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2017-12-08	4.3.1	AUTOSAR Release Management	• minor corrections / clarifications / editorial changes; For details please refer to the ChangeDocumentation

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2016-11-30	4.3.0	AUTOSAR Release Management	• minor corrections / clarifications / editorial changes; For details please refer to the ChangeDocumentation
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2013-10-31	4.1.2	AUTOSAR Release Management	• Updated constraints according to changes in SWS and TPS documents
2013-03-15	4.1.1	AUTOSAR Administration	• Initial Release

Disclaimer

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References

[1] SOME/IP Protocol Specification
AUTOSAR_FO_PRS_SOMEIPProtocol

[2] Information technology – Universal Coded Character Set (UCS)
https://www.iso.org

1 Document Information and Content

This auxiliary document provides a collection of constraints for AUTOSAR models. All constraints are copied from template specification from the AUTOSAR Adaptive Platform, so this document does not introduce any new constraints.

A list of the documents that the constraints originate from can be found in the table of contents. Chapter 2 contains the collected constraints, grouped by source documents. All constraints from the same source document are contained within a single section.

2 Autosar Model Constraints

2.1 AP_TPS_ManifestSpecification

[constr_1473]{DRAFT} **No support for PRPortPrototype** ⌈A ServiceInterface shall not be referenced by a PRPortPrototype in the role providedRequiredInterface **at the time before the generation of the ara API starts**.

⌋()

[constr_1478]{DRAFT} **SwDataDefProps applicable to ApplicationDataTypes exclusive to the *AUTOSAR adaptive platform*** ⌈

Attributes of SwDataDefProps	Root Elem.		Attribute Existence per Category
	ApplicationAssocMapDataType	ApplicationAssocMapElement	ASSOCIATIVE_MAP
additionalNativeTypeQualifier			
annotation	x	x	*
baseType			
compuMethod			
dataConstr			
displayFormat	x	x	0..1
implementationDataType			
invalidValue			
stepSize			
swAddrMethod			
swAlignment			
swBitRepresentation			
swCalibrationAccess			
swCalprmAxisSet			
swComparisonVariable			
swDataDependency			
swHostVariable			
swImplPolicy			
swIntendedResolution			
swInterpolationMethod			
swIsVirtual			
swPointerTargetProps			
swRecordLayout			
swRefreshTiming			

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swTextProps			
swValueBlockSize			
unit			
valueAxisDataType			
Other Attributes below the Root Element			
key: ApplicationAssocMapElement	x		1
value: ApplicationAssocMapElement	x		1

This rule shall be imposed **at the time before the generation of the ara API starts**

⌋()

[constr_1482]{DRAFT} **Mapping of service interfaces vs. mapping of service interface elements** ⌈In order to establish a mapping between a given pair of ServiceInterfaces, at most **one of** the following alternatives can exist:

- the given pair of ServiceInterfaces is referenced by a ServiceInterfaceMapping, where one ServiceInterface is referenced in the role sourceServiceInterface and the other ServiceInterface is referenced in the role compositeServiceInterface.
- an arbitrary mixture of the following options exists:
  - an event aggregated by one of the given ServiceInterfaces is referenced by a ServiceInterfaceEventMapping in the role sourceEvent and one events aggregated by the other given ServiceInterface is referenced by the same ServiceInterfaceEventMapping in the role targetEvent.
  - a trigger aggregated by one of the given ServiceInterfaces is referenced by a ServiceInterfaceTriggerMapping in the role sourceTrigger and one trigger aggregated by the other given ServiceInterface is referenced by the same ServiceInterfaceTriggerMapping in the role targetTrigger.
  - a field aggregated by one of the given ServiceInterfaces is referenced by a ServiceInterfaceFieldMapping in the role sourceField and one fields aggregated by the other given ServiceInterface is referenced by the same ServiceInterfaceFieldMapping in the role targetField.
  - a method aggregated by one of the given ServiceInterfaces is referenced by a ServiceInterfaceMethodMapping in the role sourceMethod and one methods aggregated by the other given ServiceInterface is referenced by the same ServiceInterfaceMethodMapping in the role targetMethod.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1483]{DRAFT} **Applicability of a ServiceInterface** ⌈The applicability of a ServiceInterface shall be limited to the *AUTOSAR adaptive platform*, i.e. a ServiceInterface shall only be taken to type a PortPrototype if the latter is aggregated by an AdaptiveApplicationSwComponentType or by a CompositionSwComponentType defined in the context of an Executable.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1488]{DRAFT} **Initialization of a DataPrototype typed by an ApplicationAssocMapDataType** ⌈A DataPrototype typed by an ApplicationAssocMapDataType shall only be initialized by an ApplicationAssocMapValueSpecification **at the time before the generation of the ara API starts**.

⌋()

[constr_1489]{DRAFT} **Uniqueness of ApplicationAssocMapValueSpecification.mapElementTuple.key** ⌈The value of all mapElementTuple.key elements in the context of a given ApplicationAssocMapValueSpecification shall be unique **at the time before the generation of the ara API starts**.

⌋()

[constr_1490]{DRAFT} **Allowed value for Executable.category if ProcessToMachineMapping references a NonOsModuleInstantiation** ⌈If a ProcessToMachineMapping references a NonOsModuleInstantiation, then the Process referenced in the role ProcessToMachineMapping.process shall only refer (in the role Process.executable) to an Executable where attribute Executable.category is set to PLATFORM_LEVEL (see [constr_1605]) **at the time when the creation of the manifest is finished**.

⌋()

[constr_1492]{DRAFT} **SwComponentType referenced in the role Executable.rootSwComponentPrototype.applicationType** ⌈Any SwComponentType referenced in the role Executable.rootSwComponentPrototype.applicationType, or used to type a SwComponentPrototype nested inside the SwComponentType referenced in the role Executable.rootSwComponentPrototype.applicationType shall **only** be either a CompositionSwComponentType or an AdaptiveApplicationSwComponentType **at the time before the generation of the ara API starts**.

⌋()

[constr_1494]{DRAFT} **Initial value for event** ⌈A ServiceInterface.event shall **not** have an initValue **at the time before the generation of the ara API starts**.

⌋()

[constr_1507]{DRAFT} **PortInterfaceToDataTypeMapping is only applicable to ServiceInterface or PersistencyKeyValueStorageInterface** ⌈PortInterfaceToDataTypeMapping.portInterface shall only refer to **either** a ServiceInterface **or** a PersistencyKeyValueStorageInterface **at the time before the generation of the ara API starts**.

⌋()

[constr_1536]{DRAFT} **Definition of SoftwareCluster applies for a single Machine** ⌈Within the scope of a SoftwareCluster, each Process referenced in the role containedProcess shall be mapped (e.g. by means of the existence of a ProcessToMachineMapping) to the same Machine **at the time when the creation of the manifest is finished**.

⌋()

[constr_1549]{DRAFT} **Value of ProcessorCore.coreId** ⌈The value of ProcessorCore.coreId shall be unique in the context of the enclosing Processor **at the time when the creation of the manifest is finished**.

⌋()

[constr_1550]{DRAFT} **Reference from Process to ProcessDesign** ⌈Each ProcessDesign shall only be referenced from a single Process **at the time when the creation of the manifest is finished**

⌋()

[constr_1551]{DRAFT} **Existence of DataPrototypeInServiceInterfaceRef.dataPrototype vs. DataPrototypeInServiceInterfaceRef.elementInImplDatatype** ⌈For every given DataPrototypeInServiceInterfaceRef, either the aggregation DataPrototypeInServiceInterfaceRef.dataPrototype or DataPrototypeInServiceInterfaceRef.elementInImplDatatype shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_1553]{DRAFT} **Restriction for ProcessToMachineMapping** ⌈The following restrictions apply for the usage of ProcessToMachineMapping:

1. Each combination of Process and Machine shall only be referenced by one ProcessToMachineMapping in the role process or machine.
2. Each Process shall only be referenced by a single ProcessToMachineMapping in the role process.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_1554]{DRAFT} **Restriction regarding attribute PersistencyKeyValuePair.initValue** ⌈The concrete sub-class of ValueSpecification aggregated in the role PersistencyKeyValuePair.initValue shall not (after resolving a possible redirection by means of ConstantReference) be a ReferenceValueSpecification **at the time when the creation of the manifest is finished**.

⌋()

[constr_1555]{DRAFT} **Restriction applicable for PersistencyPortPrototypeToKeyValueStorageMapping.portPrototype** ⌈The reference PersistencyPortPrototypeToKeyValueStorageMapping.portPrototype shall only be used for a PortPrototype typed by a PersistencyKeyValueStorageInterface **at the time when the creation of the manifest is finished**.

⌋()

[constr_1556]{DRAFT} **Restriction applicable for PersistencyPortPrototypeToFileStorageMapping.portPrototype** ⌈The reference PersistencyPortPrototypeToFileStorageMapping.portPrototype shall only be used for a PortPrototype typed by a PersistencyFileStorageInterface **at the time when the creation of the manifest is finished**.

⌋()

[constr_1560]{DRAFT} **Usage of SoftwareClusterDesign.requiredARElement** ⌈The reference SoftwareClusterDesign.requiredARElement shall not be used to refer to another SoftwareClusterDesign or even SoftwareCluster **at the time when the sub-system design is complete**.

⌋()

[constr_1566]{DRAFT} **Usage of SoftwareCluster.containedARElement** ⌈The reference SoftwareCluster.containedARElement shall not be used to refer to a SoftwareCluster or a SoftwareClusterDesign **at the time when the creation of the manifest is finished**.

⌋()

[constr_1570]{DRAFT} **Restriction for UserDefinedServiceInterfaceDeployment of category SERVICE_INTERFACE_DEPLOYMENT_IPC** ⌈An AdaptivePlatformServiceInstance that references a UserDefinedServiceInterfaceDeployment of category SERVICE_INTERFACE_DEPLOYMENT_IPC shall **only** be referenced by a UserDefinedServiceInstanceToMachineMapping in the role serviceInstance that in turn references a UserDefinedCommu-

nicationConnector **at the time when the creation of the manifest is finished**.

⌋()

[constr_1571]{DRAFT} **CppImplementationDataType is limited** ⌈The usage of a CppImplementationDataType is limited to the context of AdaptiveApplicationSwComponentTypes and CompositionSwComponentTypes defined in the context of an Executable.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1576]{DRAFT} **Existence of CppTemplateArgument.templateType vs. CppTemplateArgument.allocator** ⌈For any given CppTemplateArgument, **at most one of** the references

- CppTemplateArgument.templateType or
- CppTemplateArgument.allocator

may exist **at the time before the generation of the ara API starts**.

⌋()

[constr_1578]{DRAFT} **Applicable data categories** ⌈

Category	Applicable to ...								Description
	ApplicationArrayDataType	ApplicationRecordDataType	ApplicationPrimitiveDataType	ApplicationRecordElement	ApplicationArrayElement	ApplicationValueSpecification	StdCppImplementationDataType	CustomCppImplementationDataType	
VALUE			x	x	x	x	x		Contains a single value. See also [TPS_MANI_03192].
TYPE_REFERENCE							x		The element is defined via reference to another data type (via CppImplementationDataType.typeReference.
STRUCTURE		x		x	x		x		Holds one or several further elements which can have different AutosarDataTypes. See also [TPS_MANI_03180].

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Category	Applicable to ...								Description
	ApplicationArrayDataType	ApplicationRecordDataType	ApplicationPrimitiveDataType	ApplicationRecordElement	ApplicationArrayElement	ApplicationValueSpecification	StdCppImplementationDataType	CustomCppImplementationDataType	
VARIANT							x	x	Can hold values of different data types. It is similar to STRUCTURE except that all of its members start at the same location in memory. A VARIANT data prototype can contain only one of its elements at a time and represents a type-safe union. The size of the VARIANT is at least the size of the largest member. See also [TPS_MANI_03189].
ARRAY	x			x	x		x	x	A fixed-sized array of sub-elements of the same data type. See also [TPS_MANI_03169].
VECTOR							x	x	An array of elements of the same data type that is able to grow at run-time. See also [TPS_MANI_03174].
ASSOCIATIVE_ MAP							x	x	An associative array of key-value pairs. See also [TPS_MANI_03183].
STRING			x	x	x	x	x		Contains a text string. See also [TPS_MANI_03178].
BOOLEAN			x	x	x	x			Contains one boolean state. Depending on the CPU direct addressing of single bits may not be available. So a byte or a word can be used to store only one logical state.

This rule shall be imposed **at the time before the generation of the ara API starts**

⌋()

[constr_1579]{DRAFT} **SwDataDefProps applicable to CppImplementationDataTypes exclusive to the *AUTOSAR adaptive platform*** ⌈

Attributes of SwDataDefProps	Root Element	Attribute Existence per Category							
	CppImplementationDataType	VALUE	TYPE_REFERENCE	STRUCTURE	VARIANT	ARRAY	VECTOR	ASSOCIATIVE_MAP	STRING
additionalNativeTypeQualifier									
annotation	x	*	*	*	*	*	*	*	*
baseType									
compuMethod	x		0..1						
dataConstr.dataConstrRule.physConstrs	x		d/c			d/c	d/c		
dataConstr.dataConstrRule.internalConstrs	x		0..1			0..1	0..1		
displayFormat	x	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1
implementationDataType									
invalidValue	x		0..1						0..1
stepSize									
swAddrMethod									
swAlignment									
swBitRepresentation									
swCalibrationAccess									
swCalprmAxisSet									
swComparisonVariable									
swDataDependency									
swHostVariable									
swImplPolicy									
swIntendedResolution									
swInterpolationMethod									
swIsVirtual									
swPointerTargetProps									
swPointerTargetProps.swDataDefProps									
swRecordLayout									
swRefreshTiming	x	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1
swTextProps									
swValueBlockSize									
unit									
valueAxisDataType									

This rule shall be imposed **at the time before the generation of the ara API starts**

⌋()

[constr_1581]{DRAFT} **Value of `fileElement.fileName`** ⌈Within the scope of any given `PersistencyFileStorageInterface`, the value of all `fileElement.fileName` shall be unique **at the time before the generation of the ara API starts**.

⌋()

[constr_1582]{DRAFT} **`PersistencyKeyValuePair.valueDataType` shall match to `AbstractImplementationDataType` for the corresponding `PersistencyDataElement`** ⌈Each `PersistencyKeyValuePair.valueDataType` shall match the `AbstractImplementationDataType` that either directly or indirectly (via the applicable `DataTypeMap`) types the corresponding (based on identical values of the respective `shortName`) `PersistencyDataElement` **at the time when the creation of the manifest is finished**.

⌋()

[constr_1589]{DRAFT} **Value of `file.fileName`** ⌈Within the scope of any given `PersistencyFileStorage`, the value of all `file.fileName` shall be unique **at the time when the creation of the manifest is finished**.

A `fileName` is considered unique if there are no other `fileName`s with **exactly** the same sequence of characters[1].

⌋()

[constr_1593]{DRAFT} **Completeness of the existence of a set of `TlvDataIdDefinition.tlvArgument`s** ⌈If the reference `TlvDataIdDefinition.tlvArgument` exists for one `argument` of a given `ClientServerOperation` then further `TlvDataIdDefinition.tlvArgument` shall exist **for all** `argument`s of the given `ClientServerOperation` and all affected `TlvDataIdDefinition` shall be aggregated by the same `TransformationPropsToServiceInterfaceElementMapping`.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1594]{DRAFT} **Consistent assignment of TLV data ids to `ApplicationRecordDataType`** ⌈For every `ApplicationRecordDataType` where direct members set the attribute `ApplicationRecordElement.isOptional` to the value `true` references to **all direct members** of this `ApplicationRecordDataType` shall be created on the basis of the definition of `TlvDataIdDefinition`.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[1] The characters "x" and "X" are not considered as identical characters for this purpose.

[constr_1595]{DRAFT} **Consistent assignment of TLV data ids to CppImplementationDataType or CppImplementationDataTypeElement** ⌈For every CppImplementationDataType of category STRUCTURE where direct members set the attribute CppImplementationDataTypeElement.isOptional to the value true references to **all direct members** of this CppImplementationDataType shall be created on the basis of the definition of TlvDataIdDefinition.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1596]{DRAFT} **Scope of the uniqueness of the value of TlvDataIdDefinition.id for references to ArgumentDataPrototype** ⌈For all TlvDataIdDefinition that are referencing ArgumentDataPrototypes of a given ClientServerOperation in the role tlvArgument, the attribute TlvDataIdDefinition.id **shall exist and have a unique value per communication direction**, i.e. in the context of the collection of all

- arguments where attribute direction is set to either in or inout
- arguments where attribute direction is set to either out or inout
- arguments where attribute direction is set to inout (if the method **only** has arguments where attribute direction is set to inout)

of the respective enclosing ClientServerOperation.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1597]{DRAFT} **Scope of the uniqueness of the value of TlvDataIdDefinition.id for references to ApplicationRecordElement** ⌈For all TlvDataIdDefinition that are referencing ApplicationRecordElements of a given ApplicationDataType in the role tlvRecordElement the attribute TlvDataIdDefinition.id **shall exist and have a unique value** in the context of respective enclosing ApplicationRecordDataType.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1598]{DRAFT} **Scope of the uniqueness of the value of TlvDataIdDefinition.id for references to CppImplementationDataTypeElement** ⌈For all TlvDataIdDefinition that are referencing CppImplementationDataTypeElements of a given CppImplementationDataType/CppImplementationDataTypeElement in the role tlvImplementationDataTypeElement the attribute TlvDataIdDefinition.id **shall exist and have a unique value** in the

context of respective enclosing CppImplementationDataType or CppImplementationDataTypeElement.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1599]{DRAFT} **TlvDataIdDefinition referencing ArgumentDataPrototype** ⌈Each ArgumentDataPrototype shall be referenced **at most once** in the role tlvArgument in the context of the same TransformationPropsToServiceInterfaceElementMapping **at the time before the generation of the ara API starts**.

⌋()

[constr_1600]{DRAFT} **TlvDataIdDefinition referencing ApplicationRecordElement** ⌈Each ApplicationRecordElement shall be referenced **at most once** in the role tlvRecordElement in the context of the same TransformationPropsToServiceInterfaceElementMapping **at the time before the generation of the ara API starts**.

⌋()

[constr_1601]{DRAFT} **TlvDataIdDefinition referencing CppImplementationDataTypeElement** ⌈Each CppImplementationDataTypeElement shall be referenced **at most once** in the role tlvImplementationDataTypeElement in the context of the same TransformationPropsToServiceInterfaceElementMapping **at the time before the generation of the ara API starts**.

⌋()

[constr_1603]{DRAFT} **Completeness of the existence of a set of TlvDataIdDefinition.tlvRecordElements** ⌈If the reference TlvDataIdDefinition.tlvRecordElement exists for one element of a given ApplicationRecordDataType then further TlvDataIdDefinition.tlvRecordElement shall exist **for all** elements of the given ApplicationRecordDataType and all affected TlvDataIdDefinition shall be aggregated by the same TransformationPropsToServiceInterfaceElementMapping.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1604]{DRAFT} **Completeness of the existence of a set of TlvDataIdDefinition.tlvImplementationDataTypeElements** ⌈If the reference TlvDataIdDefinition.tlvImplementationDataTypeElement exists for one subElement of a given CppImplementationDataType or CppImplementationDataTypeElement then further TlvDataIdDefinition.tlvImplementationDataTypeElement shall exist **for all** subElements of the given CppImplementationDataType or CppImplementationDataTypeElement and all affected

TlvDataIdDefinition shall be aggregated by the same TransformationPropsToServiceInterfaceElementMapping.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1605]{DRAFT} **Standardized values of attribute Executable.category** ⌈The following values for attribute Executable.category are standardized by AUTOSAR:

- PLATFORM_LEVEL: the Executable represents software on the platform level (i.e. conceptually located *on the level of* the middleware).
- APPLICATION_LEVEL: the Executable represents software on the application level (i.e. conceptually located *above* the middleware).

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1606]{DRAFT} **Processes with mutual ExecutionDependencys** ⌈A Process.stateDependentStartupConfig.executionDependency shall not refer to any ModeDeclaration owned by a second Process that in turn refers via stateDependentStartupConfig.executionDependency to any ModeDeclaration owned by the first Process **at the time when the creation of the manifest is finished**.

⌋()

[constr_1613]{DRAFT} **File name of matching pairs of PersistencyFileElement and PersistencyFile** ⌈The value of attributes PersistencyFileElement.fileName and PersistencyFile.fileName shall be identical for matching pairs (as identified by the application of [TPS_MANI_01187]) of PersistencyFileStorage and PersistencyFile **at the time when the creation of the manifest is finished**.

⌋()

[constr_1618]{DRAFT} **Ability to shut down** ⌈In the context of one Machine, at least one Process shall have a stateDependentStartupConfig.functionGroupState that has the shortName Shutdown **at the time when the creation of the manifest is finished**.

⌋()

[constr_1619]{DRAFT} **Ability to restart** ⌈In the context of one Machine, at least one Process shall have a stateDependentStartupConfig.functionGroupState

that has the shortName Restart **at the time when the creation of the manifest is finished**.

⌋()

[constr_1625]{DRAFT} **Existence of reference ApApplicationError.errorDomain** ⌈For each ApApplicationError, the reference errorDomain shall exist **at the time before the generation of the ara API starts**.

In other words, the association of an ApApplicationError with a corresponding ApApplicationErrorDomain is mandatory.

⌋()

[constr_1628]{DRAFT} **Definition of static length field sizes in case of TLV usage** ⌈If the aggregation tlvDataIdDefinition exists for a given TransformationPropsToServiceInterfaceElementMapping then attributes

- sizeOfArrayLengthField,
- sizeOfStringLengthField,
- sizeOfStructLengthField, and
- sizeOfUnionLengthField

shall have a value greater than 0 **at the time before the generation of the ara API starts**.

⌋()

[constr_1629]{DRAFT} **Identical sizes of length fields in case of TLV usage** ⌈If the aggregation tlvDataIdDefinition exists for a given TransformationPropsToServiceInterfaceElementMapping then attributes

- sizeOfArrayLengthField,
- sizeOfStringLengthField,
- sizeOfStructLengthField, and
- sizeOfUnionLengthField

shall have an identical value **at the time before the generation of the ara API starts**.

⌋()

[constr_1630]{DRAFT} **No definition of length field sizes on DataPrototype level in case of TLV usage** ⌈If the reference in the role tlvDataIdDefinition exists for a given TransformationPropsToServiceInterfaceElementMapping then attributes

- sizeOfArrayLengthField,
- sizeOfStringLengthField,

- sizeOfStructLengthField, and
- sizeOfUnionLengthField

shall not be individually defined on the level of a DataPrototype (i.e. by means of the reference SomeipDataPrototypeTransformationProps.someipTransformationProps) but only on the level of a ServiceInterface (i.e. by means of the reference TransformationPropsToServiceInterfaceElementMapping.transformationProps).

This rule shall be imposed **at the time before the generation of the ara API starts**

⌋()

[constr_1658]{DRAFT} **Number of DiagnosticTroubleCodeUdsToClearConditionGroupMapping elements per DiagnosticTroubleCodeUds** ⌈The mapping element DiagnosticTroubleCodeUdsToClearConditionGroupMapping shall be created no more than once per DiagnosticTroubleCodeUds.

If several DiagnosticTroubleCodeUdsToClearConditionGroupMapping elements referring to the same DiagnosticTroubleCodeUds are defined, then the Clear Condition Group mapping shall be regarded as defective

This rule shall be imposed **at the time when the diagnostic design is complete**.

⌋()

[constr_1659]{DRAFT} **Restriction for the usage of CppImplementationDataTypeElementQualifier.inplace** ⌈The attribute CppImplementationDataTypeElementQualifier.inplace shall only exist if the target referenced in the role CppImplementationDataTypeElementQualifier.typeReference is an StdCppImplementationDataType that has the attribute category set to either of the values

- ARRAY
- VECTOR
- ASSOCIATIVE_MAP
- VARIANT
- STRUCTURE
- STRING
- TYPE_REFERENCE, if the CppImplementationDataType refers to a CompuMethod of category TEXTTABLE

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1660]{DRAFT} **Restriction for the usage of CppTemplateArgument.inplace** ⌈The attribute CppTemplateArgument.inplace shall only exist if the target referenced in the role CppTemplateArgument.templateType is an StdCppImplementationDataType that has the attribute category set to either of the values

- ARRAY
- VECTOR
- ASSOCIATIVE_MAP
- VARIANT
- STRUCTURE
- STRING

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1661]{DRAFT} **Multiplicity of OsModuleInstantiation.resourceGroup** ⌈Any given OsModuleInstantiation shall always define at least one resourceGroup **at the time when the creation of the manifest is finished**.

⌋()

[constr_1664]{DRAFT} **Unique ApApplicationError.shortName** ⌈Within the set of all ApApplicationErrors that reference a given ApApplicationErrorDomain in the role errorDomain the attribute ApApplicationError.shortName shall have a unique value **at the time before the generation of the ara API starts**.

⌋()

[constr_1665]{DRAFT} **Unique ApApplicationError.errorCode** ⌈Within the set of all ApApplicationErrors that reference a given ApApplicationErrorDomain in the role errorDomain the attribute ApApplicationError.errorCode shall have a unique value **at the time before the generation of the ara API starts**.

⌋()

[constr_1666]{DRAFT} **References from PersistencyPortPrototypeToKeyValueStorageMapping to PersistencyKeyValueStorage** ⌈Each PersistencyKeyValueStorage shall only be referenced by at most one PersistencyPort-

PrototypeToKeyValueStorageMapping **at the time when the creation of the manifest is finished**.

⌋()

[constr_1667]{DRAFT} **References from PersistencyPortPrototypeToFileStorageMapping to PersistencyFileStorage** ⌈Each PersistencyFileStorage shall only be referenced by at most one PersistencyPortPrototypeToFileStorageMapping **at the time when the creation of the manifest is finished**.

⌋()

[constr_1668]{DRAFT} **Allowed combinations of PersistencyRedundancyChecksum.length and algorithmFamily** ⌈

	8	16	32	64
CRC_J1850	x			
CRC_CCITT_FALSE		x		
CRC_ETHERNET			x	
CRC_0x42F0E1EBA9EA3693				x
CRC_8H2F	x			
CRC_16ARC		x		
CRC_32P4			x	

This rule shall be imposed **at the time before the generation of the ara API starts**

⌋()

[constr_1673]{DRAFT} **Existence of attributes hasGetter, hasSetter, and hasNotifier** ⌈For any given Field, all of the attributes

- hasGetter
- hasSetter
- hasNotifier

shall exist and at least one of the attributes shall be set to true **at the time before the generation of the ara API starts**.

⌋()

[constr_1675]{DRAFT} **Existence of attribute ApSomeipTransformationProps.stringEncoding** ⌈The attribute TransformationPropsToServiceInterfaceElementMapping.transformationProps.stringEncoding shall only exist for a event, methodCall, methodReturn, or field (referenced by the same TransformationPropsToServiceInterfaceElementMapping) that consists of

or contains a DataPrototype typed by a CppImplementationDataType of category STRING.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1676]{DRAFT} **Consistency of references shallRunOn and shallNotRunOn** ⌈Within the context of one ProcessToMachineMapping, all ProcessorCores referenced in the role shallRunOn or shallNotRunOn shall be aggregated by the same Processor **at the time when the creation of the manifest is finished**.

⌋()

[constr_1677]{DRAFT} **Mutual exclusive existence of references shallRunOn and shallNotRunOn** ⌈For any given ProcessToMachineMapping, either the reference in the role shallRunOn or the reference in the role shallNotRunOn may exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_1678]{DRAFT} **Allowed values for attribute ApSomeipTransformationProps.stringEncoding** ⌈Imposed by technical restrictions in the definition of the SOME/IP message format [1], only two possible values of attribute ApSomeipTransformationProps.stringEncoding are allowed:

- UTF-8: UCS Transformation Format 8
- UTF-16: Character encoding for Unicode *code points* based on 16 bit *code units* [2]

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1688]{DRAFT} **StateDependentStartupConfig shall only refer to Function Group States of the same Function Group** ⌈For all StateDependentStartupConfigs aggregated in the role Process.stateDependentStartupConfig, references in the role functionGroupState to ModeDeclaration shall only refer to ModeDeclarations aggregated by the same ModeDeclarationGroup in the context of the same ModeDeclarationGroupPrototype (that represents the actual Function Group) **at the time when the creation of the manifest is finished**.

⌋()

[constr_1689]{DRAFT} **Modeling of a startup dependency between different Processes** ⌈The existence of attribute Process.stateDependentStartupConfig.executionDependency is only valid if

- the owner of the stateDependentStartupConfig.executionDependency (in other words: the **referencing** Process) and
- the owner of the ModeDeclarationGroupPrototype referenced in the role contextModeDeclarationGroupPrototype within the reference stateDependentStartupConfig.executionDependency.processState (i.e. the **referenced** Process)

refer to the **identical Function Group State** formalized as ModeDeclaration **at the time when the creation of the manifest is finished**.

⌋()

[constr_1690]{DRAFT} **SoftwareCluster shall only be referenced by a single SoftwarePackage.** ⌈Each SoftwareCluster shall only be referenced by a single SoftwarePackage **at the time when the creation of the manifest is finished**.

⌋()

[constr_1691]{DRAFT} **UcmModuleInstantiation.identifier shall be unique** ⌈The value of attribute UcmModuleInstantiation.identifier shall be unique for each Machine in a given vehicle **at the time when the creation of the manifest is finished**.

⌋()

[constr_1692]{DRAFT} **Value of schedulingPriority** ⌈The value of attribute StartupConfig.schedulingPriority shall be set to a positive integer value **at the time when the creation of the manifest is finished**.

⌋()

[constr_1693]{DRAFT} **Relation of Executable, ProcessDesign, and Process** ⌈Any Executable that is referenced by a ProcessDesign shall also be referenced by every Process that references the ProcessDesign **at the time when the creation of the manifest is finished**.

⌋()

[constr_1695]{DRAFT} **Semantics of a Grant depends on the existence of IamModuleInstantiation** ⌈The existence of Grants shall only be enforced if in the context of the enclosing Machine an IamModuleInstantiation has been defined and is referencing the Grant **at the time when the creation of the manifest is finished**.

⌋()

[constr_1696]{DRAFT} **ClientServerOperation aggregated by DiagnosticRoutineInterface** ⌈Any ClientServerOperation aggregated by a DiagnosticRoutineInterface shall not define the following attributes:

- fireAndForget

- possibleApError
- possibleApErrorSet

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1697]{DRAFT} **Restriction for ClientServerOperation aggregated by a DiagnosticDataIdentifierInterface or DiagnosticDataElementInterface** ⌈If meta-classes DiagnosticDataIdentifierInterface or DiagnosticDataElementInterface aggregate two ClientServerOperations then

- The two ClientServerOperations shall have the same number of arguments.
- The arguments on the nth position in the collection of arguments shall have identical properties, except the direction. In particular, the following conditions shall be fulfilled with respect to attribute direction:
  - Any ArgumentDataPrototype aggregated by a ClientServerOperation that is itself aggregated in either the role DiagnosticDataIdentifierInterface.read or DiagnosticDataElementInterface.read shall set attribute direction to out.
  - Any ArgumentDataPrototype aggregated by a ClientServerOperation that is itself aggregated in the role DiagnosticDataIdentifierInterface.write shall set attribute direction to in.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1708]{DRAFT} **Combination of CppImplementationDataTypeElement.isOptional and CppImplementationDataTypeElementQualifier.inplace** ⌈If a CppImplementationDataTypeElement is typed by a CppImplementationDataType of category STRUCTURE then the combination of attribute CppImplementationDataTypeElement.isOptional set to true and CppImplementationDataTypeElement.typeReference.inplace set to true is not allowed **at the time before the generation of the ara API starts**.

⌋()

[constr_1710]{DRAFT} **Consistency of values of attributes PersistencyInterface.redundancy and PersistencyRedundancyHandling.scope** ⌈If attribute PersistencyInterface.redundancy is set to value PersistencyRedundancyEnum.redundantPerElement then attribute PersistencyRedundancyHandling.scope shall be set to PersistencyRedundancyHandlingScopeEnum.persistencyRedundancyHandlingScopeElement for at least one Persisten-

cyRedundancyHandling aggregated by the corresponding PersistencyDeployment **at the time when the creation of the manifest is finished**.

⌋()

[constr_1723]{DRAFT} **ProvidedSomeipServiceInstance shall be unique in respect of serviceInstanceId, serviceInterfaceId and majorVersion on a VLAN** ⌈On a VLAN, each ProvidedSomeipServiceInstance shall have a different serviceInstanceId, serviceInterfaceId and majorVersion value combination.

In other words, no two ProvidedSomeipServiceInstances shall have the same serviceInstanceId, serviceInterfaceId and majorVersion value combination during runtime on the same VLAN.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_1727]{DRAFT} **Qualified combinations of PortPrototypes and PhmSupervisedEntityInterface on application software level** ⌈Within the context of an Executable of category APPLICATION_LEVEL the usage of PhmSupervisedEntityInterface is **only** supported for an RPortPrototype.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1728]{DRAFT} **Qualified combinations of PortPrototypes and PhmHealthChannelInterface on application software level** ⌈Within the context of an Executable of category APPLICATION_LEVEL the usage of PhmHealthChannelInterface is **only** supported for a RPortPrototype.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1729]{DRAFT} **Qualified combinations of PortPrototypes and PhmSupervisionRecoveryNotificationInterface / PhmHealthChannelRecoveryNotificationInterface on State Management software level** ⌈Within the context of an Executable of category APPLICATION_LEVEL the usage of PhmSupervisionRecoveryNotificationInterface and PhmHealthChannelRecoveryNotificationInterface is **only** supported for a PPortPrototype.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_1731]{DRAFT} **Value of UcmDescription.identifier in the scope of a VehiclePackage** ⌈Within the scope of any given VehiclePackage, no two UcmDescriptions shall define the same value of attribute identifier **at the time when the creation of the manifest is finished**.

⌋()

[constr_1736]{DRAFT} **Multiplicity of reference LogicalSupervision.initialCheckpoint** ⌈At the time of deployment of a LogicalSupervision, at least one reference to meta-class SupervisionCheckpoint in the role initialCheckpoint shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_1737]{DRAFT} **Multiplicity of reference LogicalSupervision.finalCheckpoint** ⌈At the time of deployment of a LogicalSupervision, at least one reference to meta-class SupervisionCheckpoint in the role finalCheckpoint shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_1740]{DRAFT} **Multiplicity of reference LogicalSupervision.transition** ⌈At the time of deployment of a LogicalSupervision, at least one reference to meta-class CheckpointTransition in the role LogicalSupervision.transition shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_1742]{DRAFT} **Multiplicity of reference SupervisionCheckpoint.phmCheckpoint** ⌈At the time of deployment of a SupervisionCheckpoint, one reference to meta-class PhmCheckpoint in the role phmCheckpoint shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_1743]{DRAFT} **CppImplementationDataType.headerFile vs. CppImplementationDataType.typeEmitter** ⌈The two attributes CppImplementationDataType.headerFile and CppImplementationDataType.typeEmitter shall always be used mutually exclusive.

In other words, a subclass of CppImplementationDataType shall either use headerFile or typeEmitter. The simultaneous usage of both attributes is not supported.

This rule shall be imposed **at the time before the generation of the ara API starts**

⌋()

[constr_1746]{DRAFT} **Mutual exclusive existence of `PersistencyInterface.redundancy` and `PersistencyInterface.redundancyHandling`** ⌈For each `PersistencyInterface`, either the attribute `redundancy` or the aggregation of `PersistencyRedundancyHandling` in the role `redundancyHandling` may exist **`at the time before the generation of the ara API starts`**.

⌋()

[constr_1747]{DRAFT} **Completeness of the `SoftwareCluster.version`** ⌈The `SoftwareCluster.version` shall contain all the following parts:

- Major version
- Minor version
- Patch version
- Additional labels for pre-release version and build metadata

This rule shall be imposed **`at the time when the creation of the manifest is finished`**.

⌋()

[constr_1748]{DRAFT} **Existence of references `TlvDataIdDefinition.tlvArgument`, `TlvDataIdDefinition.tlvRecordElement`, and `TlvDataIdDefinition.tlvImplementationDataTypeElement`** ⌈For each `TlvDataIdDefinition`, only one out of the following references shall exist:

- reference to an `ArgumentDataPrototype` in the role `tlvArgument`
- reference to an `ApplicationRecordElement` in the role `tlvRecordElement`
- reference to an `AbstractImplementationDataTypeElement` in the role `tlvImplementationDataTypeElement`.

This rule shall be imposed **`at the time before the generation of the ara API starts`**.

⌋()

[constr_1751]{DRAFT} **Value of `PersistencyRedundancyMOutOfN.m`** ⌈The value of attribute `PersistencyRedundancyMOutOfN.m` shall be set at least to 1 and at most to the value of attribute `PersistencyRedundancyMOutOfN.n`, i.e. the allowed interval is [1..`PersistencyRedundancyMOutOfN.n`].

This rule shall be imposed **`at the time before the generation of the ara API starts`**.

⌋()

[constr_1764]{DRAFT} **Counterpart of `PhmCheckpoint`** ⌈Each `PhmCheckpoint` shall be referenced once and only once in the role `targetPhmCheckpoint` by a `PhmCheckpointInExecutableInstanceRef` with the same `Executable` and chain

of contextComponentPrototype and contextRPortPrototype that is aggregated by a SupervisionCheckpoint in combination with a specific Process. This reference shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_1769]{DRAFT} **Existence of ProcessArgument.argument** ⌈For each ProcessArgument, attribute argument shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_1770]{DRAFT} **Value of ProvidedSomeipServiceInstance.serviceInstanceId** ⌈For each ProvidedSomeipServiceInstance.serviceInstanceId, the value shall be in the range 0..65534 **at the time when the creation of the manifest is finished**.

⌋()

[constr_1784]{DRAFT} **Restriction for the reference to UploadableExclusivePackageElement** ⌈A reference to an UploadableExclusivePackageElement shall not cross the boundary of the enclosing SoftwareCluster, i.e. the target UploadableExclusivePackageElement of such a reference shall not be located in a different SoftwareCluster than the owner of the reference **at the time when the creation of the manifest is finished**.

⌋()

[constr_1785]{DRAFT} **Restriction regarding the reference into another SoftwareCluster** ⌈A reference from an element in one SoftwareCluster to an element located in another SoftwareCluster shall only exist if the SoftwareCluster that owns the referenced element is referenced by a SoftwareClusterDependencyCompareCondition in the context of the mentioned SoftwareClusterDependencyFormula in the role part.softwareCluster **at the time when the creation of the manifest is finished**.

[constr_1784] applies.

⌋()

[constr_1786]{DRAFT} **Restriction to use functionGroup in terms of SoftwareCluster** ⌈Each functionGroup shall only be referenced in the role claimedFunctionGroup by **at most one** SoftwareCluster **at the time when the creation of the manifest is finished**.

⌋()

[constr_1787]{DRAFT} **Restricted use of Function Groups in the context of a SoftwareCluster** ⌈All Processes referenced by a SoftwareCluster in the role containedProcess shall only aggregate StateDependentStartupConfigs where the reference functionGroupState refers to a ModeDeclarationGroup-

Prototype (as context) that is also referenced by the same SoftwareCluster in the role claimedFunctionGroup **at the time when the creation of the manifest is finished**.

⌋()

[constr_1788]{DRAFT} **Restriction to SoftwareCluster of category PLATFORM_CORE** ⌈On each Machine, exactly one SoftwareCluster of category PLATFORM_CORE shall be deployed **at the time when the creation of the manifest is finished**.

⌋()

[constr_3287]{DRAFT} **Mandatory information of a ProvidedSomeipServiceInstance** ⌈The ProvidedSomeipServiceInstance shall always define the serviceInstanceId **at the time when the creation of the manifest is finished**.

⌋()

[constr_3288]{DRAFT} **IP configuration restriction for unicastNetworkEndpoints** ⌈A NetworkEndpoint that is referenced by a EthernetCommunicationConnector in the role unicastNetworkEndpoint shall have either

- one Ipv4Configuration or
- one Ipv6Configuration

as networkEndpointAddress that is defined in the unicast IP range according to the rules defined in [TPS_MANI_03005] and [TPS_MANI_03006] **at the time when the creation of the manifest is finished**.

⌋()

[constr_3290]{DRAFT} **Transport Protocol attributes defined for a ProvidedSomeipServiceInstance** ⌈Each SomeipServiceInstanceToMachineMapping that is defined for a ProvidedSomeipServiceInstance shall define either

- a udpPort or
- a tcpPort or
- a udpPort and a tcpPort.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_3300]{DRAFT} **Allowed ServiceMethodDeployment.method references** ⌈The ClientServerOperation that is referenced by ServiceMethodDeployment in the role method shall be defined in the context of a ServiceInterface that is referenced by the ServiceInterfaceDeployment in the role serviceIn-

terface that contains the ServiceMethodDeployment **at the time when the creation of the manifest is finished**.

⌋()

[constr_3301]{DRAFT} **Allowed ServiceEventDeployment.event references** ⌈The VariableDataPrototype that is referenced by ServiceEventDeployment in the role event shall be defined in the context of a ServiceInterface that is referenced by the ServiceInterfaceDeployment in the role serviceInterface that contains the ServiceEventDeployment **at the time when the creation of the manifest is finished**.

⌋()

[constr_3302]{DRAFT} **Allowed ServiceFieldDeployment.field references** ⌈The Field that is referenced by ServiceFieldDeployment in the role field shall be defined in the context of a ServiceInterface that is referenced by the ServiceInterfaceDeployment in the role serviceInterface that contains the ServiceFieldDeployment **at the time when the creation of the manifest is finished**.

⌋()

[constr_3304]{DRAFT} **Value of attribute SomeipEventGroup.eventGroupId shall be unique** ⌈The value of attribute eventGroupId shall be unique in the context of the enclosing SomeipServiceInterfaceDeployment **at the time when the creation of the manifest is finished**.

⌋()

[constr_3305]{DRAFT} **Value of attribute SomeipEventDeployment.eventId shall be unique** ⌈The value of eventId shall be unique in the context of the enclosing SomeipServiceInterfaceDeployment, unless SomeipEventDeployment.serializer is set to SerializationTechnologyEnum.signalBased **at the time when the creation of the manifest is finished**.

⌋()

[constr_3306]{DRAFT} **Value of attribute methodId shall be unique per SomeipServiceInterfaceDeployment** ⌈The value of methodId shall be unique in the context of the enclosing SomeipServiceInterfaceDeployment **at the time when the creation of the manifest is finished**.

⌋()

[constr_3308]{DRAFT} **SomeipEventDeployment.transportProtocol setting to tcp and the impact on ProvidedSomeipServiceInstances** ⌈If SomeipEventDeployment.transportProtocol is set to tcp then each ProvidedSomeipServiceInstance that refers the SomeipServiceInterfaceDeployment in the role serviceInterfaceDeployment shall only be mapped to a MachineDesign with a SomeipServiceInstanceToMachineMapping with

a configured tcpPort **at the time when the creation of the manifest is finished**.

⌋()

[constr_3309]{DRAFT} **SomeipMethodDeployment.transportProtocol setting to udp and the impact on ProvidedSomeipServiceInstances** ⌈If SomeipMethodDeployment.transportProtocol is set to udp then each ProvidedSomeipServiceInstance that refers the SomeipServiceInterfaceDeployment in the role serviceInterfaceDeployment shall only be mapped to a MachineDesign with a SomeipServiceInstanceToMachineMapping with a configured udpPort **at the time when the creation of the manifest is finished**.

⌋()

[constr_3310]{DRAFT} **SomeipMethodDeployment.transportProtocol setting to tcp and the impact on ProvidedSomeipServiceInstances** ⌈If SomeipMethodDeployment.transportProtocol is set to tcp then each ProvidedSomeipServiceInstance that refers the SomeipServiceInterfaceDeployment in the role serviceInterfaceDeployment shall only be mapped to a MachineDesign with a SomeipServiceInstanceToMachineMapping with a configured tcpPort **at the time when the creation of the manifest is finished**.

⌋()

[constr_3320]{DRAFT} **Aggregation of CommunicationConnector by MachineDesign** ⌈Meta-Class MachineDesign shall only aggregate EthernetCommunicationConnectors in the role communicationConnector. No other subclass of CommunicationConnector shall appear in this aggregation.

This rule shall be imposed **at the time when the machine design is complete**.

⌋()

[constr_3349]{DRAFT} **Usage of ApplicationAssocMapDataType is limited** ⌈The usage of an ApplicationAssocMapDataType is limited to the context of AdaptiveApplicationSwComponentTypes and CompositionSwComponentTypes defined in the context of an Executable, i.e. such a data type shall not be used on the *AUTOSAR classic platform*.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_3351]{DRAFT} **SOME/IP segmentation allowed for udp SomeipEventDeployments** ⌈Attribute SomeipEventDeployment.maximumSegmentLength shall only be used if the value of attribute SomeipEventDeployment.transportPro-

tocol is set to udp **at the time when the creation of the manifest is finished**.

⌋()

[constr_3352]{DRAFT} **SOME/IP segmentation allowed for udp SomeipMethodDeployments** ⌈SomeipMethodDeployment.maximumSegmentLengthRequest and SomeipMethodDeployment.maximumSegmentLengthResponse shall only be used if SomeipMethodDeployment.transportProtocol is set to udp **at the time when the creation of the manifest is finished**.

⌋()

[constr_3353]{DRAFT} **Restriction in usage of ApSomeipTransformationProps.sizeOfArrayLengthField** ⌈The value of the attribute sizeOfArrayLengthField shall be either 0, 1, 2 or 4 **at the time before the generation of the ara API starts**.

⌋()

[constr_3354]{DRAFT} **Restriction in usage of ApSomeipTransformationProps.sizeOfStructLengthField** ⌈The value of the attribute sizeOfStructLengthField shall be either 0, 1, 2 or 4 **at the time before the generation of the ara API starts**.

⌋()

[constr_3355]{DRAFT} **Restriction in usage of ApSomeipTransformationProps.sizeOfUnionLengthField** ⌈The value of the attribute sizeOfUnionLengthField shall be either 0, 1, 2 or 4 **at the time before the generation of the ara API starts**.

⌋()

[constr_3356]{DRAFT} **Restriction in usage of ApSomeipTransformationProps.alignment** ⌈The value of the attribute alignment shall be either 8, 16, 32, 64, 128, or 256 **at the time before the generation of the ara API starts**.

⌋()

[constr_3357]{DRAFT} **Restriction in usage of ApSomeipTransformationProps.sizeOfUnionTypeSelectorField** ⌈The value of the attribute sizeOfUnionTypeSelectorField shall be either 1, 2 or 4 **at the time before the generation of the ara API starts**.

⌋()

[constr_3359]{DRAFT} **RPortPrototypeProps are related only to RPortPrototypes** ⌈The RPortPrototypeProps shall be aggregated only by a RPortProto-

type in the role portPrototypePropsat the time before the generation of the ara API starts.

⌋()

[constr_3361]{DRAFT} **Selective definition of serialization settings** ⌈If a SomeipDataPrototypeTransformationProps is defined for a composite DataPrototype of an element of a ServiceInterface (method, field, event) and if the reference someipTransformationProps exists then SomeipDataPrototypeTransformationProps that define the reference someipTransformationProps shall be defined for all other composite DataPrototypes of the ServiceInterface element as well.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_3362]{DRAFT} **SomeipEventDeploymentS aggregated by a SomeipFieldDeployment** ⌈A SomeipEventDeployment that is aggregated by a SomeipFieldDeployment in the role notifier shall not reference a VariableDataPrototype in the role event **at the time when the creation of the manifest is finished**.

⌋()

[constr_3363]{DRAFT} **SomeipMethodDeploymentS aggregated by a SomeipFieldDeployment** ⌈A SomeipMethodDeployment that is aggregated by a SomeipFieldDeployment in the role get or set shall not reference a ClientServerOperation in the role method **at the time when the creation of the manifest is finished**.

⌋()

[constr_3367]{DRAFT} **FieldMapping.notifierDataElement reference** ⌈The FieldMapping shall only contain the notifierDataElement reference if the hasNotifier attribute in the referenced field is set to true **at the time when the system design is complete**.

⌋()

[constr_3368]{DRAFT} **FieldMapping.getterOperation reference** ⌈The FieldMapping shall only contain the getterOperation reference if the hasGetter attribute in the referenced field is set to true **at the time when the system design is complete**.

⌋()

[constr_3369]{DRAFT} **FieldMapping.setterOperation reference** ⌈The FieldMapping shall only contain the setterOperation reference if the hasSet-

ter attribute in the referenced field is set to true **at the time when the system design is complete**.

⌋()

[constr_3370]{DRAFT} **InterfaceMapping shall map all elements of a single ServiceInterface** ⌈The mappings that are included in an InterfaceMapping shall map all elements of a single ServiceInterface (i.e. fields, events, methods) to PortInterface elements of the classic platform **at the time when the system design is complete**.

⌋()

[constr_3371]{DRAFT} **Mutually exclusive existence of FireAndForgetMethodMapping.dataElement reference and FireAndForgetMethodMapping.trigger reference** ⌈A FireAndForgetMethodMapping shall never reference a dataElement and a trigger at the same time **at the time when the system design is complete**.

⌋()

[constr_3372]{DRAFT} **Restriction in usage of ApSomeipTransformationProps.sizeOfStringLengthField** ⌈The value of the attribute sizeOfStringLengthField shall be either 0, 1, 2 or 4 **at the time before the generation of the ara API starts**.

⌋()

[constr_3374]{DRAFT} **method with attribute fireAndForget set to true shall not have any inout or out arguments** ⌈A method that has the value of attribute fireAndForget set to true is not allowed to have any arguments with direction inout or out **at the time before the generation of the ara API starts**.

⌋()

[constr_3375]{DRAFT} **method with attribute fireAndForget set to true shall not reference an ApApplicationError** ⌈A method that has the value of attribute fireAndForget set to true is not allowed to reference

- an ApApplicationError in role possibleApError and/or
- an ApApplicationErrorSet in the role possibleApErrorSet.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_3376]{DRAFT} **FireAndForgetMethodMapping shall reference only fire and forget methods** ⌈A FireAndForgetMethodMapping is only allowed to reference a ClientServerOperation in role method for which the value of attribute

method.fireAndForget is set to true **at the time when the system design is complete**.

⌋()

[constr_3391]{DRAFT} **ServiceInterfaceElementSecureComConfig references to ServiceInterfaceDeployment elements** ⌈ServiceInterfaceElementSecureComConfig element shall be defined for exactly one ServiceInterface element and shall therefore contain only one single reference to an element defined in the scope of a ServiceInterfaceDeployment **at the time when the creation of the manifest is finished**.

⌋()

[constr_3392]{DRAFT} **ServiceInterfaceElementSecureComConfig.dataId and ServiceInterfaceElementSecureComConfig.freshnessValueId are mandatory in case of SecOC communication** ⌈The attributes ServiceInterfaceElementSecureComConfig.dataId and ServiceInterfaceElementSecureComConfig.freshnessValueId are mandatory in case of SecOC communication **at the time when the creation of the manifest is finished**.

⌋()

[constr_3393]{DRAFT} **Usage of shallRunOn and shallNotRunOn references** ⌈The ProcessorCore that is referenced by a ProcessToMachineMapping in the role shallRunOn or shallNotRunOn shall be aggregated by the Machine that is referenced in the role machine by the same ProcessToMachineMapping **at the time when the creation of the manifest is finished**.

⌋()

[constr_3395]{DRAFT} **TransformationPropsToServiceInterfaceElementMapping is restricted to one single ServiceInterface** ⌈All ServiceInterface elements that are referenced by the TransformationPropsToServiceInterfaceElementMapping in the role event, trigger, methodCall, methodReturn, or field shall be aggregated by the same ServiceInterface in the role event, trigger, method or field.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_3396]{DRAFT} **Number of Process.stateDependentStartupConfig that refer to the same functionGroupState** ⌈Within the context of a given Process, no two StateDependentStartupConfigs shall refer to the same ModeDeclaration in the role functionGroupState **at the time when the creation of the manifest is finished**.

⌋()

[constr_3408]{DRAFT} **Value range of SomeipEventDeployment.eventId** ⌈The value of eventId shall be in the range of 0..32767 **at the time when the creation of the manifest is finished**.

⌋()

[constr_3409]{DRAFT} **Value range of SomeipMethodDeployment.methodId** ⌈The value of methodId shall be in the range of 0..32767 **at the time when the creation of the manifest is finished**.

⌋()

[constr_3410]{DRAFT} **Value range of SomeipServiceInterfaceDeployment.serviceInterfaceId** ⌈The value of serviceInterfaceId shall be in the range of 0..65535 **at the time when the creation of the manifest is finished**.

⌋()

[constr_3413]{DRAFT} **StateDependentStartupConfig of a Process is mapped to exactly one ResourceGroup** ⌈Each StateDependentStartupConfig of a Process shall be assigned to exactly one ResourceGroup that is defined in the Machine Manifest **at the time when the creation of the manifest is finished**.

⌋()

[constr_3414]{DRAFT} **Allowed usage of PlatformModuleEthernetEndpointConfiguration attributes that are allowed to be used to configure the network communication in the different platform modules** ⌈

	Element	
PlatformModuleEthernetEndpointConfiguration attributes	**Usage in DoIpInstantiation**	**Usage in DltLogSink**
tcpPort	Optional	Optional
udpPort	Optional	Optional
ipv4MulticastIpAddress	N/A	N/A
ipv6MulticastIpAddress	N/A	N/A
communicationConnector	Mandatory	Mandatory

This rule shall be imposed **at the time when the creation of the manifest is finished**

⌋()

[constr_3415]{DRAFT} **Value range of ProvidedSomeipServiceInstance.loadBalancingPriority** ⌈The value of attribute ProvidedSomeipServiceInstance.loadBalancingPriority shall be in the range of 0..65535 **at the time when the creation of the manifest is finished**.

⌋()

[constr_3416]{DRAFT} **Value range of ProvidedSomeipServiceInstance.loadBalancingWeight** ⌈The value of attribute ProvidedSomeipServiceInstance.loadBalancingWeight shall be in the range of 0..65535 **at the time when the creation of the manifest is finished**.

⌋()

[constr_3417]{DRAFT} **UserDefinedEventDeployments aggregated by a UserDefinedFieldDeployment** ⌈A UserDefinedEventDeployment that is aggregated by a UserDefinedFieldDeployment in the role notifier shall not reference a VariableDataPrototype in the role event **at the time when the creation of the manifest is finished**.

⌋()

[constr_3418]{DRAFT} **UserDefinedMethodDeployments aggregated by a UserDefinedFieldDeployment** ⌈A UserDefinedMethodDeployment that is aggregated by a UserDefinedFieldDeployment in the role get or set shall not reference a ClientServerOperation in the role method **at the time when the creation of the manifest is finished**.

⌋()

[constr_3419]{DRAFT} **Allowed usage of UdpNmNetworkConfiguration attributes** ⌈The UdpNmNetworkConfiguration that is aggregated by UdpNmCluster in the role networkConfiguration shall have either

- ipv4MulticastIpAddress or
- ipv6MulticastIpAddress.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_3421]{DRAFT} **Fibex elements applicable for a System of category MACHINE_DESIGN_EXTRACT** ⌈A System with the category MACHINE_DESIGN_EXTRACT is allowed to reference the following fibexElements:

- CommunicationCluster
- MachineDesign
- GlobalTimeDomain
- NmConfig
- SystemMapping that is allowed to contain only a PncMapping

This rule shall be imposed **at the time when the system design is complete**.

⌋()

[constr_3423]{DRAFT} **StateDependentStartupConfig of a Process shall reference a functionGroupState** ⌈Each StateDependentStartupConfig of a Process shall reference at least one ModeDeclaration in the role functionGroupState **at the time when the creation of the manifest is finished**.

⌋()

[constr_3424]{DRAFT} **StateDependentStartupConfig shall never reference the functionGroupState Off** ⌈A StateDependentStartupConfig shall never reference the ModeDeclaration that has the shortName Off in the role functionGroupState. Please note that the Off ModeDeclaration is a special state in a Function Group as defined by [TPS_MANI_03195].

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_3425]{DRAFT} **Restriction of DoIpInstantiations on a Machine** ⌈Each Machine shall aggregate at most one DoIpInstantiation in the role moduleInstantiation **at the time when the creation of the manifest is finished**.

⌋()

[constr_3429]{DRAFT} **No allocator usage for CppImplementationDataTypes of category VARIANT** ⌈CppImplementationDataType of category VARIANT is not allowed to aggregate a templateArgument that points to an Allocator in the role allocator **at the time before the generation of the ara API starts**.

⌋()

[constr_3433]{DRAFT} **Aggregation of templateArguments for an ARRAY** ⌈CppImplementationDataType of category ARRAY that boils down to ara::core::Array shall aggregate exactly one templateArgument that defines the type of elements contained in the CppImplementationDataType of category ARRAY **at the time before the generation of the ara API starts**.

⌋()

[constr_3434]{DRAFT} **Aggregation of templateArguments for a VECTOR** ⌈A CppImplementationDataType of category VECTOR that boils down to ara::core::Vector shall aggregate at least one and at most two templateArgument where the first one shall define the type of elements contained in the CppImplementationDataType of category VECTOR with the templateType reference **at the time before the generation of the ara API starts**.

⌋()

[constr_3443]{DRAFT} **Specification of a namespace for a StdCppImplementationDataType** ⌈The definition of a namespace for a StdCppImplementationDataType of category VALUE is not allowed.

For this value of category the std namespace is already assumed by the usage of the StdCppImplementationDataType.

This rule shall be imposed **at the time before the generation of the ara API starts**

⌋()

[constr_3446]{DRAFT} **CppTemplateArgument with allocator reference and the inplace flag** ⌈A CppTemplateArgument that points with an allocator reference to an Allocator shall not have the inplace flag set to a value **at the time before the generation of the ara API starts**.

⌋()

[constr_3447]{DRAFT}**ApSomeipTransformationProps.sizeOfArrayLengthField that equals 0** ⌈The sizeOfArrayLengthField value of 0 is only allowed to be used if a fixed size array for which the SomeipDataPrototypeTransformationProps is defined is referenced within the aggregated DataPrototypeInServiceInterfaceRef **at the time before the generation of the ara API starts**.

⌋()

[constr_3462]{DRAFT} **CppTemplateArgument.templateType reference to StdCppImplementationDataType of category STRUCTURE and the inplace flag** ⌈CppTemplateArgument.templateType that points to a StdCppImplementationDataType of category STRUCTURE shall have the inplace attribute set to **false** **at the time before the generation of the ara API starts**.

⌋()

[constr_3485]{DRAFT} **UDP endpoint using DTLS SERVER role can only serve provided service instances** ⌈A ServiceInstanceToMachineMapping that refers to TlsSecureComProps in the role secureComPropsForUdp is only allowed to reference ProvidedApServiceInstances in the role serviceInstance if the TlsSecureComProps has the category TLS_SERVER **at the time when the creation of the manifest is finished**.

⌋()

[constr_3486]{DRAFT} **TCP endpoint using TLS SERVER role can only serve provided service instances** ⌈A ServiceInstanceToMachineMapping that refers to TlsSecureComProps in the role secureComPropsForTcp is only allowed to reference ProvidedApServiceInstances in the role serviceInstance if the TlsSe-

cureComProps has the category TLS_SERVER **at the time when the creation of the manifest is finished**.

⌋()

[constr_3487]{DRAFT} **TCP endpoint can only serve provided or required service instances exclusively** ⌈ServiceInstanceToMachineMapping is not allowed to refer to a ProvidedApServiceInstance and at the same time a RequiredApServiceInstance in the role serviceInstance if

- the ServiceInterfaceDeployment that is referenced by the ProvidedApServiceInstance in the role serviceInterfaceDeployment and
- the ServiceInterfaceDeployment that is referenced by the RequiredApServiceInstance in the role serviceInterfaceDeployment

both contain defined tcp content that is described by the transportProtocol attribute in the deployment elements of SOME/IP or DDS.

In other words a TCP endpoint can only serve provided or required service instances exclusively.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_3492]{DRAFT} **DoIpInstantiation.logicalAddress shall be defined as member in the DoIpRequestConfiguration** ⌈The DoIpInstantiation.logicalAddress shall be a member of the intervals of available physical addresses configured for the DoIpInstantiation in the requestConfiguration **at the time when the creation of the manifest is finished**.

⌋()

[constr_3493]{DRAFT} **Applicable attributes for standardized E2E Profiles** ⌈

E2E Attributes	Root Element			Attribute Existence per Profile											
	End2EndEventProtectionProps	End2EndMethodProtectionProps	E2EProfileConfiguration	PROFILE_04	PROFILE_05	PROFILE_06	PROFILE_07	PROFILE_08	PROFILE_11	PROFILE_22	PROFILE_04m	PROFILE_07m	PROFILE_44	PROFILE_08m	PROFILE_44m
dataId	x	x		1	1	1	1	1	1	n	1	1	1	1	1
dataLength	x	x			x				x	x					
minDataLength	x	x		x		x	x	x			x	x	x	x	x
maxDataLength	x	x		x		x	x	x			x	x	x	x	x
dataUpdatePeriod	x	x		x	x	x	x	x	x	x	x	x	x	x	x
sourceId		x									x	x		x	x
dataIdMode			x						x						
maxDeltaCounter			x	x	x	x	x	x	x	x	x	x	x	x	x
maxErrorStateInit			x	x	x	x	x	x	x	x	x	x	x	x	x
maxErrorStateInvalid			x	x	x	x	x	x	x	x	x	x	x	x	x
maxErrorStateValid			x	x	x	x	x	x	x	x	x	x	x	x	x
minOkStateInit			x	x	x	x	x	x	x	x	x	x	x	x	x
minOkStateInvalid			x	x	x	x	x	x	x	x	x	x	x	x	x
minOkStateValid			x	x	x	x	x	x	x	x	x	x	x	x	x
windowSizeValid			x	x	x	x	x	x	x	x	x	x	x	x	x
windowSizeInvalid			x	x	x	x	x	x	x	x	x	x	x	x	x
windowSizeInit			x	x	x	x	x	x	x	x	x	x	x	x	x
clearFromValidToInvalid			x	x	x	x	x	x	x	x	x	x	x	x	x

This rule shall be imposed **at the time when the creation of the manifest is finished**

⌋()

[constr_3495]{DRAFT} **Supported value range for attribute DoIpInstantiation.eid** ⌈The supported value range of attribute DoIpInstantiation.eid is limited to the interval [0..281474976710655] **at the time when the creation of the manifest is finished**.

⌋()

[constr_3496]{DRAFT} **Supported value range for attribute DoIpInstantiation.gid** ⌈The supported value range of attribute DoIpInstantiation.gid is limited to the interval [0..281474976710655] **at the time when the creation of the manifest is finished**.

⌋()

[constr_3497]{DRAFT} **Supported value range for attribute DoIpInstantiation.maxRequestBytes** ⌈The supported value range of attribute DoIpInstantiation.maxRequestBytes is limited to the interval [0..4294967295] **at the time when the creation of the manifest is finished**.

⌋()

[constr_3498]{DRAFT} **Supported value range for attribute DoIpInstantiation.logicalAddress** ⌈The supported value range of attribute DoIpInstantiation.logicalAddress is limited to the interval [0..65535] **at the time when the creation of the manifest is finished**.

⌋()

[constr_3499]{DRAFT} **Supported value range for attribute DoIpRequestConfiguration.startAddress** ⌈The supported value range of attribute DoIpRequestConfiguration.startAddress is limited to the interval [0..65535] **at the time when the creation of the manifest is finished**.

⌋()

[constr_3528]{DRAFT} **Value range of DdsServiceInstanceProps.domainId** ⌈The value of attribute DdsServiceInstanceProps.domainId at DdsProvidedServiceInstance and domainId at DdsRequiredServiceInstance shall be in the range of a signed 32-bit integer **at the time when the creation of the manifest is finished**.

⌋()

[constr_3529]{DRAFT} **Value range of DdsProvidedServiceInstance.serviceInstanceId** ⌈The value of attribute DdsProvidedServiceInstance.serviceInstanceId shall be in the range of 0..65535 **at the time when the creation of the manifest is finished**.

⌋()

[constr_3530]{DRAFT} **Mandatory definition of checkpointId** ⌈The checkpointId shall be defined for every PhmCheckpoint element **at the time before the generation of the ara API starts**.

⌋()

[constr_3532]{DRAFT} **Mandatory definition of statusId** ⌈The statusId shall be defined for every PhmHealthChannelStatus element **at the time before the generation of the ara API starts**.

⌋()

[constr_3538]{DRAFT} **Only one ServiceInstanceToMachineMapping per technology and CommunicationConnector** ⌈Each AdaptivePlatformServiceInstance shall only be referenced up to once by a specific ServiceInstanceToMachineMapping subclass in the role serviceInstance where the Service-

InstanceToMachineMapping refer to the same CommunicationConnector **at the time when the creation of the manifest is finished**.

⌋()

[constr_3539]{DRAFT} **Only one AliveSupervision per SupervisionCheckpoint** ⌈A SupervisionCheckpoint shall only be referenced up to once by an AliveSupervision in the role checkpoint in the context of an identical SupervisionMode **at the time when the creation of the manifest is finished**.

⌋()

[constr_3540]{DRAFT} **SupervisionCheckpoint in supervision graph** ⌈Each SupervisionCheckpoint shall only be part of one supervision graph in the context of an identical SupervisionMode **at the time when the creation of the manifest is finished**.

⌋()

[constr_3541]{DRAFT} **qosProfile mandatory for DdsProvidedServiceInstance** ⌈The attribute qosProfile shall be defined for every DdsProvidedServiceInstance **at the time when manifest creation is finished at the time when the creation of the manifest is finished**.

⌋()

[constr_3542]{DRAFT} **qosProfile mandatory for DdsRequiredServiceInstance** ⌈The attribute qosProfile shall be defined for every DdsRequiredServiceInstance **at the time when the creation of the manifest is finished**.

⌋()

[constr_3550]{DRAFT} **Existence of ServiceInstanceToSignalMapping for an event with signalBased serialization** ⌈If

- an event is referenced by a SomeipEventDeployment in the role event and
- the attribute SomeipEventDeployment.serializer is set to signalBased,

then a ServiceInstanceToSignalMapping shall exist with eventElementMapping referring to the event in the role dataPrototypeInServiceInterfaceRef **at the time when the creation of the manifest is finished**.

⌋()

[constr_3551]{DRAFT} **Full mapping of target ISignalGroup** ⌈If

- an ISignalTriggering is part of a ServiceInstanceToSignalMapping and

- the ISignalTriggering refers to an ISignalPort with communicationDirection equals out and
- the ISignalTriggering refers to an ISignalGroup in the role iSignalGroup,

then a SignalBasedEventElementToISignalTriggeringMapping shall exist for every ISignal referenced by the ISignalGroup in the role iSignal **at the time when the creation of the manifest is finished**.

⌋()

[constr_3552]{DRAFT} **Full mapping of target event** ⌈If

- the ServiceInstanceToSignalMapping refers to a ProvidedSomeipServiceInstance and
- the dataPrototypeInServiceInterfaceRef refers to a DataPrototype which is part of a composite data type,

then a SignalBasedEventElementToISignalTriggeringMapping shall exist for every DataPrototype that is part of the composite data type **at the time when the creation of the manifest is finished**.

⌋()

[constr_3553]{DRAFT} **Existence of ServiceInstanceToSignalMapping for an field with signalBased serialization** ⌈If a field is referenced by a SomeipFieldDeployment in the role field and that SomeipFieldDeployment aggregates a SomeipEventDeployment in the role notifier and the SomeipEventDeployment has an attribute SomeipEventDeployment.serializer set to signalBased then there shall exist a ServiceInstanceToSignalMapping with a fieldMapping referring to the field in the role dataPrototypeInServiceInterfaceRef and the SignalBasedFieldToISignalTriggeringMapping shall refer to a ISignalTriggering in the role notifierSignalTriggering **at the time when the creation of the manifest is finished**.

⌋()

[constr_3554]{DRAFT} **E2E protection configuration check** ⌈If the SignalServiceTranslationEventProps.safeTranslation equals true then the signal-based payload shall have an EndToEnd profile defined **at the time when the creation of the manifest is finished**.

⌋()

[constr_3555]{DRAFT} **No support for SecuredIPdu.useAsCryptographicIPdu set to true** ⌈If a PduTriggering is referencing a SecuredIPdu where the attribute useAsCryptographicIPdu is set to the value true, then no subclass of AbstractSignalBasedToISignalTriggeringMapping shall refer to an ISignalTriggering that in turn refers to an ISignal that is referenced in the role iSignal by any ISignalToIPduMapping that is owned by the ISignalIPdu referenced

by the SecuredIPdu in the role payload **at the time when the creation of the manifest is finished**.

⌋()

[constr_3557]{DRAFT} **Mandatory majorVersion at SomeipServiceInterfaceDeployment.serviceInterfaceVersion** ⌈If the SomeipServiceVersion is aggregated at the SomeipServiceInterfaceDeployment in the role serviceInterfaceVersion then the attribute SomeipServiceVersion.majorVersion shall be defined **at the time when the creation of the manifest is finished**.

⌋()

[constr_3558]{DRAFT} **RequiredSomeipServiceInstance.blocklistedVersion is restricted to the usage of minorVersion** ⌈The majorVersion attribute shall not be used in the SomeipServiceVersion that is aggregated by the RequiredSomeipServiceInstance in the role blocklistedVersion **at the time when the creation of the manifest is finished**.

⌋()

[constr_3561]{DRAFT} **minimumMinorVersion and RequiredSomeipServiceInstance.requiredMinorVersion value** ⌈The RequiredSomeipServiceInstance.requiredMinorVersion shall not have the value *ANY* if versionDrivenFindBehavior = minimumMinorVersion **at the time when the creation of the manifest is finished**.

⌋()

[constr_3563]{DRAFT} **Mandatory topic name values** ⌈The attributes methodRequestTopicName, methodReplyTopicName, fieldRequestTopicName, fieldReplyTopicName, topicName shall specify string values, each of them unique within the service interface **at the time when the creation of the manifest is finished**.

⌋()

[constr_3564]{DRAFT} **Consistency between DDS Service Interface Deployment and Provided DDS Service Instance** ⌈Transport attributes DdsServiceInterfaceDeployment.transportProtocol and DdsEventDeployment.transportProtocol shall be consistent with DDS profiles generated and selected by the DdsQosProps component of DdsProvidedServiceInstance, DdsFieldQosProps, and DdsEventQosProps **at the time when the creation of the manifest is finished**.

⌋()

[constr_3565]{DRAFT} **Consistency between DDS Service Interface Deployment and Required DDS Service Instance** ⌈Transport attributes DdsServiceInterfaceDeployment.transportProtocol and DdsEventDeployment.transportProtocol shall be consistent with DDS profiles generated and selected by

the DdsQosProps component of DdsRequiredServiceInstance, DdsFieldQosProps, and DdsEventQosProps **at the time when the creation of the manifest is finished**.

⌋()

[constr_3568]{DRAFT} **No support for cross PlatformHealthManagementContribution references** ⌈All references originating on elements aggregated by one PlatformHealthManagementContribution shall only refer to elements that are part of the same PlatformHealthManagementContribution aggregation chain **at the time when the creation of the manifest is finished**.

⌋()

[constr_3569]{DRAFT} **Applicability of attribute invalidValue on CppImplementationDataType of category TYPE_REFERENCE** ⌈If a CppImplementationDataType of category TYPE_REFERENCE has an invalidValue defined, then the referenced CppImplementationDataType (via typeReference) shall eventually be of category VALUE **at the time before the generation of the ara API starts**.

⌋()

[constr_3612]{DRAFT} **Multiplicity of references recoveryNotification, recoveryAction, and process at RecoveryNotificationToPPortPrototypeMapping** ⌈The references recoveryNotification, recoveryAction, and process shall be defined for each RecoveryNotificationToPPortPrototypeMapping **at the time when the creation of the manifest is finished**.

⌋()

[constr_3613]{DRAFT} **Reference to a PhmSupervisionRecoveryNotificationInterface in the context of a HealthChannelSupervision** ⌈If the RecoveryNotification is aggregated by a HealthChannelSupervision then the RecoveryNotificationToPPortPrototypeMapping shall refer to a PPortPrototype in the role recoveryAction typed by PhmSupervisionRecoveryNotificationInterface **at the time when the creation of the manifest is finished**.

⌋()

[constr_3614]{DRAFT} **Reference to a PhmHealthChannelRecoveryNotificationInterface in the context of a HealthChannelExternalStatus** ⌈If the RecoveryNotification is aggregated by a HealthChannelExternalStatus then the RecoveryNotificationToPPortPrototypeMapping shall refer to a PPortPrototype in the role recoveryAction typed by PhmHealthChannelRecoveryNotificationInterface **at the time when the creation of the manifest is finished**.

⌋()

[constr_3619]{DRAFT} **Mandatory references of TimeBaseProviderToPersistencyMapping** ⌈The references TimeBaseProviderToPersistencyMapping.persistencyDeploymentElement and TimeBaseProviderToPersistencyMapping.timeBaseProvider shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_3623]{DRAFT} **SupervisionCheckpoints in the context of a GlobalSupervision** ⌈All SupervisionCheckpoints belonging to the same PhmSupervisedEntityInterface instance (SupervisionCheckpoints with identical PhmCheckpointInExecutableInstanceRef.contextRootSwComponentPrototype, contextComponentPrototype, contextRPortPrototype, and process references) shall only be referenced by PhmSupervisions which are aggregated by the same GlobalSupervision **at the time when the creation of the manifest is finished**.

⌋()

[constr_3624]{DRAFT} **At least one Supervision defined in the context of a GlobalSupervision** ⌈At least one AliveSupervision, LogicalSupervision, or DeadlineSupervision shall be defined in the scope of a GlobalSupervision **at the time when the creation of the manifest is finished**.

⌋()

[constr_3625]{DRAFT} **DeadlineSupervision referencing CheckpointTransition in the context of a GlobalSupervision** ⌈DeadlineSupervision aggregated in a GlobalSupervision shall only refer to a CheckpointTransition which is aggregated by the same GlobalSupervision **at the time when the creation of the manifest is finished**.

⌋()

[constr_3626]{DRAFT} **LogicalSupervision referencing CheckpointTransition in the context of a GlobalSupervision** ⌈LogicalSupervision aggregated in a GlobalSupervision shall only refer to CheckpointTransitions that are aggregated by the same GlobalSupervision **at the time when the creation of the manifest is finished**.

⌋()

[constr_3627]{DRAFT} **Existence of SupervisionModeCondition.stateReference** ⌈At the time of deployment of SupervisionModeCondition, at least one aggregation of PhmStateReference in the role SupervisionModeCondition.stateReference shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_3628]{DRAFT} **Reference to Function Group State from a SupervisionModeCondition** ⌈If a Function Group State is referenced by a Supervi-

sionModeCondition in the scope of one GlobalSupervision, then that same Function Group State shall NOT be referenced by any other SupervisionModeCondition in the scope of the same GlobalSupervision **at the time when the creation of the manifest is finished**.

⌋()

[constr_3629]{DRAFT} **Identical Function Group in the scope of a GlobalSupervision** ⌈Within the context of one GlobalSupervision, all SupervisionMode.modeCondition shall only aggregate FunctionGroupPhmStateReferences in the role stateReference where the reference FunctionGroupPhmStateReference.functionGroupState.contextModeDeclarationGroupPrototype refers to the identical ModeDeclarationGroupPrototype (that implements the Function Group, as far as state management is concerned) **at the time when the creation of the manifest is finished**.

⌋()

[constr_3630]{DRAFT} **GlobalSupervision and Process relation** ⌈Within the context of one GlobalSupervision, all aggregated PhmSupervisions shall refer to SupervisionCheckpoints where the referenced Process aggregates a stateDependentStartupConfig that in turn refers to a functionGroupState where the contextModeDeclarationGroupPrototype refers to the identical ModeDeclarationGroupPrototype (that implements the Function Group, as far as state management is concerned) **at the time when the creation of the manifest is finished**.

⌋()

[constr_3631]{DRAFT} **Global supervision restricted to one Function Group** ⌈The Function Group (ModeDeclarationGroupPrototype) referenced in [constr_3629] and [constr_3630] shall be identical for one particular GlobalSupervision **at the time when the creation of the manifest is finished**.

⌋()

[constr_3632]{DRAFT} **Supervision of a Supervised Entity Instance in the scope of a Function Group State** ⌈A Supervised Entity Instance shall be configured with checkpoint supervision (all SupervisionCheckpoints of the Supervised Entity Instance are covered by AliveSupervision, DeadlineSupervision, LogicalSupervision, NoCheckpointSupervision) or NoSupervision in all Function Group States in which the corresponding Process is configured to be executed **at the time when the creation of the manifest is finished**.

⌋()

[constr_3633]{DRAFT} **Mandatory attributes of AliveSupervision** ⌈The following attributes of AliveSupervision shall be defined **at the time when the integration into a SoftwareCluster is finished**:

- aliveReferenceCycle
- checkpoint
- expectedAliveIndications
- failedReferenceCyclesTolerance
- minMargin
- maxMargin

This rule shall be imposed **at the time when the creation of the manifest is finished**

⌋()

[constr_3634]{DRAFT} **Multiplicity of CheckpointTransition.source and CheckpointTransition.target** ⌈Each CheckpointTransition shall define exactly one source reference and one target reference **at the time when the creation of the manifest is finished**.

⌋()

[constr_3635]{DRAFT} **Mandatory attributes of DeadlineSupervision** ⌈The following attributes of DeadlineSupervision shall be defined:

- transition
- minDeadline
- maxDeadline

This rule shall be imposed **at the time when the creation of the manifest is finished**

⌋()

[constr_3636]{DRAFT} **Consistent ISignal communication direction in and RequiredApServiceInstance** ⌈If the ServiceInstanceToSignalMapping.serviceInstance refers to a RequiredApServiceInstance then any ServiceInstanceToSignalMapping.eventElementMapping (respectively ServiceInstanceToSignalMapping.fieldMapping) shall refer to an ISignalTriggering which in turn refers to an ISignalPort with communicationDirection equal to in **at the time when the creation of the manifest is finished**.

⌋()

[constr_3637]{DRAFT} **Consistent ISignal communication direction out and ProvidedApServiceInstance** ⌈If the ServiceInstanceToSignalMapping.serviceInstance refers to a ProvidedApServiceInstance then any ServiceInstanceToSignalMapping.eventElementMapping (respectively ServiceInstanceToSignalMapping.fieldMapping) shall refer to an ISignalTrigger-

ing which in turn refers to an ISignalPort with communicationDirection equal to out **at the time when the creation of the manifest is finished**.

⌋()

[constr_3639]{DRAFT} **Existence of SupervisionMode.expiredSupervisionTolerance** ⌈If the SupervisionMode refers to a PhmSupervision that in turn references a SupervisionCheckpoint and that SupervisionCheckpoint refers to a Process where the Executable has the attribute category set to APPLICATION_LEVEL,
then the attribute expiredSupervisionTolerance shall NOT exist .

For each SupervisionMode the attribute expiredSupervisionTolerance shall exist.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_3640]{DRAFT} **Existence of SupervisionMode.modeCondition** ⌈For each SupervisionMode the attribute modeCondition shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_3641]{DRAFT} **Allowed combinations of ServiceInterfaceDeployment, AdaptivePlatformServiceInstance, ServiceInstanceToMachineMapping** ⌈

	DdsProvidedServiceInstance	ProvidedSomeipServiceInstance	ProvidedUserDefinedServiceInstance	DdsRequiredServiceInstance	RequiredSomeipServiceInstance	RequiredUserDefinedServiceInstance
DdsServiceInterfaceDeployment	Yes	No	Yes	Yes	No	Yes
SomeipServiceInterfaceDeployment	No	Yes	Yes	No	Yes	Yes
UserDefinedServiceInterfaceDeployment	No	No	Yes	No	No	Yes
DdsServiceInstanceToMachineMapping	Yes	No	No	Yes	No	No

⌋()

△

SomeipServiceInstanceToMachineMapping	No	Yes	No	No	Yes	No
UserDefinedServiceInstanceToMachineMapping	No	Yes	Yes	No	Yes	Yes

This rule shall be imposed **at the time when the creation of the manifest is finished**

⌋()

[constr_3642]{DRAFT} **Restriction of aggregation of PortPrototypeProps to the Adaptive Platform** ⌈The aggregation of PortPrototypeProps is only supported in the context of a SwComponentType that is (transitively) referenced by rootSwComponentPrototype.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_3643]{DRAFT} **No filter support for service-signal-translation direction** ⌈If a ServiceInstanceToSignalMapping.serviceInstance refers to a ProvidedApServiceInstance then

- every SignalBasedEventElementToISignalTriggeringMapping aggregated in the role eventElementMapping and
- every SignalBasedFieldToISignalTriggeringMapping aggregated in the role fieldMapping

shall not have a SignalBasedEventElementToISignalTriggeringMapping.filter (resp. SignalBasedFieldToISignalTriggeringMapping.filter) defined **at the time when the creation of the manifest is finished**.

⌋()

[constr_3644]{DRAFT} **No transmissionTrigger support for service-signal-translation direction** ⌈If a ServiceInstanceToSignalMapping.serviceInstance refers to a ProvidedApServiceInstance then

- every SignalBasedEventElementToISignalTriggeringMapping aggregated in the role eventElementMapping and
- every SignalBasedFieldToISignalTriggeringMapping aggregated in the role fieldMapping

shall not have a SignalBasedEventElementToISignalTriggeringMapping.transmissionTrigger (respectively SignalBasedFieldToISignalTriggeringMapping.transmissionTrigger) defined **at the time when the creation of the manifest is finished**.

⌋()

[constr_3645]{DRAFT} **`discoveryType` mandatory for `DdsProvidedServiceInstance`** ⌈The attribute `discoveryType` shall be defined for every `DdsProvidedServiceInstance` **at the time when the creation of the manifest is finished**.

⌋()

[constr_3646]{DRAFT} **`resourceIdentifierType` mandatory for `DdsProvidedServiceInstance`** ⌈The attribute `resourceIdentifierType` shall be defined for every `DdsProvidedServiceInstance` **at the time when the creation of the manifest is finished**.

⌋()

[constr_3647]{DRAFT} **`resourceIdentifierType` value for USER_DATA QoS-based discovery** ⌈If the value of `discoveryType` is `domainParticipantUserDataQos`, for a given `DdsProvidedServiceInstance`, the only valid value for attribute `resourceIdentifierType` is `partition` **at the time when the creation of the manifest is finished**.

⌋()

[constr_3648]{DRAFT} **`discoveryType` mandatory for `DdsRequiredServiceInstance`** ⌈The attribute `discoveryType` shall be defined for every `DdsRequiredServiceInstance` **at the time when the creation of the manifest is finished**.

⌋()

[constr_3649]{DRAFT} **Consistent `SupervisionCheckpoint.process` reference** ⌈If a `SupervisionCheckpoint` refers to a `Process` in the role `process`, then

- the `SupervisionCheckpoint` shall refer to a `PhmCheckpoint` which is defined in a `PhmSupervisedEntityInterface` and
- that `PhmSupervisedEntityInterface` types an `RPortPrototype` of an `AdaptiveApplicationSwComponentType` and
- that `AdaptiveApplicationSwComponentType` is used in the scope of an `Executable` and
- that `Executable` is referenced by the same `Process` as `SupervisionCheckpoint.process`.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_3650]{DRAFT} **`headerId` required in case of Arbitrary Message Header** ⌈If [TPS_MANI_03577] applies, then the respective `SocketConnectionIpduIden-`

tifier.headerId shall be defined **at the time when the creation of the manifest is finished**.

⌋()

[constr_3674]{DRAFT} **Existence of NoSupervision.targetPhmSupervisedEntity** ⌈For each NoSupervision the attribute targetPhmSupervisedEntity shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_3675]{DRAFT} **Existence of NoSupervision.process** ⌈For each NoSupervision the attribute process shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_3676]{DRAFT} **Exclusive usage of NoSupervision** ⌈For a Supervised Entity Instance, in a given SupervisionMode, either a checkpoint supervision (AliveSupervision, DeadlineSupervision, LogicalSupervision, and/or NoCheckpointSupervision referencing all SupervisionCheckpoints corresponding to the Supervised Entity Instance) or NoSupervision shall be configured, but not both.

This rule shall be imposed **at the time when the creation of the manifest is finished**

⌋()

[constr_3677]{DRAFT} **ComGrants referencing DDS Service Instances** ⌈ComGrants associated with DdsProvidedServiceInstances or DdsRequiredServiceInstances via the serviceInstance attribute shall not be referenced by IamModuleInstantiation.grant, since access control in the DDS Network Binding is delegated to DDS Security **at the time when the creation of the manifest is finished**.

⌋()

[constr_3678]{DRAFT} **Existence of attributes for DdsSecureComProps** ⌈The following attributes of DdsSecureComProps shall exist **at the time when the creation of the manifest is finished**

- identity
- governance

⌋()

[constr_3679]{DRAFT} **Existence of attributes for DdsSecureGovernance** ⌈The following attributes of DdsSecureGovernance shall exist **at the time when the creation of the manifest is finished**

- at least one domainId
- identityCertificateAuthority
- permissionCertificateAuthority
- allowUnauthenticatedParticipants
- enableJoinAccessControl
- discoveryProtectionKind
- livelinessProtectionKind
- rtpsProtectionKind

⌋()

[constr_3680]{DRAFT} **Existence of attributes for DdsTopicAccessRule** ⌈The following attributes of DdsTopicAccessRule shall exist **at the time when the creation of the manifest is finished**

- enableDiscoveryProtection
- enableLivelinessProtection
- enableReadAccessControl
- enableWriteAccessControl
- metadataProtectionKind
- dataProtectionKind

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_3681]{DRAFT} **Supported values of DdsTopicAccessRule.dataProtectionKind** ⌈Only values none, sign, or encryptAndSign from DdsProtectionKindEnum shall be used when setting DdsTopicAccessRule.dataProtectionKind **at the time when the creation of the manifest is finished**.

⌋()

[constr_3682]{DRAFT} **Values of DdsDomainRange.min and DdsDomainRange.max** ⌈The value of DdsDomainRange.min shall be less than or equal to the value of DdsDomainRange.max **at the time when the creation of the manifest is finished**.

⌋()

[constr_3683]{DRAFT} **Attributes referencing DdsTopicAccessRule** ⌈DdsServiceInterfaceDeployment.fieldTopicsAccessRule, DdsServiceInter-

faceDeployment.methodTopicsAccessRule, and DdsEventDeployment.eventTopicAccessRule shall be set if the Service Interface Deployment is to be used by Service Instances relying in DDS Security (meaning DdsServiceInstanceToMachineMapping.secureComPropsForDds is defined) **at the time when the creation of the manifest is finished**.

⌋()

[constr_3684]{DRAFT} **Mutual exclusivity of Secure Communication Properties** ⌈The attributes ServiceInstanceToMachineMapping.secOcComPropsForMulticast and DdsServiceInstanceToMachineMapping.secureComPropsForDds are mutually exclusive, meaning zero or just one of them shall be set depending on whether no security, SecOC, or DDS Security is chosen as data-level security (optionally) above transport-level security **at the time when the creation of the manifest is finished**.

⌋()

[constr_3690]{DRAFT} **DdsServiceInterfaceDeployment.serviceInterfaceId value shall not conflict with topic-based service discovery** ⌈The value "discovery" for DdsServiceInterfaceDeployment.serviceInterfaceId is reserved and shall not be used for modeled DdsServiceInterfaceDeployments Note that in the context of the *AUTOSAR adaptive platform*, the imposition time for these constraints shall be **at the time when the system design is complete**.

⌋()

[constr_3691]{DRAFT} **Existence of ServiceInterfaceElementSecureComConfig.securedRxVerification** ⌈The attribute ServiceInterfaceElementSecureComConfig.securedRxVerification shall only be defined for a ServiceInterfaceElementSecureComConfig with the following definitions:

- The ServiceInterfaceElementSecureComConfig is aggregated by a RequiredApServiceInstance and defines at least one of the following roles:
  - ServiceInterfaceElementSecureComConfig.event
  - ServiceInterfaceElementSecureComConfig.fieldNotifier
  - ServiceInterfaceElementSecureComConfig.getterReturn
  - ServiceInterfaceElementSecureComConfig.setterReturn
  - ServiceInterfaceElementSecureComConfig.methodReturn
- The ServiceInterfaceElementSecureComConfig is aggregated by a ProvidedApServiceInstance and defines at least one of the following roles:
  - ServiceInterfaceElementSecureComConfig.getterCall
  - ServiceInterfaceElementSecureComConfig.setterCall

– ServiceInterfaceElementSecureComConfig.methodCall

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_3692]{DRAFT} **DataPrototypeInServiceInterfaceInstanceRef.targetDataPrototype in the context of a SignalBasedFireAndForgetMethodToISignalTriggeringMapping** ⌈If a DataPrototypeInServiceInterfaceInstanceRef is aggregated by a SignalBasedFireAndForgetMethodToISignalTriggeringMapping in the role dataPrototypeInMethodArgumentInstanceRef, then the reference DataPrototypeInServiceInterfaceInstanceRef.targetDataPrototype shall refer to an ArgumentDataPrototype **at the time when the creation of the manifest is finished**.

⌋()

[constr_3693]{DRAFT} **EthernetCommunicationConnector.category is set to CAN_XL** ⌈If a EthernetCommunicationConnector is aggregated by the MachineDesign where attribute category is set to CAN_XL, then a reference from the EthernetCommunicationConnector to a CanXlProps in the role canXlProps shall exist **at the time when the system design is complete**.

⌋()

[constr_3694]{DRAFT} **Existence of canXlConfig vs. canXlConfigReqs** ⌈For each CanXlProps, one of

- canXlConfig or
- canXlConfigReqs

shall exist **at the time when the system design is complete**.

⌋()

[constr_3709]{DRAFT} **AliveSupervision.terminatingCheckpoint required for self terminating Processes** ⌈Only if a Process

- refers to a StartupConfig (via stateDependentStartupConfig), and that StartupConfig has the attribute StartupConfig.terminationBehavior set to the value TerminationBehaviorEnum.processIsSelfTerminating, and
- the StateDependentStartupConfig.functionGroupState is identical to the respective GlobalSupervision.supervisionMode.modeCondition.stateReference.functionGroupState and
- there exists an AliveSupervision which refers to a SupervisionCheckpoint in the role checkpoint, and that SupervisionCheckpoint refers to that Process, then

there shall exist an AliveSupervision.terminatingCheckpoint reference from the AliveSupervision **at the time when the creation of the manifest is finished**.

⌋()

[constr_3710]{DRAFT} **Process referenced by AliveSupervision.terminatingCheckpoint** ⌈The SupervisionCheckpoint that is referenced in the role AliveSupervision.terminatingCheckpoint shall refer to the same Process as the SupervisionCheckpoint that is referenced by the AliveSupervision.checkpoint **at the time when the creation of the manifest is finished**.

⌋()

[constr_3711]{DRAFT} **AliveSupervision.terminatingCheckpointTimeoutUntilTermination** ⌈If an AliveSupervision has the reference AliveSupervision.terminatingCheckpoint defined, then the attribute AliveSupervision.terminatingCheckpointTimeoutUntilTermination shall be defined **at the time when the creation of the manifest is finished**.

⌋()

[constr_3712]{DRAFT} **Exclusive usage of NoCheckpointSupervision** ⌈If a SupervisionCheckpoint is referenced by a NoCheckpointSupervision in the role checkpoint, then that SupervisionCheckpoint shall not be referenced by any other checkpoint supervision (AliveSupervision, DeadlineSupervision (via CheckpointTransition), LogicalSupervision (also via or CheckpointTransition)) in the scope of one SupervisionMode **at the time when the creation of the manifest is finished**.

⌋()

[constr_3715]{DRAFT} **Reference in the role SomeipEventGroup.event** ⌈In the context of a given SomeipServiceInterfaceDeployment, all aggregated SomeipEventDeployments shall be referenced at least once in the role event by SomeipEventGroups that in turn are aggregated at the same SomeipServiceInterfaceDeployment **at the time when the creation of the manifest is finished**.

⌋()

[constr_3719]{DRAFT} **RecoveryNotification referenced either by HealthChannelExternalStatus or HealthChannelSupervision** ⌈A RecoveryNotification shall either be referenced from up to one HealthChannelExternalStatus element or from one or more HealthChannelSupervision elements **at the time when the creation of the manifest is finished**.

⌋()

[constr_3720]{DRAFT} **Upper multiplicity of reference in the role ComGrantDesign.remoteSubject** ⌈In the context of ComGrantDesign, the reference in the role remoteSubject shall exist at most once **at the time when the GrantDesign is complete**.

⌋()

[constr_3721]{DRAFT} **Upper multiplicity of reference in the role EthernetCommunicationConnector.unicastNetworkEndpoint** ⌈In the context of EthernetCommunicationConnector, the reference in the role unicastNetworkEndpoint shall exist at most once **at the time when the system design is complete**.

⌋()

[constr_3722]{DRAFT} **Upper multiplicity of reference in the role EthernetCommunicationConnector.canXlProps** ⌈In the context of EthernetCommunicationConnector, the reference in the role canXlProps shall exist at most once **at the time when the system design is complete**.

⌋()

[constr_3723]{DRAFT} **Upper multiplicity of reference in the role MachineDesign.tcpIpProps** ⌈In the context of MachineDesign, the reference in the role tcpIpProps shall exist at most once **at the time when the system design is complete**.

⌋()

[constr_3724]{DRAFT} **Upper multiplicity of reference in the role MachineDesign.tcpIpIcmpProps** ⌈In the context of MachineDesign, the reference in the role tcpIpIcmpProps shall exist at most once **at the time when the system design is complete**.

⌋()

[constr_3725]{DRAFT} **Upper multiplicity of reference in the role MachineDesign.ethIpProps** ⌈In the context of MachineDesign, the reference in the role ethIpProps shall exist at most once **at the time when the system design is complete**.

⌋()

[constr_3727]{DRAFT} **Upper multiplicity of reference in the role SoftwareClusterDesign.intendedTargetMachine** ⌈In the context of SoftwareClusterDesign, the reference in the role intendedTargetMachine shall exist at most once **at the time when the sub-system design is complete**.

⌋()

[constr_3728]{DRAFT} **Upper multiplicity of reference in the role IdsPlatformInstantiation.networkInterface** ⌈In the context of IdsPlatformIn-

stantiation, the reference in the role networkInterface shall exist at most once **at the time when the creation of the manifest is finished**.

⌋()

[constr_3729]{DRAFT} **Upper multiplicity of reference in the role LogAndTraceInstantiation.timeBaseResource** ⌈In the context of LogAndTraceInstantiation, the reference in the role timeBaseResource shall exist at most once **at the time when the creation of the manifest is finished**.

⌋()

[constr_3730]{DRAFT} **Upper multiplicity of reference in the role HealthChannel.recoveryNotification** ⌈In the context of HealthChannel, the reference in the role recoveryNotification shall exist at most once **at the time when the creation of the manifest is finished**.

⌋()

[constr_3731]{DRAFT} **Upper multiplicity of reference in the role ProcessDesign.executable** ⌈In the context of ProcessDesign, the reference in the role executable shall exist at most once **at the time when the sub-system design is complete**.

⌋()

[constr_3732]{DRAFT} **Upper multiplicity of reference in the role Process.executable** ⌈In the context of Process, the reference in the role executable shall exist at most once **at the time when the creation of the manifest is finished**.

⌋()

[constr_3734]{DRAFT} **Upper multiplicity of reference in the role DoIpNetworkConfiguration.networkConfiguration** ⌈In the context of DoIpNetworkConfiguration, the reference in the role networkConfiguration shall exist at most once **at the time when the creation of the manifest is finished**.

⌋()

[constr_5000]{DRAFT} **Supported value range for attribute DoIpRequestConfiguration.endAddress** ⌈The supported value range of attribute DoIpRequestConfiguration.endAddress is limited to the interval [0..65535] **at the time when the creation of the manifest is finished**.

⌋()

[constr_5004]{DRAFT} **Mapping of a Process to a Machine is mandatory in the Execution Manifest** ⌈Each Process shall be mapped by a ProcessToM-

achineMapping to one Machine **at the time when the creation of the manifest is finished**.

⌋()

[constr_5033]{DRAFT} **Compatibility of data types with category VALUE** ⌈An ApplicationDataType of category VALUE can only be mapped to a CppImplementationDataType which also has category VALUE.

This rule shall be imposed **at the time before the generation of the ara API starts**

⌋()

[constr_5034]{DRAFT} **Compatibility of data types with category BOOLEAN** ⌈An ApplicationDataType of category BOOLEAN can only be mapped to a CppImplementationDataType of category VALUE **at the time before the generation of the ara API starts**.

⌋()

[constr_5035]{DRAFT} **Compatibility of data types with category STRING** ⌈A CppImplementationDataType where attribute category is set to the value STRING can only be mapped to an ApplicationDataType

- where attribute category is set to the value STRING **and**
- where attribute swDataDefProps.swTextProps.baseType.baseTypeDefinition.baseTypeEncoding is set to the value UTF-8.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_5036]{DRAFT} **Compatibility of data types with category ARRAY** ⌈An ApplicationDataType of category ARRAY can only be mapped to

- a CppImplementationDataType of category ARRAY **or**
- a CppImplementationDataType of category VECTOR.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_5037]{DRAFT} **Compatibility of data types with category ARRAY with variableSize** ⌈An ApplicationDataType of category ARRAY that includes one ApplicationArrayElement with arraySizeSemantics set to variableSize in one of the defined dimensions shall be mapped to

- a CppImplementationDataType of category VECTOR

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_5038]{DRAFT} **Compatibility of data types with category ARRAY with fixedSize** ⌈An ApplicationDataType of category ARRAY that includes only ApplicationArrayElements with arraySizeSemantics set to fixedSize in all defined dimensions shall be mapped to

- a CppImplementationDataType of category ARRAY

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_5039]{DRAFT} **Compatibility of data types with category STRUCTURE** ⌈An ApplicationDataType of category STRUCTURE can only be mapped to a CppImplementationDataType of category STRUCTURE **at the time before the generation of the ara API starts**.

⌋()

[constr_5040]{DRAFT} **Compatibility of ApplicationRecordDataType and CppImplementationDataType that both represent an Optional Element Structure** ⌈An ApplicationRecordDataType that represents an Optional Element Structure can only be mapped to a CppImplementationDataType of category STRUCTURE that represents an Optional Element Structure if corresponding pairs of elements have the same value of the attribute isOptional.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_5041]{DRAFT} **Compatibility of data types with category ASSOCIATIVE_MAP** ⌈An ApplicationDataType of category ASSOCIATIVE_MAP can only be mapped to a CppImplementationDataType of category ASSOCIATIVE_MAP **at the time before the generation of the ara API starts**.

⌋()

[constr_5042]{DRAFT} **No data type mapping for CppImplementationDataType of category VARIANT** ⌈An ApplicationDataType shall never be mapped to a CppImplementationDataType of category VARIANT **at the time before the generation of the ara API starts**.

⌋()

[constr_5043]{DRAFT} **Forbidden mappings to CppImplementationDataType** ⌈An ApplicationDataType of category COM_AXIS, RES_AXIS, CURVE, MAP, CUBOID, CUBE_4, CUBE_5 is not supported by the Adaptive Platform and can there-

fore not be mapped to a CppImplementationDataType **at the time before the generation of the ara API starts**.

⌋()

[constr_5044]{DRAFT} **DataTypeMap for composite data types** ⌈In the context of a given ServiceInterface, all pairs of ApplicationDataType and CppImplementationDataType used in the context of the definition of an ApplicationCompositeDataType used in the context of an event, field, method shall be described in a DataTypeMap that is contained in one of the DataTypeMappingSets that are referenced in a PortInterfaceToDataTypeMapping that also references the mentioned ServiceInterface.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_5045]{DRAFT} **Only one SomeipServiceDiscovery configuration per VLAN is allowed** ⌈Only a single NetworkEndpoint on an EthernetPhysicalChannel (VLAN) is allowed to be referenced by a SomeipServiceDiscovery element in the role multicastSdIpAddress **at the time when the system design is complete**.

⌋()

[constr_5047]{DRAFT} **Supported values of TlsSecureComProps.category** ⌈The only supported values of attribute TlsSecureComProps.category are:

- **TLS_SERVER**: the TlsSecureComProps assumes the role of the *server* in the TLS connection.
- **TLS_CLIENT**: the TlsSecureComProps assumes the role of the *client* in the TLS connection.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_5048]{DRAFT} **Existence of TlsCryptoCipherSuite.certificate and TlsCryptoCipherSuite.pskIdentity in the *server* role** ⌈**Either**

- the reference to CryptoServiceCertificate in the role TlsCryptoCipherSuite.certificate
- the aggregation of TlsPskIdentity in the role TlsCryptoCipherSuite.pskIdentity

shall exist if the TlsCryptoCipherSuite is aggregated by TlsSecureComProps that has the attribute category set to the value TLS_SERVER **at the time when the creation of the manifest is finished**.

⌋()

[constr_5052]{DRAFT} **ProvidedSomeipServiceInstances of the same serviceInterface on one Machine** ⌈ProvidedSomeipServiceInstances that are referring to the same SomeipServiceInterfaceDeployment element or to several SomeipServiceInterfaceDeployments that all have the same SOME/IP credentials (SomeipServiceInterfaceDeployment.serviceInterfaceId and SomeipServiceInterfaceDeployment.serviceInterfaceVersion.majorVersion) shall not be mapped to the same combination of:

- IP address that is assigned by the SomeipServiceInstanceToMachineMapping with the reference to the EthernetCommunicationConnector that in turn references the NetworkEndpoint and
- UDP Port or TCP Port number that are defined by the SomeipServiceInstanceToMachineMapping.udpPort and SomeipServiceInstanceToMachineMapping.tcpPort references to the ApApplicationEndpoint.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_5056]{DRAFT} **Restriction of sub-class of CompositionSwComponentType.connector** ⌈In the context of a CompositionSwComponentType.connector (transitively) referenced by a Executable.rootSwComponentPrototype, the only supported sub-class of SwConnector is PassThroughSwConnector.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_5057]{DRAFT} **PassThroughSwConnector and ServiceInterfaceMapping** ⌈If a PassThroughSwConnector is defined between two Ports in a CompositionSwComponentType either:

- a ServiceInterfaceMapping between the ServiceInterfaces of these two Ports shall be defined and the PassThroughSwConnector shall reference the relevant ServiceInterfaceMapping in the role mapping or
- ServiceInterfaceElementMappings for elements of ServiceInterfaces of the two Ports shall be defined and the PassThroughSwConnector shall reference the relevant ServiceInterfaceElementMappings in the role serviceInterfaceElementMapping.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_5102]{DRAFT} **Usage of remote port ranges in IPSecRule is not allowed** ⌈IPSecRule.remotePortRangeStart and IPSecRule.remotePortRangeEnd shall always be set to the same value **at the time when the system design is complete**.

⌋()

[constr_5103]{DRAFT} **Usage of local port ranges in IPSecRule is not allowed** ⌈IPSecRule.localPortRangeStart and IPSecRule.localPortRangeEnd shall always be set to the same value **at the time when the system design is complete**.

⌋()

[constr_5115]{DRAFT} **Search for a specific SOME/IP ServiceInstance and for all SOME/IP ServiceInstances over the same RPortPrototype** ⌈A RequiredSomeipServiceInstance that configures the search for a specific ServiceInstance on SOME/IP (with concrete requiredServiceInstanceId) and a RequiredSomeipServiceInstance that configures the search for ALL ServiceInstances on SOME/IP (with requiredServiceInstanceId = ALL) that are mapped using ServiceInstanceToMachineMapping to the same EthernetCommunicationConnector (and therefore are searching for SOME/IP ServiceInstances on the same VLAN) are not allowed to be mapped by ServiceInstanceToPortPrototypeMappings to the same RPortPrototype **at the time when the creation of the manifest is finished**.

⌋()

[constr_5155]{DRAFT} **SomeipServiceInstanceToMachineMapping only supports a single Address Family** ⌈A SomeipServiceInstanceToMachineMapping shall only support a single Address Family, i.e. either IPv4 or IPv6. If IPv4 is defined for IP unicast communication according to [constr_3288] then the SomeipProvidedEventGroups in ProvidedSomeipServiceInstances that are referenced by the SomeipServiceInstanceToMachineMapping shall only define an ipv4MulticastIpAddress.

If IPv6 is defined for IP unicast communication according to [constr_3288] then the SomeipProvidedEventGroups in ProvidedSomeipServiceInstances that are referenced by the SomeipServiceInstanceToMachineMapping shall only define an ipv6MulticastIpAddress.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_5156]{DRAFT} **SomeipEventDeployment.transportProtocol setting to udp and the impact on ProvidedSomeipServiceInstances** ⌈If SomeipEventDeployment.transportProtocol is set to udp then each ProvidedSomeipServiceInstance that refers the SomeipServiceInterfaceDeployment in the role serviceInterfaceDeployment shall only be mapped to a MachineDesign with a SomeipServiceInstanceToMachineMapping with a configured udpPort **at the time when the creation of the manifest is finished**.

⌋()

[constr_5161]{DRAFT} **RequiredSomeipServiceInstance that is mapped by a SomeipServiceInstanceToMachineMapping without a configured tcpPort and udpPort** ⌈A RequiredSomeipServiceInstance that is mapped to a EthernetCommunicationConnector by a SomeipServiceInstanceToMachineMapping that does not have neither a udpPort nor a tcpPort is not allowed to reference a SomeipServiceInterfaceDeployment that includes SomeipMethodDeployments (directly or indirectly via ServiceFieldDeployment) **at the time when the creation of the manifest is finished**.

⌋()

[constr_5227]{DRAFT} **Mandatory elements of UdpNmCluster** ⌈The following attributes shall always be defined for the UdpNmCluster:

- nmMsgCycleTime
- nmNetworkTimeout
- nmRepeatMessageTime
- nmWaitBusSleepTime
- communicationCluster

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_5228]{DRAFT} **Partial Networking timing constraint** ⌈For Partial Networking the following timing constraints shall be ensured: (MachineDesign.pnResetTimer + MachineDesign.pncPrepareSleepTimer) < UdpNmCluster.nmNetworkTimeout.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_5230]{DRAFT} **Attribute E2EProfileCompatibilityProps.transitToInvalidExtended shall exist for each E2EProfileConfiguration** ⌈For each E2EProfileConfiguration, a reference to E2EProfileCompatibilityProps

in the role e2eProfileCompatibilityProps shall exist and the referenced E2EProfileCompatibilityProps shall define a value for the attribute transitToInvalidExtended **at the time when the creation of the manifest is finished**.

⌋()

[constr_5238]{DRAFT} **CryptoKeySlotAllowedModification.restrictUpdate and the relationship to maxNumberOfAllowedUpdates** ⌈If the CryptoKeySlotAllowedModification.restrictUpdate is set to true then CryptoKeySlotAllowedModification.maxNumberOfAllowedUpdates shall be set to a value **at the time before the generation of the ara API starts**.

⌋()

[constr_5239]{DRAFT} **Predefined values for CryptoKeySlotContentAllowedUsage.allowedKeyslotUsage** ⌈The following values for CryptoKeySlotContentAllowedUsage.allowedKeyslotUsage are predefined by AUTOSAR:

- ALLOW-DATA-ENCRYPTION,
- ALLOW-DATA-DECRYPTION,
- ALLOW-SIGNATURE,
- ALLOW-VERIFICATION,
- ALLOW-KEY-AGREEMENT,
- ALLOW-KEY-DIVERSIFY,
- ALLOW-DRNG-INIT,
- ALLOW-KDF-MATERIAL,
- ALLOW-KEY-EXPORTING,
- ALLOW-KEY-IMPORTING,
- ALLOW-EXACT-MODE-ONLY,
- ALLOW-DERIVED-DATA-ENCRYPTION,
- ALLOW-DERIVED-DATA-DECRYPTION,
- ALLOW-DERIVED-SIGNATURE,
- ALLOW-DERIVED-VERIFICATION,
- ALLOW-DERIVED-DIVERSIFY,
- ALLOW-DERIVED-DRNG-INIT,
- ALLOW-DERIVED-KDF-MATERIAL,
- ALLOW-DERIVED-KEY-EXPORTING,

- ALLOW-DERIVED-KEY-IMPORTING,
- ALLOW-DERIVED-EXACT-MODE-ONLY

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_5240]{DRAFT} **Restriction applicable for CryptoProviderToPortPrototypeMapping.portPrototype** ⌈The reference CryptoProviderToPortPrototypeMapping.portPrototype shall only be used for an RPortPrototype typed by a CryptoProviderInterface **at the time when the creation of the manifest is finished**.

⌋()

[constr_5241]{DRAFT} **Restriction applicable for CryptoKeySlotToPortPrototypeMapping.portPrototype** ⌈The reference CryptoKeySlotToPortPrototypeMapping.portPrototype shall only be used for an RPortPrototype typed by a CryptoKeySlotInterface **at the time when the creation of the manifest is finished**.

⌋()

[constr_5242]{DRAFT} **Restriction applicable for CryptoCertificateToPortPrototypeMapping.portPrototype** ⌈The reference CryptoCertificateToPortPrototypeMapping.portPrototype shall only be used for an RPortPrototype typed by a CryptoCertificateInterface **at the time when the creation of the manifest is finished**.

⌋()

[constr_5250]{DRAFT} **Protection of AdaptivePlatformServiceInstances of the same ServiceInterfaceDeployment** ⌈If several AdaptivePlatformServiceInstances exist that are referencing the same ServiceInterfaceDeployment and these AdaptivePlatformServiceInstances contain aggregated End2EndMethodProtectionProps and/or End2EndEventProtectionProps then the E2EProfileConfigurations that are referenced by the End2EndMethodProtectionProps and End2EndEventProtectionProps shall have the same profileName defined **at the time when the creation of the manifest is finished**.

⌋()

[constr_5260]{DRAFT} **UDP endpoint using DTLS CLIENT role can only serve required service instances** ⌈A ServiceInstanceToMachineMapping that refers to TlsSecureComProps in the role secureComPropsForUdp is only allowed to reference RequiredApServiceInstances in the role serviceInstance if the TlsSe-

cureComProps has the category TLS_CLIENT **at the time when the creation of the manifest is finished**.

⌋()

[constr_5261]{DRAFT} **TCP endpoint using TLS CLIENT role can only serve required service instances** ⌈A ServiceInstanceToMachineMapping that refers to TlsSecureComProps in the role secureComPropsForTcp is only allowed to reference RequiredApServiceInstances in the role serviceInstance if the TlsSecureComProps has the category TLS_CLIENT **at the time when the creation of the manifest is finished**.

⌋()

[constr_5275]{DRAFT} **Existence of LogAndTraceInstantiation.dltEcu** ⌈For each LogAndTraceInstantiation the reference to DltEcu in the role dltEcu shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_5276]{DRAFT} **Existence of LogAndTraceInstantiation.logSink** ⌈Each LogAndTraceInstantiation shall reference at least one DltLogSink in the role logSink **at the time when the creation of the manifest is finished**.

⌋()

[constr_5277]{DRAFT} **applicable DltLogSink categorys vs. DltLogSink attributes** ⌈

Category	Applicable to ...					
	DltLogSink.logChannelId	DltLogSink.endpointConfiguration	DltLogSink.path	DltLogSink.bufferOutput	DltLogSink.nonVerboseMode	DltLogSink.segmentationSupported
DLT_LOGSINK_REMOTE	x					
DLT_LOGSINK_DLT	x	x			x	x
DLT_LOGSINK_FILE			x			

⌋

△

Category	Applicable to ...					
	DltLogSink.logChannelId	DltLogSink.endpointConfiguration	DltLogSink.path	DltLogSink.bufferOutput	DltLogSink.nonVerboseMode	DltLogSink.segmentationSupported
DLT_LOGSINK_CONSOLE				x		
DLT_LOGSINK_ARTI						

This rule shall be imposed **at the time when the creation of the manifest is finished**

⌋()

[constr_5278]{DRAFT} **DltLogSink with category DLT_LOGSINK_REMOTE is only allowed to be referenced by DltLogSinkToPortPrototypeMapping** ⌈DltLogSink with category DLT_LOGSINK_REMOTE shall not be referenced by LogAndTraceInstantiation in the role logSink **at the time when the creation of the manifest is finished**.

⌋()

[constr_5279]{DRAFT} **DltLogSink with category DLT_LOGSINK_DLT is only allowed to be referenced by LogAndTraceInstantiation** ⌈DltLogSink with category DLT_LOGSINK_DLT shall not be referenced by DltLogSinkToPortPrototypeMapping in the role dltLogSink **at the time when the creation of the manifest is finished**.

⌋()

[constr_5281]{DRAFT} **Existence of DltLogSink.defaultTraceState** ⌈For each DltLogSink, attribute defaultTraceState shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_5282]{DRAFT} **Existence of DltLogSinkToPortPrototypeMapping.process** ⌈Each DltLogSinkToPortPrototypeMapping shall reference a Process in the role process **at the time when the creation of the manifest is finished**.

⌋()

[constr_5283]{DRAFT} **Existence of DltLogSinkToPortPrototypeMapping.dltLogSink** ⌈Each DltLogSinkToPortPrototypeMapping shall reference at least one DltLogSink in the role dltLogSink **at the time when the creation of the manifest is finished**.

⌋()

[constr_5284]{DRAFT} **Existence of DltLogSinkToPortPrototypeMapping.dltContext** ⌈Each DltLogSinkToPortPrototypeMapping shall reference a DltContext in the role dltContext **at the time when the creation of the manifest is finished**.

⌋()

[constr_5285]{DRAFT} **Existence of PortPrototype references in DltLogSinkToPortPrototypeMapping** ⌈Each DltLogSinkToPortPrototypeMapping shall reference exactly one PortPrototype in the role rPortPrototype or pPortPrototype **at the time when the creation of the manifest is finished**.

⌋()

[constr_5286]{DRAFT} **Restriction applicable for DltLogSinkToPortPrototypeMapping.rPortPrototype** ⌈The reference DltLogSinkToPortPrototypeMapping.rPortPrototype shall only be used for a RPortPrototype typed by a LogAndTraceInterface or by a ServiceInterface **at the time when the creation of the manifest is finished**.

⌋()

[constr_5287]{DRAFT} **Restriction applicable for DltLogSinkToPortPrototypeMapping.pPortPrototype** ⌈The reference DltLogSinkToPortPrototypeMapping.pPortPrototype shall only be used for a PPortPrototype typed by a ServiceInterface **at the time when the creation of the manifest is finished**.

⌋()

[constr_5288]{DRAFT} **Existence of process reference in DltApplicationToProcessMapping** ⌈Each DltApplicationToProcessMapping shall reference a Process in the role process **at the time when the creation of the manifest is finished**.

⌋()

[constr_5289]{DRAFT} **Existence of dltApplication reference in DltApplicationToProcessMapping** ⌈Each DltApplicationToProcessMapping shall reference a DltApplication in the role dltApplication **at the time when the creation of the manifest is finished**.

⌋()

[constr_5290]{DRAFT} **PPortPrototype is not allowed to be typed by LogAndTraceInterface** ⌈A PPortPrototype is not allowed to reference a LogAndTraceInterface in the role providedInterface **at the time before the generation of the ara API starts**.

⌋()

[constr_5291]{DRAFT} **Allowed usage of LTMessageCollectionToPortPrototypeMapping.rPortPrototype** ⌈An LTMessageCollectionToPortPrototypeMapping shall (in the role rPortPrototype) only refer to a RPortPrototype that is typed by a LogAndTraceInterface.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_5292]{DRAFT} **Assigned dltSessionId shall be consistent for the same PortPrototype** ⌈If several DltLogSinkToPortPrototypeMappings are referencing the same PortPrototype in the role rPortPrototype or pPortPrototype then the value for the dltSessionId in all these DltLogSinkToPortPrototypeMappings shall be the same **at the time when the creation of the manifest is finished**.

⌋()

[constr_5316]{DRAFT} **Allowed ServiceEventDeployment.trigger references** ⌈The Trigger that is referenced by ServiceEventDeployment in the role trigger shall be defined in the context of a ServiceInterface that is referenced by the ServiceInterfaceDeployment in the role serviceInterface that contains the ServiceEventDeployment **at the time when the creation of the manifest is finished**.

⌋()

[constr_5317]{DRAFT} **ServiceEventDeployment not allowed to reference an event and a trigger at the same time** ⌈The ServiceEventDeployment element shall reference either:

- a VariableDataPrototype in the role event or
- a Trigger in the role trigger,

but not both at the same time.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_5318]{DRAFT} **Existence of ServiceInstanceToSignalMapping for an trigger with signalBased serialization** ⌈If a trigger is referenced by a SomeipEventDeployment in the role trigger and the attribute SomeipEvent-

Deployment.serializer is set to signalBased then a ServiceInstanceToSignalMapping shall exist with triggerMapping referring to the trigger in the role trigger **at the time when the creation of the manifest is finished**.

⌋()

[constr_5324]{DRAFT} **MachineDesign.communicationController aggregation restriction** ⌈MachineDesign is only allowed to aggregate an EthernetCommunicationController in the role communicationController **at the time when the machine design is complete**.

⌋()

[constr_5332]{DRAFT} **Mandatory multicast endpoint in case of multicastThreshold different from 0** ⌈If SomeipProvidedEventGroup.multicastThreshold is configured to a value different from 0, then

- SomeipProvidedEventGroup.eventMulticastUdpPort

and either

- SomeipProvidedEventGroup.ipv4MulticastIpAddress or
- SomeipProvidedEventGroup.ipv6MulticastIpAddress

shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_5333]{DRAFT} **No multicast in case of TCP** ⌈If a SomeipProvidedEventGroup references only SomeipEventDeployments that have the attribute transportProtocol set to tcp (via SomeipProvidedEventGroup.eventGroup.event) then this SomeipProvidedEventGroup shall not have a SomeipProvidedEventGroup.multicastThreshold attribute or shall have the SomeipProvidedEventGroup.multicastThreshold set to 0 **at the time when the creation of the manifest is finished**.

⌋()

[constr_5338]{DRAFT} **ProvidedSomeipServiceInstance shall offer all SomeipEventGroups for subscription** ⌈In the scope of a ProvidedSomeipServiceInstance, SomeipProvidedEventGroups shall be defined such that

- every aggregated ProvidedSomeipServiceInstance.providedEventGroup references a SomeipEventGroup in the context of the SomeipServiceInterfaceDeployment referenced from the enclosing ProvidedSomeipServiceInstance in the role serviceInterfaceDeployment
- each SomeipEventGroup defined in the scope of the SomeipServiceInterfaceDeployment referenced from the enclosing ProvidedSomeipService-

Instance in the role serviceInterfaceDeployment shall be referenced from exactly one SomeipProvidedEventGroup aggregated in the role providedEventGroup in the scope of the enclosing ProvidedSomeipServiceInstance.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_5339]{DRAFT} **SomeipEventGroups of a SomeipServiceInterfaceDeployment shall be referenced at most once from a RequiredSomeipServiceInstance that instantiates the SomeipServiceInterfaceDeployment** ⌈Each SomeipEventGroup that is defined in a SomeipServiceInterfaceDeployment shall be referenced at most once from a SomeipRequiredEventGroup that is aggregated by the RequiredSomeipServiceInstance that is referencing the SomeipServiceInterfaceDeployment in the role serviceInterfaceDeployment **at the time when the creation of the manifest is finished**.

⌋()

[constr_5343]{DRAFT} **Usage of DoIpNetworkConfiguration.eidRetrieval** ⌈If DoIpNetworkConfiguration.eidRetrieval is set to eidUseConfigValue then DoIpInstantiation.eid shall exist and a value shall be assigned to it **at the time when the creation of the manifest is finished**.

⌋()

[constr_5347]{DRAFT} **Supported value range for attribute SecOcSecureComProps.authenticationVerifyAttempts** ⌈The supported value range of attribute SecOcSecureComProps.authenticationVerifyAttempts is limited to the interval [0..65535] **at the time when the creation of the manifest is finished**.

⌋()

[constr_5348] Mandatory initialMode in ModeDeclarationGroup that is referenced by StateDependentFirewall ⌈The ModeDeclarationGroup that is referenced via a ModeDeclaration from StateDependentFirewall in the role firewallState shall define an initialMode **at the time when the creation of the manifest is finished**.

⌋()

[constr_5349] Mandatory defaultAction in StateDependentFirewall ⌈The StateDependentFirewall shall always define the attribute defaultAction **at the time when the creation of the manifest is finished**.

⌋()

[constr_5350] Mandatory `action` in `FirewallRuleProps` ⌈The `FirewallRuleProps` shall always define the attribute `action` **at the time when the creation of the manifest is finished**.

⌋()

[constr_5351] `FirewallRule` is allowed to aggregate at most one protocol subelement ⌈A `FirewallRule` is allowed to aggregate either:

- `someipSdRule`
- `someipRule`
- `doIpRule`

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_5352] `DdsRule.submessageType` value restriction ⌈The value of `DdsRule.submessageType` is restricted to the following values:

- 0x01 (PAD)
- 0x06 (ACKNACK)
- 0x07 (HEARTBEAT)
- 0x08 (GAP)
- 0x09 (INFO_TS)
- 0x0c (INFO_SRC)
- 0x0d (INFO_REPLY_IP4)
- 0x0e (INFO_DST)
- 0x0f (INFO_REPLY)
- 0x12 (NACK_FRAG)
- 0x13 (HEARTBEAT_FRAG)
- 0x15 (DATA)
- 0x16 (DATA_FRAG)

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_5353] `DdsRule.readerEntityId` and `DdsRule.writerEntityId` value restriction ⌈The value of `DdsRule.readerEntityId` and `DdsRule.writerEnti-`

tyId is only allowed to be set if the value of DdsRule.submessageType is set to one of the following values:

- 0x06 (ACKNACK)
- 0x07 (HEARTBEAT)
- 0x08 (GAP)
- 0x15 (DATA)

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_5355] SomeipServiceInstanceToMachineMapping with configured remote peer addresses shall not mix ProvidedSomeipServiceInstances and RequiredSomeipServiceInstances ⌈A SomeipServiceInstanceToMachineMapping that contains a reference to a SomeipRemoteUnicastConfig with the remoteUnicastConfig shall not reference:

- ProvidedSomeipServiceInstances in the role serviceInstance and
- RequiredSomeipServiceInstances in the role serviceInstance at the same time.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_5356] RequiredSomeipServiceInstance is allowed to have only a single statically configured remote peer as service provider ⌈A SomeipServiceInstanceToMachineMapping that contains references to a RequiredSomeipServiceInstance with the serviceInstance is allowed to reference only a single SomeipRemoteUnicastConfig in the role remoteUnicastConfig **at the time when the creation of the manifest is finished**.

⌋()

[constr_5357] SomeipRemoteMulticastConfig shall only be used on required side ⌈Only a SomeipServiceInstanceToMachineMapping that contains references to one or several RequiredSomeipServiceInstances with the serviceInstance role is allowed to reference one or several SomeipRemoteMulticastConfigs in the role remoteUnicastConfig **at the time when the creation of the manifest is finished**.

⌋()

[constr_5358] AdaptiveFirewallToPortPrototypeMapping.rPortPrototype restriction ⌈The AdaptiveFirewallToPortPrototypeMapping is only allowed to reference a RPortPrototype that is typed by the Firewall-

StateSwitchInterface. This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_5366]{DRAFT} **Allowed target of ComEventGrant.serviceDeployment reference** ⌈ComEventGrant is allowed to reference only a ServiceEventDeployment in the role serviceDeployment that in turn references a VariableDataPrototype in the role event **at the time when the creation of the manifest is finished**.

⌋()

[constr_5367]{DRAFT} **Allowed target of ComTriggerGrant.serviceDeployment reference** ⌈ComTriggerGrant is allowed to reference only a ServiceEventDeployment in the role serviceDeployment that in turn references a Trigger in the role trigger **at the time when the creation of the manifest is finished**.

⌋()

[constr_5368]{DRAFT} **Multiplicity of the reference in the role ComTriggerGrant.serviceDeployment** ⌈For each ComTriggerGrant, the reference in the role serviceDeployment shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_5372] SecureComProps for a PlatformModuleEthernetEndpointConfiguration that contains a UDP configuration ⌈Only a PlatformModuleEthernetEndpointConfiguration that is referencing an ApApplicationEndpoint in the role udpPort is allowed to reference SecureComProps in the role secureComPropsForUdp.

⌋()

[constr_5373] SecureComProps for a PlatformModuleEthernetEndpointConfiguration that contains a TCP configuration ⌈Only a PlatformModuleEthernetEndpointConfiguration that is referencing an ApApplicationEndpoint in the role tcpPort is allowed to reference SecureComProps in the role secureComPropsForTcp.

⌋()

[constr_5381]{DRAFT} **Modeling of Security Event reports by FunctionalCluster shall not be done via ProcessToMachineMapping** ⌈If a Process is mapped by the ProcessToMachineMapping to a Machine and this ProcessToMachineMapping references a NonOsModuleInstantiation in the role nonOsModuleInstantiation, then this Process shall not reference a SecurityEventDefini-

tion in the role securityEvent **at the time when the creation of the manifest is finished**.

⌋()

[constr_5386]{DRAFT} **Executable.traceSwitchConfiguration** ⌈The aggregation in the role Executable.traceSwitchConfiguration shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_5387]{DRAFT} **Existence of Executable.traceSwitchConfiguration.traceMessage** ⌈The aggregation in the role Executable.traceSwitchConfiguration.traceMessage shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_5388]{DRAFT} **Existence of Executable.traceSwitchConfiguration.traceSwitch** ⌈The aggregation in the role Executable.traceSwitchConfiguration.traceSwitch shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_5392] Assignment of the same event to several SomeipEventGroups is forbidden in case one of the SomeipEventGroups has the multicastThreshold set to to a value greater than 1 ⌈The same SomeipEventDeployment (Event) shall not be referenced by several SomeipEventGroups if these SomeipEventGroups

- are referenced by different SomeipProvidedEventGroups in the context of one Machine and
- one or more of these SomeipProvidedEventGroups has the multicastThreshold set to a value>1

⌋()

[constr_6815]{DRAFT} **Existence of CppTemplateArgument.templateType for CppImplementationDataType of category STRING** ⌈In a CppImplementationDataType of category STRING, the reference templateType shall not exist **at the time before the generation of the ara API starts**.

⌋()

[constr_6905]{DRAFT} **CppTemplateArgument.allocator** ⌈The reference CppTemplateArgument.allocator shall only exist if the StdCppImplementationDataType.category is set to either of the values:

- STRING

- VECTOR
- ASSOCIATIVE_MAP

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_10002]{DRAFT} **Only one mapping per PortPrototype** ⌈If one instance of the following sub-classes of DiagnosticSwMapping - that refers to a given ProcessDesign - refers to a PortPrototype, then no other instance of DiagnosticSwMapping that refers to the same ProcessDesign shall refer to the same PortPrototype:

- DiagnosticEventPortMapping that is associated with a RPortPrototype typed by a DiagnosticMonitorInterface or a DiagnosticEventInterface.
- DiagnosticOperationCyclePortMapping that is associated with a RPortPrototype typed by a DiagnosticOperationCycleInterface.
- DiagnosticEnableConditionPortMapping that is associated with a RPortPrototype typed by a DiagnosticConditionInterface.
- DiagnosticClearConditionPortMapping that is associated with a RPortPrototype typed by a DiagnosticConditionInterface.
- DiagnosticIndicatorPortMapping that is associated with a RPortPrototype typed by a DiagnosticIndicatorInterface.
- DiagnosticMemoryDestinationPortMapping that is associated with an RPortPrototype typed by a DiagnosticDTCInformationInterface.
- DiagnosticSecurityLevelPortMapping that is associated with an PPortPrototype typed by a DiagnosticSecurityLevelInterface.
- DiagnosticDataPortMapping that is associated with a PPortPrototype typed by a DiagnosticDataIdentifierInterface.
- DiagnosticSecurityLevelPortMapping that is associated with a PPortPrototype typed by a DiagnosticSecurityLevelInterface.
- DiagnosticServiceValidationMapping that is associated with a PPortPrototype typed by a DiagnosticServiceValidationInterface.

This rule shall be imposed **at the time when the diagnostic design is complete**.

⌋()

[constr_10003]{DRAFT} **Restriction for the existence of DiagnosticDataPortMapping.diagnosticDataIdentifier vs. DiagnosticDataPortMapping.diagnosticDataElement** ⌈For each DiagnosticDataPortMapping, **ei-**

ther the reference in the role diagnosticDataIdentifier **or** diagnosticDataElement shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10007]{DRAFT} **Existence of ProcessExecutionError.executionError** ⌈For each ProcessExecutionError, attribute executionError shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10008]{DRAFT} **Value of ProcessExecutionError.executionError** ⌈The value of attribute ProcessExecutionError.executionError shall at least be set to 1 (or higher) **at the time when the creation of the manifest is finished**.

⌋()

[constr_10021]{DRAFT} **Existence of IdsmModuleInstantiation** ⌈On each Machine, only one instance of the Intrusion Detection System Manager (modeled by IdsmModuleInstantiation) shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10022]{DRAFT} **Restriction for SecurityEventMapping.process.securityEvent.id w.r.t SecurityEventMapping.id** ⌈The value of SecurityEventMapping.id shall also occur in one of the SecurityEventDefinition.id referenced in the role SecurityEventMapping.process.securityEvent **at the time when the creation of the manifest is finished**.

⌋()

[constr_10023]{DRAFT} **Mandatory content of any functionGroup** ⌈All ModeDeclarationGroupPrototypes aggregated by a FunctionGroupSet in the role functionGroup shall refer to a ModeDeclarationGroup that contains one ModeDeclaration with the shortName **Verify at the time when the creation of the manifest is finished**.

⌋()

[constr_10029]{DRAFT} **ServiceInterfaceDeployment shall cover all elements of the corresponding ServiceInterface** ⌈If a ServiceInterfaceDeployment references a ServiceInterface in the role serviceInterface, then all methods, fields, triggers, and events defined in the context of the referenced ServiceInterface shall be referenced by respective methodDeployments, fieldDeployments, and eventDeployments owned by the referencing ServiceInterfaceDeployment **at the time when the creation of the manifest is finished**.

⌋()

[constr_10030]{DRAFT} **Existence of DiagnosticDataIdentifierInterface.read** ⌈Attribute DiagnosticDataIdentifierInterface.read shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10031]{DRAFT} **Existence of DiagnosticRoutineInterface.start** ⌈Attribute DiagnosticRoutineInterface.start shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10035]{DRAFT} **Completeness of the PersistencyDeployment.version** ⌈The PersistencyDeployment.version shall contain all the following parts:

- Major version
- Minor version
- Patch version
- Additional labels for pre-release version and build metadata

at the time when the creation of the manifest is finished.

⌋()

[constr_10037]{DRAFT} **Existence of attribute TagWithOptionalValue.sequenceOffset in the context of attribute capabilityRecord owned by ProvidedSomeipServiceInstance, RequiredSomeipServiceInstance, SdServerConfig, SdClientConfig, or AbstractServiceInstance** ⌈For all capabilityRecord modeled in the context of ProvidedSomeipServiceInstance, RequiredSomeipServiceInstance, SdServerConfig, SdClientConfig, or AbstractServiceInstance, attribute TagWithOptionalValue.sequenceOffset shall not exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10046]{DRAFT} **Value of PersistencyRedundancyMOutOfN.n** ⌈The value of attribute PersistencyRedundancyMOutOfN.n shall be set at least to 2 and at most to 255, i.e. the allowed interval is [2..255].

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_10047]{DRAFT} **Restriction for the applicability of DiagnosticMonitorPortMapping** ⌈If an RPortPrototype is referenced by a DiagnosticMonitorPortMapping, then the RPortPrototype shall be typed by a DiagnosticMonitorInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10048]{DRAFT} **Existence of reference from DiagnosticMonitorPortMapping to DiagnosticEvent** ⌈Each DiagnosticEvent shall only be referenced by exactly one DiagnosticMonitorPortMapping or DiagnosticMultipleMonitorPortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10049]{DRAFT} **Restriction for the applicability of DiagnosticEventPortMapping** ⌈If an RPortPrototype is referenced by a DiagnosticEventPortMapping, then the RPortPrototype shall be typed by a DiagnosticEventInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10050]{DRAFT} **Restriction for the applicability of DiagnosticOperationCyclePortMapping** ⌈If an RPortPrototype is referenced by a DiagnosticOperationCyclePortMapping, then the RPortPrototype shall be typed by a DiagnosticOperationCycleInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10051]{DRAFT} **Existence of reference from DiagnosticOperationCyclePortMapping to DiagnosticOperationCycle** ⌈Each DiagnosticOperationCycle shall only be referenced by exactly one DiagnosticOperationCyclePortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10052]{DRAFT} **Restriction for the applicability of DiagnosticEnableConditionPortMapping** ⌈If an RPortPrototype is referenced by a DiagnosticEnableConditionPortMapping, then the RPortPrototype shall be typed by a DiagnosticConditionInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10053]{DRAFT} **Existence of reference from DiagnosticEnableConditionPortMapping to DiagnosticEnableCondition** ⌈Each DiagnosticEnableCondition shall only be referenced by at most one DiagnosticEnableConditionPortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10054]{DRAFT} **Restriction for the applicability of DiagnosticClearConditionPortMapping** ⌈If an RPortPrototype is referenced by a DiagnosticClearConditionPortMapping, then the RPortPrototype shall be typed

by a DiagnosticConditionInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10055]{DRAFT} **Existence of reference from DiagnosticClearConditionPortMapping to DiagnosticClearCondition** ⌈Each DiagnosticClearCondition shall only be referenced by at most one DiagnosticClearConditionPortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10056]{DRAFT} **Restriction for the applicability of DiagnosticIndicatorPortMapping** ⌈If an RPortPrototype is referenced by a DiagnosticIndicatorPortMapping, then the RPortPrototype shall be typed by a DiagnosticIndicatorInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10057]{DRAFT} **Restriction for the applicability of DiagnosticMemoryDestinationPortMapping** ⌈If an RPortPrototype is referenced by a DiagnosticMemoryDestinationPortMapping, then the RPortPrototype shall be typed by a DiagnosticDTCInformationInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10058]{DRAFT} **Restriction for the applicability of DiagnosticSecurityLevelPortMapping** ⌈If a PPortPrototype is referenced by a DiagnosticSecurityLevelPortMapping, then the PPortPrototype shall be typed by a DiagnosticSecurityLevelInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10059]{DRAFT} **Existence of reference from DiagnosticSecurityLevelPortMapping to DiagnosticSecurityLevel** ⌈Each DiagnosticSecurityLevel shall only be referenced by exactly one DiagnosticSecurityLevelPortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10060]{DRAFT} **PortInterface of PPortPrototype referenced by DiagnosticDataPortMapping** ⌈Any particular PPortPrototype that is referenced in the role DiagnosticDataPortMapping.pPortPrototypeInExecutable shall be typed by either of

- DiagnosticDataIdentifierInterface

- DiagnosticDataElementInterface
- DiagnosticDataIdentifierGenericInterface

This rule shall be imposed **at the time when the diagnostic design is complete**.

⌋()

[constr_10061]{DRAFT} **Mapping to DiagnosticDataIdentifierInterface, DiagnosticDataElementInterface, or DiagnosticDataIdentifierGenericInterface** ⌈All PPortPrototypes typed by either

- DiagnosticDataIdentifierInterface
- DiagnosticDataElementInterface
- DiagnosticDataIdentifierGenericInterface

shall **only** be referenced by a DiagnosticDataPortMapping. No other subclass of DiagnosticSwMapping is eligible for this purpose.

This rule shall be imposed **at the time when the diagnostic design is complete**.

⌋()

[constr_10062]{DRAFT} **DiagnosticServiceInstances that can be mapped by a DiagnosticServiceGenericMapping** ⌈DiagnosticServiceGenericMapping shall only be used for the following list of DiagnosticServiceInstances:

- DiagnosticEcuReset
- DiagnosticComControl
- DiagnosticRoutineControl
- DiagnosticCustomServiceInstance
- DiagnosticRequestUpload
- DiagnosticRequestDownload
- DiagnosticRequestFileTransfer

This rule shall be imposed **at the time when the diagnostic design is complete**.

⌋()

[constr_10063]{DRAFT} **Possible values for DiagnosticServiceValidationMapping.category** ⌈The value of attribute DiagnosticServiceValidationMapping.category is restricted to the following values:

MANUFACTURER_VALIDATION The enclosing DiagnosticServiceValidationMapping represents a validation defined by the manufacturer.

SUPPLIER_VALIDATION The enclosing DiagnosticServiceValidationMapping represents a validation defined by the supplier.

This rule shall be imposed **at the time when the diagnostic design is complete**.

⌋()

[constr_10064]{DRAFT} **Existence of DiagnosticServiceValidationMapping.pPortPrototypeInExecutable** ⌈A PPortPrototype referenced in the role DiagnosticServiceValidationMapping.pPortPrototypeInExecutable shall be typed by a DiagnosticServiceValidationInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10065]{DRAFT} **Validity of DiagnosticServiceValidationConfiguration.manufacturerValidationOrder** ⌈Any DiagnosticServiceValidationConfiguration.manufacturerValidationOrder shall only refer to a DiagnosticServiceValidationMapping where attribute category has been set to MANUFACTURER_VALIDATION **at the time when the creation of the manifest is finished**.

⌋()

[constr_10066]{DRAFT} **Validity of DiagnosticServiceValidationConfiguration.supplierValidationOrder** ⌈Any DiagnosticServiceValidationConfiguration.supplierValidationOrder shall only refer to a DiagnosticServiceValidationMapping where attribute category has been set to SUPPLIER_VALIDATION **at the time when the creation of the manifest is finished**.

⌋()

[constr_10069]{DRAFT} **Existence of SoftwareClusterDiagnosticDeploymentProps.powerDownTime** ⌈The attribute SoftwareClusterDiagnosticDeploymentProps.powerDownTime shall exist **at the time when the creation of the manifest is finished** and have a value between 0 and 254 if the referenced diagnosticExtract that in turn references in the role element a DiagnosticEcuReset where attribute category is set to the value ENABLE_RAPID_POWER_SHUT_DOWN.

⌋()

[constr_10070]{DRAFT} **Value of RequiredSomeipServiceInstance.requiredServiceInstanceId** ⌈For each RequiredSomeipServiceInstance.requiredServiceInstanceId, the value shall be in the range 0..65534 or ALL **at the time when the creation of the manifest is finished**.

⌋()

[constr_10076]{DRAFT} **Existence of RawDataStreamEthernetUdpCredentials.udpPort** ⌈In the context of RawDataStreamEthernetUdpCredentials, the attribute udpPort shall exists **at the time when the creation of the manifest is finished**.

⌋()

[constr_10077]{DRAFT} **Existence of ipV4Address and ipV6Address within AbstractRawDataStreamEthernetCredentials** ⌈Within the context of a AbstractRawDataStreamEthernetCredentials, either the attribute ipV4Address or the attribute ipV6Address shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10078]{DRAFT} **Existence of RawDataStreamEthernetTcpUdpCredentials.tcpPort and udpPort** ⌈In the context of a RawDataStreamEthernetTcpUdpCredentials, either the attribute tcpPort **or** udpPort shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10079]{DRAFT} **Existence of EthernetRawDataStreamMapping.localTcpPort and localUdpPort** ⌈In the context of a EthernetRawDataStreamMapping.localCommConnector, only **one** attribute out of

- localTcpPort
- localUdpPort

shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10080]{DRAFT} **Existence of initial values for PersistencyFileElement** ⌈For each PersistencyFileElement, if the value of attribute updateStrategy is set to the value delete, then attribute PersistencyFileElement.contentUri shall not exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10081]{DRAFT} **Existence of initial values in the definition of PersistencyDataRequiredComSpec** ⌈For each PersistencyDataRequiredComSpec, if the value of attribute dataElement.updateStrategy is set to the value delete, then attribute PersistencyDataRequiredComSpec.initValue shall not exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10082]{DRAFT} **Existence of initial values for PersistencyFile** ⌈For each PersistencyFile, if the value of attribute updateStrategy is set to the

value delete, then attribute PersistencyFile.contentUri shall not exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10083]{DRAFT} **Existence of initial values for PersistencyKeyValuePair** ⌈For each PersistencyKeyValuePair, if the value of attribute updateStrategy is set to the value delete, then attribute PersistencyKeyValuePair.initValue shall not exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10086]{DRAFT} **Existence of unicastUdpCredentials and multicastCredentials in the context of a EthernetRawDataStreamServerMapping** ⌈In the context of a EthernetRawDataStreamServerMapping, only one aggregation out of

- remoteClientConfig.multicastCredentials
- remoteClientConfig.unicastUdpCredentials

shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10090]{DRAFT} **Existence of ProcessToMachineMapping.persistencyCentralStorageURI** ⌈Attribute ProcessToMachineMapping.persistencyCentralStorageURI shall exist if the Process referenced in the role ProcessToMachineMapping.process is also referenced by at least one of

- PersistencyPortPrototypeToDeploymentMapping in the role process
- FunctionalClusterInteractsWithPersistencyDeploymentMapping in the role process

at the time when the creation of the manifest is finished.

⌋()

[constr_10092]{DRAFT} **Restriction for the applicability of DiagnosticAuthenticationPortMapping** ⌈If a PPortPrototype is referenced by a DiagnosticAuthenticationPortMapping, then the PPortPrototype shall be typed by a DiagnosticAuthenticationInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10093]{DRAFT} **Existence of reference from DiagnosticAuthenticationPortMapping to DiagnosticAuthentication** ⌈Each DiagnosticAuthentication shall only be referenced by exactly one DiagnosticAuthen-

ticationPortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10094]{DRAFT} **Restriction for the applicability of DiagnosticExternalAuthenticationPortMapping** ⌈If an RPortPrototype is referenced by a DiagnosticExternalAuthenticationPortMapping, then the RPortPrototype shall be typed by a DiagnosticExternalAuthenticationInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10098]{DRAFT} **Relation of MachineDesign.pnResetTimer and UdpNmCluster.nmMsgCycleTime** ⌈For the configuration of the partial networking timing, the following condition shall be ensured: MachineDesign.pnResetTimer > UdpNmCluster.nmMsgCycleTime.

This rule shall be imposed **at the time when the creation of the manifest is finished**,

⌋()

[constr_10101]{DRAFT} **Attribute NmHandleToFunctionGroupStateMapping.mappingDirection is set to nmHandleActiveToFunctionGroupState or nmHandleInactiveToFunctionGroupState** ⌈If the value of attribute NmHandleToFunctionGroupStateMapping.mappingDirection is set to the value NmHandleMappingDirectionEnum.nmHandleActiveToFunctionGroupState or NmHandleMappingDirectionEnum.nmHandleInactiveToFunctionGroupState, then the reference NmHandleToFunctionGroupStateMapping.functionGroupState shall not refer to two (or more) ModeDeclarations **of the same** ModeDeclarationGroup **at the time when the creation of the manifest is finished**.

⌋()

[constr_10102]{DRAFT} **Existence of initial values for PersistencyKeyValuePair** ⌈For each PersistencyKeyValuePair, if the value of attribute updateStrategy is set to either of the values

- keepExisting or
- overwrite,

then attribute PersistencyKeyValuePair.initValue shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10103]{DRAFT} **Existence of initial values for PersistencyFile** ⌈For each PersistencyFile, if the value of attribute updateStrategy is set to either of the values

- keepExisting or
- overwrite,

then attribute PersistencyFile.contentUri shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10105]{DRAFT} **Existence of UcmRetryStrategy.maximumNumberOfRetries** ⌈For each UcmRetryStrategy, attribute maximumNumberOfRetries shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10106]{DRAFT} **Existence of UcmRetryStrategy.retryIntervalTime** ⌈For each UcmRetryStrategy, attribute retryIntervalTime shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10107]{DRAFT} **Existence of the attribute UcmMasterModuleInstantiation.blockInconsistent** ⌈The attribute UcmMasterModuleInstantiation.blockInconsistent shall **at the time when the creation of the manifest is finished**.

⌋()

[constr_10108]{DRAFT} **Existence of the attribute UcmMasterModuleInstantiation.serviceBusy** ⌈The attribute UcmMasterModuleInstantiation.serviceBusy shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10109]{DRAFT} **Existence of the attribute UcmMasterModuleInstantiation.updateSessionRejected** ⌈The attribute UcmMasterModuleInstantiation.updateSessionRejected shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10110]{DRAFT} **Existence of UcmSubordinateModuleInstantiation on a Machine** ⌈For each Machine, a ProcessToMachineMapping shall exist that refers in the role machine to the Machine and in the role nonOsModuleInstantiation to a UcmSubordinateModuleInstantiation.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_10113]{DRAFT} **Restriction for the existence of ExecutableLoggingImplementationProps** ⌈The aggregation of ExecutableLoggingImplementa-

tionProps in the role Executable.implementationProps is only allowed for an Executable where attribute category is set to the value PLATFORM_LEVEL.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_10114]{DRAFT} **Existence of attributes of DiagnosticEnvDataElementCondition if the reference in the role pPortPrototype exists** ⌈If the reference in the role DiagnosticEnvDataElementCondition.pPortPrototype exists, then the aggregations in the roles compareValue, process, and swDataDefProps shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10124]{DRAFT} **Multiplicity of attribute ApplicationAssocMapDataType.key** ⌈For each ApplicationAssocMapDataType, the attribute key shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10125]{DRAFT} **Multiplicity of attribute ApplicationAssocMapDataType.value** ⌈For each ApplicationAssocMapDataType, the attribute value shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10126]{DRAFT} **Multiplicity of attribute ApplicationAssocMapElementValueSpecification.key** ⌈For each ApplicationAssocMapElementValueSpecification, the attribute key shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10127]{DRAFT} **Multiplicity of attribute ApplicationAssocMapElementValueSpecification.value** ⌈For each ApplicationAssocMapElementValueSpecification, the attribute value shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10128]{DRAFT} **Multiplicity of attribute CppImplementationDataTypeElementQualifier.typeReference** ⌈For each CppImplementationDataTypeElementQualifier, the attribute typeReference shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10129]{DRAFT} **Multiplicity of attribute `Field.hasGetter`** ⌈For each `Field`, the attribute `hasGetter` shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10130]{DRAFT} **Multiplicity of attribute `Field.hasSetter`** ⌈For each `Field`, the attribute `hasSetter` shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10131]{DRAFT} **Multiplicity of attribute `Field.hasNotifier`** ⌈For each `Field`, the attribute `hasNotifier` shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10132]{DRAFT} **Multiplicity of attribute `ApApplicationError.errorCode`** ⌈For each `ApApplicationError`, the attribute `errorCode` shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10133]{DRAFT} **Multiplicity of attribute `ApApplicationErrorDomain.value`** ⌈For each `ApApplicationErrorDomain`, the attribute `value` shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10134]{DRAFT} **Multiplicity of reference in the role `PortInterfaceToDataTypeMapping.dataTypeMappingSet`** ⌈For each `PortInterfaceToDataTypeMapping`, the reference in the role `dataTypeMappingSet` shall exist at least once **at the time before the generation of the ara API starts**.

⌋()

[constr_10135]{DRAFT} **Multiplicity of reference in the role `PortInterfaceToDataTypeMapping.portInterface`** ⌈For each `PortInterfaceToDataTypeMapping`, the reference in the role `portInterface` shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10136]{DRAFT} **Multiplicity of reference in the role `ServiceInterfaceMapping.compositeServiceInterface`** ⌈For each `ServiceInterfaceMapping`, the reference in the role `compositeServiceInterface` shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10137]{DRAFT} **Multiplicity of reference in the role ServiceInterfaceMapping.sourceServiceInterface** ⌈For each ServiceInterfaceMapping, the reference in the role sourceServiceInterface shall exist at least once **at the time before the generation of the ara API starts**.

⌋()

[constr_10138]{DRAFT} **Multiplicity of reference in the role ServiceInterfaceEventMapping.sourceEvent** ⌈For each ServiceInterfaceEventMapping, the reference in the role sourceEvent shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10139]{DRAFT} **Multiplicity of reference in the role ServiceInterfaceEventMapping.targetEvent** ⌈For each ServiceInterfaceEventMapping, the reference in the role targetEvent shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10140]{DRAFT} **Multiplicity of reference in the role ServiceInterfaceFieldMapping.sourceField** ⌈For each ServiceInterfaceFieldMapping, the reference in the role sourceField shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10141]{DRAFT} **Multiplicity of reference in the role ServiceInterfaceFieldMapping.targetField** ⌈For each ServiceInterfaceFieldMapping, the reference in the role targetField shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10142]{DRAFT} **Multiplicity of reference in the role ServiceInterfaceMethodMapping.sourceMethod** ⌈For each ServiceInterfaceMethodMapping, the reference in the role sourceMethod shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10143]{DRAFT} **Multiplicity of reference in the role ServiceInterfaceMethodMapping.targetMethod** ⌈For each ServiceInterfaceMethodMapping, the reference in the role targetMethod shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10144]{DRAFT} **Multiplicity of reference in the role PersistencyRedundancyChecksum.algorithmFamily** ⌈For each PersistencyRedundancy-

Checksum, the reference in the role algorithmFamily shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10145]{DRAFT} **Multiplicity of reference in the role PersistencyRedundancyChecksum.length** ⌈For each PersistencyRedundancyChecksum, the reference in the role length shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10146]{DRAFT} **Multiplicity of reference in the role PersistencyRedundancyMOutOfN.m** ⌈For each PersistencyRedundancyMOutOfN, the reference in the role m shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10147]{DRAFT} **Multiplicity of reference in the role PersistencyRedundancyMOutOfN.n** ⌈For each PersistencyRedundancyMOutOfN, the reference in the role n shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10148]{DRAFT} **Multiplicity of reference in the role PersistencyFileElement.contentUri** ⌈For each PersistencyFileElement, the reference in the role contentUri shall exist if the value of attribute updateStrategy is set to either

- PersistencyElementLevelUpdateStrategyEnum.keepExisting or
- PersistencyElementLevelUpdateStrategyEnum.overwrite.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_10149]{DRAFT} **Multiplicity of reference in the role PersistencyFileElement.fileName** ⌈For each PersistencyFileElement, the reference in the role fileName shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10150]{DRAFT} **Multiplicity of reference in the role SynchronizedTimeBaseProviderInterface.timeBaseKind** ⌈For each SynchronizedTimeBaseProviderInterface, the reference in the role timeBaseKind shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10151]{DRAFT} **Multiplicity of reference in the role PhmCheckpoint.checkpointId** ⌈For each PhmCheckpoint, the reference in the role checkpointId shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10152]{DRAFT} **Multiplicity of reference in the role FieldSenderComSpec.initValue** ⌈For each FieldSenderComSpec, the reference in the role initValue shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10153]{DRAFT} **Multiplicity of reference in the role PersistencyDataRequiredComSpec.dataElement** ⌈For each PersistencyDataRequiredComSpec, the reference in the role dataElement shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10154]{DRAFT} **Multiplicity of reference in the role ProcessDesignToMachineDesignMapping.processDesign** ⌈For each ProcessDesignToMachineDesignMapping, the reference in the role processDesign shall exist **at the time when the ProcessDesign is complete**.

⌋()

[constr_10155]{DRAFT} **Multiplicity of reference in the role ComOfferServiceGrantDesign.providedServicePort** ⌈For each ComOfferServiceGrantDesign, the reference in the role providedServicePort shall exist **at the time when the GrantDesign is complete**.

⌋()

[constr_10157]{DRAFT} **Multiplicity of reference in the role ComFieldGrantDesign.field** ⌈For each ComFieldGrantDesign, the reference in the role field shall exist **at the time when the GrantDesign is complete**.

⌋()

[constr_10158]{DRAFT} **Multiplicity of reference in the role ComFieldGrantDesign.role** ⌈For each ComFieldGrantDesign, the reference in the role role shall exist **at the time when the GrantDesign is complete**.

⌋()

[constr_10159]{DRAFT} **Multiplicity of reference in the role ComEventGrantDesign.event** ⌈For each ComEventGrantDesign, the reference in the role event shall exist **at the time when the GrantDesign is complete**.

⌋()

[constr_10160]{DRAFT} **Multiplicity of reference in the role ComTriggerGrantDesign.trigger** ⌈For each ComTriggerGrantDesign, the reference in the role trigger shall exist **at the time when the GrantDesign is complete**.

⌋()

[constr_10161]{DRAFT} **Multiplicity of reference in the role ComMethodGrantDesign.method** ⌈For each ComMethodGrantDesign, the reference in the role method shall exist **at the time when the GrantDesign is complete**.

⌋()

[constr_10162]{DRAFT} **Multiplicity of reference in the role DiagnosticClearConditionPortMapping.clearCondition** ⌈For each DiagnosticClearConditionPortMapping, the reference in the role clearCondition shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10163]{DRAFT} **Multiplicity of reference in the role DiagnosticIndicatorPortMapping.indicator** ⌈For each DiagnosticIndicatorPortMapping, the reference in the role indicator shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10164]{DRAFT} **Multiplicity of reference in the role DiagnosticMemoryDestinationPortMapping.memoryDestination** ⌈For each DiagnosticMemoryDestinationPortMapping, the reference in the role memoryDestination shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10165]{DRAFT} **Multiplicity of reference in the role DiagnosticDataPortMapping.process** ⌈For each DiagnosticDataPortMapping, the reference in the role process shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10166]{DRAFT} **Multiplicity of attribute DiagnosticProvidedDataMapping.dataProvider** ⌈For each DiagnosticProvidedDataMapping, the attribute dataProvider shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10167]{DRAFT} **Multiplicity of attribute SomeipServiceDiscovery.someipServiceDiscoveryPort** ⌈For each SomeipServiceDiscovery, the attribute someipServiceDiscoveryPort shall exist **at the time when the system design is complete**.

⌋()

[constr_10169]{DRAFT} **Multiplicity of reference in the role Machine.machineDesign** ⌈For each Machine, the reference in the role machineDesign shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10170]{DRAFT} **Multiplicity of attribute Machine.trustedPlatformExecutableLaunchBehavior** ⌈For each Machine, the attribute trustedPlatformExecutableLaunchBehavior shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10171]{DRAFT} **Multiplicity of attribute Machine.processor** ⌈For each Machine, at least one aggregation on the role processor shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10172]{DRAFT} **Multiplicity of attribute Processor.core** ⌈For each Processor, the attribute core shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10173]{DRAFT} **Multiplicity of attribute ProcessorCore.coreId** ⌈For each ProcessorCore, the attribute coreId shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10174]{DRAFT} **Multiplicity of the reference in the role ProcessToMachineMapping.process** ⌈For each ProcessToMachineMapping, the reference in the role process shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10175]{DRAFT} **Multiplicity of attribute StateDependentStartupConfig.resourceGroup** ⌈For each StateDependentStartupConfig, the attribute resourceGroup shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10176]{DRAFT} **Multiplicity of attribute StateDependentStartupConfig.startupConfig** ⌈For each StateDependentStartupConfig, the attribute startupConfig shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10177]{DRAFT} **Multiplicity of attribute PersistencyDeployment.updateStrategy** ⌈For each PersistencyDeployment, the attribute updateStrategy shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10178]{DRAFT} **Multiplicity of the reference in the role PersistencyPortPrototypeToDeploymentMapping.process** ⌈For each PersistencyPortPrototypeToDeploymentMapping, the reference in the role process shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10179]{DRAFT} **Multiplicity of attribute PersistencyKeyValuePair.valueDataType** ⌈For each PersistencyKeyValuePair, the attribute valueDataType shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10180]{DRAFT} **Multiplicity of the reference in the role PersistencyPortPrototypeToKeyValueStorageMapping.keyValueStorage** ⌈For each PersistencyPortPrototypeToKeyValueStorageMapping, the reference in the role keyValueStorage shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10182]{DRAFT} **Multiplicity of the reference in the role PersistencyPortPrototypeToFileStorageMapping.fileStorage** ⌈For each PersistencyPortPrototypeToFileStorageMapping, the reference in the role fileStorage shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10183]{DRAFT} **Multiplicity of attribute PersistencyFile.fileName** ⌈For each PersistencyFile, the attribute fileName shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10184]{DRAFT} **Multiplicity of the reference in the role SynchronizedTimeBaseConsumer.networkTimeConsumer** ⌈For each SynchronizedTimeBaseConsumer, the reference in the role networkTimeConsumer shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10185]{DRAFT} **Multiplicity of the reference in the role SynchronizedTimeBaseProvider.networkTimeProvider** ⌈For each Synchronized-

TimeBaseProvider, the reference in the role networkTimeProvider shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10186]{DRAFT} **Multiplicity of attribute DoIpInstantiation.entityStatusMaxByteFieldUse** ⌈For each DoIpInstantiation, the attribute entityStatusMaxByteFieldUse shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10187]{DRAFT} **Multiplicity of attribute DoIpInstantiation.gidInvalidityPattern** ⌈For each DoIpInstantiation, the attribute gidInvalidityPattern shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10188]{DRAFT} **Multiplicity of attribute DoIpInstantiation.logicalAddress** ⌈For each DoIpInstantiation, the attribute logicalAddress shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10189]{DRAFT} **Multiplicity of attribute DoIpInstantiation.maxRequestBytes** ⌈For each DoIpInstantiation, the attribute maxRequestBytes shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10190]{DRAFT} **Multiplicity of attribute DoIpInstantiation.vinInvalidityPattern** ⌈For each DoIpInstantiation, the attribute vinInvalidityPattern shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10191]{DRAFT} **Multiplicity of attribute DoIpNetworkConfiguration.isActivationLineDependent** ⌈For each DoIpNetworkConfiguration, the attribute isActivationLineDependent shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10192]{DRAFT} **Multiplicity of attribute DoIpNetworkConfiguration.maxInitialVehicleAnnouncementTime** ⌈For each DoIpNetworkConfiguration, the attribute maxInitialVehicleAnnouncementTime shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10193]{DRAFT} **Multiplicity of attribute DoIpNetworkConfiguration.maxTesterConnections** ⌈For each DoIpNetworkConfiguration, the attribute maxTesterConnections shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10194]{DRAFT} **Multiplicity of attribute DoIpNetworkConfiguration.networkInterfaceId** ⌈For each DoIpNetworkConfiguration, the attribute networkInterfaceId shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10195]{DRAFT} **Multiplicity of attribute DoIpNetworkConfiguration.vehicleIdentificationSyncStatus** ⌈For each DoIpNetworkConfiguration, the attribute vehicleIdentificationSyncStatus shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10197]{DRAFT} **Multiplicity of attribute DoIpRequestConfiguration.endAddress** ⌈For each DoIpRequestConfiguration, the attribute endAddress shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10198]{DRAFT} **Multiplicity of attribute DoIpRequestConfiguration.requestType** ⌈For each DoIpRequestConfiguration, the attribute requestType shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10199]{DRAFT} **Multiplicity of attribute DoIpRequestConfiguration.startAddress** ⌈For each DoIpRequestConfiguration, the attribute startAddress shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10200]{DRAFT} **Multiplicity of attribute UcmModuleInstantiation.identifier** ⌈For each UcmModuleInstantiation, the attribute identifier shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10201]{DRAFT} **Multiplicity of of the reference in the role ComGrant.serviceInstance** ⌈For each ComGrant, the reference in the role serviceIn-

stance shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10202]{DRAFT} **Multiplicity of attribute ComFieldGrant.role** ⌈For each ComFieldGrant, the attribute role shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10203]{DRAFT} **Multiplicity of the reference in the role ComFieldGrant.serviceDeployment** ⌈For each ComFieldGrant, the reference in the role serviceDeployment shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10204]{DRAFT} **Multiplicity of the reference in the role ComMethodGrant.serviceDeployment** ⌈For each ComMethodGrant, the reference in the role serviceDeployment shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10205]{DRAFT} **Multiplicity of the reference in the role ComEventGrant.serviceDeployment** ⌈For each ComEventGrant, the reference in the role serviceDeployment shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10206]{DRAFT} **Multiplicity of the reference in the role ComOfferServiceGrant.serviceInstance** ⌈For each ComOfferServiceGrant, the reference in the role serviceInstance shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10207]{DRAFT} **Multiplicity of the reference in the role CryptoProviderToPortPrototypeMapping.cryptoProvider** ⌈For each CryptoProviderToPortPrototypeMapping, the reference in the role cryptoProvider shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10208]{DRAFT} **Multiplicity of the reference in the role CryptoProviderToPortPrototypeMapping.process** ⌈For each CryptoProviderTo-

PortPrototypeMapping, the reference in the role process shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10209]{DRAFT} **Multiplicity of the reference in the role CryptoKeySlotToPortPrototypeMapping.keySlot** ⌈For each CryptoKeySlotToPortPrototypeMapping, the reference in the role keySlot shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10210]{DRAFT} **Multiplicity of the reference in the role CryptoKeySlotToPortPrototypeMapping.process** ⌈For each CryptoKeySlotToPortPrototypeMapping, the reference in the role process shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10211]{DRAFT} **Multiplicity of the reference in the role CryptoCertificateToCryptoKeySlotMapping.cryptoCertificate** ⌈For each CryptoCertificateToCryptoKeySlotMapping, the reference in the role cryptoCertificate shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10212]{DRAFT} **Multiplicity of attribute SomeipServiceInterfaceDeployment.serviceInterfaceId** ⌈For each SomeipServiceInterfaceDeployment, the attribute serviceInterfaceId shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10213]{DRAFT} **Multiplicity of attribute SomeipServiceInterfaceDeployment.serviceInterfaceVersion** ⌈For each SomeipServiceInterfaceDeployment, the attribute serviceInterfaceVersion shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10214]{DRAFT} **Multiplicity of attribute SomeipEventGroup.eventGroupId** ⌈For each SomeipEventGroup, the attribute eventGroupId shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10215]{DRAFT} **Multiplicity of attribute SomeipEventDeployment.eventId** ⌈For each SomeipEventDeployment, the attribute eventId shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10216]{DRAFT} **Multiplicity of attribute SomeipEventDeployment.transportProtocol** ⌈For each SomeipEventDeployment, the attribute transportProtocol shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10217]{DRAFT} **Multiplicity of the attribute DdsServiceInterfaceDeployment.serviceInterfaceId** ⌈For each DdsServiceInterfaceDeployment, the attribute serviceInterfaceId shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10218]{DRAFT} **Multiplicity of reference in the role ProvidedSomeipServiceInstance.sdServerConfig** ⌈For each ProvidedSomeipServiceInstance, the reference in the role sdServerConfig shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10219]{DRAFT} **Multiplicity of attribute ProvidedSomeipServiceInstance.serviceInstanceId** ⌈For each ProvidedSomeipServiceInstance, the attribute serviceInstanceId shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10220]{DRAFT} **Multiplicity of attribute SomeipProvidedEventGroup.multicastThreshold** ⌈For each SomeipProvidedEventGroup, the attribute multicastThreshold shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10221]{DRAFT} **Multiplicity of reference in the role RequiredSomeipServiceInstance.sdClientConfig** ⌈For each RequiredSomeipServiceInstance, the reference in the role sdClientConfig shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10222]{DRAFT} **Multiplicity of the reference in the role SomeipRequiredEventGroup.sdClientEventGroupTimingConfig** ⌈For each SomeipRequiredEventGroup, the reference in the role sdClientEventGroupTimingConfig shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10223]{DRAFT} **Multiplicity of attribute DdsServiceInstanceProps.domainId** ⌈For each DdsServiceInstanceProps, the attribute domainId shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10224]{DRAFT} **Multiplicity of reference in the role DdsEventQosProps.event** ⌈For each DdsEventQosProps, the reference in the role event shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10225]{DRAFT} **Multiplicity of reference in the role DdsFieldQosProps.field** ⌈For each DdsFieldQosProps, the reference in the role field shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10226]{DRAFT} **Multiplicity of attribute E2EProfileConfiguration.profileName** ⌈For each E2EProfileConfiguration, the attribute profileName shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10227]{DRAFT} **Multiplicity of attribute SecOcJobRequirement.secOcJobSemantic** ⌈For each SecOcJobRequirement, the attribute secOcJobSemantic shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10228]{DRAFT} **Multiplicity of attribute SignalBasedFieldToISignalTriggeringMapping.dataPrototypeInServiceInterfaceRef** ⌈For each SignalBasedFieldToISignalTriggeringMapping, the attribute dataPrototypeInServiceInterfaceRef shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10230]{DRAFT} **Multiplicity of attribute SignalServiceTranslationEventProps.safeTranslation** ⌈For each SignalServiceTranslationEventProps, the attribute safeTranslation shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10231]{DRAFT} **Multiplicity of attribute SignalServiceTranslationEventProps.secureTranslation** ⌈For each SignalServiceTranslationEventProps, the attribute secureTranslation shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10232]{DRAFT} **Multiplicity of reference in the role PersistencyDeploymentToCryptoKeySlotMapping.persistencyDeployment** ⌈For each PersistencyDeploymentToCryptoKeySlotMapping, the reference in the role persistencyDeployment shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10233]{DRAFT} **Multiplicity of the reference in the role SoftwareCluster.vendorSignature** ⌈For each SoftwareCluster, the reference in the role vendorSignature shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10234]{DRAFT} **Multiplicity of attribute SoftwareCluster.version** ⌈For each SoftwareCluster, the attribute version shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10235]{DRAFT} **Multiplicity of attribute SoftwareCluster.vendorId** ⌈For each SoftwareCluster, the attribute vendorId shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10236]{DRAFT} **Multiplicity of attribute SoftwareClusterDiagnosticAddress.addressSemantics** ⌈For each SoftwareClusterDiagnosticAddress, the attribute addressSemantics shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10237]{DRAFT} **Multiplicity of attribute SoftwareClusterDependencyCompareCondition.compareType** ⌈For each SoftwareClusterDependencyCompareCondition, the attribute compareType shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10240]{DRAFT} **Multiplicity of attribute SoftwarePackage.actionType** ⌈For each SoftwarePackage, the attribute actionType shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10241]{DRAFT} **Multiplicity of attribute SoftwarePackage.compressedSoftwarePackageSize** ⌈For each SoftwarePackage, the attribute compressedSoftwarePackageSize shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10242]{DRAFT} **Multiplicity of attribute SoftwarePackage.minimumSupportedUcmVersion** ⌈For each SoftwarePackage, the attribute minimumSupportedUcmVersion shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10243]{DRAFT} **Multiplicity of attribute SoftwarePackage.packagerId** ⌈For each SoftwarePackage, the attribute packagerId shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10244]{DRAFT} **Multiplicity of reference in the role SoftwarePackage.packagerSignature** ⌈For each SoftwarePackage, the reference in the role packagerSignature shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10245]{DRAFT} **Multiplicity of reference in the role SoftwarePackage.softwareCluster** ⌈For each SoftwarePackage, the reference in the role softwareCluster shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10246]{DRAFT} **Multiplicity of attribute SoftwarePackage.uncompressedSoftwareClusterSize** ⌈For each SoftwarePackage, the attribute uncompressedSoftwareClusterSize shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10247]{DRAFT} **Multiplicity of reference in the role VehiclePackage.packagerSignature** ⌈For each VehiclePackage, the reference in the role packagerSignature shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10248]{DRAFT} **Multiplicity of reference in the role UcmDescription.identifier** ⌈For each UcmDescription, the reference in the role identifier shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10249]{DRAFT} **Multiplicity of reference in the role VehicleDriverNotification.approvalRequired** ⌈For each VehicleDriverNotification,

the reference in the role `approvalRequired` shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10250]{DRAFT} **Multiplicity of reference in the role `VehicleDriverNotification.notificationState`** ⌈For each `VehicleDriverNotification`, the reference in the role `notificationState` shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10251]{DRAFT} **Multiplicity of the reference in the role `ServiceFieldDeployment.field`** ⌈For each `ServiceFieldDeployment`, the reference in the role `field` shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10252]{DRAFT} **Multiplicity of attribute `SignalBasedEventElementToISignalTriggeringMapping.dataPrototypeInServiceInterfaceRef`** ⌈For each `SignalBasedEventElementToISignalTriggeringMapping`, the attribute `dataPrototypeInServiceInterfaceRef` shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10253]{DRAFT} **Multiplicity of attribute `SoftwareClusterDependencyCompareCondition.considerBuildNumber`** ⌈For each `SoftwareClusterDependencyCompareCondition`, the attribute `considerBuildNumber` shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10254]{DRAFT} **Multiplicity of attribute `SoftwareClusterDependencyCompareCondition.version`** ⌈For each `SoftwareClusterDependencyCompareCondition`, the attribute `version` shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10255]{DRAFT} **Multiplicity of attribute `SignalServiceTranslationProps.serviceControl`** ⌈For each `SignalServiceTranslationProps`, the attribute `serviceControl` shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10256]{DRAFT} **Multiplicity of reference in the role `SoftwarePackageStoring.storing`** ⌈For each `SoftwarePackageStoring`, the reference in the

role storing shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10365]{DRAFT} **Existence of PersistencyDeployment.deploymentUri** ⌈For each concrete sub-class of PersistencyDeployment, attribute deploymentUri shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10366]{DRAFT} **Possible multiplicities of PersistencyDeployment.deploymentUri** ⌈Possible multiplicities of PersistencyDeployment.deploymentUri shall be one of

- 1
- 2
- value of attribute PersistencyRedundancyMOutOfN.n

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_10367]{DRAFT} **Condition for the multiplicity of attribute PersistencyDeployment.deploymentUri** ⌈The multiplicity of attribute PersistencyDeployment.deploymentUri shall only be greater than 1 if meta-class PersistencyRedundancyMOutOfN is aggregated in the role PersistencyDeployment.redundancyHandling and attribute PersistencyDeployment.redundancyHandling.scope is set to the value PersistencyRedundancyHandlingScopeEnum.persistencyRedundancyHandlingScopeStorage.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_10374]{DRAFT} **Existence of the attribute UcmSubordinateModuleInstantiation.verifyUpdate** ⌈The attribute UcmSubordinateModuleInstantiation.verifyUpdate shall **at the time when the creation of the manifest is finished**.

⌋()

[constr_10375]{DRAFT} **Existence of the attribute UcmSubordinateModuleInstantiation.prepareUpdate** ⌈The attribute UcmSubordinateModuleInstantiation.prepareUpdate shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10376]{DRAFT} **Existence of the attribute UcmSubordinateModuleInstantiation.prepareRollback** ⌈The attribute UcmSubordinateModuleInstantiation.prepareRollback shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10377]{DRAFT} **Completeness of the modeling of PersistencyKeyValueDataTypeMapping** ⌈For each PersistencyKeyValueDataTypeMapping, the references in the roles

- previousDataType
- currentDataType

shall **both** exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10378]{DRAFT} **PersistencyKeyValueDataTypeMapping references AbstractImplementationDataType in the role currentDataType** ⌈Each PersistencyKeyValueDataTypeMapping that references to an AbstractImplementationDataType as part of the collection in the role currentDataType shall also refer to an AbstractImplementationDataType in the role previousDataType.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_10379]{DRAFT} **PersistencyKeyValueDataTypeMapping references ApplicationDataType in the role currentDataType** ⌈Each PersistencyKeyValueDataTypeMapping that references to an ApplicationDataType as part of the collection in the role currentDataType shall also refer to an ApplicationDataType in the role previousDataType.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_10380]{DRAFT} **Target of ArtifactLocator.representedModelElement** ⌈The target of a reference in the role ArtifactLocator.representedModelElement shall not be the target of another reference in the role ArtifactLocator.representedModelElement.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_10381]{DRAFT} **Existence of attribute `ArtifactLocator.uri`** ⌈For each `ArtifactLocator`, the attribute `uri` shall exist **at the time when the creation of the manifest is finished**

⌋()

[constr_10382]{DRAFT} **Existence of attribute `ArtifactLocator.representedModelElement`** ⌈For each `ArtifactLocator`, the attribute `representedModelElement` shall exist **at the time when the creation of the manifest is finished**

⌋()

[constr_10384]{DRAFT} **`PortInterface` used for trigger state requests** ⌈Each `RPortPrototype` that is referenced by a `StateManagementRequestTrigger` shall be typed by ether

- a subclass of `StateManagementTriggerInterface` or
- a `ServiceInterface`.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_10385]{DRAFT} **`PortInterface` used for error state requests** ⌈Each `RPortPrototype` that is referenced by a `StateManagementRequestError` shall be typed by subclass of `StateManagementErrorInterface` **at the time when the creation of the manifest is finished**.

⌋()

[constr_10386]{DRAFT} **Existence of references `StateManagementStateMachineActionItem.startStateMachine` and `stopStateMachine`** ⌈For each `StateManagementStateMachineActionItem`, **at most one** of the two references

- `startStateMachine`
- `stopStateMachine`

shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10387]{DRAFT} **Consistency of `StateManagementSetFunctionGroupStateActionItem.portPrototype` and `StateManagementSetFunctionGroupStateActionItem.setFunctionGroupState`** ⌈For each `StateManagementSetFunctionGroupStateActionItem`, the `ModeDeclarationGroup` used to type the `ModeDeclaration` that is referenced in the role `setFunctionGroupState` shall be identical to the `ModeDeclarationGroup` referenced in the role `modeGroup` from the `StateManagementFunctionGroupSwitchNotification-`

Interface that is used to type the PPortPrototype that is referenced in the role portPrototype from the affected StateManagementSetFunctionGroupStateActionItem.

This rule shall be imposed **at the time when the creation of the manifest is finished**.

⌋()

[constr_10388]{DRAFT} **Restriction for a PortInterface used for state switch notifications** ⌈Each PPortPrototype that is referenced by a StateManagementStateNotification shall be typed by a ServiceInterface **at the time when the creation of the manifest is finished**.

⌋()

[constr_10389]{DRAFT} **Existence of attribute StateManagementFunctionGroupSwitchNotificationInterface.modeGroup** ⌈For each StateManagementFunctionGroupSwitchNotificationInterface, the aggregation in the role modeGroup shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10390]{DRAFT} **Existence of reference StateManagementStateRequest.stateRequestPort** ⌈Unless the StateManagementStateRequest is referenced from a NmInteractsWithSmMapping, the reference in the role stateRequestPort shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10391]{DRAFT} **Existence of attribute StateManagementStateNotification.notificationPort** ⌈For each StateManagementStateNotification, the aggregation in the role notificationPort shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10392]{DRAFT} **Existence of attribute StateManagementRequestRule.formula** ⌈For each StateManagementRequestRule, the aggregation in the role formula shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10393]{DRAFT} **Existence of reference in the role StateManagementRequestRule.nextState** ⌈For each StateManagementRequestRule, the reference in the role nextState shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10394]{DRAFT} **Existence of attribute StateManagementCompareCondition.compareType** ⌈For each StateManagementCompareCondition, the aggregation in the role compareType shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10395]{DRAFT} **Existence of attribute StateManagementCompareCondition.compareValue** ⌈For each StateManagementCompareCondition, the aggregation in the role compareValue shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10396]{DRAFT} **Existence of reference in the role StateManagementTriggerCompareRule.assumedCurrentState** ⌈For each StateManagementTriggerCompareRule, the reference in the role assumedCurrentState shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10397]{DRAFT} **Existence of reference in the role StateManagementSetFunctionGroupStateActionItem.portPrototype** ⌈For each StateManagementSetFunctionGroupStateActionItem, the reference in the role portPrototype shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10398]{DRAFT} **Existence of reference in the role StateManagementSetFunctionGroupStateActionItem.setFunctionGroupState** ⌈For each StateManagementSetFunctionGroupStateActionItem, the reference in the role setFunctionGroupState shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10399]{DRAFT} **Allowed interval of the "index" field according to the initialization rule for data object typed by a CppImplementationDataType of category VARIANT** ⌈The allowed value range of the "index" field of a RecordValueSpecification according to [TPS_MANI_01393] goes from 1 to the number of templateArguments owned by the CppImplementationDataType of category VARIANT.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_10400]{DRAFT} **Existence of SovdServerInstantiation.componentQualifier** ⌈For each SovdServerInstantiation, attribute componentQual-

ifier shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10401]{DRAFT} **Existence of SovdGatewayLocalEndpointTcpConfig.tcpPort** ⌈For each SovdGatewayLocalEndpointTcpConfig, attribute tcpPort shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10402]{DRAFT} **Existence of SovdGatewayEthernetCredentials.ipv4Address vs. SovdGatewayEthernetCredentials.ipv6Address** ⌈For each SovdGatewayEthernetCredentials, at least one of attributes

- SovdGatewayEthernetCredentials.ipv4Address
- SovdGatewayEthernetCredentials.ipv6Address

shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10403]{DRAFT} **Existence of SovdGatewayEthernetCredentials.udpPort** ⌈For each SovdGatewayEthernetCredentials, attribute udpPort shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10404]{DRAFT} **Existence of SoftwareClusterSovdAddress.componentQualifier** ⌈For each SoftwareClusterSovdAddress, attribute componentQualifier shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10405]{DRAFT} **Existence of reference in the role StateManagementActionList.affectedState** ⌈For each StateManagementActionList, the reference in the role affectedState shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10410] Value of SoftwareCluster.installationBehavior for a SoftwareCluster of category PLATFORM_CORE ⌈In a SoftwareCluster of category PLATFORM_CORE, the attribute installationBehavior shall exist and its value shall be set to cannotBeRemoved **at the time when the creation of the manifest is finished**.

⌋()

[constr_10411]{DRAFT} **Existence of `ExecutionDependency` and references to `Function Group States`** ⌈Each `StateDependentStartupConfig` that aggregates at least one `ExecutionDependency` in the role `executionDependency` shall reference at most one `ModeDeclaration` in the role `functionGroupState`.

This rule shall be imposed **`at the time when the creation of the manifest is finished`**.

⌋()

[constr_10416]{DRAFT} **Aggregation of optional `templateArgument` that defines an `Allocator` for a `VECTOR`** ⌈If a `CppImplementationDataType` of `category VECTOR` that boils down to `ara::core::Vector` aggregates (in addition to the `templateArgument` mentioned in [constr_3434]) one additional `templateArgument`, then this additional `templateArgument` shall reference the `Allocator` by means of the `allocator` reference **`at the time before the generation of the ara API starts`**.

⌋()

[constr_10417]{DRAFT} **Existence of attributes of `CppImplementationDataTypes` depending on the `category`** ⌈

Attributes of CppImplementationDataType	Attribute Existence per Category							
	VALUE	TYPE_REFERENCE	STRUCTURE	VARIANT	ARRAY	VECTOR	ASSOCIATIVE_MAP	STRING
subElement			1..*					
templateArgument				1..*	1	1..*	2..*	0..1
typeReference		1						
arraySize					1	0..1[2]		

This rule shall be imposed **`at the time before the generation of the ara API starts`**

⌋()

[constr_10420]{DRAFT} **Restriction for the existence of initial values for `PersistencyDataElement`** ⌈For each `PersistencyKeyValuePair`, if the value of attribute `updateStrategy` is set to the value `PersistencyElementLevelUpdateStrategyEnum.delete`, then the specific `PersistencyDataElement` shall not be referenced by a `PersistencyDataRequiredComSpec` that is aggregated by a `RPortPrototype` that in turn is typed by the `PersistencyInterface` that owns the specific `PersistencyDataElement`.

[2]This depends on the existence of an allocator, see [TPS_MANI_03186].

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_10425]{DRAFT} **Existence of initial values for PersistencyDataElement** ⌈For each PersistencyDataElement, if the value of attribute PersistencyInterface.updateStrategy is set to either

- PersistencyElementLevelUpdateStrategyEnum.keepExisting or
- PersistencyElementLevelUpdateStrategyEnum.overwrite,

then a PersistencyDataRequiredComSpec shall be aggregated by a RPortPrototype that is typed by the PersistencyInterface that owns the specific PersistencyDataElement.

The PersistencyDataRequiredComSpec shall

- refer to the respective PersistencyDataElement and
- aggregate ValueSpecification in the role initValue.

This rule shall be imposed **at the time before the generation of the ara API starts**.

⌋()

[constr_10426]{DRAFT} **Multiplicity of attribute PersistencyDeploymentElement.updateStrategy** ⌈For each PersistencyDeploymentElement, the attribute updateStrategy shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10427]{DRAFT} **Multiplicity of attribute PersistencyInterfaceElement.updateStrategy** ⌈For each PersistencyInterfaceElement, the attribute updateStrategy shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10428]{DRAFT} **Existence of attribute UcmModuleInstantiation.identifier in subclasses** ⌈The Attribute identifier shall **not** exist in a UcmMasterModuleInstantiation **at the time when the creation of the manifest is finished**.

⌋()

[constr_10429]{DRAFT} **Existence of attribute VehicleRolloutStep.violatedSafetyConditionBehavior** ⌈For each VehicleRolloutStep, the attribute vi-

olatedSafetyConditionBehavior shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10430]{DRAFT} **Existence of attribute Machine.defaultApplicationTimeout** ⌈For each Machine, the attribute defaultApplicationTimeout shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10431]{DRAFT} **Existence of attribute Machine.defaultApplicationTimeout.enterTimeoutValue** ⌈For each Machine, the attribute defaultApplicationTimeout.enterTimeoutValue shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10432]{DRAFT} **Existence of attribute Machine.defaultApplicationTimeout.exitTimeoutValue** ⌈For each Machine, the attribute defaultApplicationTimeout.exitTimeoutValue shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10436]{DRAFT} **Restriction for the applicability of DiagnosticMultipleMonitorPortMapping** ⌈If an RPortPrototype is referenced by a DiagnosticMultipleMonitorPortMapping, then the RPortPrototype shall be typed by a DiagnosticMultipleMonitorInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10437]{DRAFT} **Restriction for the applicability of DiagnosticMultipleEventPortMapping** ⌈If an RPortPrototype is referenced by a DiagnosticMultipleEventPortMapping, then the RPortPrototype shall be typed by a DiagnosticMultipleEventInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10438]{DRAFT} **Restriction for the applicability of DiagnosticMultipleConditionPortMapping** ⌈If an RPortPrototype is referenced by a DiagnosticMultipleConditionPortMapping, then the RPortPrototype shall be typed by a DiagnosticMultipleConditionInterface.

⌋()

[constr_10441]{DRAFT} **Restriction for NetworkHandlePortMapping.pPortPrototypeInExecutable** ⌈A PPortPrototype referenced in the role NetworkHandlePortMapping.pPortPrototypeInExecutable shall only be typed

by a NetworkManagementPortInterface **at the time before the generation of the ara API starts**.

⌋()

[constr_10442]{DRAFT} **Restriction for the applicability of DiagnosticSovdProximityChallengePortMapping** ⌈If a PPortPrototype is referenced by a DiagnosticSovdProximityChallengePortMapping in the role pPortPrototypeInExecutable, then the PPortPrototype shall be typed by a DiagnosticSovdProximityChallengeInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10443]{DRAFT} **Restriction for the applicability of DiagnosticSovdProximityChallengeInterface** ⌈If a PPortPrototype is typed by a DiagnosticSovdProximityChallengeInterface, then the PortPrototype shall only be referenced in the role pPortPrototypeInExecutable by a DiagnosticSovdProximityChallengePortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10444]{DRAFT} **Existence of DiagnosticSovdProximityChallengePortMapping** ⌈Each DiagnosticContributionSet shall only reference at most one DiagnosticSovdProximityChallengePortMapping in the role element **at the time when the diagnostic design is complete**.

⌋()

[constr_10445]{DRAFT} **Existence of the reference in the role DiagnosticSovdProximityChallengePortMapping.pPortPrototypeInExecutable** ⌈For each DiagnosticSovdProximityChallengePortMapping, the reference in the role DiagnosticSovdProximityChallengePortMapping.pPortPrototypeInExecutable shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10446]{DRAFT} **Existence of the reference in the role DiagnosticSovdProximityChallengePortMapping.process** ⌈For each DiagnosticSovdProximityChallengePortMapping, the reference in the role DiagnosticSovdProximityChallengePortMapping.process shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10447]{DRAFT} **Restriction for the applicability of DiagnosticSovdAuthorizationPortMapping** ⌈If a PPortPrototype is referenced in the role pPortPrototypeInExecutable by a DiagnosticSovdAuthorizationPortMapping, then the PPortPrototype shall be typed by a DiagnosticSov-

dAuthorizationInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10448]{DRAFT} **Restriction for the applicability of DiagnosticSovdAuthorizationInterface** ⌈If a PPortPrototype is typed by a DiagnosticSovdAuthorizationInterface, then the PortPrototype shall only be referenced in the role pPortPrototypeInExecutable by a DiagnosticSovdAuthorizationPortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10449]{DRAFT} **Existence of DiagnosticSovdAuthorizationPortMapping** ⌈Each DiagnosticContributionSet shall only reference in the role element at most one DiagnosticSovdAuthorizationPortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10450]{DRAFT} **Existence of the reference in the role DiagnosticSovdAuthorizationPortMapping.pPortPrototypeInExecutable** ⌈For each DiagnosticSovdAuthorizationPortMapping, the reference in the role DiagnosticSovdAuthorizationPortMapping.pPortPrototypeInExecutable shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10451]{DRAFT} **Existence of the reference in the role DiagnosticSovdAuthorizationPortMapping.process** ⌈For each DiagnosticSovdAuthorizationPortMapping, the reference in the role DiagnosticSovdAuthorizationPortMapping.process shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10452]{DRAFT} **Restriction for the applicability of DiagnosticSovdBulkDataPortMapping** ⌈If a PPortPrototype is referenced n the role pPortPrototypeInExecutable by a DiagnosticSovdBulkDataPortMapping, then the PPortPrototype shall be typed by a DiagnosticSovdBulkDataInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10453]{DRAFT} **Restriction for the applicability of DiagnosticSovdBulkDataInterface** ⌈If a PPortPrototype is typed by a DiagnosticSovdBulkDataInterface, then the PortPrototype shall only be referenced in the role

pPortPrototypeInExecutable by a DiagnosticSovdBulkDataPortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10454]{DRAFT} **Uniqueness of reference from DiagnosticSovdBulkDataPortMapping to DiagnosticSovdBulkData** ⌈Each instance DiagnosticSovdBulkData shall only be referenced in the role serviceInstance by exactly one DiagnosticSovdBulkDataPortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10455]{DRAFT} **Existence of the reference in the role DiagnosticSovdBulkDataPortMapping.serviceInstance** ⌈For each DiagnosticSovdBulkDataPortMapping, the reference in the role DiagnosticSovdBulkDataPortMapping.serviceInstance shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10456]{DRAFT} **Existence of the reference in the role DiagnosticSovdBulkDataPortMapping.pPortPrototypeInExecutable** ⌈For each DiagnosticSovdBulkDataPortMapping, the reference in the role DiagnosticSovdBulkDataPortMapping.pPortPrototypeInExecutable shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10457]{DRAFT} **Existence of the reference in the role DiagnosticSovdBulkDataPortMapping.process** ⌈For each DiagnosticSovdBulkDataPortMapping, the reference in the role DiagnosticSovdBulkDataPortMapping.process shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10458]{DRAFT} **Restriction for the applicability of DiagnosticSovdUpdatePortMapping** ⌈If a PPortPrototype is referenced in the role pPortPrototypeInExecutable by a DiagnosticSovdUpdatePortMapping, then the PPortPrototype shall be typed by a DiagnosticSovdUpdateInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10459]{DRAFT} **Restriction for the applicability of DiagnosticSovdUpdateInterface** ⌈If a PPortPrototype is typed by a DiagnosticSovdUpdateInterface, then the PortPrototype shall only be referenced in the role pPortPrototypeInExecutable by a DiagnosticSovdUpdatePortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10460]{DRAFT} **Uniqueness of reference from DiagnosticSovdUpdatePortMapping to DiagnosticSovdUpdate** ⌈Each instance of DiagnosticSovdUpdate shall only be referenced in the role serviceInstance by exactly one DiagnosticSovdUpdatePortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10461]{DRAFT} **Existence of the reference in the role DiagnosticSovdUpdatePortMapping.serviceInstance** ⌈For each DiagnosticSovdUpdatePortMapping, the reference in the role DiagnosticSovdUpdatePortMapping.serviceInstance shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10462]{DRAFT} **Existence of the reference in the role DiagnosticSovdUpdatePortMapping.pPortPrototypeInExecutable** ⌈For each DiagnosticSovdUpdatePortMapping, the reference in the role DiagnosticSovdUpdatePortMapping.pPortPrototypeInExecutable shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10463]{DRAFT} **Existence of the reference in the role DiagnosticSovdUpdatePortMapping.process** ⌈For each DiagnosticSovdUpdatePortMapping, the reference in the role DiagnosticSovdUpdatePortMapping.process shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10464]{DRAFT} **Restriction for the applicability of DiagnosticSovdServiceValidationPortMapping** ⌈If a PPortPrototype is referenced in the role pPortPrototypeInExecutable by a DiagnosticSovdServiceValidationPortMapping, then the PPortPrototype shall be typed by a DiagnosticSovdServiceValidationInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10465]{DRAFT} **Restriction for the applicability of DiagnosticSovdServiceValidationInterface** ⌈If a PPortPrototype is typed by a DiagnosticSovdServiceValidationInterface, then the PortPrototype shall only be referenced in the role pPortPrototypeInExecutable by a DiagnosticSovdServiceValidationPortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10466]{DRAFT} **Existence of the reference in the role DiagnosticSovdServiceValidationPortMapping.pPortPrototypeInExecutable**

⌈For each DiagnosticSovdServiceValidationPortMapping, the reference in the role DiagnosticSovdServiceValidationPortMapping.pPortPrototypeInExecutable shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10467]{DRAFT} **Existence of the reference in the role DiagnosticSovdServiceValidationPortMapping.process** ⌈For each DiagnosticSovdServiceValidationPortMapping, the reference in the role DiagnosticSovdServiceValidationPortMapping.process shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10468]{DRAFT} **Restriction for the applicability of DiagnosticSovdConfigurationPortMapping** ⌈If a PPortPrototype is referenced in the role pPortPrototypeInExecutable by a DiagnosticSovdConfigurationPortMapping, then the PPortPrototype shall be typed by a DiagnosticSovdConfigurationInterface **at the time when the diagnostic design is complete**.

⌋()

[constr_10469]{DRAFT} **Restriction for the applicability of DiagnosticSovdConfigurationInterface** ⌈If a PPortPrototype is typed by a DiagnosticSovdConfigurationInterface, then the PortPrototype shall only be referenced in the role pPortPrototypeInExecutable by a DiagnosticSovdConfigurationPortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10470]{DRAFT} **Uniqueness of reference from DiagnosticSovdConfigurationPortMapping to DiagnosticSovdConfiguration** ⌈Each instance of a sub-class of DiagnosticSovdConfiguration shall only be referenced in the role serviceInstance by exactly one DiagnosticSovdConfigurationPortMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10471]{DRAFT} **Existence of the reference in the role DiagnosticSovdConfigurationPortMapping.serviceInstance** ⌈For each DiagnosticSovdConfigurationPortMapping, the reference in the role DiagnosticSovdConfigurationPortMapping.serviceInstance shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10472]{DRAFT} **Existence of the reference in the role DiagnosticSovdConfigurationPortMapping.pPortPrototypeInExecutable** ⌈For each

DiagnosticSovdConfigurationPortMapping, the reference in the role DiagnosticSovdConfigurationPortMapping.pPortPrototypeInExecutable shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10473]{DRAFT} **Existence of the reference in the role DiagnosticSovdConfigurationPortMapping.process** ⌈For each DiagnosticSovdConfigurationPortMapping, the reference in the role DiagnosticSovdConfigurationPortMapping.process shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10474]{DRAFT} **Uniqueness of reference from DiagnosticSovdConfigurationDataIdentifierMapping to DiagnosticSovdConfigurationParameter** ⌈Each instance of a sub-class of DiagnosticSovdConfigurationParameter shall only be referenced by exactly one DiagnosticSovdConfigurationDataIdentifierMapping **at the time when the diagnostic design is complete**.

⌋()

[constr_10475]{DRAFT} **Existence of the reference in the role DiagnosticSovdConfigurationDataIdentifierMapping.serviceInstance** ⌈For each DiagnosticSovdConfigurationDataIdentifierMapping, the reference in the role DiagnosticSovdConfigurationDataIdentifierMapping.serviceInstance shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10476]{DRAFT} **Existence of the reference in the role DiagnosticSovdConfigurationDataIdentifierMapping.dataIdentifier** ⌈For each DiagnosticSovdConfigurationDataIdentifierMapping, the reference in the role DiagnosticSovdConfigurationDataIdentifierMapping.dataIdentifier shall exist **at the time when the diagnostic design is complete**.

⌋()

[constr_10477]{DRAFT} **Existence of DiagnosticSovdLog** ⌈Each DiagnosticContributionSet shall at most reference a single DiagnosticSovdLog in the role element **at the time when the diagnostic design is complete**.

⌋()

[constr_10478]{DRAFT} **Existence of DiagnosticSovdUpdate** ⌈Each DiagnosticContributionSet shall at most reference a single DiagnosticSovdUpdate

in the role element **at the time when the diagnostic design is complete**.

⌋()

[constr_10479]{DRAFT} **Restriction on values of attribute DiagnosticSovdMethodPrimitive.category aggregated in the role put in the context of SOVD Update** ⌈If a DiagnosticSovdMethod is referenced from a DiagnosticSovdUpdate and the attribute put.category exists, then the value of the attribute category within any DiagnosticSovdMethodPrimitive aggregated in the role put is restricted to the following values:

- PREPARE
- EXECUTE
- AUTOMATE

This rule shall be imposed **at the time when the diagnostic design is complete**.

⌋()

[constr_10480]{DRAFT} **Restriction on value of attribute DiagnosticSovdMethodPrimitive.category aggregated in the role get in the context of SOVD Update** ⌈If a DiagnosticSovdMethod is referenced from a DiagnosticSovdUpdate and the attribute get.category exists, then the value of the attribute category within any DiagnosticSovdMethodPrimitive aggregated in the role get is restricted to the value STATUS **at the time when the diagnostic design is complete**.

⌋()

[constr_10481]{DRAFT} **Restriction on values of attribute DiagnosticSovdMethodPrimitive.category aggregated in the role get in the context of SOVD Log** ⌈If a DiagnosticSovdMethod is referenced from a DiagnosticSovdLog and the attribute get exists, then the value of the attribute category within any DiagnosticSovdMethodPrimitive aggregated in the role get is restricted to the values

- CONFIG
- ENTRIES

This rule shall be imposed **at the time when the diagnostic design is complete**.

⌋()

[constr_10482]{DRAFT} **Restriction on values of attribute DiagnosticSovdMethodPrimitive.category aggregated in the roles put and delete in the context of SOVD Log** ⌈If a DiagnosticSovdMethod is referenced from a DiagnosticSovdLog and the attributes

- put
- delete

exist, then the value of the attribute category within any DiagnosticSovdMethod-Primitive aggregated in the role

- put
- delete

is restricted to the value CONFIG.

This rule shall be imposed **at the time when the diagnostic design is complete**.

⌋()

[constr_10483]{DRAFT} **Applicable values of baseTypeEncoding in the context of the definition of a DiagnosticDataElement** ⌈Any SwBaseType referenced in the role DiagnosticDataElement.swDataDefProps.baseType shall only set one of the following values for attribute SwBaseType.baseTypeDefinition.baseType-Encoding:

- **BOOLEAN** (for baseTypeSize = 8)
- **NONE** (for baseTypeSize = 8, 16, or 32)
- **2C** (for baseTypeSize = 8, 16, or 32)
- **BCD-P** (for baseTypeSize = 8)
- **BCD-UP** (for baseTypeSize = 8)
- **IEEE754** (for baseTypeSize = 32)
- **UTF-8** (for baseTypeSize = 8)
- **UTF-16** (for baseTypeSize = 16)
- **WINDOWS-1252** (for baseTypeSize = 8)

⌋()

[constr_10484]{DRAFT} **Existence of FunctionalClusterInteractsWithPer-sistencyDeploymentMapping.contractVersion** ⌈In the context of Function-alClusterInteractsWithPersistencyDeploymentMapping, the attribute in the role contractVersion shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10485]{DRAFT} **Existence of PersistencyInterface.contractVer-sion** ⌈In the context of PersistencyInterface, the attribute in the role

contractVersion shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10486]{DRAFT} **Existence of PersistencyKeyValueDataTypeMapping.previousContractVersion** ⌈In the context of PersistencyKeyValueDataTypeMapping, the attribute in the role previousContractVersion shall exist **at the time before the generation of the ara API starts**.

⌋()

[constr_10487]{DRAFT} **Only one physical address per DiagnosticCommonProps** ⌈Each DiagnosticCommonProps shall only aggregate one SoftwareClusterDiagnosticAddress where the value of attribute addressSemantics is set to SoftwareClusterDiagnosticAddressSemanticsEnum.physicalAddress.

⌋()

[constr_10488]{DRAFT} **Existence of attribute DiagnosticCommonProps.authenticationTimeout** ⌈Attribute DiagnosticCommonProps.authenticationTimeout shall exist **at the time when the manifest is complete**.

⌋()

[constr_10489]{DRAFT} **Existence of StateManagementModuleInstantiation in the context of a Machine** ⌈Each Machine shall only aggregate at most one StateManagementModuleInstantiation in the role moduleInstantiation **at the time when the creation of the manifest is finished**.

⌋()

[constr_10490]{DRAFT} **DiagnosticDataElement shall be directly or indirectly the target of a reference owned by a subclass of DiagnosticMapping** ⌈Each DiagnosticDataElement shall be directly or indirectly considered by a DiagnosticMapping. Therefore, exactly one of the following conditions shall be fulfilled:

- A DiagnosticProvidedDataMapping exists that refers to the respective DiagnosticDataElement in the role dataElement.
- A DiagnosticDataPortMapping exists that refers to the respective DiagnosticDataElement in the role diagnosticDataElement.
- A DiagnosticDataPortMapping exists that refers in the role diagnosticDataIdentifier to the DiagnosticDataIdentifier that aggregates the respective DiagnosticDataElement in the role dataElement.dataElement.

This rule shall be imposed **at the time when the diagnostic design is complete**.

⌋()

[constr_10491]{DRAFT} **Type of PPortPrototype referenced in the role IdsmTimestampProviderMapping.pPortPrototypeInExecutable** ⌈A PPortPrototype referenced in the role IdsmTimestampProviderMapping.pPortPrototypeInExecutable shall only be typed by a IdsmTimestampProviderInterface **at the time when the creation of the manifest is finished**.

⌋()

[constr_10492]{DRAFT} **PPortPrototype typed by a IdsmTimestampProviderInterface** ⌈A PPortPrototype that is typed by a IdsmTimestampProviderInterface shall only be referenced in the role pPortPrototypeInExecutable by a IdsmTimestampProviderMapping **at the time when the creation of the manifest is finished**.

⌋()

[constr_10493]{DRAFT} **Existence of IdsmTimestampProviderMapping.idsPlatformInstantiation** ⌈For each IdsmTimestampProviderMapping, the reference to an IdsPlatformInstantiation in the role idsPlatformInstantiation shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10494]{DRAFT} **Existence of IdsmTimestampProviderMapping.pPortPrototypeInExecutable** ⌈For each IdsmTimestampProviderMapping, the instance reference to a PPortPrototype in the role pPortPrototypeInExecutable shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10495]{DRAFT} **Existence of IdsmTimestampProviderMapping.process** ⌈For each IdsmTimestampProviderMapping, the reference to a Process in the role process shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10496]{DRAFT} **Type of PPortPrototype referenced in the role IdsmContextProviderMapping.pPortPrototypeInExecutable** ⌈A PPortPrototype referenced in the role IdsmContextProviderMapping.pPortPrototypeInExecutable shall only be typed by a IdsmContextProviderInterface **at the time when the creation of the manifest is finished**.

⌋()

[constr_10497]{DRAFT} **PPortPrototype typed by a IdsmContextProviderInterface** ⌈A PPortPrototype that is typed by a IdsmContextProviderInterface shall only be referenced in the role pPortPrototypeInExecutable

by a IdsmContextProviderMapping **at the time when the creation of the manifest is finished**.

⌋()

[constr_10498]{DRAFT} **Existence of IdsmContextProviderMapping.idsPlatformInstantiation** ⌈For each IdsmContextProviderMapping, the reference to an IdsPlatformInstantiation in the role idsPlatformInstantiation shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10499]{DRAFT} **Existence of IdsmContextProviderMapping.pPortPrototypeInExecutable** ⌈For each IdsmContextProviderMapping, the instance reference to a PPortPrototype in the role pPortPrototypeInExecutable shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10500]{DRAFT} **Existence of IdsmContextProviderMapping.process** ⌈For each IdsmContextProviderMapping, the reference to a Process in the role process shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10501]{DRAFT} **Access to time stamps for *Intrusion Detection System Management*** ⌈Access to time stamps shall be configured in at most **one of two** possible ways:

- by reference in the role timeBase from IdsPlatformInstantiation to TimeBaseResource or
- by creating a IdsmTimestampProviderMapping that refers in the role pPortPrototypeInExecutable to a PPortPrototype defined by a piece of application software that represents a time-stamp provider.

⌋()

[constr_10508]{DRAFT} **Existence of the attribute UcmSubordinateModuleInstantiation.maxAvailablePersistencyStorageSpace** ⌈The attribute UcmSubordinateModuleInstantiation.maxAvailablePersistencyStorageSpace shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10509]{DRAFT} **Existence of attribute PersistencyDeployment.maximumAllowedSize** ⌈For each concrete sub-class of PersistencyDeployment, at-

tribute maximumAllowedSize shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10510]{DRAFT} **Existence of attribute PersistencyDeployment.minimumSustainedSize** ⌈For each concrete sub-class of PersistencyDeployment, attribute minimumSustainedSize shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10511]{DRAFT} **Reference StateManagementStateRequest.stateRequestPort shall not exist if StateManagementStateRequest is referenced from NmInteractsWithSmMapping** ⌈The reference StateManagementStateRequest.stateRequestPort shall not exist if StateManagementStateRequest is referenced from NmInteractsWithSmMapping.

⌋()

[constr_10512]{DRAFT} **Restriction for the value of StateManagementSleepActionItem.sleepTime** ⌈For each StateManagementSleepActionItem, the value of attribute sleepTime shall only have a value greater than 0 **at the time when the creation of the manifest is finished**.

⌋()

[constr_10513]{DRAFT} **Existence of the reference in the role SmInteractsWithNmMapping.actionItem** ⌈For each SmInteractsWithNmMapping, the reference in the role actionItem shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10514]{DRAFT} **Existence of the reference in the role SmInteractsWithNmMapping.nmNetworkHandle** ⌈For each SmInteractsWithNmMapping, the reference in the role nmNetworkHandle shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10515]{DRAFT} **Existence of the reference in the role NmInteractsWithSmMapping.stateRequest** ⌈For each NmInteractsWithSmMapping, the reference in the role stateRequest shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_10516]{DRAFT} **Existence of the reference in the role NmInteractsWithSmMapping.nmNetworkHandle** ⌈For each NmInteractsWithSmMap-

ping, the reference in the role nmNetworkHandle shall exist **at the time when the creation of the manifest is finished**.

⌋()

[constr_11000]{DRAFT} **SomeipEventDeployment.eventReceptionDefaultValue shall not be specified in the physical domain** ⌈Attribute SomeipEventDeployment.eventReceptionDefaultValue shall only be defined by

- a NumericalValueSpecification or
- a TextValueSpecification

or by

- a RecordValueSpecification or
- a ArrayValueSpecification or
- a CompositeRuleBasedValueSpecification

that (after further nesting levels consisting of CompositeRuleBasedValueSpecification, RecordValueSpecification and ArrayValueSpecification are resolved) only contain

- NumericalValueSpecification
- TextValueSpecification

at the time when the creation of the manifest is finished.

⌋()

2.2 AP_TPS_TimingExtensions

[constr_4569]{DRAFT} **Restricted usage of Occurence Expression functions** ⌈The functions:

- *TIMEX_occurs*,
- *TIMEX_hasOccurred*,
- *TIMEX_timeSinceLastOccurrence*,
- *TIMEX_angleSinceLastOccurrence*,
- *TIMEX_modeActive*

shall only be used for an occurrence expression applied to a TDEventComplex.

⌋()

[constr_4570]{DRAFT} **Application rule for the occurrence expression in `TDEventComplex`** ⌈The occurrence expression shall be specified such that it describes an *event* rather than a state. As a consequence the occurrence expression shall ensure that a complex timing event *could* only occur at the occurrence time of one of the referenced `TimingDescriptionEvent`s.

⌋()

[constr_4571]{DRAFT} **Use references only as function operands** ⌈The references to model elements (e.g. the *timing event* reference targeting `TimingDescriptionEvent`) do have specific semantics. The usage of these references within the expression is *only* allowed as operand of the functions mentioned above.

⌋()

[constr_4572]{DRAFT} **Restricted usage of `AutosarOperationArgumentInstance` for Content Filter** ⌈If a content filter is defined for an atomic event then references to `AutosarOperationArgumentInstance`s are only allowed if the atomic event is of type `TDEventOperation`. Only if such an atomic event occurs, the value of the operation arguments can be evaluated. Thus, also the scope of the atomic event shall be the same as the `AutosarOperationArgumentInstance`, meaning that they shall point to the same `ClientServerOperation`. Finally, references to an `AutosarOperationArgumentInstance` with argument direction "out" are only allowed, if the atomic event of type `TDEventOperation` refers either to the point in time when the operation call response has been sent (TD-EVENT-OPERATION-TYPE=OPERATION-CALL-RESPONSE-SENT) or to the point in time when the operation call response has been received (TD-EVENT-OPERATION-TYPE=OPERATION-CALL-RESPONSE-RECEIVED).

⌋()

[constr_4573]{DRAFT} **Restricted usage of `AgeConstraint`** ⌈An `AgeConstraint` shall only be defined for events of type `TimingDescriptionEvent` associated with the receipt and reading of data.

⌋()

[constr_4574]{DRAFT} **Specifying minimum and maximum number of occurrences** ⌈The minimum and maximum number of occurrences shall be specified such that the following holds: $0 \leq \texttt{minNumberOfOccurrences} \leq \texttt{maxNumberOfOccurrences}$.

⌋()

[constr_4575]{DRAFT} **Specifying minimum inter-arrival time and pattern length** ⌈The minimum inter-arrival time and pattern length shall be specified such that the following holds: $0 < \texttt{minimumInterArrivalTime} \leq \texttt{patternLength}$.

⌋()

[constr_4576]{DRAFT} **Specifying pattern length, pattern jitter and patter period** ⌈The pattern length, pattern jitter and pattern period shall be specified such that the following holds: $\texttt{patternLength} + \texttt{patternJitter} < \texttt{patternPeriod}$.

⌋()

[constr_4579]{DRAFT} **SynchronizationTimingConstraint shall reference at least two events** ⌈In the case, that the SynchronizationTimingConstraint is imposed on events then at least two (2) timing description events shall be referenced.

⌋()

[constr_4580]{DRAFT} **SynchronizationTimingConstraint shall reference at least two event chains** ⌈In the case, that the SynchronizationTimingConstraint is imposed on event chains then at least two (2) timing description event chains shall be referenced.

⌋()

[constr_4581]{DRAFT} **Specifying stimulus and response in TimingDescriptionEventChain** ⌈The references between TimingDescriptionEventChain and TimingDescriptionEvent playing the role stimulus and response shall not reference the same TimingDescriptionEvent.

⌋()

[constr_4582]{DRAFT} **Specifying event chain segments** ⌈If a TimingDescriptionEventChain consists of further event chain segments then at least one sequence of event chain segments shall exist from the event chain's stimulus to the response.

⌋()

[constr_4583]{DRAFT} **Referencing no further event chain segments** ⌈If a TimingDescriptionEventChain is not subdivided in further event chain segments, then the reference playing the role of segment shall reference this TimingDescriptionEventChain. In other words, an event chain without any event chain segments shall reference itself.

⌋()

[constr_4584]{DRAFT} **Specifying stimulus event and response event of first and last event chain segment** ⌈The stimulus event of the first event chain segment and the response event of the last event chain segment shall reference the stimulus and response of the parent event chain the event chain segments directly belong to.

⌋()

[constr_4585]{DRAFT} **Specifying patternLength** ⌈The patternLength shall be specified such that the following holds: $0 \leq max(\texttt{offset}) \leq \texttt{patternLength}$.

⌋()

[constr_4586]{DRAFT} **Specifying attribute synchronizationConstraintType** ⌈The attribute synchronizationConstraintType shall be specified if the SynchronizationTimingConstraint is imposed on events.

⌋()

[constr_4587]{DRAFT} **Specifying attribute synchronizationConstraintType** ⌈The attribute synchronizationConstraintType shall be specified if the SynchronizationTimingConstraint is imposed on event chains.

⌋()

[constr_4588]{DRAFT} **SynchronizationTimingConstraint shall either reference events or event chains** ⌈The SynchronizationTimingConstraint shall either reference timing description events or timing description event chains, but not both at the same time.

⌋()

[constr_4589]{DRAFT} **Maximum value of the parameter minimumInterArrivalTime** ⌈The value of the parameter minimumInterArrivalTime shall be less than or equal the value of the parameter period.

⌋()

[constr_4590]{DRAFT} **Specifying patternLength, patternJitter and patternPeriod** ⌈The pattern length, pattern jitter and pattern period shall be specified such that the following holds: patternLength + patternJitter < patternPeriod.

⌋()

[constr_4591]{DRAFT} **Use only Numericals in TDEventOccurrenceExpression** ⌈The target data prototype of the instance references of variable and argument shall be Numerical.

⌋()

[constr_4592]{DRAFT} **Restricted usage of AutosarVariableInstance for Content Filter** ⌈If a content filter is defined for an atomic event then references to AutosarVariableInstances are only allowed if the atomic event is of type TDEventVariableDataPrototype. Only if such an atomic event occurs, the value of the variables can be evaluated. Thus, also the scope of the atomic event shall be the same as the AutosarVariableInstance, meaning that they shall point to the same VariableDataPrototype.

⌋()

[constr_6902] Existence of ExecutableTiming.executable ⌈For each ExecutableTiming, the reference to a Executable in the role executable shall exist **at the time when the Executable Timing Description is complete**.

⌋()

[constr_6903] Existence of `ServiceTiming.serviceInstance` ⌈For each `ServiceTiming`, the reference to a `AdaptivePlatformServiceInstance` in the role `serviceInstance` shall exist **`at the time when the Service Timing Description is complete`**.

⌋()

[constr_6904] Existence of `MachineTiming.machine` ⌈For each `MachineTiming`, the reference to a `Machine` in the role `machine` shall exist **`at the time when the Machine Timing Description is complete`**.

⌋()

A Mentioned Class Tables

Class	***AbstractImplementationDataType*** (abstract)			
Package	M2::AUTOSARTemplates::CommonStructure::ImplementationDataTypes			
Note	This meta-class represents an abstract base class for different flavors of ImplementationDataType.			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *AutosarDataType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Subclasses	*CppImplementationDataType*, ImplementationDataType			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.1: AbstractImplementationDataType

Class	***AbstractImplementationDataTypeElement*** (abstract)			
Package	M2::AUTOSARTemplates::CommonStructure::ImplementationDataTypes			
Note	This meta-class represents the ability to act as an abstract base class for specific derived meta-classes that support the modeling of ImplementationDataTypes for a particular language binding.			
Base	*ARObject*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	CppImplementationDataTypeElement, ImplementationDataTypeElement			
Aggregated by	*AtpClassifier*.atpFeature			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.2: AbstractImplementationDataTypeElement

Class	***AbstractRawDataStreamEthernetCredentials*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::RawDataStreamMapping			
Note	This meta-class serves as an abstract base class for the configuration of network credentials.			
Base	*ARObject*, *Describable*			
Subclasses	RawDataStreamEthernetTcpUdpCredentials, RawDataStreamEthernetUdpCredentials			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
ipV4Address	Ip4AddressString	0..1	attr	This attribute describes the IP V4 address of the remote server.
ipV6Address	Ip6AddressString	0..1	attr	This attribute describes the IP V6 address of the remote server.
udpPort	PositiveInteger	0..1	attr	This attribute represents the configuration of a UDP port number.

Table A.3: AbstractRawDataStreamEthernetCredentials

Class	***AbstractServiceInstance*** (abstract)
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::ServiceInstances
Note	Provided and Consumed Ethernet Service Instances that are available at the ApplicationEndpoint.
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*
Subclasses	ConsumedServiceInstance, *DdsCpServiceInstance*, ProvidedServiceInstance
Aggregated by	ServiceInstanceCollectionSet.serviceInstance

▽

△

Class	***AbstractServiceInstance*** (abstract)			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
capability Record	TagWithOptionalValue	*	aggr	A sequence of records to store arbitrary name/value pairs conveying additional information about the named service. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=capabilityRecord, capabilityRecord.variationPoint.shortLabel vh.latestBindingTime=postBuild
majorVersion	PositiveInteger	0..1	attr	Major Version of the ServiceInterface. Value can be set to a number that represents the Major Version of the service.
method Activation RoutingGroup	PduActivationRoutingGroup	0..1	aggr	The ServiceDiscovery module is able to activate and deactivate the PDU routing for ClientServerOperations (SOME/IP methods). **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=methodActivationRoutingGroup.shortName, methodActivationRoutingGroup.variationPoint.shortLabel vh.latestBindingTime=postBuild
routingGroup	SoAdRoutingGroup	*	ref	The ServiceDiscovery module is able to activate and deactivate the PDU routing from and to TCP/IP-sockets. **Tags:** atp.Status=obsolete

Table A.4: AbstractServiceInstance

Class	***AbstractSignalBasedToISignalTriggeringMapping*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SignalBasedCommunication			
Note	This meta-class is the common class for all SIgnalBased to ISignalTRiggering mappings. **Tags:** atp.Status=candidate			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	SignalBasedEventElementToISignalTriggeringMapping, SignalBasedFieldToISignalTriggeringMapping, SignalBasedFireAndForgetMethodToISignalTriggeringMapping, SignalBasedTriggerToISignalTriggeringMapping			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.5: AbstractSignalBasedToISignalTriggeringMapping

Class	**AdaptiveApplicationSwComponentType**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationStructure			
Note	This meta-class represents the ability to support the formal modeling of application software on the AUTOSAR adaptive platform. Consequently, it shall only be used on the AUTOSAR adaptive platform. **Tags:** atp.recommendedPackage=AdaptiveApplicationSwComponentTypes			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *SwComponentType*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***

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Class	**AdaptiveApplicationSwComponentType**			
internalBehavior	AdaptiveSwcInternal Behavior	0..1	aggr	This aggregation represents the internal behavior of the AdaptiveApplicationSwComponentType for the AUTOSAR adaptive platform. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=internalBehavior.shortName, internal Behavior.variationPoint.shortLabel vh.latestBindingTime=preCompileTime

Table A.6: AdaptiveApplicationSwComponentType

Class	**AdaptiveFirewallToPortPrototypeMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Firewall			
Note	This meta-class maps the AdaptiveFirewall moduleInstantiation to the RPortPrototype that is typed by a FirewallModeSwitchInterface. **Tags:** atp.Status=candidate atp.recommendedPackage=AdaptiveFirewallToPortPrototypeMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
firewall	AdaptiveFirewallModule Instantiation	0..1	ref	Reference to the Firewall module **Tags:** atp.Status=candidate
rPortPrototype	RPortPrototype	0..1	ref	Reference to RPortPrototype typed by a FirewallMode SwitchInterface **Tags:** atp.Status=candidate

Table A.7: AdaptiveFirewallToPortPrototypeMapping

Class	***AdaptivePlatformServiceInstance*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	This meta-class represents the ability to describe the existence and configuration of a service instance in an abstract way.			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Subclasses	*ProvidedApServiceInstance*, *RequiredApServiceInstance*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
e2eEvent ProtectionProps	End2EndEvent ProtectionProps	*	aggr	This aggregation allows to protect an event or a field notifier that is defined inside of the ServiceInterface that is referenced by the ServiceInstance in the role service Interface.
e2eMethod ProtectionProps	End2EndMethod ProtectionProps	*	aggr	This aggregation allows to protect a method or a field getter or a field setter that is defined inside of the Service Interface that is referenced by the ServiceInstance in the role serviceInterface
secureCom Config	ServiceInterface ElementSecureCom Config	*	aggr	Configuration settings to secure the communication of ServiceInterface elements.

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Class	***AdaptivePlatformServiceInstance*** (abstract)			
serviceInterface Deployment	ServiceInterface Deployment	0..1	ref	Reference to a ServiceInterfaceDeployment that identifies the ServiceInterface that is represented by the Service Instance.

Table A.8: AdaptivePlatformServiceInstance

Class	**AgeConstraint**			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingConstraint::AgeConstraint			
Note	Constrains the `scope` by a `minimum` and `maximum` time boundary.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *TimingConstraint*, *Traceable*			
Aggregated by	*TimingExtension*.timingGuarantee, *TimingExtension*.timingRequirement			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
maximum	MultidimensionalTime	0..1	aggr	The received event referenced by `scope` should not exceed this upper bound.
minimum	MultidimensionalTime	0..1	aggr	The received event referenced by `scope` should not precede this lower bound.
scope	TimingDescriptionEvent	0..1	ref	`TimingDescriptionEvent` to be constrained.

Table A.9: AgeConstraint

Class	**AliveSupervision**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	Defines an AliveSupervision for one checkpoint.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *PhmSupervision*, *Referrable*			
Aggregated by	GlobalSupervision.aliveSupervision			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
aliveReference Cycle	TimeValue	0..1	attr	Time period at which the Alive Supervision mechanism compares the amount of received Alive Indications for the SupervisionCheckpoint against the expectedAlive Indications.
checkpoint	SupervisionCheckpoint	0..1	ref	Reference to a checkpoint in the context of Alive Supervision.
expectedAlive Indications	PositiveInteger	0..1	attr	Defines the amount of expected Alive Indications of the SupervisionCheckpoint within the aliveReferenceCycle.
failedReference Cycles Tolerance	PositiveInteger	0..1	attr	This attribute defines the acceptable amount of alive ReferenceCycles with incorrect/failed AliveSupervision.
maxMargin	PositiveInteger	0..1	attr	Defines the amount of Alive Indications of the Supervision Checkpoint that are acceptable to be additional to the expectedAliveIndications within the aliveReferenceCycle.
minMargin	PositiveInteger	0..1	attr	Defines the amount of Alive Indications of the Supervision Checkpoint that are acceptable to be missing to the expectedAliveIndications within the aliveReferenceCycle.
terminating Checkpoint	SupervisionCheckpoint	0..1	ref	Reference to the SupervisionCheckpoint which is defined as the terminating checkpoint of this AliveSupervision.
terminating Checkpoint TimeoutUntil Termination	TimeValue	0..1	attr	Defines the time a process shall terminate after it has announced its start of termination by reporting terminatingCheckpoint.

Table A.10: AliveSupervision

Class	**Allocator**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CppImplementationDataType			
Note	This meta-class represents the ability to specify an optional custom C++ allocator for a C++ type which may dynamically grow beyond it's initial allocated size during it's lifetime. Any storage principles are defined in the implementation of the allocator itself, which should implement the ISO C++ std::allocator_ traits interface. **Tags:** atp.recommendedPackage=Allocators			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
headerFile	String	0..1	attr	Configuration of the Header File with the custom class declaration
namespace (ordered)	SymbolProps	*	aggr	This aggregation allows for the definition of a namespace of an Allocator.

Table A.11: Allocator

Class	**ApApplicationEndpoint**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::APApplicationEndpoint			
Note	An application endpoint is the endpoint on an Ecu in terms of application addressing (e.g. UDP or TCP Port).			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	EthernetCommunicationConnector.apApplicationEndpoint			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
priority	PositiveInteger	0..1	attr	This attribute defines the VLAN frame priority where values from 0 (best effort) to 7 (highest) are allowed.
tpConfiguration	TcpUdpConfig	0..1	aggr	Configuration of the used transport protocol.

Table A.12: ApApplicationEndpoint

Class	**ApApplicationError**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class represents the ability to formally specify the semantics of an application error on the AUTOSAR adaptive platform **Tags:** atp.recommendedPackage=ApplicationErrors			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
errorCode	Integer	0..1	attr	This attribute has the ability to specify the error code value within the enclosing AdaptivePlatformApplication Error.
errorDomain	ApApplicationError Domain	0..1	ref	This reference represents the error domain of the Ap ApplicationError.

Table A.13: ApApplicationError

Class	**ApApplicationErrorDomain**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class represents the ability to define a global error domain for an ApApplicationError. **Tags:** atp.recommendedPackage=ApplicationErrorDomains			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
namespace (ordered)	SymbolProps	*	aggr	This aggregation defines the namespace of the Ap ApplicationErrorDomain
value	PositiveUnlimitedInteger	0..1	attr	This attribute identifies the error category.

Table A.14: ApApplicationErrorDomain

Class	**ApApplicationErrorSet**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class acts as a reference target that represents an entire collection of APApplicationErrors. This takes the burden from ClientServerOperations that reference a larger number of ApApplication Errors. **Tags:** atp.recommendedPackage=ApplicationErrorSets			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
apApplication Error	ApApplicationError	*	ref	This reference represents the collection of ApApplication Error represented by the enclosing ApApplicationErrorSet

Table A.15: ApApplicationErrorSet

Class	**ApSomeipTransformationProps**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::SerializationProperties			
Note	SOME/IP serialization properties.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *TransformationProps*			
Aggregated by	TransformationPropsSet.transformationProps			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
alignment	PositiveInteger	0..1	attr	Defines the padding for alignment purposes that will be added by the SOME/IP transformer after the serialized data of the variable data length data element. The alignment shall be specified in Bits.
byteOrder	ByteOrderEnum	0..1	attr	Specifies the byte order of data in the serialized data stream.

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Class	**ApSomeipTransformationProps**			
implements LegacyString Serialization	Boolean	0..1	attr	This attribute indicates that Strings in the SOME/IP message shall NOT be serialized according to the SOME/IP specification for Strings. If this attribute is set to true, BOM and null-termination shall NOT be added in the serialization for Strings in the payload. If this attribute is set to false (or not set) BOM and null-termination shall be added in the serialization for Strings in the payload according to the SOME/IP specification for Strings. NOTE! This attribute is not future safe, and will be removed in an upcoming AUTOSAR release! **Tags:** atp.Status=obsolete
isDynamic LengthFieldSize	Boolean	0..1	attr	This attribute represents the ability to control the setting of the wire type for TLV encoding. If the attribute is set to true then wire type 5-7 shall be used. If the attribute does not exist or is set to false then wire type 4 shall be used.
sizeOfArray LengthField	PositiveInteger	0..1	attr	Configures the SOME/IP serialization for the referenced dataPrototype in case of a variable size Array (Vector), fixed-size Array or an Associative_Map. It describes the size of the length field (in Bytes) that will be put in front of the Array or Associative_Map in the SOME/IP message.
sizeOfString LengthField	PositiveInteger	0..1	attr	Configures the SOME/IP serialization for the referenced dataPrototype in case of a String. It describes the size of the length field (in Bytes) that will be put in front of the String in the SOME/IP message.
sizeOfStruct LengthField	PositiveInteger	0..1	attr	Configures the SOME/IP serialization for the referenced dataPrototype in case of an Struct. It describes the size of the length field (in Bytes) that will be put in front of the Struct in the SOME/IP message.
sizeOfUnion LengthField	PositiveInteger	0..1	attr	Configures the SOME/IP serialization for the referenced dataPrototype in case of a Union. It describes the size of the length field (in Bytes) that will be put in front of the Union in the SOME/IP message.
sizeOfUnion TypeSelector Field	PositiveInteger	0..1	attr	Configures the SOME/IP serialization for the referenced dataPrototype in case of a Union. It describes the size of the type selector field (in Bytes) that will be put in front of the Union in the SOME/IP message.
stringEncoding	BaseTypeEncoding String	0..1	attr	Configures the encoding for SOME/IP serialization for the referenced dataPrototype in case of an String.

Table A.16: ApSomeipTransformationProps

Class	**ApplicationArrayDataType**
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes
Note	An application data type which is an array, each element is of the same application data type. **Tags:** atp.recommendedPackage=ApplicationDataTypes
Base	*ARElement*, *ARObject*, *ApplicationCompositeDataType*, *ApplicationDataType*, *AtpBlueprint*, *Atp Blueprintable*, *AtpClassifier*, *AtpType*, *AutosarDataType*, *CollectableElement*, *Identifiable*, *Multilanguage Referrable*, *PackageableElement*, *Referrable*
Aggregated by	ARPackage.element

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Class	**ApplicationArrayDataType**			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
dynamicArray SizeProfile	String	0..1	attr	Specifies the profile which the array will follow if it is a variable size array.
element	ApplicationArray Element	0..1	aggr	This association implements the concept of an array element. That is, in some cases it is necessary to be able to identify single array elements, e.g. as input values for an interpolation routine.

Table A.17: ApplicationArrayDataType

Class	**ApplicationArrayElement**			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::DataPrototypes			
Note	Describes the properties of the elements of an application array data type.			
Base	*ARObject*, *ApplicationCompositeElementDataPrototype*, *AtpFeature*, *AtpPrototype*, *DataPrototype*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	ApplicationArrayDataType.element, *AtpClassifier*.atpFeature			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
arraySize Handling	ArraySizeHandling Enum	0..1	attr	The way how the size of the array is handled.
arraySize Semantics	ArraySizeSemantics Enum	0..1	attr	This attribute controls how the information about the array size shall be interpreted.
indexDataType	ApplicationPrimitive DataType	0..1	ref	This reference can be taken to assign a CompuMethod of category TEXTTABLE to the array. The texttable entries associate a textual value to an index number such that the element with that index number is represented by a symbolic name.
maxNumberOf Elements	PositiveInteger	0..1	attr	The maximum number of elements that the array can contain. **Stereotypes:** atpVariation **Tags:** vh.latestBindingTime=preCompileTime

Table A.18: ApplicationArrayElement

Class	**ApplicationAssocMapDataType**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationDataType			
Note	An application data type which is a map and consists of a key and a value **Tags:** atp.recommendedPackage=ApplicationDataTypes			
Base	*ARElement*, *ARObject*, *ApplicationCompositeDataType*, *ApplicationDataType*, *AtpBlueprint*, *Atp Blueprintable*, *AtpClassifier*, *AtpType*, *AutosarDataType*, *CollectableElement*, *Identifiable*, *Multilanguage Referrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
key	ApplicationAssocMap Element	0..1	aggr	Key element of the map that is used to uniquely identify the value of the map.
value	ApplicationAssocMap Element	0..1	aggr	Value element of the map that stores the content associated to a key.

Table A.19: ApplicationAssocMapDataType

Class	**ApplicationAssocMapElement**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationDataType			
Note	Describes the properties of the elements of an application map data type.			
Base	*ARObject*, *ApplicationCompositeElementDataPrototype*, *AtpFeature*, *AtpPrototype*, *DataPrototype*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	ApplicationAssocMapDataType.key, ApplicationAssocMapDataType.value, *AtpClassifier*.atpFeature			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.20: ApplicationAssocMapElement

Class	**ApplicationAssocMapElementValueSpecification**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationDataType			
Note	This meta-class represents the ability to define the initialization of the elements of an ApplicationAssoc MapDataType.			
Base	*ARObject*			
Aggregated by	ApplicationAssocMapValueSpecification.mapElementTuple			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
key	ValueSpecification	0..1	aggr	This aggregation represents the initialization of the key part of an AssociativeElementValueSpecification.
value	ValueSpecification	0..1	aggr	This aggregation represents the initialization of the value part of an AssociativeElementValueSpecification.

Table A.21: ApplicationAssocMapElementValueSpecification

Class	**ApplicationAssocMapValueSpecification**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationDataType			
Note	This meta-class represents the ability to define the initialization of an ApplicationAssocMapDataType.			
Base	*ARObject*, *CompositeValueSpecification*, *ValueSpecification*			
Aggregated by	ApplicationAssocMapElementValueSpecification.key, ApplicationAssocMapElementValueSpecification. value, ArrayValueSpecification.element, CalibrationParameterValue.applInitValue, CalibrationParameter Value.implInitValue, CompositeRuleBasedValueSpecification.argument, ConstantSpecification.value Spec, CryptoServiceKey.developmentValue, DiagnosticEnvDataCondition.compareValue, DiagnosticEnv DataElementCondition.compareValue, FieldSenderComSpec.initValue, ISignal.initValue, ISignal.timeout SubstitutionValue, NonqueuedReceiverComSpec.initValue, NonqueuedReceiverComSpec.timeout SubstitutionValue, NonqueuedSenderComSpec.initValue, NvProvideComSpec.ramBlockInitValue, Nv ProvideComSpec.romBlockInitValue, NvRequireComSpec.initValue, ParameterDataPrototype.initValue, ParameterProvideComSpec.initValue, ParameterRequireComSpec.initValue, PersistencyDataRequired ComSpec.initValue, PersistencyKeyValuePair.initValue, PortDefinedArgumentValue.value, PortPrototype BlueprintInitValue.value, RecordValueSpecification.field, SomeipEventDeployment.eventReception DefaultValue, *StateManagementCompareCondition*.compareValue, SwDataDefProps.invalidValue, VariableDataPrototype.initValue			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
mapElement Tuple (ordered)	ApplicationAssocMap ElementValue Specification	*	aggr	This aggregation represents the initial values for the elements of the ApplicationAssocMapValueSpecification.

Table A.22: ApplicationAssocMapValueSpecification

Class	***ApplicationCompositeDataType*** (abstract)			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes			
Note	Abstract base class for all application data types composed of other data types.			
Base	*ARElement*, *ARObject*, *ApplicationDataType*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *AutosarDataType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Subclasses	ApplicationArrayDataType, ApplicationAssocMapDataType, ApplicationRecordDataType			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.23: ApplicationCompositeDataType

Class	***ApplicationDataType*** (abstract)			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes			
Note	ApplicationDataType defines a data type from the application point of view. Especially it should be used whenever something "physical" is at stake. An ApplicationDataType represents a set of values as seen in the application model, such as measurement units. It does not consider implementation details such as bit-size, endianess, etc. It should be possible to model the application level aspects of a VFB system by using ApplicationData Types only.			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *AutosarDataType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Subclasses	*ApplicationCompositeDataType*, ApplicationPrimitiveDataType			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.24: ApplicationDataType

Class	**ApplicationPrimitiveDataType**			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes			
Note	A primitive data type defines a set of allowed values. **Tags:** atp.recommendedPackage=ApplicationDataTypes			
Base	*ARElement*, *ARObject*, *ApplicationDataType*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *AutosarDataType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.25: ApplicationPrimitiveDataType

Class	**ApplicationRecordDataType**
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes
Note	An application data type which can be decomposed into prototypes of other application data types. **Tags:** atp.recommendedPackage=ApplicationDataTypes

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Class	**ApplicationRecordDataType**			
Base	*ARElement*, *ARObject*, *ApplicationCompositeDataType*, *ApplicationDataType*, *AtpBlueprint*, *Atp Blueprintable*, *AtpClassifier*, *AtpType*, *AutosarDataType*, *CollectableElement*, *Identifiable*, *Multilanguage Referrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
element (ordered)	ApplicationRecord Element	*	aggr	Specifies an element of a record. The aggregation of ApplicationRecordElement is subject to variability with the purpose to support the conditional existence of elements inside a ApplicationrecordData Type. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=element.shortName, element.variation Point.shortLabel vh.latestBindingTime=preCompileTime

Table A.26: ApplicationRecordDataType

Class	**ApplicationRecordElement**			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::DataPrototypes			
Note	Describes the properties of one particular element of an application record data type.			
Base	*ARObject*, *ApplicationCompositeElementDataPrototype*, *AtpFeature*, *AtpPrototype*, *DataPrototype*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	ApplicationRecordDataType.element, *AtpClassifier*.atpFeature			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
isOptional	Boolean	0..1	attr	This attribute represents the ability to declare the enclosing ApplicationRecordElement as optional. This means the that, at runtime, the ApplicationRecord Element may or may not have a valid value and shall therefore be ignored. The underlying runtime software provides means to set the ApplicationRecordElement as not valid at the sending end of a communication and determine its validity at the receiving end.

Table A.27: ApplicationRecordElement

Class	**ApplicationValueSpecification**
Package	M2::AUTOSARTemplates::CommonStructure::Constants
Note	This meta-class represents values for DataPrototypes typed by ApplicationDataTypes (this includes in particular compound primitives). For further details refer to ASAM CDF 2.0. This meta-class corresponds to some extent with SW-INSTANCE in ASAM CDF 2.0.
Base	*ARObject*, *CompositeRuleBasedValueArgument*, *ValueSpecification*

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Class	**ApplicationValueSpecification**			
Aggregated by	ApplicationAssocMapElementValueSpecification.key, ApplicationAssocMapElementValueSpecification.value, ArrayValueSpecification.element, CalibrationParameterValue.applInitValue, CalibrationParameterValue.implInitValue, CompositeRuleBasedValueSpecification.compoundPrimitiveArgument, ConstantSpecification.valueSpec, CryptoServiceKey.developmentValue, DiagnosticEnvDataCondition.compareValue, DiagnosticEnvDataElementCondition.compareValue, FieldSenderComSpec.initValue, ISignal.initValue, ISignal.timeoutSubstitutionValue, NonqueuedReceiverComSpec.initValue, NonqueuedReceiverComSpec.timeoutSubstitutionValue, NonqueuedSenderComSpec.initValue, NvProvideComSpec.ramBlockInitValue, NvProvideComSpec.romBlockInitValue, NvRequireComSpec.initValue, ParameterDataPrototype.initValue, ParameterProvideComSpec.initValue, ParameterRequireComSpec.initValue, PersistencyDataRequiredComSpec.initValue, PersistencyKeyValuePair.initValue, PortDefinedArgumentValue.value, PortPrototypeBlueprintInitValue.value, RecordValueSpecification.field, SomeipEventDeployment.eventReceptionDefaultValue, *StateManagementCompareCondition*.compareValue, SwDataDefProps.invalidValue, VariableDataPrototype.initValue			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
category	Identifier	0..1	attr	Specifies to which category of ApplicationDataType this ApplicationValueSpecification can be applied (e.g. as an initial value), thus imposing constraints on the structure and semantics of the contained values, see [constr_1006] and [constr_2051].
swAxisCont (ordered)	SwAxisCont	*	aggr	This represents the axis values of a Compound Primitive Data Type (curve or map). The first swAxisCont describes the x-axis, the second swAxisCont describes the y-axis, the third swAxisCont describes the z-axis. In addition to this, the axis can be denoted in swAxisIndex.
swValueCont	SwValueCont	0..1	aggr	This represents the values of a Compound Primitive Data Type.

Table A.28: ApplicationValueSpecification

Class	**ArgumentDataPrototype**			
Package	M2::AUTOSARTemplates::SWComponentTemplate::PortInterface			
Note	An argument of an operation, much like a data element, but also carries direction information and is owned by a particular ClientServerOperation.			
Base	*ARObject*, *AtpFeature*, *AtpPrototype*, *AutosarDataPrototype*, *DataPrototype*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, ClientServerOperation.argument			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
direction	ArgumentDirectionEnum	0..1	attr	This attribute specifies the direction of the argument prototype.
serverArgumentImplPolicy	ServerArgumentImplPolicyEnum	0..1	attr	This defines how the argument type of the servers RunnableEntity is implemented. If the attribute is not defined this has the same semantics as if the attribute is set to the value useArgumentType for primitive arguments and structures.

Table A.29: ArgumentDataPrototype

Enumeration	**ArgumentDirectionEnum**
Package	M2::AUTOSARTemplates::GenericStructure::GeneralTemplateClasses::PrimitiveTypes
Note	Use cases: • Arguments in ClientServerOperation can have different directions that need to be formally indicated because they have an impact on how the function signature looks like eventually. • Arguments in BswModuleEntry already determine a function signature, but the direction is used to specify the semantics, especially of pointer arguments.
Aggregated by	ArgumentDataPrototype.direction, SwServiceArg.direction
Literal	*Description*
in	The argument value is passed to the callee. **Tags:** atp.EnumerationLiteralIndex=0
inout	The argument value is passed to the callee but also passed back from the callee to the caller. **Tags:** atp.EnumerationLiteralIndex=1
out	The argument value is passed from the callee to the caller. **Tags:** atp.EnumerationLiteralIndex=2

Table A.30: ArgumentDirectionEnum

Enumeration	**ArraySizeSemanticsEnum**
Package	M2::AUTOSARTemplates::CommonStructure::ImplementationDataTypes
Note	This type controls how the information about the number of elements in an ApplicationArrayDataType is to be interpreted.
Aggregated by	ApplicationArrayElement.arraySizeSemantics, DiagnosticDataElement.arraySizeSemantics, ImplementationDataTypeElement.arraySizeSemantics, SwTextProps.arraySizeSemantics
Literal	*Description*
fixedSize	This means that the ApplicationArrayDataType will always have a fixed number of elements. **Tags:** atp.EnumerationLiteralIndex=0
variableSize	This implies that the actual number of elements in the ApplicationArrayDataType might vary at run-time. The value of arraySize represents the maximum number of elements in the array. **Tags:** atp.EnumerationLiteralIndex=1

Table A.31: ArraySizeSemanticsEnum

Class	**ArrayValueSpecification**			
Package	M2::AUTOSARTemplates::CommonStructure::Constants			
Note	Specifies the values for an array.			
Base	*ARObject*, *CompositeValueSpecification*, *ValueSpecification*			
Aggregated by	ApplicationAssocMapElementValueSpecification.key, ApplicationAssocMapElementValueSpecification.value, ArrayValueSpecification.element, CalibrationParameterValue.applInitValue, CalibrationParameterValue.implInitValue, CompositeRuleBasedValueSpecification.argument, ConstantSpecification.valueSpec, CryptoServiceKey.developmentValue, DiagnosticEnvDataCondition.compareValue, DiagnosticEnvDataElementCondition.compareValue, FieldSenderComSpec.initValue, ISignal.initValue, ISignal.timeoutSubstitutionValue, NonqueuedReceiverComSpec.initValue, NonqueuedReceiverComSpec.timeoutSubstitutionValue, NonqueuedSenderComSpec.initValue, NvProvideComSpec.ramBlockInitValue, NvProvideComSpec.romBlockInitValue, NvRequireComSpec.initValue, ParameterDataPrototype.initValue, ParameterProvideComSpec.initValue, ParameterRequireComSpec.initValue, PersistencyDataRequiredComSpec.initValue, PersistencyKeyValuePair.initValue, PortDefinedArgumentValue.value, PortPrototypeBlueprintInitValue.value, RecordValueSpecification.field, SomeipEventDeployment.eventReceptionDefaultValue, *StateManagementCompareCondition*.compareValue, SwDataDefProps.invalidValue, VariableDataPrototype.initValue			
Attribute	*Type*	*Mult.*	*Kind*	*Note*

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Class	**ArrayValueSpecification**			
element (ordered)	ValueSpecification	*	aggr	The value for a single array element. All Value Specifications aggregated by ArrayValueSpecification shall have the same structure. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=element, element.variationPoint.shortLabel vh.latestBindingTime=preCompileTime
intendedPartial Initialization Count	PositiveInteger	0..1	attr	This attribute shall only have a meaning for dynamic arrays and shall be taken as a sanity check: the number filled in the attribute shall be identical to the number of ArrayValueSpecification.element. If the attribute does not exist it means that no partial initialization is intended.

Table A.32: ArrayValueSpecification

Class	**ArtifactLocator**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::General			
Note	This meta-class has the ability to define the location of an artifact that is represented by a model element, e.g. Executable.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	SoftwareCluster.artifactLocator			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
represented ModelElement	Identifiable	0..1	ref	This reference identifies the model element that is represented by the artifact.
uri	String	0..1	attr	This attribute describes the location of the artifact.

Table A.33: ArtifactLocator

Class	***AutosarDataType*** (abstract)			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes			
Note	Abstract base class for user defined AUTOSAR data types for software.			
Base	*ARElement*, *ARObject*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Subclasses	*AbstractImplementationDataType*, *ApplicationDataType*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
swDataDef Props	SwDataDefProps	0..1	aggr	The properties of this AutosarDataType. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=swDataDefProps

Table A.34: AutosarDataType

Class	**AutosarOperationArgumentInstance**			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription::TimingDescriptionEvents::TDEventOccurrenceExpression			
Note	This class represents a reference to an argument instance. This way it is possible to reference an argument instance in the occurrence expression formula. The argument instance can target to one of the following arguments: • a whole argument used in an operation of a PortPrototype with ClientServerInterface • an element inside of a composite argument used in an operation of a PortPrototype with ClientServerInterface			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	TDEventOccurrenceExpression.argument, TimingExtensionResource.timingArgument			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
operationArgumentInstance	DataPrototype	0..1	iref	This is the reference to the instanceRef definition. **InstanceRef implemented by:** OperationArgumentInComponentInstanceRef

Table A.35: AutosarOperationArgumentInstance

Class	**AutosarVariableInstance**			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription::TimingDescriptionEvents::TDEventOccurrenceExpression			
Note	This class represents a reference to a variable instance within AUTOSAR. This way it is possible to reference a variable instance in the occurrence expression formula. The variable instance can target to one of the following variables: • a variable provided via a PortPrototype as whole • an element inside of a composite variable provided via a PortPrototype			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	TDEventOccurrenceExpression.variable, TimingExtensionResource.timingVariable			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
variableInstance	DataPrototype	0..1	iref	This is the reference to the instanceRef definition. **InstanceRef implemented by:** VariableInComponentInstanceRef

Table A.36: AutosarVariableInstance

Class	***BaseType*** (abstract)			
Package	M2::MSR::AsamHdo::BaseTypes			
Note	This abstract meta-class represents the ability to specify a platform dependent base type.			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Subclasses	SwBaseType			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
baseTypeDefinition	BaseTypeDefinition	1	aggr	This is the actual definition of the base type. **Tags:** xml.roleElement=false xml.roleWrapperElement=false xml.sequenceOffset=20 xml.typeElement=false xml.typeWrapperElement=false

Table A.37: BaseType

Class	**BaseTypeDirectDefinition**			
Package	M2::MSR::AsamHdo::BaseTypes			
Note	This BaseType is defined directly (as opposite to a derived BaseType)			
Base	*ARObject*, *BaseTypeDefinition*			
Aggregated by	*BaseType*.baseTypeDefinition			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
baseType Encoding	BaseTypeEncoding String	0..1	attr	This specifies, how an object of the current BaseType is encoded, e.g. in an ECU within a message sequence. **Tags:** xml.sequenceOffset=90
baseTypeSize	PositiveInteger	0..1	attr	Describes the length of the data type specified in the container in bits. **Tags:** xml.sequenceOffset=70
byteOrder	ByteOrderEnum	0..1	attr	This attribute specifies the byte order of the base type. **Tags:** xml.sequenceOffset=110
memAlignment	PositiveInteger	0..1	attr	This attribute describes the alignment of the memory object in bits. E.g. "8" specifies, that the object in question is aligned to a byte while "32" specifies that it is aligned four byte. If the value is set to "0" the meaning shall be interpreted as "unspecified". **Tags:** xml.sequenceOffset=100
native Declaration	NativeDeclarationString	0..1	attr	This attribute describes the declaration of such a base type in the native programming language, primarily in the Programming language C. This can then be used by a code generator to include the necessary declarations into a header file. For example BaseType with shortName: "MyUnsignedInt" native Declaration: "unsigned short" Results in typedef unsigned short MyUnsignedInt; If the attribute is not defined the referring Implementation DataTypes will not be generated as a typedef by RTE. If a nativeDeclaration type is given it shall fulfill the characteristic given by basetypeEncoding and baseType Size. This is required to ensure the consistent handling and interpretation by software components, RTE, COM and MCM systems. **Tags:** xml.sequenceOffset=120

Table A.38: BaseTypeDirectDefinition

Class	**CanXIProps**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SystemDesign			
Note	This meta-class is used to configure Machine specific CAN XL attributes. **Tags:** atp.recommendedPackage=CanXIProps			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
canBaudrate	PositiveInteger	0..1	attr	Specifies the data segment CAN 2.0 baud rate of the CAN XL controller in bits/s.

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Class	**CanXlProps**			
canConfig	CanController Configuration	0..1	aggr	CAN 2.0 configuration parameters for the CAN XL controller.
canFdBaudrate	PositiveInteger	0..1	attr	Specifies the data segment CAN FD baud rate of the CAN XL controller in bits/s.
canFdConfig	CanControllerFd Configuration	0..1	aggr	CAN FD configuration parameters for the CAN XL controller.
canXlBaudrate	PositiveInteger	0..1	attr	Specifies the data segment CAN XL baud rate of the CAN XL controller in bits/s.
canXlConfig	CanControllerXl Configuration	0..1	aggr	CAN XL configuration parameters for the CAN XL controller.
canXlConfig Reqs	CanControllerXl Configuration Requirements	0..1	aggr	CAN XL configuration parameter requirements for the CAN XL controller.

Table A.39: CanXlProps

Class	**CheckpointTransition**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	Defines one transition between two checkpoints.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	GlobalSupervision.transition			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
source	SupervisionCheckpoint	0..1	ref	Reference to the source checkpoint for this transition.
target	SupervisionCheckpoint	0..1	ref	Reference to the target checkpoint for this transition.

Table A.40: CheckpointTransition

Class	**ClientServerOperation**			
Package	M2::AUTOSARTemplates::SWComponentTemplate::PortInterface			
Note	An operation declared within the scope of a client/server interface.			
Base	*ARObject*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	ApplicationInterface.command, *AtpClassifier*.atpFeature, ClientServerInterface.operation, DiagnosticDataElementInterface.read, DiagnosticDataIdentifierInterface.read, DiagnosticDataIdentifierInterface.write, DiagnosticRoutineInterface.requestResult, DiagnosticRoutineInterface.start, DiagnosticRoutineInterface.stop, PhmRecoveryActionInterface.recovery, ServiceInterface.method			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
argument (ordered)	ArgumentDataPrototype	*	aggr	An argument of this ClientServerOperation **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=argument.shortName, argument.variationPoint.shortLabel vh.latestBindingTime=blueprintDerivationTime
fireAndForget	Boolean	0..1	attr	This attribute defines whether this method is a fire&forget method (true) or not (false).
possibleApError	ApApplicationError	*	ref	This reference identifies AdaptivePlatformApplicationErrors as a possible error raised by the enclosing ClientServerOperation.

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Class	**ClientServerOperation**			
possibleApErrorSet	ApApplicationErrorSet	*	ref	This reference represents the ability to refer to an entire group of ApApplicationErrors as one model element instead of having to refer to all the represented Ap ApplicationErrors separately.

Table A.41: ClientServerOperation

Class	**ComEventGrant**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IdentityAccessManagement			
Note	This meta-class represents the ability to grant access to a ServiceInterface.event. **Tags:** atp.Status=candidate atp.recommendedPackage=Grants			
Base	*ARElement*, *ARObject*, *CollectableElement*, *ComGrant*, *Grant*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
design	ComEventGrantDesign	0..1	ref	This reference identifies the ComEventGrantDesign that the enclosing ComEventGrant was created from. **Stereotypes:** atpUriDef **Tags:** atp.Status=candidate
service Deployment	ServiceEvent Deployment	0..1	ref	This reference identifies the applicable deployment within the context of an AdaptivePlatformServiceInstance for which the grant applies. **Tags:** atp.Status=candidate

Table A.42: ComEventGrant

Class	**ComEventGrantDesign**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::GrantDesign::ComGrant			
Note	This meta-class represents the ability to define a Grant for a ServiceInterface.event. **Tags:** atp.Status=candidate atp.recommendedPackage=GrantDesigns			
Base	*ARElement*, *ARObject*, *CollectableElement*, *ComGrantDesign*, *GrantDesign*, *Identifiable*, *Multilanguage Referrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
event	VariableDataPrototype	0..1	iref	This reference represents the affected event. **Tags:** atp.Status=candidate **InstanceRef implemented by:** EventInExecutable InstanceRef

Table A.43: ComEventGrantDesign

Class	**ComFieldGrant**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IdentityAccessManagement			
Note	This meta-class represents the ability to grant access to a ServiceInterface.field. **Tags:** atp.Status=candidate atp.recommendedPackage=Grants			
Base	*ARElement*, *ARObject*, *CollectableElement*, *ComGrant*, *Grant*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
design	ComFieldGrantDesign	0..1	ref	This reference identifies the ComFieldGrantDesign that the enclosing ComFieldGrant was created from. **Stereotypes:** atpUriDef **Tags:** atp.Status=candidate
role	FieldAccessEnum	0..1	attr	This attribute provides the ability to further specify the access to the ServiceInterface.field. **Tags:** atp.Status=candidate
service Deployment	ServiceField Deployment	0..1	ref	This reference identifies the applicable deployment within the context of an AdaptivePlatformServiceInstance for which the grant applies. **Tags:** atp.Status=candidate

Table A.44: ComFieldGrant

Class	**ComFieldGrantDesign**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::GrantDesign::ComGrant			
Note	This meta-class represents the ability to define a Grant for a ServiceInterface.field. **Tags:** atp.Status=candidate atp.recommendedPackage=GrantDesigns			
Base	*ARElement*, *ARObject*, *CollectableElement*, *ComGrantDesign*, *GrantDesign*, *Identifiable*, *Multilanguage Referrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
field	Field	0..1	iref	Reference to the affected Field in the context of an Executable. **Tags:** atp.Status=candidate **InstanceRef implemented by:** FieldInExecutable InstanceRef
role	FieldAccessEnum	0..1	attr	This attribute provides the ability to further specify the access to the ServiceInterface.field from a design perspective. **Tags:** atp.Status=candidate

Table A.45: ComFieldGrantDesign

Class	***ComGrant*** (abstract)
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IdentityAccessManagement
Note	This meta-class serves as the abstract base class for defining specific ComGrants **Tags:** atp.Status=candidate

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Class	***ComGrant*** (abstract)			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Grant*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Subclasses	ComEventGrant, ComFieldGrant, ComMethodGrant, ComTriggerGrant			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
remoteSubject	AbstractIamRemote Subject	*	ref	This optional reference defines the remoteSubject that is allowed to access the defined Object via the Grant. **Tags:** atp.Status=candidate
serviceInstance	AdaptivePlatform ServiceInstance	0..1	ref	This reference identifies the applicable AdaptivePlatform ServiceInstance for which the grant applies. **Tags:** atp.Status=candidate

Table A.46: ComGrant

Class	***ComGrantDesign*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::GrantDesign::ComGrant			
Note	This meta-class serves as an abstract base class for the description of com grants on design level. **Tags:** atp.Status=candidate			
Base	*ARElement*, *ARObject*, *CollectableElement*, *GrantDesign*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Subclasses	ComEventGrantDesign, ComFieldGrantDesign, ComMethodGrantDesign, ComTriggerGrantDesign			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
remoteSubject	AbstractIamRemote Subject	*	ref	This optional reference defines the remoteSubject that is allowed to access the defined Object via the Grant. **Tags:** atp.Status=candidate

Table A.47: ComGrantDesign

Class	**ComMethodGrant**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IdentityAccessManagement			
Note	This meta-class represents the ability to grant access to a ServiceInterface.method. **Tags:** atp.Status=candidate atp.recommendedPackage=Grants			
Base	*ARElement*, *ARObject*, *CollectableElement*, *ComGrant*, *Grant*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
design	ComMethodGrant Design	0..1	ref	This reference identifies the ComMethodGrantDesign that the enclosing ComMethodGrant was created from. **Stereotypes:** atpUriDef **Tags:** atp.Status=candidate
service Deployment	ServiceMethod Deployment	0..1	ref	This reference identifies the applicable deployment within the context of an AdaptivePlatformServiceInstance for which the grant applies. **Tags:** atp.Status=candidate

Table A.48: ComMethodGrant

Class	**ComMethodGrantDesign**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::GrantDesign::ComGrant			
Note	This meta-class represents the ability to define a Grant for a ServiceInterface.method. **Tags:** atp.Status=candidate atp.recommendedPackage=GrantDesigns			
Base	*ARElement*, *ARObject*, *CollectableElement*, *ComGrantDesign*, *GrantDesign*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
method	ClientServerOperation	0..1	iref	This reference identifies the corresponding method. **Tags:** atp.Status=candidate **InstanceRef implemented by:** RequiredMethodIn ExecutableInstanceRef

Table A.49: ComMethodGrantDesign

Class	**ComOfferServiceGrant**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IdentityAccessManagement			
Note	This meta-class represents the ability to grant the offering of a service. **Tags:** atp.Status=candidate atp.recommendedPackage=Grants			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Grant*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
design	ComOfferServiceGrant Design	0..1	ref	This reference identifies the ComOfferServiceGrant Design that the enclosing ComOfferServiceGrant was created from. **Stereotypes:** atpUriDef **Tags:** atp.Status=candidate
serviceInstance	AdaptivePlatform ServiceInstance	0..1	ref	This reference identifies the AdaptivePlatformService Instances for which the grant applies. **Tags:** atp.Status=candidate

Table A.50: ComOfferServiceGrant

Class	**ComOfferServiceGrantDesign**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::GrantDesign::ComGrant			
Note	This meta-class represents the ability to define a Grant for offering a service. **Tags:** atp.Status=candidate atp.recommendedPackage=GrantDesigns			
Base	*ARElement*, *ARObject*, *CollectableElement*, *GrantDesign*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***

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Class	**ComOfferServiceGrantDesign**			
providedService Port	PPortPrototype	0..1	iref	This instanceRef identifies the PPortPrototype on which the service shall be offered. **Tags:** atp.Status=candidate **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef

Table A.51: ComOfferServiceGrantDesign

Class	**ComTriggerGrant**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IdentityAccessManagement			
Note	This meta-class represents the ability to grant access to a ServiceInterface.trigger **Tags:** atp.Status=candidate atp.recommendedPackage=Grants			
Base	*ARElement*, *ARObject*, *CollectableElement*, *ComGrant*, *Grant*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
design	ComTriggerGrant Design	0..1	ref	This reference identifies the ComTriggerGrantDesign that the enclosing ComTriggerGrant was created from **Stereotypes:** atpUriDef **Tags:** atp.Status=candidate
service Deployment	ServiceEvent Deployment	0..1	ref	This reference identifies the applicable deployment within the context of an AdaptivePlatformServiceInstance for which the grant applies. **Tags:** atp.Status=candidate

Table A.52: ComTriggerGrant

Class	**ComTriggerGrantDesign**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::GrantDesign::ComGrant			
Note	This meta-class represents the ability to define a Grant for a ServiceInterface.trigger. **Tags:** atp.Status=candidate atp.recommendedPackage=GrantDesigns			
Base	*ARElement*, *ARObject*, *CollectableElement*, *ComGrantDesign*, *GrantDesign*, *Identifiable*, *Multilanguage Referrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
trigger	Trigger	0..1	iref	This reference represents the affected trigger. **Tags:** atp.Status=candidate **InstanceRef implemented by:** TriggerInExecutable InstanceRef

Table A.53: ComTriggerGrantDesign

Class	***CommConnectorPort*** (abstract)			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreTopology			
Note	The Ecu communication relationship defines which signals, Pdus and frames are actually received and transmitted by this ECU. For each signal, Pdu or Frame that is transmitted or received and used by the Ecu an association between an ISignalPort, IPduPort or FramePort with the corresponding Triggering shall be created. An ISignalPort shall be created only if the corresponding signal is handled by COM (RTE or Signal Gateway). If a Pdu Gateway ECU only routes the Pdu without being interested in the content only a FramePort and an IPduPort needs to be created.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	FramePort, IPduPort, ISignalPort			
Aggregated by	*CommunicationConnector*.ecuCommPortInstance			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
communication Direction	Communication DirectionType	0..1	attr	Communication Direction of the Connector Port (input or output Port).

Table A.54: CommConnectorPort

Class	<<atpVariation>> ***CommunicationCluster*** (abstract)			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreTopology			
Note	The CommunicationCluster is the main element to describe the topological connection of communicating ECUs. A cluster describes the ensemble of ECUs, which are linked by a communication medium of arbitrary topology (bus, star, ring, ...). The nodes within the cluster share the same communication protocol, which may be event-triggered, time-triggered or a combination of both. A CommunicationCluster aggregates one or more physical channels. **Tags:** vh.latestBindingTime=postBuild			
Base	*ARElement*, *ARObject*, *CollectableElement*, *FibexElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Subclasses	*AbstractCanCluster*, EthernetCluster, FlexrayCluster, LinCluster, UserDefinedCluster			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
baudrate	PositiveUnlimitedInteger	0..1	attr	Channels speed in bits/s.
physical Channel	PhysicalChannel	*	aggr	This relationship defines which channel element belongs to which cluster. A channel shall be assigned to exactly one cluster, whereas a cluster may have one or more channels. Note: This atpSplitable property has no atp.Splitkey due to atpVariation (PropertySetPattern). **Stereotypes:** atpSplitable; atpVariation **Tags:** vh.latestBindingTime=systemDesignTime
protocolName	String	0..1	attr	The name of the protocol used.
protocolVersion	String	0..1	attr	The version of the protocol used.

Table A.55: CommunicationCluster

Class	***CommunicationConnector*** (abstract)			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreTopology			
Note	The connection between the referencing ECU and the referenced channel via the referenced controller. Connectors are used to describe the bus interfaces of the ECUs and to specify the sending/receiving behavior. Each CommunicationConnector has a reference to exactly one communicationController. Note: Several CommunicationConnectors can be assigned to one PhysicalChannel in the scope of one ECU Instance.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	*AbstractCanCommunicationConnector*, EthernetCommunicationConnector, FlexrayCommunication Connector, UserDefinedCommunicationConnector			
Aggregated by	EcuInstance.connector, MachineDesign.communicationConnector			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
createEcu WakeupSource	Boolean	0..1	attr	If this parameter is available and set to true then a channel wakeup source shall be created for the Physical Channel referencing this CommunicationConnector.
pncFilterArray Mask (ordered)	PositiveInteger	*	attr	Bit mask for NM-Pdu Payload used to configure the NM filter mask for the Network Management.

Table A.56: CommunicationConnector

Enumeration	**CommunicationDirectionType**
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication
Note	Describes the communication direction.
Aggregated by	*CommConnectorPort*.communicationDirection, *IEEE1722TpConnection*.communicationDirection, IP SecRule.direction, ISignalIPduGroup.communicationDirection
Literal	***Description***
in	Reception (Input) **Tags:** atp.EnumerationLiteralIndex=0
out	Transmission (Output) **Tags:** atp.EnumerationLiteralIndex=1

Table A.57: CommunicationDirectionType

Class	**CompositeRuleBasedValueSpecification**			
Package	M2::AUTOSARTemplates::CommonStructure::Constants			
Note	This meta-class represents rule-based values for DataPrototypes typed by composite AutosarDataTypes.			
Base	*ARObject*, *AbstractRuleBasedValueSpecification*, *ValueSpecification*			
Aggregated by	ApplicationAssocMapElementValueSpecification.key, ApplicationAssocMapElementValueSpecification. value, ArrayValueSpecification.element, CalibrationParameterValue.applInitValue, CalibrationParameter Value.implInitValue, ConstantSpecification.valueSpec, CryptoServiceKey.developmentValue, Diagnostic EnvDataCondition.compareValue, DiagnosticEnvDataElementCondition.compareValue, FieldSenderCom Spec.initValue, ISignal.initValue, ISignal.timeoutSubstitutionValue, NonqueuedReceiverComSpec.init Value, NonqueuedReceiverComSpec.timeoutSubstitutionValue, NonqueuedSenderComSpec.initValue, NvProvideComSpec.ramBlockInitValue, NvProvideComSpec.romBlockInitValue, NvRequireComSpec.init Value, ParameterDataPrototype.initValue, ParameterProvideComSpec.initValue, ParameterRequireCom Spec.initValue, PersistencyDataRequiredComSpec.initValue, PersistencyKeyValuePair.initValue, Port DefinedArgumentValue.value, PortPrototypeBlueprintInitValue.value, RecordValueSpecification.field, SomeipEventDeployment.eventReceptionDefaultValue, *StateManagementCompareCondition*.compare Value, SwDataDefProps.invalidValue, VariableDataPrototype.initValue			
Attribute	***Type***	***Mult.***	***Kind***	***Note***

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Class	**CompositeRuleBasedValueSpecification**			
argument (ordered)	CompositeValue Specification	*	aggr	This represents the collection of aggregated Value Specifications. The last ValueSpecification in the collection shall be taken to execute the filling rule. **Tags:** xml.sequenceOffset=30
compound Primitive Argument (ordered)	CompositeRuleBased ValueArgument	*	aggr	This represents the collection of aggregated Value Specifications for compound primitive data type. The last ValueSpecification in the collection shall be taken to execute the filling rule. **Tags:** xml.sequenceOffset=35
maxSizeToFill	PositiveInteger	0..1	attr	If a rule is chosen which does not fill until the end, this determines until which size the rule shall fill the values. **Tags:** xml.sequenceOffset=40
rule	Identifier	0..1	attr	This denotes the name of the rule of the RuleBasedValue Specification. The rule determines the calculation specification according which the arguments are used to calculated the values. **Tags:** xml.sequenceOffset=20

Table A.58: CompositeRuleBasedValueSpecification

Class	**CompositionSwComponentType**			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Composition			
Note	A `CompositionSwComponentType` aggregates `SwComponentPrototype`s (that in turn are typed by `SwComponentTypes`) as well as `SwConnector`s for primarily connecting `SwComponentPrototype`s among each others and towards the surface of the `CompositionSwComponentType`. By this means, a hierarchical structures of software-components can be created. **Tags:** atp.recommendedPackage=SwComponentTypes			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *SwComponentType*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
component	SwComponent Prototype	*	aggr	The instantiated components that are part of this composition. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=component.shortName, component.variation Point.shortLabel vh.latestBindingTime=postBuild

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Class	**CompositionSwComponentType**			
connector	SwConnector	*	aggr	SwConnectors have the principal ability to establish a connection among PortPrototypes. They can have many roles in the context of a CompositionSwComponentType. Details are refined by subclasses. The aggregation of SwConnectors is subject to variability with the purpose to support variant data flow. The aggregation is marked as atpSplitable in order to allow the extension of the ECU extract with AssemblySwConnectors between ApplicationSwComponentTypes and ServiceSwComponentTypes during the ECU integration. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=connector.shortName, connector.variation Point.shortLabel vh.latestBindingTime=postBuild
constantValue Mapping	ConstantSpecification MappingSet	*	ref	Reference to the ConstantSpecificationMapping to be applied for initValues of PPortComSpecs and RPortComSpec. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=constantValueMapping
dataType Mapping	DataTypeMappingSet	*	ref	Reference to the DataTypeMapping to be applied for the used ApplicationDataTypes in ServiceInterfaces. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=dataTypeMapping
physical Dimension Mapping	PhysicalDimension MappingSet	0..1	ref	This reference identifies the PhysicalDimensionMappingSet that is applicable in the context of the enclosing CompositionSwComponentType. The PhysicalDimensionMappings contained in the PhysicalDimensionMappingSet shall be taken into account for the assessment of the compatibility of PhysicalDimensions in the context of creation of a PortInterfaceMapping in the scope of the CompositionSwComponentType.

Table A.59: CompositionSwComponentType

Class	**CompuMethod**			
Package	M2::MSR::AsamHdo::ComputationMethod			
Note	This meta-class represents the ability to express the relationship between a physical value and the mathematical representation. Note that this is still independent of the technical implementation in data types. It only specifies the formula how the internal value corresponds to its physical pendant. **Tags:** atp.recommendedPackage=CompuMethods			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*

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Class	**CompuMethod**			
compuInternal ToPhys	Compu	0..1	aggr	This specifies the computation from internal values to physical values. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=compuInternalToPhys xml.sequenceOffset=80
compuPhysTo Internal	Compu	0..1	aggr	This represents the computation from physical values to the internal values. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=compuPhysToInternal xml.sequenceOffset=90
displayFormat	DisplayFormatString	0..1	attr	This property specifies, how the physical value shall be displayed e.g. in documents or measurement and calibration tools. **Tags:** xml.sequenceOffset=20
unit	Unit	0..1	ref	This is the physical unit of the Physical values for which the CompuMethod applies. **Tags:** xml.sequenceOffset=30

Table A.60: CompuMethod

Class	**ConcretePatternEventTriggering**			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingConstraint::EventTriggeringConstraint			
Note	Describes the behavior of an event that occurs according to a precisely known pattern.			
Base	*ARObject*, *EventTriggeringConstraint*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *Timing Constraint*, *Traceable*			
Aggregated by	*TimingExtension*.timingGuarantee, *TimingExtension*.timingRequirement			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
offset	MultidimensionalTime	*	aggr	The offset for each occurrence of the event in the specified time interval. A list of point-in-times in the time interval given by the parameter patternLength at which the event occurs. **Tags:** xml.name=TIME-VALUE xml.roleElement=true xml.sequenceOffset=10 xml.typeElement=false
patternJitter	MultidimensionalTime	0..1	aggr	The maximum deviation of the time interval's starting point from the beginning of the given period. This parameter is only applicable in conjunction with the parameter `patternPeriod`.
patternLength	MultidimensionalTime	0..1	aggr	The duration of the time interval within which the event repeatedly occurs. The event occurs at concrete points in time within the given time interval. **Tags:** xml.sequenceOffset=20
patternPeriod	MultidimensionalTime	0..1	aggr	The time distance between the beginnings of subsequent repetitions of the given concrete pattern.

Table A.61: ConcretePatternEventTriggering

Class	**ConstantReference**			
Package	M2::AUTOSARTemplates::CommonStructure::Constants			
Note	Instead of defining this value inline, a constant is referenced.			
Base	*ARObject*, *ValueSpecification*			
Aggregated by	ApplicationAssocMapElementValueSpecification.key, ApplicationAssocMapElementValueSpecification.value, ArrayValueSpecification.element, CalibrationParameterValue.applInitValue, CalibrationParameterValue.implInitValue, ConstantSpecification.valueSpec, CryptoServiceKey.developmentValue, DiagnosticEnvDataCondition.compareValue, DiagnosticEnvDataElementCondition.compareValue, FieldSenderComSpec.initValue, ISignal.initValue, ISignal.timeoutSubstitutionValue, NonqueuedReceiverComSpec.initValue, NonqueuedReceiverComSpec.timeoutSubstitutionValue, NonqueuedSenderComSpec.initValue, NvProvideComSpec.ramBlockInitValue, NvProvideComSpec.romBlockInitValue, NvRequireComSpec.initValue, ParameterDataPrototype.initValue, ParameterProvideComSpec.initValue, ParameterRequireComSpec.initValue, PersistencyDataRequiredComSpec.initValue, PersistencyKeyValuePair.initValue, PortDefinedArgumentValue.value, PortPrototypeBlueprintInitValue.value, RecordValueSpecification.field, SomeipEventDeployment.eventReceptionDefaultValue, *StateManagementCompareCondition*.compareValue, SwDataDefProps.invalidValue, VariableDataPrototype.initValue			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
constant	ConstantSpecification	0..1	ref	The referenced constant.

Table A.62: ConstantReference

Class	***CppImplementationDataType*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CppImplementationDataType			
Note	This meta-class represents the way to specify a reusable data type definition taken as a the basis for a C++ language binding			
Base	*ARElement*, *ARObject*, *AbstractImplementationDataType*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *AutosarDataType*, *CollectableElement*, *CppImplementationDataTypeContextTarget*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Subclasses	CustomCppImplementationDataType, StdCppImplementationDataType			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
arraySize	PositiveInteger	0..1	attr	This attribute can be used to specify the array size if the enclosing CppImplementationDataType has array semantics. **Stereotypes:** atpVariation **Tags:** vh.latestBindingTime=preCompileTime
headerFile	String	0..1	attr	Configuration of the Header File with the custom class declaration.
namespace (ordered)	SymbolProps	*	aggr	This aggregation allows for the definition an own namespace for the enclosing CppImplementationDataType.
subElement (ordered)	CppImplementationDataTypeElement	*	aggr	This represents the collection of sub-elements of the enclosing CppImplementationDataType
template Argument (ordered)	CppTemplateArgument	*	aggr	This aggregation allows for the specification of properties of template arguments
typeEmitter	NameToken	0..1	attr	This attribute can be taken to control how the respective CppImplementationDataType is contributed to the language binding.
typeReference	CppImplementationDataType	0..1	ref	This reference shall be defined to define a type reference (a.k.a. typedef).

Table A.63: CppImplementationDataType

Class	**CppImplementationDataTypeElement**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CppImplementationDataType			
Note	Declares a data object which is locally aggregated. Such an element can only be used within the scope where it is aggregated. A CppImplementationDataTypeElement is used to represent an element of a structure, defining its type.			
Base	*ARObject*, *AbstractImplementationDataTypeElement*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *CppImplementationDataTypeContextTarget*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, *CppImplementationDataType*.subElement			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
isOptional	Boolean	0..1	attr	This attribute represents the ability to declare the enclosing CppImplementationDataTypeElement as optional. This means the that, at runtime, the Cpp ImplementationDataTypeElement may or may not have a valid value and shall therefore be ignored. The underlying runtime software provides means to set the CppImplementationDataTypeElement as not valid at the sending end of a communication and determine its validity at the receiving end.
typeReference	CppImplementation DataTypeElement Qualifier	0..1	aggr	This aggregation defines the type of the Cpp ImplementationDataTypeElement and determines whether in C++ the CppImplementationDataTypeElement is defined inside or outside of the enclosing Cpp ImplementationDataType.

Table A.64: CppImplementationDataTypeElement

Class	**CppImplementationDataTypeElementQualifier**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CppImplementationDataType			
Note	This element qualifies the typeReference of the CppImplementationDataTypeElement to the Cpp ImplementationDataType.			
Base	*ARObject*			
Aggregated by	CppImplementationDataTypeElement.typeReference			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
inplace	Boolean	0..1	attr	This attribute defines whether the member type of the CppImplementationDataTypeElement in C++ is an embedded type element inside of the enclosing struct (true) or whether the type declaration is defined outside of the struct.
typeReference	CppImplementation DataType	0..1	ref	This reference defines a type reference.

Table A.65: CppImplementationDataTypeElementQualifier

Class	**CppTemplateArgument**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CppImplementationDataType			
Note	This meta-class has the ability to define properties for template arguments.			
Base	*ARObject*			
Aggregated by	*CppImplementationDataType*.templateArgument			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
allocator	Allocator	0..1	ref	This reference identifies the applicable allocator.
category	CategoryString	0..1	attr	This attribute shall be used to contribute further clarification regarding the semantics of the enclosing Cpp TemplateArgument.

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Class	**CppTemplateArgument**			
inplace	Boolean	0..1	attr	This attribute specifies whether the shortName of the referenced templateType is used in the code generation and the type declaration is defined outside of the enclosing CppImplementationDataType (true) or whether the type definition is embedded inside of the enclosing CppImplementationDataType and the shortName is ignored (false).
templateType	CppImplementation DataType	0..1	ref	This reference identifies the data type of the specific template argument required for the language binding.

Table A.66: CppTemplateArgument

Class	**CryptoCertificateInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CryptoDesign			
Note	This meta-class provides the ability to define a PortInterface for a CryptoCertificate. **Tags:** atp.Status=candidate atp.recommendedPackage=CryptoInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *CryptoInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
isPrivate	Boolean	0..1	attr	This attribute controls the possibility to access the content of the CryptoCertificateSlot by Find() interfaces of the X509 Provider. **Tags:** atp.Status=candidate
writeAccess	Boolean	0..1	attr	This attribute defines whether the application has write-access to the CryptoCertificate (true) or only read-access (false). **Tags:** atp.Status=candidate

Table A.67: CryptoCertificateInterface

Class	**CryptoCertificateToCryptoKeySlotMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::CryptoDeployment			
Note	This meta-class represents the ability to define a mapping between a CryptoKeySlot and a Crypto Certificate.			
Base	*ARObject*			
Aggregated by	CryptoModuleInstantiation.certificateToKeySlotMapping			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
crypto Certificate	CryptoCertificate	0..1	ref	This reference represents the mapped cryptoCertificate.
cryptoKeySlot	CryptoKeySlot	0..2	ref	This reference represents the mapped cryptoKeySlot.

Table A.68: CryptoCertificateToCryptoKeySlotMapping

Class	**CryptoCertificateToPortPrototypeMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::CryptoDeployment			
Note	This meta-class represents the ability to define a mapping between a CryptoCertificate on deployment level to a given PortPrototype that is typed by a CryptoCertificateInterface. **Tags:** atp.recommendedPackage=CryptoCertificateToPortPrototypeMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
crypto Certificate	CryptoCertificate	0..1	ref	This reference represents the mapped cryptoCertificate.
portPrototype	RPortPrototype	0..1	iref	This reference represents the mapped PortPrototype. **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef
process	Process	0..1	ref	This reference represents the process required as context for the mapping.
writeAccess	Boolean	0..1	attr	This attribute defines whether the application has write-access to the CryptoCertificate (true) or only read-access (false).

Table A.69: CryptoCertificateToPortPrototypeMapping

Class	**CryptoKeySlotAllowedModification**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CryptoDesign			
Note	This meta-class restricts the allowed modification of a key stored in the key slot. **Tags:** atp.Status=candidate			
Base	*ARObject*			
Aggregated by	CryptoKeySlot.keySlotAllowedModification, CryptoKeySlotInterface.keySlotAllowedModification			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
allowContent TypeChange	Boolean	0..1	attr	This attribute describes whether the key content type can be changed (true) or not (false), e.g. changing the key from symmetric to RSA. **Tags:** atp.Status=candidate
exportability	Boolean	0..1	attr	This attribute describes whether the key slot content is allowed to be exported or not. **Tags:** atp.Status=candidate
maxNumberOf AllowedUpdates	PositiveInteger	0..1	attr	This attribute describes the maximum updates that are allowed to the slot. **Tags:** atp.Status=candidate
restrictUpdate	Boolean	0..1	attr	This attribute defines whether restrictions on the number of updates are defined or not. • false: no restriction is placed on the number of updates. • true: restrictions are placed on the number of updates with the attribute maxNumberOfAllowedUpdates. **Tags:** atp.Status=candidate

Table A.70: CryptoKeySlotAllowedModification

Class	**CryptoKeySlotContentAllowedUsage**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CryptoDesign			
Note	This meta-class restricts the allowed usage of a key stored in the key slot. **Tags:** atp.Status=candidate			
Base	*ARObject*			
Aggregated by	CryptoKeySlot.keySlotContentAllowedUsage, CryptoKeySlotInterface.keySlotContentAllowedUsage			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
allowedKeyslot Usage	String	0..1	attr	This attribute defines for which operations the KeySlot may be used. **Tags:** atp.Status=candidate

Table A.71: CryptoKeySlotContentAllowedUsage

Class	**CryptoKeySlotInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CryptoDesign			
Note	This meta-class provides the ability to define a PortInterface for Crypto Key Slots. **Tags:** atp.Status=candidate atp.recommendedPackage=CryptoInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *CryptoInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
allocateShadow Copy	Boolean	0..1	attr	This attribute defines whether a shadow copy of this Key Slot shall be allocated to enable rollback of a failed Key Slot update campaign (see interface BeginTransaction). **Tags:** atp.Status=candidate
cryptoAlgId	String	0..1	attr	This attribute defines a crypto algorithm restriction (kAlgId Any means without restriction). The algorithm can be specified partially: family & length, mode, padding. Future Crypto Providers can support some crypto algorithms that are not well known/ standardized today, therefore AUTOSAR doesn't provide a concrete list of crypto algorithms' identifiers and doesn't suppose usage of numerical identifiers. Instead of this a provider supplier should provide string names of supported algorithms in accompanying documentation. The name of a crypto algorithm shall follow the rules defined in the specification of cryptography for Adaptive Platform. **Tags:** atp.Status=candidate
cryptoObject Type	CryptoObjectTypeEnum	0..1	attr	Object type that can be stored in the slot. If this field contains "Undefined" then mSlotCapacity must be provided and larger then 0 **Tags:** atp.Status=candidate
keySlotAllowed Modification	CryptoKeySlotAllowed Modification	0..1	aggr	Restricts how this keySlot may be used **Tags:** atp.Status=candidate
keySlotContent AllowedUsage	CryptoKeySlotContent AllowedUsage	*	aggr	Restriction of allowed usage of a key stored to the slot. **Tags:** atp.Status=candidate

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Class	**CryptoKeySlotInterface**			
slotCapacity	PositiveInteger	0..1	attr	Capacity of the slot in bytes to be reserved by the stack vendor. One use case is to define this value in case that the cryptoObjectType is undefined and the slot size can not be deduced from cryptoObjectType and cryptoAlgId. "0" means slot size can be deduced from cryptoObject Type and cryptoAlgId. **Tags:** atp.Status=candidate
slotType	CryptoKeySlotType Enum	0..1	attr	This attribute defines whether the keySlot is exclusively used by the Application; or whether it is used by Stack Services and managed by a Key Manager Application. **Tags:** atp.Status=candidate

Table A.72: CryptoKeySlotInterface

Class	**CryptoKeySlotToPortPrototypeMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::CryptoDeployment			
Note	This meta-class represents the ability to define a mapping between a CryptoKeySlot on deployment level to a given PortPrototype that is typed by a CryptoKeySlotInterface. **Tags:** atp.recommendedPackage=CryptoKeySlotToPortPrototypeMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
keySlot	CryptoKeySlot	0..1	ref	This reference represents the mapped CryptoKeySlot.
portPrototype	RPortPrototype	0..1	iref	This reference represents the mapped PortPrototype. **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef
process	Process	0..1	ref	This reference represents the process required as context for the mapping.

Table A.73: CryptoKeySlotToPortPrototypeMapping

Class	**CryptoProviderInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CryptoDesign			
Note	This meta-class provides the ability to define a PortInterface for a CryptoProvider. **Tags:** atp.Status=candidate atp.recommendedPackage=CryptoInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *CryptoInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.74: CryptoProviderInterface

Class	**CryptoProviderToPortPrototypeMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::CryptoDeployment			
Note	This meta-class represents the ability to define a mapping between a CryptoProvider on deployment level to a given PortPrototype that is typed by a CryptoProviderInterface. **Tags:** atp.recommendedPackage=CryptoProviderToPortPrototypeMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
cryptoProvider	CryptoProvider	0..1	ref	This reference represents the mapped cryptoProvider.
portPrototype	RPortPrototype	0..1	iref	This reference represents the mapped PortPrototype. **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef
process	Process	0..1	ref	This reference represents the process required as context for the mapping.

Table A.75: CryptoProviderToPortPrototypeMapping

Class	**CryptoServiceCertificate**			
Package	M2::AUTOSARTemplates::SystemTemplate::SecureCommunication			
Note	This meta-class represents the ability to model a cryptographic certificate. **Tags:** atp.recommendedPackage=CryptoServiceCertificates			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
algorithmFamily	CryptoCertificate AlgorithmFamilyEnum	0..1	attr	This attribute represents a description of the family of crypto algorithm used to generate public key and signature of the cryptographic certificate.
format	CryptoCertificateFormat Enum	0..1	attr	This attribute can be used to provide information about the format used to create the certificate
maximum Length	PositiveInteger	0..1	attr	This attribute represents the ability to define the maximum length of the certificate in bytes.
nextHigher Certificate	CryptoService Certificate	0..1	ref	The reference identifies the next higher certificate in the certificate chain.
serverName Identification	String	0..1	attr	Server Name Indication (SNI) is needed if the IP address hosts multiple servers (on the same port), each of them using a different certificate. If the client sends the SNI to the Server in the client hello, the server looks the SNI up in its certificate list and uses the certificate identified by the SNI.

Table A.76: CryptoServiceCertificate

Class	**CustomCppImplementationDataType**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CppImplementationDataType
Note	This meta-class represents the way to specify a data type definition that is taken as the basis for a C++ language binding to a custom implementation that is declared in the configured header file. The Short Name of this CustomCppImplementationDataType defines the Class-Name of the custom implementation. **Tags:** atp.recommendedPackage=CppImplementationDataTypes

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Class	CustomCppImplementationDataType			
Base	*ARElement*, *ARObject*, *AbstractImplementationDataType*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *AutosarDataType*, *CollectableElement*, *CppImplementationDataType*, *CppImplementationDataTypeContextTarget*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.77: CustomCppImplementationDataType

Class	DataConstr			
Package	M2::MSR::AsamHdo::Constraints::GlobalConstraints			
Note	This meta-class represents the ability to specify constraints on data. **Tags:** atp.recommendedPackage=DataConstrs			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
dataConstrRule	DataConstrRule	*	aggr	This is one particular rule within the data constraints. **Tags:** xml.roleElement=true xml.roleWrapperElement=true xml.sequenceOffset=30 xml.typeElement=false xml.typeWrapperElement=false

Table A.78: DataConstr

Class	DataConstrRule			
Package	M2::MSR::AsamHdo::Constraints::GlobalConstraints			
Note	This meta-class represents the ability to express one specific data constraint rule.			
Base	*ARObject*			
Aggregated by	DataConstr.dataConstrRule			
Attribute	Type	Mult.	Kind	Note
constrLevel	Integer	0..1	attr	This attribute describes the category of a constraint. One of its functions is in the area of constraint violation, where it can be used from a certain level, to produce error messages. The lower the level, the more stringent the check. Used to distinguish hard or soft limits. **Tags:** xml.sequenceOffset=20
internalConstrs	InternalConstrs	0..1	aggr	Describes the limitations applicable on the internal domain (as opposed to the physical domain). **Tags:** xml.sequenceOffset=40
physConstrs	PhysConstrs	0..1	aggr	Describes the limitations applicable on the physical domain (as opposed to the internal domain). **Tags:** xml.sequenceOffset=30

Table A.79: DataConstrRule

Class	***DataPrototype*** (abstract)			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::DataPrototypes			
Note	Base class for prototypical roles of any data type.			
Base	*ARObject*, *AtpFeature*, *AtpPrototype*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	*ApplicationCompositeElementDataPrototype*, *AutosarDataPrototype*			
Aggregated by	*AtpClassifier*.atpFeature			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
swDataDef Props	SwDataDefProps	0..1	aggr	This property allows to specify data definition properties which apply on data prototype level. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=swDataDefProps

Table A.80: DataPrototype

Class	**DataPrototypeInServiceInterfaceInstanceRef**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::General::SomethingInPortInterfaceInstanceRef			
Note				
Base	*ARObject*, *AtpInstanceRef*, *DataPrototypeInPortInterfaceInstanceRef*			
Aggregated by	DataPrototypeInPortInterfaceRef.dataPrototypeInServiceInterface, DataPrototypeInServiceInterfaceRef.dataPrototype, SignalBasedFireAndForgetMethodToISignalTriggeringMapping.dataPrototypeInMethodArgumentInstanceRef			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
base	ServiceInterface	0..1	ref	**Stereotypes:** atpDerived
contextData Prototype (ordered)	ApplicationComposite ElementDataPrototype	*	ref	**Tags:** xml.sequenceOffset=20
rootData Prototype	AutosarDataPrototype	0..1	ref	**Tags:** xml.sequenceOffset=10
targetData Prototype	DataPrototype	0..1	ref	**Tags:** xml.sequenceOffset=30

Table A.81: DataPrototypeInServiceInterfaceInstanceRef

Class	**DataPrototypeInServiceInterfaceRef**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::General::SomethingInPortInterfaceInstanceRef			
Note	This meta-class represents the ability to refer to an AUTOSAR DataPrototype in the context of a Service Interface.			
Base	*ARObject*			
Aggregated by	SignalBasedEventElementToISignalTriggeringMapping.dataPrototypeInServiceInterfaceRef, SignalBasedFieldToISignalTriggeringMapping.dataPrototypeInServiceInterfaceRef, SomeipDataPrototypeTransformationProps.dataPrototype			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
dataPrototype	DataPrototype	0..1	iref	This element represents the ability to: • refer to a DataPrototype in the context of a Service Interface. • refer to the internal structure of a DataPrototype in which is typed by an ApplicationDatatype the context of a ServiceInterface. **InstanceRef implemented by:** DataPrototypeInServiceInterfaceInstanceRef

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Class	DataPrototypeInServiceInterfaceRef			
elementInImpl Datatype	PortInterfaceElementIn Implementation DatatypeRef	0..1	aggr	This element represents the ability to refer to the internal structure of an AutosarDataPrototype which is typed by an ImplementationDatatype in the context of a Service Interface.

Table A.82: DataPrototypeInServiceInterfaceRef

Class	DataTypeMap			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes			
Note	This class represents the relationship between ApplicationDataType and its implementing Abstract ImplementationDataType.			
Base	*ARObject*			
Aggregated by	DataTypeMappingSet.dataTypeMap			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
applicationData Type	ApplicationDataType	0..1	ref	This is the corresponding ApplicationDataType
implementation DataType	AbstractImplementation DataType	0..1	ref	This is the corresponding AbstractImplementationData Type.

Table A.83: DataTypeMap

Class	DataTypeMappingSet			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes			
Note	This class represents a list of mappings between ApplicationDataTypes and ImplementationDataTypes. In addition, it can contain mappings between ImplementationDataTypes and ModeDeclarationGroups. **Tags:** atp.recommendedPackage=DataTypeMappingSets			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
dataTypeMap	DataTypeMap	*	aggr	This is one particular association between an Application DataType and its AbstractImplementationDataType.
modeRequest TypeMap	ModeRequestTypeMap	*	aggr	This is one particular association between an Mode DeclarationGroup and its AbstractImplementationData Type.

Table A.84: DataTypeMappingSet

Class	DdsDomainRange			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::SecureCommunication			
Note	DDS Domain ID range.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	DdsSecureGovernance.domainId			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
max	PositiveInteger	0..1	attr	Upper bound of the DdsDomainRange.
min	PositiveInteger	0..1	attr	Lower bound of the DdsDomainRange.

Table A.85: DdsDomainRange

Class	**DdsEventDeployment**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	DDS configuration settings for an Event.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *ServiceEventDeployment*			
Aggregated by	DdsFieldDeployment.notifier, *ServiceInterfaceDeployment*.eventDeployment			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
eventTopic AccessRule	DdsTopicAccessRule	0..1	ref	DDS Security access rule applicable to the DDS Topics used for the service interface event.
topicName	String	0..1	attr	Name of the DDS Topic associated with the Event.
transport Protocol	String	*	attr	This attribute defines over which Transport Layer Protocol(s) this event is intended to be sent.

Table A.86: DdsEventDeployment

Class	**DdsEventQosProps**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	Configuration properties of the Event using DDS as the underlying network binding.			
Base	*ARObject*, *DdsQosProps*			
Aggregated by	DdsProvidedServiceInstance.eventQosProps, DdsRequiredServiceInstance.eventQosProps			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
event	ServiceEvent Deployment	0..1	ref	Reference to an event that is provided.

Table A.87: DdsEventQosProps

Class	**DdsFieldQosProps**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	Configuration properties of the Field interaction when using DDS as the underlying network binding.			
Base	*ARObject*, *DdsQosProps*			
Aggregated by	DdsProvidedServiceInstance.fieldNotifierQosProps, DdsRequiredServiceInstance.fieldNotifierQosProps			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
field	ServiceField Deployment	0..1	ref	Reference to the field.

Table A.88: DdsFieldQosProps

Enumeration	**DdsProtectionKindEnum**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::SecureCommunication
Note	Supported cryptographic transformations (extended).
Aggregated by	DdsSecureGovernance.discoveryProtectionKind, DdsSecureGovernance.livelinessProtectionKind, DdsSecureGovernance.rtpsProtectionKind, DdsTopicAccessRule.dataProtectionKind, DdsTopic AccessRule.metadataProtectionKind
Literal	***Description***
encryptAndSign	encryption and MAC transformations (in that precise order) are applied **Tags:** atp.EnumerationLiteralIndex=2
encryptAndSign WithOrigin Authentication	similar to "EncryptAndSign" but with additional authentication codes produced under different secret keys, which prevents receiving peers from impersonating a specific sender **Tags:** atp.EnumerationLiteralIndex=4

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Enumeration	**DdsProtectionKindEnum**
none	no transformation is applied **Tags:** atp.EnumerationLiteralIndex=0
sign	Message Authentication Code (MAC) is applied, no encryption **Tags:** atp.EnumerationLiteralIndex=1
signWithOrigin Authentication	similar to "sign" but with additional authentication codes produced under different secret keys, which prevents receiving peers from impersonating a specific sender **Tags:** atp.EnumerationLiteralIndex=3

Table A.89: DdsProtectionKindEnum

Class	**DdsProvidedServiceInstance**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	This meta-class represents the ability to describe the existence and configuration of a provided service instance in a concrete implementation on top of DDS. **Tags:** atp.recommendedPackage=ServiceInstances			
Base	*ARElement*, *ARObject*, *AdaptivePlatformServiceInstance*, *CollectableElement*, *DdsQosProps*, *DdsServiceInstanceProps*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *ProvidedApServiceInstance*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
discoveryType	DdsServiceInstanceDiscoveryTypeEnum	0..1	attr	Discovery protocol.
eventQosProps	DdsEventQosProps	*	aggr	List of configuration properties for the Events that are provided by the Service Instance.
fieldNotifierQosProps	DdsFieldQosProps	*	aggr	List of configuration properties for Field notifiers that are provided by the Service Instance.
resourceIdentifierType	DdsServiceInstanceResourceIdentifierTypeEnum	0..1	attr	Type of resource identification scheme.
serviceInstanceId	PositiveInteger	0..1	attr	Identification number that is used by DDS to identify DomainParticipants associated with an instance of the service.

Table A.90: DdsProvidedServiceInstance

Class	***DdsQosProps*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	QoS configuration properties for the DDS entities associated with an event, method, or field provided by or requested from a Service Instance using DDS as the underlying network binding.			
Base	*ARObject*			
Subclasses	DdsEventQosProps, DdsFieldQosProps, *DdsServiceInstanceProps*			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
qosProfile	String	0..1	attr	Identifies a group of QoS Policies that apply to the DDS entities associated with the event, method, field, or the service instance.

Table A.91: DdsQosProps

Class	**DdsRequiredServiceInstance**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	This meta-class represents the ability to describe the existence and configuration of a required service instance in a concrete implementation on top of DDS. **Tags:** atp.recommendedPackage=ServiceInstances			
Base	*ARElement*, *ARObject*, *AdaptivePlatformServiceInstance*, *CollectableElement*, *DdsQosProps*, *DdsServiceInstanceProps*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *RequiredApServiceInstance*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
blocklistedVersion	DdsServiceVersion	*	aggr	Collection of blocklisted versions.
discoveryType	DdsServiceInstanceDiscoveryTypeEnum	0..1	attr	Discovery protocol.
eventQosProps	DdsEventQosProps	*	aggr	List of configuration properties for the Events that are required by the Service Instance.
fieldNotifierQosProps	DdsFieldQosProps	*	aggr	List of configuration properties for Field notifiers that are required by the Service Instance.
requiredServiceInstanceId	AnyServiceInstanceId	0..1	attr	This attribute represents the ability to describe the required service instance ID.

Table A.92: DdsRequiredServiceInstance

Class	**DdsRule**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Firewall			
Note	Configuration of a DDS firewall rule **Tags:** atp.Status=candidate			
Base	*ARObject*			
Aggregated by	FirewallRule.ddsRule			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
appId	PositiveInteger	0..1	attr	Filter for DDSI-RTPS messages in which the appId in the DDSI-RTPS header and the INFO_DST (0x0E) submessage matches. **Tags:** atp.Status=candidate
hostId	PositiveInteger	0..1	attr	Filter for DDSI-RTPS messages in which the hostId in the DDSI-RTPS header and the INFO_DST (0x0E) submessage matches. **Tags:** atp.Status=candidate
instanceId	PositiveInteger	0..1	attr	Filter for DDSI-RTPS messages in which the instanceId in the DDSI-RTPS header and the INFO_DST (0x0E) submessage matches. **Tags:** atp.Status=candidate
majorProtocolVersion	PositiveInteger	0..1	attr	Filter for DDSI-RTPS messages in which the major ProtocolVersion in the DDSI-RTPS header matches. **Tags:** atp.Status=candidate
minorProtocolVersion	PositiveInteger	0..1	attr	Filter for DDSI-RTPS messages in which the minor ProtocolVersion in the DDSI-RTPS header matches. **Tags:** atp.Status=candidate
productId	PositiveInteger	0..1	attr	Filter for DDSI-RTPS messages in which the productId in the DDSI-RTPS header matches. **Tags:** atp.Status=candidate

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Class	**DdsRule**			
readerEntityId	PositiveInteger	0..1	attr	Filter for DDSI-RTPS messages in which the readerEntity ID in a DDSI-RTPS submessage matches **Tags:** atp.Status=candidate
submessage Type	PositiveInteger	0..1	attr	Defines the allowed submessage type in the DDSI-RTPS message **Tags:** atp.Status=candidate
vendorId	PositiveInteger	0..1	attr	Filter for DDSI-RTPS messages in which the vendorId in the DDSI-RTPS header matches. **Tags:** atp.Status=candidate
writerEntityId	PositiveInteger	0..1	attr	Filter for DDSI-RTPS messages in which the writerEntity ID in a DDSI-RTPS submessage matches **Tags:** atp.Status=candidate

Table A.93: DdsRule

Class	**DdsSecureComProps**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceMapping			
Note	Identity and governance information of participants in case of DDS Security. **Tags:** atp.recommendedPackage=SecureComProps			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *SecureComProps*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
governance	DdsSecureGovernance	0..1	ref	This attribute defines general DDS Security communication properties applicable to the DDS domain(s) in which the subject operates. **Tags:** atp.Status=candidate
identity	CryptoCertificate	0..1	ref	This attribute defines the cryptographic identity of the subject.

Table A.94: DdsSecureComProps

Class	**DdsSecureGovernance**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::SecureCommunication			
Note	Configuration of DDS Security for all applications joining a specific set of DDS Domains. **Tags:** atp.Status=candidate atp.recommendedPackage=DdsSecureGovernances			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
allowUnauthen-ticated Participants	Boolean	0..1	attr	Defines whether unauthenticated participants can join this domain. **Tags:** atp.Status=candidate

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Class	**DdsSecureGovernance**			
discovery ProtectionKind	DdsProtectionKind Enum	0..1	attr	Defines the kind of cryptographic transformation to apply in DDS discovery communication. **Tags:** atp.Status=candidate
domainId	DdsDomainRange	*	aggr	Set of domains to be covered by this property set. **Tags:** atp.Status=candidate
enableJoin AccessControl	Boolean	0..1	attr	Defines whether access control is to be enforced upon joining this domain. **Tags:** atp.Status=candidate
identity Certificate Authority	CryptoCertificate	0..1	ref	Certificate representing the identity certificate authority applicable to the domain(s) specified by domainsIds. **Tags:** atp.Status=candidate
liveliness ProtectionKind	DdsProtectionKind Enum	0..1	attr	Defines the kind of cryptographic transformation to apply in DDS liveliness communication. **Tags:** atp.Status=candidate
permission Certificate Authority	CryptoCertificate	0..1	ref	Certificate representing the permissions certificate authority applicable to the domain(s) specified by domainsIds. **Tags:** atp.Status=candidate
rtpsProtection Kind	DdsProtectionKind Enum	0..1	attr	Defines the kind of cryptographic transformation to apply to whole DDS RTPS. **Tags:** atp.Status=candidate

Table A.95: DdsSecureGovernance

Enumeration	**DdsServiceInstanceDiscoveryTypeEnum**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment
Note	Supported discovery schemes for DDS Service Instances.
Aggregated by	DdsProvidedServiceInstance.discoveryType, DdsRequiredServiceInstance.discoveryType
Literal	*Description*
domainParticipant UserDataQos	The USER_DATA QoS policy is used to advertise and discover available Service Instances hosted by each Domain Participant. **Tags:** atp.EnumerationLiteralIndex=0
topic	A purpose-specific Topic is used to convey availability of Service Instances and how to bind against them. **Tags:** atp.EnumerationLiteralIndex=1

Table A.96: DdsServiceInstanceDiscoveryTypeEnum

Class	***DdsServiceInstanceProps*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	Common configuration properties for the DDS entities provided by or requested from a Service Instance using DDS as the underlying network binding.			
Base	*ARObject*, *DdsQosProps*			
Subclasses	DdsProvidedServiceInstance, DdsRequiredServiceInstance			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
domainId	Integer	0..1	attr	This attribute identifies the DDS Domain the Service Instance shall join.

Table A.97: DdsServiceInstanceProps

Enumeration	**DdsServiceInstanceResourceIdentifierTypeEnum**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment
Note	Supported Resource Identification schemes for DDS Service Instances.
Aggregated by	DdsProvidedServiceInstance.resourceIdentifierType
Literal	***Description***
instanceId	In-band instance identification fields are used to discriminate samples related to specific Service Instances sharing the same DDS Topics • Partitions: - • Topics: ara.com://services/<InterfaceId>/<Major>.<<Minor>/<TopicName> **Tags:** atp.EnumerationLiteralIndex=2
partition	The DDS PARTITION QoS policy is used to isolate DDS Topics related to specific Service Instances • Partitions: ara.com://services/<InterfaceId>/<InstanceId> • Topics: ara.com://services/<InterfaceId>/<Major>.<Minor>/<TopicName> **Tags:** atp.EnumerationLiteralIndex=0
topicPrefix	Unique prefixes are assigned to DDS Topics related to specific Service Instances • Partitions: - • Topics: ara.com://services/<InterfaceId>/<InstanceId>/<TopicName> **Tags:** atp.EnumerationLiteralIndex=1

Table A.98: DdsServiceInstanceResourceIdentifierTypeEnum

Class	**DdsServiceInstanceToMachineMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceMapping			
Note	This meta-class allows to map DdsServiceInstances to a CommunicationConnector of a Machine. **Tags:** atp.recommendedPackage=ServiceInstanceToMachineMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *ServiceInstanceToMachineMapping*, *UploadableDesignElement*, *Uploadable PackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
secureCom PropsForDds	DdsSecureComProps	0..1	ref	Reference to SecureComProps applicable to the service instance.

Table A.99: DdsServiceInstanceToMachineMapping

Class	**DdsServiceInterfaceDeployment**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	DDS configuration settings for a ServiceInterface. **Tags:** atp.recommendedPackage=ServiceInterfaceDeployments			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *ServiceInterfaceDeployment*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
fieldReplyTopic Name	String	0..1	attr	Name of the DDS Reply Topic associated with the Field.
fieldRequest TopicName	String	0..1	attr	Name of the DDS Request Topic associated with the Field.

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Class	**DdsServiceInterfaceDeployment**			
fieldTopics AccessRule	DdsTopicAccessRule	0..1	ref	DDS Security access rule applicable to the DDS Topics used for service interface field access methods (Get, Set).
methodReply TopicName	String	0..1	attr	Name of the DDS Reply Topic associated with the Method.
methodRequest TopicName	String	0..1	attr	Name of the DDS Request Topic associated with the Method.
methodTopics AccessRule	DdsTopicAccessRule	0..1	ref	DDS Security access rule applicable to the DDS Topics used for service interface methods.
serviceInterface Id	String	0..1	attr	Unique Identifier that identifies the ServiceInterface in DDS. This Identifier is encoded in the USER_DATA QoS of the DomainParticipant associated with the Service Instance and its value is propagated by DDS Discovery messages.
transport Protocol	String	*	attr	This attribute defines over which Transport Layer Protocol(s) this Method is intended to be sent.

Table A.100: DdsServiceInterfaceDeployment

Class	**DdsTopicAccessRule**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	DDS Topic access rule definition. **Tags:** atp.recommendedPackage=DdsTopicAccessRules			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
dataProtection Kind	DdsProtectionKind Enum	0..1	attr	Defines the data protection policy applicable to metadata related to the DDS Topic(s).
enable Discovery Protection	Boolean	0..1	attr	Defines whether discovery protection mechanisms should apply to the DDS Topic(s).
enable Liveliness Protection	Boolean	0..1	attr	Defines whether liveliness protection mechanisms should apply to the DDS Topic(s).
enableRead AccessControl	Boolean	0..1	attr	Defines whether read access control mechanisms should apply to the DDS Topic(s).
enableWrite AccessControl	Boolean	0..1	attr	Defines whether write access control mechanisms should apply to the DDS Topic(s).
metadata ProtectionKind	DdsProtectionKind Enum	0..1	attr	Defines the data protection policy applicable to metadata related to the DDS Topic(s).

Table A.101: DdsTopicAccessRule

Class	**DeadlineSupervision**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	Defines an DeadlineSupervision for one transition.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *PhmSupervision*, *Referrable*			
Aggregated by	GlobalSupervision.deadlineSupervision			
Attribute	*Type*	*Mult.*	*Kind*	*Note*

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Class	**DeadlineSupervision**			
maxDeadline	TimeValue	0..1	attr	Defines the longest time span before which the deadline is considered to be met for transition.
minDeadline	TimeValue	0..1	attr	Defines the shortest time span after which the deadline is considered to be met for transition.
transition	CheckpointTransition	0..1	ref	Reference to the transition in the context of a Deadline Supervision.

Table A.102: DeadlineSupervision

Class	***DiagnosticAbstractParameter*** (abstract)			
Package	M2::AUTOSARTemplates::DiagnosticExtract::CommonDiagnostics			
Note	This meta-class represents an abstract base class for modeling a diagnostic parameter.			
Base	*ARObject*			
Subclasses	DiagnosticParameter, DiagnosticParameterElement			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
bitOffset	PositiveInteger	0..1	attr	This represents the bitOffset of the DiagnosticParameter. The value of the bitOffset shall always be interpreted as relative to the start of the enclosing DiagnosticData Identifier, DiagnosticParameterIdentifier, or Diagnostic RoutineSubfunction. **Stereotypes:** atpIdentityContributor **Tags:** atp.Status=candidate
dataElement	DiagnosticDataElement	0..1	aggr	This represents the related dataElement of the Diagnostic Parameter **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=dataElement.shortName, data Element.variationPoint.shortLabel vh.latestBindingTime=postBuild
parameterSize	PositiveInteger	0..1	attr	This attribute allows for the specification of the parameter size. This information is relevant if there is a gap between one diagnostic parameter and the following diagnostic parameter (or the tail of the telegram). The unit is bit and the values shall be multiples of 8. **Tags:** atp.Status=candidate

Table A.103: DiagnosticAbstractParameter

Class	***DiagnosticAuthentication*** (abstract)			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::DiagnosticService::Authentication			
Note	This meta-class represents the ability to configure the usage of the UDS service Authentication in the Diagnostic extract.			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticServiceInstance*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Subclasses	DiagnosticAuthTransmitCertificate, DiagnosticAuthenticationConfiguration, DiagnosticDeAuthentication, DiagnosticProofOfOwnership, DiagnosticVerifyCertificateBidirectional, DiagnosticVerifyCertificate Unidirectional			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***

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Class	***DiagnosticAuthentication*** (abstract)			
authentication Class	Diagnostic AuthenticationClass	0..1	ref	This represents the corresponding "class", i.e. this meta-class provides properties that are shared among all instances of applicable sub-classes of DiagnosticService Instance. The subclasses that affected by this pattern implement references to the applicable "class"-role that substantiate this abstract reference.

Table A.104: DiagnosticAuthentication

Class	**DiagnosticAuthenticationInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a focused PortInterface for handling the diagnostic service "authentication" on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.105: DiagnosticAuthenticationInterface

Class	**DiagnosticAuthenticationPortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	This mapping class identifies the PortPrototype in the application software that handles the client authentication. **Tags:** atp.recommendedPackage=DiagnosticPortMapppings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
diagnostic Authentication	Diagnostic Authentication	0..1	ref	Reference to the DiagnosticAuthentication that is assigned to a SWC service port.
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic AuthenticationPortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process

Table A.106: DiagnosticAuthenticationPortMapping

Class	**DiagnosticClearCondition**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticClearCondition			
Note	This meta-class describes a clear condition for diagnostic purposes. **Tags:** atp.recommendedPackage=DiagnosticConditions			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticCondition*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
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Table A.107: DiagnosticClearCondition

Class	**DiagnosticClearConditionPortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	Defines to which SWC service ports the DiagnosticClearCondition is mapped. **Tags:** atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
clearCondition	DiagnosticClear Condition	0..1	ref	Reference to the ClearCondition which is mapped to a SWC service port.
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process
rPortPrototype InExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic ClearConditionMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.108: DiagnosticClearConditionPortMapping

Class	**DiagnosticComControl**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::DiagnosticService::CommunicationControl			
Note	This represents an instance of the "Communication Control" diagnostic service. **Tags:** atp.recommendedPackage=DiagnosticCommunicationControls			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticServiceInstance*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
comControl Class	DiagnosticComControl Class	0..1	ref	This reference substantiates that abstract reference in the role serviceClass for this specific concrete class. Thereby, the reference represents the ability to access shared attributes among all DiagnosticComControl in the given context.

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Class	**DiagnosticComControl**			
customSub Function Number	PositiveInteger	0..1	attr	This attribute shall be used to define a custom sub-function number if none of the standardized values of category shall be used.

Table A.109: DiagnosticComControl

Class	<<atpVariation>> **DiagnosticCommonProps**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::DiagnosticCommonProps			
Note	This meta-class aggregates a number of common properties that are shared among a diagnostic extract. **Tags:** vh.latestBindingTime=codeGenerationTime			
Base	*ARObject*			
Aggregated by	DiagnosticContributionSet.commonProperties			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
authentication Timeout	TimeValue	0..1	attr	This attribute defines the time (in seconds) that the authentication state is maintained in default-session if there is no communication from the authenticated client.
debounce AlgorithmProps	DiagnosticDebounce AlgorithmProps	*	aggr	Defines the used debounce algorithms relevant in the context of the enclosing DiagnosticCommonProps. Usually, there is a variety of debouncing algorithms to take into account and therefore the multiplicity of this aggregation is set to 0..*.
default Endianness	ByteOrderEnum	0..1	attr	Defines the default endianness of the data belonging to a DID or RID which is applicable if the DiagnosticData Element does not define the endianness via the swData DefProps.baseType attribute.
diagnostic Address	SoftwareCluster DiagnosticAddress	*	aggr	"This aggregation represents the collection of diagnostic addresses that apply for the SoftwareClusterDesign. Note: This atpSplitable property has no atp.Splitkey due to atpVariation (PropertySetPattern). **Stereotypes:** atpSplitable **Tags:** xml.namePlural=DIAGNOSTIC-ADDRESSES
event Combination Reporting Behavior	DiagnosticEvent CombinationReporting BehaviorEnum	0..1	attr	In case of EventCombination on Retrieval, this attribute specifies if a specific order of reporting is to be maintained.
external Authentication	DiagnosticExternal Authentication Identification	*	aggr	This aggregation supports the configuration of the authentication of diagnostic clients. Note: This atpSplitable property has no atp.Splitkey due to atpVariation (PropertySetPattern). **Stereotypes:** atpSplitable
maxNumberOf Request Correctly Received Response Pending	PositiveInteger	0..1	attr	Maximum number of negative responses with response code 0x78 (requestCorrectlyReceived-ResponsePending) allowed per request. DCM will send a negative response with response code 0x10 (generalReject), in case the limit value gets reached. Value 0xFF means that no limit number of NRC 0x78 response apply.
occurrence Counter Processing	DiagnosticOccurrence CounterProcessing Enum	0..1	attr	This attribute defines the consideration of the fault confirmation process for the occurrence counter.
resetConfirmed BitOnOverflow	Boolean	0..1	attr	This attribute defines, whether the confirmed bit is reset or not while an event memory entry will be displaced.

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Class	<<atpVariation>> **DiagnosticCommonProps**			
resetPendingBit OnOverflow	Boolean	0..1	attr	This attribute defines, whether the pending bit is reset or not while an event memory entry will be displaced. In order to be compliant to ISO 14229-1 [1], this parameter needs to be set to "false".
responseOnAll RequestSids	Boolean	0..1	attr	If set to FALSE the DCM will not respond to diagnostic request that contains a service ID which is in the range from 0x40 to 0x7F or in the range from 0xC0 to 0xFF (Response IDs).
responseOn Second Declined Request	Boolean	0..1	attr	Defines the reaction upon a second request (ClientB) that can not be processed (e.g. due to priority assessment). TRUE: when the second request (Client B) can not be processed, it shall be answered with NRC21 BusyRepeat Request. FALSE: when the second request (Client B) can not be processed, it shall not be responded.
typeOfEvent Combination Supported	DiagnosticEvent CombinationBehavior Enum	0..1	attr	Select type of Event Combination support.

Table A.110: DiagnosticCommonProps

Class	**DiagnosticConditionInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a PortInterface to process requests for diagnostic conditions on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.111: DiagnosticConditionInterface

Class	**DiagnosticContributionSet**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::DiagnosticContribution			
Note	This meta-class represents a root node of a diagnostic extract. It bundles a given set of diagnostic model elements. The granularity of the DiagonsticContributionSet is arbitrary in order to support the aspect of decentralized configuration, i.e. different contributors can come up with an own DiagnosticContribution Set. **Tags:** atp.recommendedPackage=DiagnosticContributionSets			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
common Properties	DiagnosticCommon Props	0..1	aggr	This attribute represents a collection of diagnostic properties that are shared among the entire Diagnostic ContributionSet. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=commonProperties

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Class	**DiagnosticContributionSet**			
element	DiagnosticCommon Element	*	ref	This represents a DiagnosticCommonElement considered in the context of the DiagnosticContributionSet **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=element.diagnosticCommonElement, element.variationPoint.shortLabel vh.latestBindingTime=postBuild
serviceTable	DiagnosticServiceTable	*	ref	This represents the collection of DiagnosticServiceTables to be considered in the scope of this Diagnostic ContributionSet. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=serviceTable.diagnosticServiceTable, service Table.variationPoint.shortLabel vh.latestBindingTime=postBuild

Table A.112: DiagnosticContributionSet

Class	**DiagnosticCustomServiceInstance**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::DiagnosticService::CustomServiceInstance			
Note	This meta-class has the ability to define an instance of a custom diagnostic service. **Tags:** atp.recommendedPackage=DiagnosticCustomInstances			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticServiceInstance*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
customService Class	DiagnosticCustom ServiceClass	0..1	ref	Reference to the corresponding DiagnosticCustom ServiceClass.

Table A.113: DiagnosticCustomServiceInstance

Class	**DiagnosticDTCInformationInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a PortInterface to access the properties of DTCs on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.114: DiagnosticDTCInformationInterface

Class	**DiagnosticDataElement**
Package	M2::AUTOSARTemplates::DiagnosticExtract::CommonDiagnostics
Note	This meta-class represents the ability to describe a concrete piece of data to be taken into account for diagnostic purposes.

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Class	**DiagnosticDataElement**			
Base	*ARObject*, *DiagnosticServiceMappingDiagTarget*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*DiagnosticAbstractParameter*.dataElement			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
arraySize Semantics	ArraySizeSemantics Enum	0..1	attr	This attribute controls the meaning of the value of the array size.
maxNumberOf Elements	PositiveInteger	0..1	attr	The existence of this attribute turns the data instance into an array of data. The attribute determines the size of the array in terms of how many elements the array can take.
scalingInfoSize	PositiveInteger	0..1	attr	Size in bytes of scaling information for the DiagnosticData Element if used with DiagnosticReadScalingDataBy Identifier
swDataDef Props	SwDataDefProps	0..1	aggr	This property allows to specify data definition properties in order to support the definition of e.g. computation formulae and data constraints. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=swDataDefProps

Table A.115: DiagnosticDataElement

Class	**DiagnosticDataElementInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a element-of-DID-focused PortInterface for diagnostics on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticAbstractDataIdentifierInterface*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
read	ClientServerOperation	0..1	aggr	This represents the method to read the content of an element of a diagnostic data identifier.

Table A.116: DiagnosticDataElementInterface

Class	**DiagnosticDataIdentifier**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::CommonDiagnostics			
Note	This meta-class represents the ability to model a diagnostic data identifier (DID) that is fully specified regarding the payload at configuration-time. **Tags:** atp.recommendedPackage=DiagnosticDataIdentifiers			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticAbstractDataIdentifier*, *DiagnosticCommon Element*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*

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Class	**DiagnosticDataIdentifier**			
dataElement	DiagnosticParameter	*	aggr	This is the dataElement associated with the Diagnostic DataIdentifier. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=dataElement.bitOffset, data Element.ident.shortName, dataElement.variation Point.shortLabel vh.latestBindingTime=postBuild
didSize	PositiveInteger	0..1	attr	This attribute indicates the size in bytes of the Diagnostic DataIdentifier.
representsVin	Boolean	0..1	attr	This attributes indicates whether the specific Diagnostic DataIdentifier represents the vehicle identification.
supportInfoByte	DiagnosticSupportInfo Byte	0..1	aggr	This attribute represents the supported information associated with the DiagnosticDataIdentifier.

Table A.117: DiagnosticDataIdentifier

Class	**DiagnosticDataIdentifierGenericInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a generic DID-focused PortInterface for diagnostics on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticAbstractDataIdentifierInterface*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.118: DiagnosticDataIdentifierGenericInterface

Class	**DiagnosticDataIdentifierInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a DID-focused PortInterface for diagnostics on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticAbstractDataIdentifierInterface*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
read	ClientServerOperation	0..1	aggr	This represents the method to read the content of a diagnostic data identifier.
write	ClientServerOperation	0..1	aggr	This represents the method to write the contents of a diagnostic data identifier.

Table A.119: DiagnosticDataIdentifierInterface

Class	**DiagnosticDataPortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	This meta-class provides the ability to define a diagnostic access to an entire DID. **Tags:** atp.recommendedPackage=DiagnosticServiceMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
diagnosticData Element	DiagnosticDataElement	0..1	ref	This reference represents the applicable DiagnosticData Element.
diagnosticData Identifier	DiagnosticDataIdentifier	0..1	ref	This reference represents the applicable DiagnosticData Identfiier.
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This reference identifies the applicable PPortPrototype from which that data is obtained. The reference has the ability to point into the component hierarchy (under possible consideration of the rootSoftwareComposition). **Stereotypes:** atpUriDef **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process

Table A.120: DiagnosticDataPortMapping

Class	**DiagnosticEcuReset**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::DiagnosticService::EcuReset			
Note	This represents an instance of the "ECU Reset" diagnostic service. **Tags:** atp.recommendedPackage=DiagnosticEcuResets			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticServiceInstance*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
customSub Function Number	PositiveInteger	0..1	attr	This attribute shall be used to define a custom sub-function number if none of the standardized values of category shall be used.
ecuResetClass	DiagnosticEcuReset Class	0..1	ref	This reference substantiates that abstract reference in the role serviceClass for this specific concrete class. Thereby, the reference represents the ability to access shared attributes among all DiagnosticEcuReset in the given context.

Table A.121: DiagnosticEcuReset

Class	**DiagnosticEnableCondition**
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dem::DiagnosticCondition
Note	Specification of an enable condition. **Tags:** atp.recommendedPackage=DiagnosticConditions

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Class	**DiagnosticEnableCondition**			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticCondition*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.122: DiagnosticEnableCondition

Class	**DiagnosticEnableConditionPortMapping**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::DiagnosticMapping			
Note	Defines to which SWC service ports the DiagnosticEnableCondition is mapped. **Tags:** atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
enableCondition	DiagnosticEnable Condition	0..1	ref	Reference to the EnableCondition which is mapped to a SWC service port.
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process
rPortPrototype InExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic EnableConditionPortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.123: DiagnosticEnableConditionPortMapping

Class	**DiagnosticEnvDataElementCondition**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::EnvironmentalCondition			
Note	This meta-class represents the ability to formulate a diagnostic environment condition based on the value of a data element owned by the application software.			
Base	*ARObject*, *DiagnosticEnvCompareCondition*, *DiagnosticEnvConditionFormulaPart*			
Aggregated by	DiagnosticEnvConditionFormula.part			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
compareValue	ValueSpecification	0..1	aggr	This aggregation represents the definition of the compare value against which the value taken from the application software shall be compared.
dataPrototype	DataPrototype	0..1	iref	This instanceRef represent the ability to access a data element owned by the application software on the AUTOSAR classic platform. **InstanceRef implemented by:** DataPrototypeInSystem InstanceRef

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Class	**DiagnosticEnvDataElementCondition**			
pPortPrototype	PPortPrototype	0..1	iref	This instanceRef identifies the PortPrototype from which the relevant information for the environment condition can be obtained. This InstanceRef is only relevant for the adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
process	ProcessDesign	0..1	ref	This reference identifies the applicable ProcessDesign.
swDataDef Props	SwDataDefProps	0..1	aggr	Via this aggregation it is possible to describe the properties of the data that is obtained from the application for the environmental condition. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=swDataDefProps

Table A.124: DiagnosticEnvDataElementCondition

Class	**DiagnosticEvent**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dem::DiagnosticEvent			
Note	This element is used to configure DiagnosticEvents. **Tags:** atp.recommendedPackage=DiagnosticEvents			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *Identifiable*, *Multilanguage Referrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
associated Event Identification	PositiveInteger	0..1	attr	This attribute represents the identification number that is associated with the enclosing DiagnosticEvent and allows to identify it when placed into a snapshot record or extended data record storage. This value can be reported as internal data element in snapshot records or extended data records.
clearEvent Allowed Behavior	DiagnosticClearEvent AllowedBehaviorEnum	0..1	attr	This attribute defines the resulting UDS status byte for the related event, which shall not be cleared according to the ClearEventAllowed callback
confirmation Threshold	PositiveInteger	0..1	attr	This attribute defines the number of operation cycles with a failed result before a confirmed DTC is set to 1. The semantic of this attribute is a by "1" increased value compared to the confirmation threshold of the "trip counter" mentioned in ISO 14229-1 in figure D.4. A value of "1" defines the immediate confirmation of the DTC along with the first reported failed. This is also sometimes called "zero trip DTC". A value of "2" defines a DTC confirmation in the operation cycle after the first occurred failed. A value of "2" is typically used in the US for OBD DTC confirmation. **Stereotypes:** atpVariation **Tags:** vh.latestBindingTime=preCompileTime
connected Indicator	DiagnosticConnected Indicator	*	aggr	Event specific description of Indicators. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=connectedIndicator.shortName, connected Indicator.variationPoint.shortLabel vh.latestBindingTime=postBuild

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Class	**DiagnosticEvent**			
prestorage FreezeFrame	Boolean	0..1	attr	This attribute describes whether the Prestorage of Freeze Frames is supported by the assigned event or not. true: Prestorage of FreezeFrames is supported fFalse: Prestorage of FreezeFrames is not supported
prestored Freezeframe StoredInNvm	Boolean	0..1	attr	If the Event uses a prestored freeze-frame (using the operations PrestoreFreezeFrame and ClearPrestored FreezeFrame of the service interface DiagnosticMonitor) this attribute indicates if the Event requires the data to be stored in non-volatile memory. TRUE = Dem shall store the prestored data in non-volatile memory, FALSE = Data can be lost at shutdown (not stored in Nvm)
recoverableIn SameOperation Cycle	Boolean	0..1	attr	If the attribute is set to true then reporting PASSED will reset the indication of a failed test in the current operation cycle. If the attribute is set to false then reporting PASSED will be ignored and not lead to a reset of the indication of a failed test.

Table A.125: DiagnosticEvent

Class	**DiagnosticEventInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a PortInterface to access the properties of diagnostic events on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.126: DiagnosticEventInterface

Class	**DiagnosticEventPortMapping**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::DiagnosticMapping			
Note	Defines to which SWC service ports the DiagnosticEvent is mapped. **Tags:** atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
diagnosticEvent	DiagnosticEvent	0..1	ref	Reference to the DiagnosticEvent that is assigned to SWC service ports.
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process

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Class	DiagnosticEventPortMapping			
rPortPrototype InExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic EventPortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.127: DiagnosticEventPortMapping

Class	DiagnosticExternalAuthenticationInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a focused PortInterface for handling the diagnostic client authentication (i.e. convey the Authentication state to the Diagnostic Server instance of the DM) on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.128: DiagnosticExternalAuthenticationInterface

Class	DiagnosticExternalAuthenticationPortMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	This mapping class identifies the PortPrototype in the application software that handles the external authentication. **Tags:** atp.recommendedPackage=DiagnosticPortMapppings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process
rPortPrototype InExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic ClientAuthenticationPortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.129: DiagnosticExternalAuthenticationPortMapping

Class	**DiagnosticIndicatorInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a PortInterface to implement indicator functionality on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.130: DiagnosticIndicatorInterface

Class	**DiagnosticIndicatorPortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	Defines to which SWC service ports the DiagnosticIndicator is mapped. **Tags:** atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
indicator	DiagnosticIndicator	0..1	ref	Reference to the DiagnosticIndicator which is mapped to a SWC service port.
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process
rPortPrototype InExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic IndicatorMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.131: DiagnosticIndicatorPortMapping

Class	***DiagnosticMapping*** (abstract)			
Package	M2::AUTOSARTemplates::DiagnosticExtract::DiagnosticMapping			
Note	Abstract element for different kinds of diagnostic mappings.			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *Identifiable*, *Multilanguage Referrable*, *PackageableElement*, *Referrable*			
Subclasses	DiagnosticEventToDebounceAlgorithmMapping, DiagnosticEventToEnableConditionGroupMapping, DiagnosticEventToOperationCycleMapping, DiagnosticEventToSecurityEventMapping, DiagnosticEvent ToTroubleCodeUdsMapping, DiagnosticFimAliasEventGroupMapping, DiagnosticFimAliasEventMapping, DiagnosticInhibitSourceEventMapping, DiagnosticMasterToSlaveEventMapping, DiagnosticProvidedData Mapping, DiagnosticSecureCodingMapping, DiagnosticSovdConfigurationDataIdentifierMapping, *DiagnosticSwMapping*, DiagnosticTroubleCodeUdsToClearConditionGroupMapping, DiagnosticTrouble CodeUdsToTroubleCodeObdMapping			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.132: DiagnosticMapping

Class	**DiagnosticMemoryDestinationPortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	Defines to which SWC service ports the DiagnosticMemoryDestination. **Tags:** atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
memory Destination	DiagnosticMemory Destination	0..1	ref	Reference to the MemoryDestination which is mapped to a SWC service port.
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process
rPortPrototype InExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic MemoryDestinationMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.133: DiagnosticMemoryDestinationPortMapping

Class	**DiagnosticMonitorInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a monitor-focused PortInterface for diagnostics on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.134: DiagnosticMonitorInterface

Class	**DiagnosticMonitorPortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	Defines to which SWC service port the Diagnostic Monitor is mapped. **Tags:** atp.recommendedPackage=DiagnosticPortMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
diagnosticEvent	DiagnosticEvent	0..1	ref	Reference to the DiagnosticEvent that is assigned to SWC service ports.

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Class	**DiagnosticMonitorPortMapping**			
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process
rPortPrototype InExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic MonitorPortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.135: DiagnosticMonitorPortMapping

Class	**DiagnosticMultipleConditionInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a condition-focused PortInterface for diagnostics on the adaptive platform. In contrast to the DiagnosticConditionInterface, the DiagnosticMultipleCondition Interface allows for handling more than one condition in the scope of a single PortPrototype. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticMultipleResourceInterface*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.136: DiagnosticMultipleConditionInterface

Class	**DiagnosticMultipleConditionPortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	Defines to which SWC service port that can handle a collection of diagostic conditions the specific condition is mapped. **Tags:** atp.recommendedPackage=DiagnosticPortMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticMultipleResourcePortMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
diagnostic Condition	DiagnosticCondition	0..1	ref	Reference to the DiagnosticCondition which is mapped to a SWC service port.
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process

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Class	DiagnosticMultipleConditionPortMapping			
rPortPrototype InExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic ConditionPortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.137: DiagnosticMultipleConditionPortMapping

Class	DiagnosticMultipleEventInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a event-focused PortInterface for diagnostics on the adaptive platform. In contrast to the DiagnosticEventInterface, the DiagnosticMultipleMonitorInterface allows for handling more than one event in the scope of a single PortPrototype. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticMultipleResourceInterface*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.138: DiagnosticMultipleEventInterface

Class	DiagnosticMultipleEventPortMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	Defines to which SWC service port that can handle a collection of event status the specific event is mapped. **Tags:** atp.recommendedPackage=DiagnosticPortMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticMultipleResourcePortMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
diagnosticEvent	DiagnosticEvent	0..1	ref	Reference to the DiagnosticEvent that is assigned to a SWC service port.
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process
rPortPrototype InExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic MonitorMultipleEventPortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.139: DiagnosticMultipleEventPortMapping

Class	**DiagnosticMultipleMonitorInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a monitor-focused PortInterface for diagnostics on the adaptive platform. In contrast to the DiagnosticMonitorInterface, the DiagnosticMultipleMonitor Interface allows for handling more than one event in the scope of a single PortPrototype. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticMultipleResourceInterface*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.140: DiagnosticMultipleMonitorInterface

Class	**DiagnosticMultipleMonitorPortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	Defines to which SWC service port that can handle a collection of monitors the specific event is mapped **Tags:** atp.recommendedPackage=DiagnosticPortMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticMultipleResourcePortMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
diagnosticEvent	DiagnosticEvent	0..1	ref	Reference to the DiagnosticEvent that is assigned to a SWC service port.
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process
rPortPrototype InExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic MonitorMultipleMonitorPortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.141: DiagnosticMultipleMonitorPortMapping

Class	**DiagnosticOperationCycle**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dem::DiagnosticOperationCycle			
Note	Definition of an operation cycle that is the base of the event qualifying and for Dem scheduling. **Tags:** atp.recommendedPackage=DiagnosticOperationCycles			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *Identifiable*, *Multilanguage Referrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
type	DiagnosticOperation CycleTypeEnum	0..1	attr	Operation cycles types for the Dem.

Table A.142: DiagnosticOperationCycle

Class	**DiagnosticOperationCycleInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a PortInterface to process requests for operation cycles on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.143: DiagnosticOperationCycleInterface

Class	**DiagnosticOperationCyclePortMapping**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::DiagnosticMapping			
Note	Defines to which SWC service ports the DiagnosticOperationCycle is mapped. **Tags:** atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
operationCycle	DiagnosticOperation Cycle	0..1	ref	Reference to the DiagnosticOperationCycle that is assigned to SWC service ports.
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process
rPortPrototype InExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic OperationCyclePortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.144: DiagnosticOperationCyclePortMapping

Class	**DiagnosticProvidedDataMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticProvidedDataMapping			
Note	This represents the ability to define the nature of a data access for a DiagnosticDataElement based on a data provider that cannot be modeled explicitly. **Tags:** atp.recommendedPackage=DataMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
dataElement	DiagnosticDataElement	0..1	ref	This represents the DiagnosticDataElement for which the access is further qualified by the DiagnosticProvidedData Mapping.dataProvider.
dataProvider	NameToken	0..1	attr	This represents the ability to further specify the data provider.

Table A.145: DiagnosticProvidedDataMapping

Class	**DiagnosticRequestDownload**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::DiagnosticService::MemoryByAddress			
Note	This represents an instance of the "Request Download" diagnostic service. **Tags:** atp.recommendedPackage=DiagnosticMemoryByAdresss			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMemoryAddressableRangeAccess*, *DiagnosticMemoryByAddress*, *DiagnosticServiceInstance*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
request DownloadClass	DiagnosticRequest DownloadClass	0..1	ref	This reference substantiates that abstract reference in the role serviceClass for this specific concrete class. Thereby, the reference represents the ability to access shared attributes among all DiagnosticRequestDownload in the given context.

Table A.146: DiagnosticRequestDownload

Class	**DiagnosticRequestFileTransfer**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::DiagnosticService::RequestFileTransfer			
Note	This diagnostic service instance implements the UDS service 0x38. **Tags:** atp.recommendedPackage=DiagnosticRequestFileTransfers			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticServiceInstance*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
requestFile TransferClass	DiagnosticRequestFile TransferClass	0..1	ref	This reference substantiates that abstract reference in the role serviceClass for this specific concrete class. Thereby, the reference represents the ability to access shared attributes among all DiagnosticRequestFile Transfer in the given context.

Table A.147: DiagnosticRequestFileTransfer

Class	**DiagnosticRequestUpload**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::DiagnosticService::MemoryByAddress			
Note	This represents an instance of the "Request Upload" diagnostic service. **Tags:** atp.recommendedPackage=DiagnosticMemoryByAdresss			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMemoryAddressableRangeAccess*, *DiagnosticMemoryByAddress*, *DiagnosticServiceInstance*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
requestUpload Class	DiagnosticRequest UploadClass	0..1	ref	This reference substantiates that abstract reference in the role serviceClass for this specific concrete class. Thereby, the reference represents the ability to access shared attributes among all DiagnosticRequestUpload in the given context.

Table A.148: DiagnosticRequestUpload

Class	**DiagnosticRoutineControl**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::DiagnosticService::RoutineControl			
Note	This represents an instance of the "Routine Control" diagnostic service. **Tags:** atp.recommendedPackage=DiagnosticRoutineControls			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticServiceInstance*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
routine	DiagnosticRoutine	0..1	ref	This refers to the applicable DiagnosticRoutine.
routineControl Class	DiagnosticRoutine ControlClass	0..1	ref	This reference substantiates that abstract reference in the role serviceClass for this specific concrete class. Thereby, the reference represents the ability to access shared attributes among all DiagnosticRoutineControl in the given context.

Table A.149: DiagnosticRoutineControl

Class	**DiagnosticRoutineInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a routine-focused PortInterface for diagnostics on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticAbstractRoutineInterface*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
requestResult	ClientServerOperation	0..1	aggr	This represents the request result method of the diagnostic routine.
start	ClientServerOperation	0..1	aggr	This represents the start method of the diagnostic routine.
stop	ClientServerOperation	0..1	aggr	This represents the stop method of the diagnostic routine.

Table A.150: DiagnosticRoutineInterface

Class	**DiagnosticSecurityLevel**			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm			
Note	This meta-class represents the ability to define a security level considered for diagnostic purposes. **Tags:** atp.recommendedPackage=DiagnosticSecurityLevels			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *Identifiable*, *Multilanguage Referrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
accessData RecordSize	PositiveInteger	0..1	attr	This represents the size of the AccessDataRecord used in GetSeed. Unit:byte.
keySize	PositiveInteger	0..1	attr	This represents the size of the security key. Unit: byte.
numFailed SecurityAccess	PositiveInteger	0..1	attr	This represents the number of failed security accesses after which the delay time is activated.
securityDelay Time	TimeValue	0..1	attr	This represents the delay time after a failed security access. Unit: second.
seedSize	PositiveInteger	0..1	attr	This represents the size of the security seed. Unit: byte.

Table A.151: DiagnosticSecurityLevel

Class	**DiagnosticSecurityLevelInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a security-level-focused PortInterface for diagnostics on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.152: DiagnosticSecurityLevelInterface

Class	**DiagnosticSecurityLevelPortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	Defines to which SWC service ports the DiagnosticSecurityLevel is mapped. **Tags:** atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic SecurityLevelMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process
securityLevel	DiagnosticSecurityLevel	0..1	ref	Reference to the SecurityLevel which is mapped to a SWC service port.

Table A.153: DiagnosticSecurityLevelPortMapping

Class	**DiagnosticServiceGenericMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	This meta-class represents the ability to implement a generic generic mapping for select diagnostics services on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticServiceMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
diagnostic ServiceInstance	DiagnosticService Instance	0..1	ref	Reference to the ServiceInstance mapped to a SWC service port.

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Class	**DiagnosticServiceGenericMapping**			
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic ServiceGenericMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process

Table A.154: DiagnosticServiceGenericMapping

Class	***DiagnosticServiceInstance*** (abstract)			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::DiagnosticService::CommonService			
Note	This represents a concrete instance of a diagnostic service.			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *Identifiable*, *Multilanguage Referrable*, *PackageableElement*, *Referrable*			
Subclasses	*DiagnosticAuthentication*, DiagnosticClearDiagnosticInformation, DiagnosticClearResetEmissionRelated Info, DiagnosticComControl, DiagnosticControlDTCSetting, DiagnosticCustomServiceInstance, *DiagnosticDataByIdentifier*, DiagnosticDynamicallyDefineDataIdentifier, DiagnosticEcuReset, Diagnostic IOControl, *DiagnosticMemoryByAddress*, DiagnosticReadDTCInformation, DiagnosticReadDataBy PeriodicID, DiagnosticRequestControlOfOnBoardDevice, DiagnosticRequestCurrentPowertrainData, DiagnosticRequestEmissionRelatedDTC, DiagnosticRequestEmissionRelatedDTCPermanentStatus, DiagnosticRequestFileTransfer, DiagnosticRequestOnBoardMonitoringTestResults, DiagnosticRequest PowertrainFreezeFrameData, DiagnosticRequestVehicleInfo, DiagnosticResponseOnEvent, Diagnostic RoutineControl, DiagnosticSecurityAccess, DiagnosticSessionControl			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
access Permission	DiagnosticAccess Permission	0..1	ref	This represents the collection of DiagnosticAccess Permissions that allow for the execution of the referencing DiagnosticServiceInstance.. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=accessPermission
serviceClass	DiagnosticServiceClass	0..1	ref	This represents the corresponding "class", i.e. this meta-class provides properties that are shared among all instances of applicable sub-classes of DiagnosticService Instance. The subclasses that affected by this pattern implement references to the applicable "class"-role that substantiate this abstract reference. **Stereotypes:** atpAbstract

Table A.155: DiagnosticServiceInstance

Class	**DiagnosticServiceValidationConfiguration**
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution
Note	This meta-class has the ability to configure the order of manufacturer/supplier-checks. **Tags:** atp.recommendedPackage=DiagnosticValueConfigurations
Base	*ARObject*

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Class	**DiagnosticServiceValidationConfiguration**			
Aggregated by	SoftwareClusterDiagnosticDeploymentProps.validationConfiguration			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
manufacturer ValidationOrder (ordered)	DiagnosticService ValidationMapping	*	ref	This reference defines the order in which validations created by manufacturer are executed.
sovdValidation Order (ordered)	DiagnosticSovdService ValidationPortMapping	*	ref	This reference defines the order in which validations of SOVD requests are executed. **Tags:** atp.Status=candidate
supplier ValidationOrder (ordered)	DiagnosticService ValidationMapping	*	ref	This reference defines the order in which validations created by supplier are executed.

Table A.156: DiagnosticServiceValidationConfiguration

Class	**DiagnosticServiceValidationInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a PortInterface to process requests for service validation on the adaptive platform. **Tags:** atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.157: DiagnosticServiceValidationInterface

Class	**DiagnosticServiceValidationMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	This meta-class provides the ability to specify manufacturer/supplier checks to be executed before diagnostic services can be processed. **Tags:** atp.recommendedPackage=DiagnosticPortMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This mapping identifies a PortPrototype typed by a DiagnosticValidationInterface in which a manufacturer/ supplier-specific check is executed. **Stereotypes:** atpUriDef **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process

Table A.158: DiagnosticServiceValidationMapping

Class	**DiagnosticSovdAuthorizationInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class is used to type a PPortPrototype for implementing the SOVD authorization. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *DiagnosticSovdPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
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Table A.159: DiagnosticSovdAuthorizationInterface

Class	**DiagnosticSovdAuthorizationPortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticSovdMapping			
Note	This mapping class identifies the PortPrototype in the application software that handles the SOVD authorization. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic SovdAuthorizationPortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **Tags:** atp.Status=candidate **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process atp.Status=candidate

Table A.160: DiagnosticSovdAuthorizationPortMapping

Class	**DiagnosticSovdBulkData**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::SovdServiceInstance			
Note	This meta-class represents a "Bulk Data" SOVD service instance. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticSovdServiceInstances			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticSovdService Instance*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
bulkData Category	String	0..1	attr	This attribute provides a categorization of the bulk data. **Tags:** atp.Status=candidate

Table A.161: DiagnosticSovdBulkData

Class	**DiagnosticSovdBulkDataInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class is used to type a PPortPrototype for implementing the SOVD bulk data transmission. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *DiagnosticSovdPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.162: DiagnosticSovdBulkDataInterface

Class	**DiagnosticSovdBulkDataPortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticSovdMapping			
Note	This mapping associates a PPortPrototype typed by a DiagnosticSovdBulkDataInterface to to the corresponding SOVD service instance that is modeled as DiagnosticSovdBulkData. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic SovdBulkDataPortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **Tags:** atp.Status=candidate **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef

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Class	**DiagnosticSovdBulkDataPortMapping**			
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process atp.Status=candidate
serviceInstance	DiagnosticSovdBulk Data	0..1	ref	This reference identifies the applicable diagnostic SOVD service instance. **Tags:** atp.Status=candidate

Table A.163: DiagnosticSovdBulkDataPortMapping

Class	***DiagnosticSovdConfiguration*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::SovdServiceInstance			
Note	This abstract meta-class represents a "configuration" SOVD service instance. The concrete nature of the service instance is defined by sub-classes. **Tags:** atp.Status=candidate			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticSovdService Instance*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Subclasses	DiagnosticSovdConfigurationBulkData, DiagnosticSovdConfigurationParameter			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.164: DiagnosticSovdConfiguration

Class	**DiagnosticSovdConfigurationDataIdentifierMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticSovdMapping			
Note	This mapping associates a SOVD configuration service instance to a DiagnosticDataIdentifier that carries the configuration payload. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
dataIdentifier	DiagnosticDataIdentifier	0..1	ref	This reference identifies the applicable data identifier, **Tags:** atp.Status=candidate
serviceInstance	DiagnosticSovd ConfigurationParameter	0..1	ref	This reference identifies the applicable service instance. **Tags:** atp.Status=candidate

Table A.165: DiagnosticSovdConfigurationDataIdentifierMapping

Class	**DiagnosticSovdConfigurationInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class is used to configure a PortInterface for the exchange of configuration content. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *DiagnosticSovdPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.166: DiagnosticSovdConfigurationInterface

Class	**DiagnosticSovdConfigurationParameter**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::SovdServiceInstance			
Note	This meta-class represents a "Configuration Parameter" SOVD service instance. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticSovdServiceInstances			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticSovdConfiguration*, *DiagnosticSovdServiceInstance*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.167: DiagnosticSovdConfigurationParameter

Class	**DiagnosticSovdConfigurationPortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticSovdMapping			
Note	This mapping associates a PPortPrototype typed by a DiagnosticSovdConfigurationInterface to to the corresponding SOVD service instance that is modeled as DiagnosticSovdConfiguration. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic SovdConfigurationPortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **Tags:** atp.Status=candidate **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef

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Class	**DiagnosticSovdConfigurationPortMapping**			
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process atp.Status=candidate
serviceInstance	DiagnosticSovd Configuration	0..1	ref	This reference identifies the applicable diagnostic SOVD service instance. **Tags:** atp.Status=candidate

Table A.168: DiagnosticSovdConfigurationPortMapping

Class	**DiagnosticSovdLog**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::SovdServiceInstance			
Note	This meta-class represents a "Log" SOVD service instance. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticSovdServiceInstances			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticSovdService Instance*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.169: DiagnosticSovdLog

Class	**DiagnosticSovdMethod**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::SovdServiceInstance			
Note	A DiagnosticSovdMethod represents a re-usable complex operation (that consists of primitive operations) in the context of the communication of an SOVD server. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticSovdMethods			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *Identifiable*, *Multilanguage Referrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
delete	DiagnosticSovdMethod Primitive	*	aggr	This represents the "delete" method primitive. **Tags:** atp.Status=candidate
get	DiagnosticSovdMethod Primitive	*	aggr	This represents the "get" method primitive. **Tags:** atp.Status=candidate
post	DiagnosticSovdMethod Primitive	*	aggr	This represents the "post" method primitive. **Tags:** atp.Status=candidate
put	DiagnosticSovdMethod Primitive	*	aggr	This represents the "delete" method primitive. **Tags:** atp.Status=candidate

Table A.170: DiagnosticSovdMethod

Class	**DiagnosticSovdMethodPrimitive**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::SovdServiceInstance			
Note	This meta-class represents a primitive operation inside a DiagnosticSovdMethod. **Tags:** atp.Status=candidate			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	DiagnosticSovdMethod.delete, DiagnosticSovdMethod.get, DiagnosticSovdMethod.post, DiagnosticSovdMethod.put			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
access Permission	DiagnosticAccess Permission	0..1	ref	This reference identifes the applicable access permission. **Tags:** atp.Status=candidate

Table A.171: DiagnosticSovdMethodPrimitive

Class	**DiagnosticSovdProximityChallengeInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class is used to type a PPortPrototype for implementing the SOVD proximity challenge. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *DiagnosticSovdPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.172: DiagnosticSovdProximityChallengeInterface

Class	**DiagnosticSovdProximityChallengePortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticSovdMapping			
Note	This mapping class identifies the PortPrototype in the application software that handles the SOVD proximity challenge. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic SovdProximityChallengePortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **Tags:** atp.Status=candidate **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef

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Class	DiagnosticSovdProximityChallengePortMapping			
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process atp.Status=candidate

Table A.173: DiagnosticSovdProximityChallengePortMapping

Class	DiagnosticSovdServiceValidationInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class is used to type a PPortPrototype for implementing the SOVD service validation. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticPortInterface			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *DiagnosticSovdPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
–	–	–	–	–

Table A.174: DiagnosticSovdServiceValidationInterface

Class	DiagnosticSovdServiceValidationPortMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticSovdMapping			
Note	This mapping class identifies the PortPrototype in the application software that handles the SOVD service validation. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic SovdValidationPortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **Tags:** atp.Status=candidate **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Tags:** atp.Status=candidate

Table A.175: DiagnosticSovdServiceValidationPortMapping

Class	**DiagnosticSovdUpdate**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::SovdServiceInstance			
Note	This meta-class represents a "Update" SOVD service instance. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticSovdServiceInstances			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticSovdService Instance*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.176: DiagnosticSovdUpdate

Class	**DiagnosticSovdUpdateInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class is used to type a PPortPrototype for implementing the SOVD update procedure. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *DiagnosticPortInterface*, *DiagnosticSovdPortInterface*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.177: DiagnosticSovdUpdateInterface

Class	**DiagnosticSovdUpdatePortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticSovdMapping			
Note	This mapping associates a PPortPrototype typed by an DiagnosticSovdUpdateInterface with the corresponding SOVD service instance that is modeled as a DiagnosticSovdUpdate. **Tags:** atp.Status=candidate atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *DiagnosticSwMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic SovdUpdatePortMapping on the AUTOSAR adaptive platform. **Stereotypes:** atpUriDef **Tags:** atp.Status=candidate **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef

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Class	DiagnosticSovdUpdatePortMapping			
process	ProcessDesign	0..1	ref	Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process atp.Status=candidate
serviceInstance	DiagnosticSovdUpdate	0..1	ref	This reference identifies the applicable diagnostic SOVD service instance. **Tags:** atp.Status=candidate

Table A.178: DiagnosticSovdUpdatePortMapping

Class	*DiagnosticSwMapping* (abstract)			
Package	M2::AUTOSARTemplates::DiagnosticExtract::DiagnosticMapping			
Note	This represents the ability to define a mapping between a diagnostic information (at this point there is no way to become more specific about the semantics) to a software-component.			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Subclasses	DiagnosticAuthenticationPortMapping, DiagnosticClearConditionPortMapping, DiagnosticDataPort Mapping, DiagnosticEnableConditionPortMapping, DiagnosticEventPortMapping, DiagnosticExternal AuthenticationPortMapping, DiagnosticFimFunctionMapping, DiagnosticIndicatorPortMapping, DiagnosticMemoryDestinationPortMapping, DiagnosticMonitorPortMapping, *DiagnosticMultipleResource PortMapping*, DiagnosticOperationCyclePortMapping, DiagnosticSecurityLevelPortMapping, Diagnostic ServiceDataMapping, DiagnosticServiceGenericMapping, DiagnosticServiceSwMapping, Diagnostic ServiceValidationMapping, DiagnosticSovdAuthorizationPortMapping, DiagnosticSovdBulkDataPort Mapping, DiagnosticSovdConfigurationPortMapping, DiagnosticSovdProximityChallengePortMapping, DiagnosticSovdServiceValidationPortMapping, DiagnosticSovdUpdatePortMapping			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.179: DiagnosticSwMapping

Class	DiagnosticTroubleCodeUds			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dem::DiagnosticTroubleCode			
Note	This element is used to describe non OBD-relevant DTCs. **Tags:** atp.recommendedPackage=DiagnosticTroubleCodes			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticTroubleCode*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
considerPto Status	Boolean	0..1	attr	This attribute describes the affection of the event by the Dem PTO handling. true: the event is affected by the Dem PTO handling. false: the event is not affected by the Dem PTO handling. **Stereotypes:** atpVariation **Tags:** vh.latestBindingTime=preCompileTime
dtcProps	DiagnosticTroubleCode Props	0..1	ref	Defined properties associated with the DemDTC.

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Class	**DiagnosticTroubleCodeUds**			
eventReadiness Group	EventObdReadiness Group	0..1	aggr	This attribute specifies the Event OBD Readiness group for PID $01 and PID $41 computation. This attribute is only applicable for emission-related ECUs. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=eventReadinessGroup.eventObdReadiness Group, eventReadinessGroup.variationPoint.shortLabel vh.latestBindingTime=postBuild
functionalUnit	PositiveInteger	0..1	attr	This attribute specifies a 1-byte value which identifies the corresponding basic vehicle / system function which reports the DTC. This parameter is necessary for the report of severity information. **Stereotypes:** atpVariation **Tags:** vh.latestBindingTime=preCompileTime
obdDtc Value3Byte	PositiveInteger	0..1	attr	3 Byte OBD DTC value based on the definition from SAE J2012. The existence of this attribute is only required if separated UDS and OBD DTC values are used for SAE J1979-2. If this attribute does not exist, then UDS DTC values are used with J1979-2. **Stereotypes:** atpVariation **Tags:** vh.latestBindingTime=preCompileTime
severity	DiagnosticUdsSeverity Enum	0..1	attr	DTC severity according to ISO 14229-1. **Stereotypes:** atpVariation **Tags:** vh.latestBindingTime=preCompileTime
udsDtcValue	PositiveInteger	0..1	attr	Unique Diagnostic Trouble Code value for UDS. **Stereotypes:** atpVariation **Tags:** vh.latestBindingTime=preCompileTime
wwhObdDtc Class	DiagnosticWwhObdDtc ClassEnum	0..1	attr	This attribute is used to identify (if applicable) the corresponding severity class of an WWH-OBD DTC. **Stereotypes:** atpVariation **Tags:** vh.latestBindingTime=preCompileTime

Table A.180: DiagnosticTroubleCodeUds

Class	**DiagnosticTroubleCodeUdsToClearConditionGroupMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticClearCondition			
Note	This meta-class provides the ability to map a DiagnosticClearConditionGroup to a collection of Diagnostic TroubleCodeUds. **Tags:** atp.recommendedPackage=DiagnosticMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *DiagnosticCommonElement*, *DiagnosticMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
clearCondition Group	DiagnosticClear ConditionGroup	0..1	ref	Thi reference identifies the applicable DiagnosticClear ConditionGroup.
troubleCodeUds	DiagnosticTroubleCode Uds	0..1	ref	This reference identifies the DiagnosticTroubleCodeUds that are relevant for the mapping.

Table A.181: DiagnosticTroubleCodeUdsToClearConditionGroupMapping

Class	**DltApplication**			
Package	M2::AUTOSARTemplates::LogAndTraceExtract			
Note	This meta-class represents the application from which the log and trace message originates.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	DltEcu.application			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
application Description	String	0..1	attr	This attribute can be used to describe the applicationId that is used in the log and trace message in more detail.
applicationId	String	0..1	attr	This attribute identifies the SW-C/BSW module in the log and trace message.
context	DltContext	*	ref	Definition of ContextIds for the Application. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=context.dltContext, context.variationPoint.shortLabel vh.latestBindingTime=systemDesignTime

Table A.182: DltApplication

Class	**DltApplicationToProcessMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::LogAndTrace			
Note	This element assigns a DltApplicationId to a Process. **Tags:** atp.recommendedPackage=DltApplicationToProcessMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
dltApplication	DltApplication	0..1	ref	Reference to a DltApplication that defines the application Id
process	Process	0..1	ref	Reference to the process that is assigned to a Log And Trace applicationId.

Table A.183: DltApplicationToProcessMapping

Class	**DltContext**			
Package	M2::AUTOSARTemplates::LogAndTraceExtract			
Note	This meta-class represents the Context that groups Log and Trace Messages that are generated by an application. **Tags:** atp.recommendedPackage=DltContexts			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
context Description	String	0..1	attr	This attribute can be used to describe the contextId that is used in the log and trace message in more detail.
contextId	String	0..1	attr	This attribute is used to group log and trace messages produced by an application to distinguish functionality.

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Class	**DltContext**			
dltMessage	DltMessage	*	ref	Group of Log and Trace Messages assigned to the Dlt Context **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=dltMessage.dltMessage, dlt Message.variationPoint.shortLabel vh.latestBindingTime=systemDesignTime

Table A.184: DltContext

Class	**DltEcu**			
Package	M2::AUTOSARTemplates::LogAndTraceExtract			
Note	This element represents an Ecu or Machine that produces logging and tracing information. **Tags:** atp.recommendedPackage=DltEcus			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
application	DltApplication	*	aggr	Application on DltEcu that provides log or trace data. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=application.shortName, application.variation Point.shortLabel vh.latestBindingTime=systemDesignTime
ecuId	String	0..1	attr	This attribute defines the name of the ECU for use within the Dlt protocol.

Table A.185: DltEcu

Class	**DltLogSink**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::LogAndTrace			
Note	The meta-class defines the output sink for DltLogMessages **Tags:** atp.recommendedPackage=DltLogSinks			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
bufferOutput	Boolean	0..1	attr	This attribute defines whether a buffer is used in case that the output sink is the console.
defaultLog Threshold	LogTraceDefaultLog LevelEnum	0..1	attr	This attribute allows to set a log level Threshold for Log Level filtering.
defaultTrace State	Boolean	0..1	attr	This attributes defines the default trace status.
endpoint Configuration	PlatformModule EthernetEndpoint Configuration	0..1	ref	Network configuration (Protocol, Port, IP Address) for transmission of dlt messages on a specific VLAN.
logChannelId	String	0..1	attr	This attribute identifies the LogChannel for usage within the Log And Trace protocol.

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Class	**DltLogSink**			
nonVerbose Mode	Boolean	0..1	attr	This attribute defines whether this DltLogSink supports non-Verbose Dlt messages. If disabled only verbose mode messages shall be used.
path	UriString	0..1	attr	This attribute defines the path to the file that is used as output sink.
queueSize	PositiveInteger	0..1	attr	Length of the queue (in which messages can be stored before processing) in the unit "Log message".
segmentation Supported	Boolean	0..1	attr	If enabled, segmentation will be used for DLT messages that are larger than EthernetCommunication Connector.maximumTransmissionUnit referenced via Dlt LogSink.endpointConfiguration.

Table A.186: DltLogSink

Class	**DltLogSinkToPortPrototypeMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::LogAndTrace			
Note	This meta-class maps a PortPrototype to an output sink of a log and trace message. **Tags:** atp.recommendedPackage=DltLogSinkToPortPrototypeMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
dltContext	DltContext	0..1	ref	Assignement of the DltContext that groups log and trace messages that will be transmitted to the DltLogSink.
dltLogSink	DltLogSink	*	ref	Reference to the output sink to which the log or trace message will be transmitted,
dltSessionId	PositiveInteger	0..1	attr	This attribute allows distinguishing log/trace messages from different instances of the same SW-C.
pPortPrototype	PPortPrototype	0..1	iref	Reference to PPortPrototype that is mapped to the DltLog Sink. **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
process	Process	0..1	ref	This reference represents the process required as context for the mapping.
rPortPrototype	RPortPrototype	0..1	iref	Reference to RPortPrototype that is mapped to a DltLog Sink **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.187: DltLogSinkToPortPrototypeMapping

Enumeration	**DoIpEidRetrievalEnum**
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation
Note	Enumeration with options to retrieve EID.
Aggregated by	DoIpNetworkConfiguration.eidRetrieval
Literal	***Description***
eidUseApi	API DiagnosticDoIPEntityIdentification is used to retrieve eid **Tags:** atp.EnumerationLiteralIndex=1

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Enumeration	**DoIpEidRetrievalEnum**
eidUseConfigValue	eid is configured manually by DoIpInstantiation.eid **Tags:** atp.EnumerationLiteralIndex=2
eidUseMac	MAC of the network interface is used as eid **Tags:** atp.EnumerationLiteralIndex=0

Table A.188: DoIpEidRetrievalEnum

Class	**DoIpInstantiation**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation			
Note	This meta-class defines the attributes for the DoIP configuration on a specific machine.			
Base	*ARObject*, *AdaptiveModuleInstantiation*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *NonOsModuleInstantiation*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, Machine.moduleInstantiation			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
eid	PositiveUnlimitedInteger	0..1	attr	Configured EID (Entity ID) used for VehicleIdentification Request.
entityStatusMax ByteFieldUse	Boolean	0..1	attr	This attribute is used to distinguish the optional support of the Max data size element of a diagnostic entity status response.
gid	PositiveUnlimitedInteger	0..1	attr	Configured GID (Group ID) used for VehicleIdentification Request. If configured, take this value (and set "Further action required" byte to 0x00="No further action required"), if not configured use ServiceInterface Do IPGroupIdentification to retrieve GID and 'further action required' values.
gidInvalidity Pattern	PositiveInteger	0..1	attr	Specifies the Byte pattern that is used for response messages if no valid GID could be retrieved. Only the value '0' or '255' is allowed.
logicalAddress	PositiveInteger	0..1	attr	Describes the logical address of the DoIP entity, which is used for VehicleAnnouncement and RoutingActivation responses.
maxRequest Bytes	PositiveInteger	0..1	attr	Specifies the maximum allowed bytes of a DoIP message request without the DoIP header.
network Interface	DoIpNetwork Configuration	*	aggr	Network interface specific DoIP properties.
request Configuration	DoIpRequest Configuration	*	aggr	Request configuration that is used to determine whether an incoming DiagnosticMessage request needs to be interpreted as PHYSICAL or FUNCTIONAL. Any request with target address not within the configured target address range will be rejected.
vinInvalidity Pattern	PositiveInteger	0..1	attr	Specifies the Byte pattern that is used for response messages if no valid VIN could be retrieved. Only the value '0' or '255' is allowed.

Table A.189: DoIpInstantiation

Class	**DoIpNetworkConfiguration**
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation
Note	This element collects DoIP properties that are network interface specific.

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Class	**DoIpNetworkConfiguration**			
Base	*ARObject*			
Aggregated by	DoIpInstantiation.networkInterface			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
eidRetrieval	DoIpEidRetrievalEnum	0..1	attr	This attribute defines how DoIp Entitiy Identification is retrieved.
isActivationLine Dependent	Boolean	0..1	attr	This attribute defines whether the network interface • is started "on-demand" when an activation line is sensed or • is always available.
maxInitial Vehicle Announcement Time	TimeValue	0..1	attr	Upper bound for the time to wait in [s] for sending first vehicle announcement message after IP address assignment. Represents parameter A_DoIP_Announce_ Wait of ISO 13400-2:2019. The value of this timing shall be determined randomly in the closed interval [0..max InitialVehicleAnnouncementTime].
maxTester Connections	PositiveInteger	0..1	attr	Maximum amount of tester connections that shall be maintained at one time before alive check is performed.
network Configuration	PlatformModule EthernetEndpoint Configuration	*	ref	Network configuration (Protocol, Port, IP Address) for transmission of DoIP messages on a specific VLAN.
network InterfaceId	PositiveInteger	0..1	attr	This attribute defines the identifier for the DoIPInterface.
tcpAliveCheck Response Timeout	TimeValue	0..1	attr	Timeout in [s] for waiting for a response to an Alive Check request before the connection is considered to be disconnected. Represents parameter T_TCP_AliveCheck of ISO 13400-2:2019.
tcpGeneral InactivityTime	TimeValue	0..1	attr	Timeout in [s] for maximum inactivity of a TCP socket connection before the DoIP module will close the according socket connection. Represents parameter T_ TCP_General_Inactivity of ISO 13400-2:2019.
tcpInitial InactivityTime	TimeValue	0..1	attr	Timeout in [s] used for initial inactivity of a connected TCP socket connection directly after socket connection. Represents parameter T_TCP_Initial_Inactivity of ISO 13400-2:2019.
vehicle Announcement Count	PositiveInteger	0..1	attr	Number of vehicle announcement messages on IP address assignment. Represents parameter A_DoIP_ Announce_Num of ISO 13400-2:2019.
vehicle Announcement Interval	TimeValue	0..1	attr	Time to wait in [s] for sending subsequent vehicle announcement messages. Represents parameter A_Do IP_Announce_Interval of ISO 13400-2:2019.
vehicle Identification SyncStatus	Boolean	0..1	attr	Defines if the optional VIN/GID synchronization status is used additionally in the vehicle identification/ announcement.

Table A.190: DoIpNetworkConfiguration

Class	**DoIpRequestConfiguration**
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation
Note	This meta-class specifies a range of target addresses and its interpretation as either physical or functional request.
Base	*ARObject*
Aggregated by	DoIpInstantiation.requestConfiguration

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Class	DoIpRequestConfiguration			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
endAddress	PositiveInteger	0..1	attr	End address for range of target-addresses (including this address).
requestType	RequestTypeEnum	0..1	attr	Determines the type of request.
startAddress	PositiveInteger	0..1	attr	Start address for range of target-addresses (including this address).

Table A.191: DoIpRequestConfiguration

Class	E2EProfileCompatibilityProps			
Package	M2::AUTOSARTemplates::SystemTemplate::Transformer			
Note	This meta-class collects settings for configuration of the E2E state machine. **Tags:** atp.recommendedPackage=E2EProfileCompatibilityPropsCollection			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
transitToInvalid Extended	Boolean	0..1	attr	E2E State machine behavior concerning transition from NODATA/INIT to INVALID value=0 (false): no direct transition from NODATA to INVALID, no transition from INIT to INVALID due to counter-related faults (Autosar R19-11 or former behavior) value=1 (true): direct transition from NODATA to INVALID covered, transition from INIT to INVALID due to counter-related faults covered (state machine extended)

Table A.192: E2EProfileCompatibilityProps

Class	E2EProfileConfiguration			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::E2E			
Note	This element holds E2E profile specific configuration settings.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	E2EProfileConfigurationSet.e2eProfileConfiguration			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
clearFromValid ToInvalid	Boolean	0..1	attr	Clear monitoring window on transition from state Valid to state Invalid.
dataIdMode	DataIdModeEnum	0..1	attr	This attribute describes the inclusion mode that is used to include the implicit Data ID in the one-byte CRC.
e2eProfile Compatibility Props	E2EProfileCompatibility Props	0..1	ref	Reference to additional settings for the E2E state machine.
maxDelta Counter	PositiveInteger	0..1	attr	Maximum allowed difference between two counter values of two consecutively received valid messages. For example, if the receiver gets data with counter 1 and Max DeltaCounter is 3, then at the next reception the receiver can accept Counters with values 2, 3 or 4.
maxErrorState Init	PositiveInteger	0..1	attr	Maximal number of checks in which ProfileStatus equal to E2E_P_ERROR was determined, within the last Window Size checks, for the state E2E_SM_INIT.

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Class	**E2EProfileConfiguration**			
maxErrorState Invalid	PositiveInteger	0..1	attr	Maximal number of checks in which ProfileStatus equal to E2E_P_ERROR was determined, within the last Window Size checks, for the state E2E_SM_INVALID.
maxErrorState Valid	PositiveInteger	0..1	attr	Maximal number of checks in which ProfileStatus equal to E2E_P_ERROR was determined, within the last Window Size checks, for the state E2E_SM_VALID.
minOkStateInit	PositiveInteger	0..1	attr	Minimal number of checks in which ProfileStatus equal to E2E_P_OK was determined, within the last WindowSize checks, for the state E2E_SM_INIT.
minOkState Invalid	PositiveInteger	0..1	attr	Minimal number of checks in which ProfileStatus equal to E2E_P_OK was determined, within the last WindowSize checks, for the state E2E_SM_INVALID.
minOkState Valid	PositiveInteger	0..1	attr	Minimal number of checks in which ProfileStatus equal to E2E_P_OK was determined, within the last WindowSize checks, for the state E2E_SM_VALID.
profileName	NameToken	0..1	attr	Definition of the E2E profile.
windowSizeInit	PositiveInteger	0..1	attr	Size of the monitoring window of state Init for the E2E state machine.
windowSize Invalid	PositiveInteger	0..1	attr	Size of the monitoring window of state Invalid for the E2E state machine.
windowSize Valid	PositiveInteger	0..1	attr	Size of the monitoring window of state Valid for the E2E state machine.

Table A.193: E2EProfileConfiguration

Class	**End2EndEventProtectionProps**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::E2E			
Note	This element allows to protect an event or a field notifier with an E2E profile.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*AdaptivePlatformServiceInstance*.e2eEventProtectionProps			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
dataId (ordered)	PositiveInteger	*	attr	This represents a unique numerical identifier for the referenced event or field notifier that is included in the CRC calculation. Note: ID is used for protection against masquerading. The details concerning the maximum number of values (this information is specific for each E2E profile) applicable for this attribute are controlled by a semantic constraint that depends on the category of the EndToEnd Protection.
dataLength	PositiveInteger	0..1	attr	Length of payload including E2E header in bits.
dataUpdate Period	TimeValue	0..1	attr	This attribute describes the period in which the applications are assumed to process E2E-protected messages. The middleware does not use this attribute at all.
e2eProfile Configuration	E2EProfileConfiguration	0..1	ref	Reference to E2E profile configuration settings that are valid to protect the referenced event or field notifier.
event	ServiceEvent Deployment	0..1	ref	Reference to an event that is protected by the E2E profile.
maxDataLength	PositiveInteger	0..1	attr	Maximum length of payload including E2E header in bits.
minDataLength	PositiveInteger	0..1	attr	Minimum length of payload including E2E header in bits.

Table A.194: End2EndEventProtectionProps

Class	**End2EndMethodProtectionProps**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::E2E			
Note	This element allows to protect a method, a field setter or a field getter with an E2E profile.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*AdaptivePlatformServiceInstance*.e2eMethodProtectionProps			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
dataId (ordered)	PositiveInteger	*	attr	This represents a numerical identifier that is included in the CRC calculation. This dataId is used for call and response. Note: ID is used for protection against masquerading. The details concerning the maximum number of values (this information is specific for each E2E profile) applicable for this attribute are controlled by a semantic constraint that depends on the category of the EndToEnd Protection.
dataLength	PositiveInteger	0..1	attr	Length of payload including E2E header in bits.
dataUpdate Period	TimeValue	0..1	attr	This attribute describes the period in which the applications are assumed to process E2E-protected messages. The middleware does not use this attribute at all.
e2eProfile Configuration	E2EProfileConfiguration	0..1	ref	Reference to E2E profile configuration settings that are valid to protect the referenced method, field getter or field setter.
maxDataLength	PositiveInteger	0..1	attr	Maximum length of payload including E2E header in bits.
method	ServiceMethod Deployment	0..1	ref	Reference to a method, a field getter or a field setter that is protected by the E2E profile.
minDataLength	PositiveInteger	0..1	attr	Minimum length of payload including E2E header in bits.
sourceId	PositiveInteger	0..1	attr	This represents a unique numerical identifier identifying the source of a certain transmission. In case of C/S communication, this ID uniquely identifies the client. Note: ID is used for protection against masquerading. The details concerning the maximum number of values (this information is specific for each E2E profile) applicable for this attribute are controlled by a semantic constraint that depends on the category of the EndToEnd Protection.

Table A.195: End2EndMethodProtectionProps

Class	**EnterExitTimeout**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::MachineManifest			
Note	This meta-class represents the ability to specify a pair of timeouts, one for entering, and one for exiting.			
Base	*ARObject*			
Aggregated by	Machine.defaultApplicationTimeout, StartupConfig.timeout			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
enterTimeout Value	TimeValue	0..1	attr	This attribute represents the value of the enter timeout in seconds.
exitTimeout Value	TimeValue	0..1	attr	This attribute represents the value of the exit timeout in seconds.

Table A.196: EnterExitTimeout

Class	**EthernetCommunicationConnector**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::EthernetTopology			
Note	Ethernet specific attributes to the CommunicationConnector.			
Base	*ARObject*, *CommunicationConnector*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	EcuInstance.connector, MachineDesign.communicationConnector			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
apApplication Endpoint	ApApplicationEndpoint	*	aggr	Collection of Application Addresses that are used on the CommunicationConnector.
canXlProps	CanXlProps	*	ref	If the Ethernet frames handled by this Ethernet CommunicationConnector are tunneled through CAN XL, then this reference shall refer the CanXlProps which contains the specific configuration parameters of the CAN XL controller of the physical CAN XL connection to be used for tunneling.
maximum Transmission Unit	PositiveInteger	0..1	attr	This attribute specifies the maximum transmission unit in bytes.
neighborCache Size	PositiveInteger	0..1	attr	This attribute specifies the size of neighbor cache or ARP table in units of entries.
pathMtu Enabled	Boolean	0..1	attr	If enabled the IPv4/IPv6 processes incoming ICMP "Packet Too Big" messages and stores a MTU value for each destination address.
pathMtuTimeout	TimeValue	0..1	attr	If this value is >0 the IPv4/IPv6 will reset the MTU value stored for each destination after n seconds.
unicastNetwork Endpoint	NetworkEndpoint	*	ref	Network Endpoint that defines the IPAddress of the machine.

Table A.197: EthernetCommunicationConnector

Class	<<atpVariation>> **EthernetCommunicationController**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::EthernetTopology			
Note	Ethernet specific communication port attributes.			
Base	*ARObject*, *CommunicationController*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	EcuInstance.commController, MachineDesign.communicationController			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
canXlConfig	AbstractCan Communication Controller	0..1	ref	If the Ethernet frames handled by this Ethernet CommunicationController are to be tunneled through CAN XL, then this reference shall refer to the Abstract CanCommunicationController that aggregates the Can ControllerXlConfiguration of the physical CAN XL channel to be used for tunneling.
couplingPort	CouplingPort	*	aggr	Optional CouplingPort that can be used to connect the ECU to a CouplingElement (e.g. a switch).
macLayerType	EthernetMacLayerType Enum	0..1	attr	Specifies the mac layer type of the ethernet controller.
macUnicast Address	MacAddressString	0..1	attr	Media Access Control address (MAC address) that uniquely identifies each EthernetCommunication Controller in the network.
maximum ReceiveBuffer Length	Integer	0..1	attr	Determines the maximum receive buffer length (frame length) in bytes.
maximum TransmitBuffer Length	Integer	0..1	attr	Determines the maximum transmit buffer length (frame length) in bytes.

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Class	<<atpVariation>> **EthernetCommunicationController**			
slaveActAs Passive Communication Slave	Boolean	0..1	attr	This attribute specifies if the EcuInstance is acting as a passive communication slave on the connected Physical Channel. This is used for EthernetCommunication Controllers that use Ethernet hardware which supports wake-up and sleep on the network (e.g. Open Alliance TC10 compliant Ethernet hardware).
slaveQualified UnexpectedLink DownTime	TimeValue	0..1	attr	This attribute specifies time when an unexpected link down is evaluated as link down and indicated to the AUTOSAR communication stack.

Table A.198: EthernetCommunicationController

Class	**EthernetPhysicalChannel**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::EthernetTopology			
Note	The EthernetPhysicalChannel represents a VLAN or an untagged channel. An untagged channel is modeled as an EthernetPhysicalChannel without an aggregated VLAN.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *PhysicalChannel*, *Referrable*			
Aggregated by	*CommunicationCluster*.physicalChannel			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
network Endpoint	NetworkEndpoint	*	aggr	Collection of NetworkEndpoints that are used in the VLan. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=networkEndpoint.shortName
vlan	VlanConfig	0..1	aggr	VLAN Configuration.

Table A.199: EthernetPhysicalChannel

Class	**EthernetRawDataStreamLocalEndpointConfig**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::RawDataStreamMapping			
Note	This meta-class has the ability to act as a wrapper for the configuration of the remote endpoint in the context of a raw data stream mapping.			
Base	*ARObject*			
Aggregated by	*EthernetRawDataStreamMapping*.localEndpointConfig			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
localComm Connector	EthernetCommunication Connector	0..1	ref	This attribute represents the CommunicationConnector taken for socket-based data communication.
localTcpPort	ApApplicationEndpoint	0..1	ref	This aggregation represents the configuration of a local TCP port number.
localUdpPort	ApApplicationEndpoint	0..1	ref	This aggregation represents the configuration of a local unicast UDP port number.

Table A.200: EthernetRawDataStreamLocalEndpointConfig

Class	***EthernetRawDataStreamMapping*** (abstract)
Package	M2::AUTOSARTemplates::AdaptivePlatform::RawDataStreamMapping
Note	This meta-class serves as the abstract bases class for the ability to map a PortPrototype to a Ethernet-based communication channel.
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *RawDataStreamMapping*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*
Subclasses	EthernetRawDataStreamClientMapping, EthernetRawDataStreamServerMapping

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Class	***EthernetRawDataStreamMapping*** (abstract)			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
localEndpoint Config	EthernetRawData StreamLocalEndpoint Config	0..1	aggr	This aggregation is used to configure the credentials of the endpoint.
socketOption	String	*	attr	This attribute represents the ability to specify non-formal socket options that might only be valid for specific platforms. AUTOSAR does not define a standardized meaning for the possible values of this attribute.
tlsSecureCom Props	TlsSecureComProps	0..1	ref	This reference provides the ability to define TLS-related properties for the enclosing SocketRawDataStream Mapping.

Table A.201: EthernetRawDataStreamMapping

Class	**EthernetRawDataStreamRemoteClientConfig**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::RawDataStreamMapping			
Note	This meta-class has the ability to act as a wrapper for the configuration of the remote server in the context of a raw data stream client mapping.			
Base	*ARObject*			
Aggregated by	EthernetRawDataStreamServerMapping.remoteClientConfig			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
multicast Credentials	RawDataStream EthernetUdpCredentials	0..1	aggr	This aggregation represents the configuration of multicast credentials for communication with a remote raw data stream client.
unicastUdp Credentials	RawDataStream EthernetUdpCredentials	0..1	aggr	This aggregation represents the configuration of a remote raw data stream client that communicates via unicast over UDP.

Table A.202: EthernetRawDataStreamRemoteClientConfig

Class	**EthernetRawDataStreamServerMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::RawDataStreamMapping			
Note	This meta-class represents the ability to map a server PortPrototype to a Ethernet-based communication channel. **Tags:** atp.recommendedPackage=RawDataStreamingMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *EthernetRawDataStreamMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *RawDataStreamMapping*, *Referrable*, *Uploadable DeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
remoteClient Config	EthernetRawData StreamRemoteClient Config	0..1	aggr	This aggregation is used to configure the credentials of the remote client.

Table A.203: EthernetRawDataStreamServerMapping

Class	**Executable**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationStructure			
Note	This meta-class represents an executable program. **Tags:** atp.recommendedPackage=Executables			
Base	*ARElement*, *ARObject*, *AtpClassifier*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
buildType	BuildTypeEnum	0..1	attr	This attribute describes the buildType of a module and/or platform implementation.
implementation Props	Executable ImplementationProps	*	aggr	This aggregation contains the collection of implementation-specific properties necessary to properly build the enclosing Executable.
minimumTimer Granularity	TimeValue	0..1	attr	This attribute describes the minimum timer resolution (TimeValue of one tick) that is required by the Executable.
reporting Behavior	ExecutionState ReportingBehavior Enum	0..1	attr	this attribute controls the execution state reporting behavior of the enclosing Executable.
rootSw Component Prototype	RootSwComponent Prototype	0..1	aggr	This represents the root SwCompositionPrototype of the Executable. This aggregation is required (in contrast to a direct reference of a SwComponentType) in order to support the definition of instanceRefs in Executable context.
traceSwitch Configuration	TraceSwitch Configuration	*	aggr	Configuration of the MsgId based trace switch **Tags:** atp.Status=draft
version	StrongRevisionLabel String	0..1	attr	Version of the executable.

Table A.204: Executable

Class	**ExecutableLoggingImplementationProps**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationStructure			
Note	This meta-class contains configuration relevant for the implementation of an Executable used in the context of the LogAndTraceInstantiation.			
Base	*ARObject*, *Describable*, *ExecutableImplementationProps*			
Aggregated by	Executable.implementationProps			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
usesTimeBase Resource	Boolean	0..1	attr	This attribute indicates that the implementation of the enclosing Executable is required to access resources provided by the synchronized time base functional cluster.

Table A.205: ExecutableLoggingImplementationProps

Class	**ExecutableTiming**
Package	M2::AUTOSARTemplates::AdaptivePlatform::Timing::TimingExtensions
Note	This meta-class represents the timing view for one or more executables. **Tags:** atp.Status=draft atp.recommendedPackage=TimingExtensions
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *TimingExtension*
Aggregated by	ARPackage.element

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Class	ExecutableTiming			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
executable	Executable	*	ref	This defines the scope of a ExecutableTiming. All corresponding timing descriptions and constraints shall be defined within this scope. **Tags:** atp.Status=draft

Table A.206: ExecutableTiming

Class	ExecutionDependency			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest			
Note	This element defines a ProcessState in which a dependent process needs to be before the process that aggregates the ExecutionDependency element can be started.			
Base	*ARObject*			
Aggregated by	StateDependentStartupConfig.executionDependency			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
processState	ModeDeclaration	0..1	iref	This represent the applicable modeDeclaration that represents an ProcessState. **InstanceRef implemented by:** ModeInProcessInstanceRef

Table A.207: ExecutionDependency

Class	Field			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class represents the ability to define a piece of data that can be accessed with read and/or write semantics. It is also possible to generate a notification if the value of the data changes.			
Base	*ARObject*, *AtpFeature*, *AtpPrototype*, *AutosarDataPrototype*, *DataPrototype*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	ApplicationInterface.attribute, *AtpClassifier*.atpFeature, ServiceInterface.field			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
hasGetter	Boolean	0..1	attr	This attribute controls whether read access is foreseen to this field.
hasNotifier	Boolean	0..1	attr	This attribute controls whether a notification semantics is foreseen to this field.
hasSetter	Boolean	0..1	attr	This attribute controls whether write access is foreseen to this field.

Table A.208: Field

Class	FieldMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SystemDesign			
Note	Mapping of a Field that is located in a ServiceInterface to ClientServerOperations that represent the getter and setter methods and to a VariableDataPrototype that represents the notifier in the Field.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	InterfaceMapping.fieldMapping			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
field	Field	0..1	ref	Reference to a field that is located in a ServiceInterface.

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Class	FieldMapping			
getterOperation	ClientServerOperation	0..1	ref	Reference to a ClientServerOperation that represents the getter Method in the Field.
notifierData Element	VariableDataPrototype	0..1	ref	Reference to a VariableDataPrototype that represents the notifier in the Field.
setterOperation	ClientServerOperation	0..1	ref	Reference to a ClientServerOperation that represents the setter Method in the Field.

Table A.209: FieldMapping

Class	FieldSenderComSpec			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ComSpec			
Note	Port specific communication attributes for a Field that is defined in a ServiceInterface.			
Base	*ARObject*, *PPortComSpec*, *SenderComSpec*			
Aggregated by	*AbstractProvidedPortPrototype*.providedComSpec, PortPrototypeBlueprint.providedComSpec			
Attribute	Type	Mult.	Kind	Note
initValue	ValueSpecification	0..1	aggr	Initial value for a Field that is set before the Service Interface is offered.

Table A.210: FieldSenderComSpec

Class	FireAndForgetMethodMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SystemDesign			
Note	Mapping of a Fire&Forget Method that is located in a ServiceInterface to a VariableDataPrototype in a SenderReceiverInterface or to a Trigger in a TriggerInterface.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	InterfaceMapping.fireAndForgetMethodMapping			
Attribute	Type	Mult.	Kind	Note
dataElement	VariableDataPrototype	0..1	ref	Reference to a VariableDataPrototype that is located in a SenderReceiverInterface in case that the Fire&Forget Method is represented by this VariableDataPrototype.
method	ClientServerOperation	0..1	ref	Reference to a Fire&Forget Method that is located in a ServiceInterface.
trigger	Trigger	0..1	ref	Reference to a Trigger that is located in a TriggerInterface in case that the Fire&Forget Method is represented by this Trigger.

Table A.211: FireAndForgetMethodMapping

Class	FirewallRule			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Firewall			
Note	Firewall Rule that defines the control information in individual packets. **Tags:** atp.Status=candidate atp.recommendedPackage=FirewallRules			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note

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Class	**FirewallRule**			
bucketSize	PositiveInteger	0..1	attr	This attribute defines the capacity of the queue for rate limitation (leaky-bucket Algorithm). **Tags:** atp.Status=candidate
dataLinkLayer Rule	DataLinkLayerRule	0..1	aggr	Configuration of rules on the Data Link Layer **Tags:** atp.Status=candidate
ddsRule	DdsRule	0..1	aggr	Configuration of firewall rules for DDS. **Tags:** atp.Status=candidate
doIpRule	DoIpRule	0..1	aggr	Configuration of firewall rules for DoIP messages **Tags:** atp.Status=candidate
networkLayer Rule	NetworkLayerRule	0..1	aggr	Configuration of rules on the Network Layer **Tags:** atp.Status=candidate
payloadByte PatternRule	PayloadBytePattern Rule	*	aggr	Configuration of generic firewall rules **Tags:** atp.Status=candidate
refillAmount	PositiveInteger	0..1	attr	This attribute defines the output rate that describes how many packets leave the queue per second (leaky-bucket Algorithm). **Tags:** atp.Status=candidate
someipRule	SomeipProtocolRule	0..1	aggr	Configuration of firewall rules for SOME/IP messages **Tags:** atp.Status=candidate
someipSdRule	SomeipSdRule	0..1	aggr	Configuration of firewall rules for SOME/IP Service Discovery messages **Tags:** atp.Status=candidate
transportLayer Rule	TransportLayerRule	0..1	aggr	Configuration of rules on the Transport Layer **Tags:** atp.Status=candidate

Table A.212: FirewallRule

Class	**FirewallRuleProps**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Firewall			
Note	Firewall rule that is defined by an action that is performed if the referenced pattern matches. **Tags:** atp.Status=candidate			
Base	*ARObject*			
Aggregated by	StateDependentFirewall.firewallRuleProps			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
action	FirewallActionEnum	0..1	attr	Action that is performed by the firewall if the matching Rule is fulfilled. **Tags:** atp.Status=candidate
matchingEgress Rule (ordered)	FirewallRule	*	ref	This element defines an egress rule expression against which the network traffic is matched. **Tags:** atp.Status=candidate
matching IngressRule (ordered)	FirewallRule	*	ref	This element defines an ingress rule expression against which the network traffic is matched. **Tags:** atp.Status=candidate

Table A.213: FirewallRuleProps

Class	**FirewallStateSwitchInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class provides the ability to implement a PortInterface for interaction with the Firewall mode. **Tags:** atp.Status=candidate atp.recommendedPackage=FirewallStateSwitchPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
firewallState Machine	ModeDeclarationGroup Prototype	*	aggr	The state machine of this firewall interface. **Tags:** atp.Status=candidate

Table A.214: FirewallStateSwitchInterface

Class	**FunctionGroupPhmStateReference**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	Function Group state dependency.			
Base	*ARObject*, *PhmStateReference*			
Aggregated by	SupervisionModeCondition.stateReference			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
functionGroup State	ModeDeclaration	0..1	iref	This represent the applicable functionGroupState. **InstanceRef implemented by:** FunctionGroupStateIn FunctionGroupSetInstanceRef

Table A.215: FunctionGroupPhmStateReference

Class	**FunctionGroupSet**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::General			
Note	This meta-class provides the ability to create arbitrary collections of function groups. **Tags:** atp.recommendedPackage=FunctionGroupSets			
Base	*ARElement*, *ARObject*, *AtpClassifier*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
functionGroup	ModeDeclarationGroup Prototype	*	aggr	This aggregation represents the collection of function groups.

Table A.216: FunctionGroupSet

Class	**FunctionGroupStateInFunctionGroupSetInstanceRef**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest::InstanceRefs			
Note				
Base	*ARObject*, *AtpInstanceRef*			
Aggregated by	FunctionGroupPhmStateReference.functionGroupState, NmHandleToFunctionGroupStateMapping. functionGroupState, SecurityEventStateFilter.blockIfStateActiveAp, StateDependentStartupConfig. functionGroupState, StateManagementSetFunctionGroupStateActionItem.setFunctionGroupState			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
base	FunctionGroupSet	0..1	ref	**Stereotypes:** atpDerived

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Class	**FunctionGroupStateInFunctionGroupSetInstanceRef**			
contextMode Declaration GroupPrototype	ModeDeclarationGroup Prototype	0..1	ref	**Tags:** xml.sequenceOffset=10
targetMode Declaration	ModeDeclaration	0..1	ref	**Tags:** xml.sequenceOffset=20

Table A.217: FunctionGroupStateInFunctionGroupSetInstanceRef

Class	**FunctionalClusterInteractsWithPersistencyDeploymentMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	This meta-class represents the ability to define a mapping between any functional cluster modeled as a subclass of NonOsModuleInstantiation and a PersistencyDeployment. **Tags:** atp.recommendedPackage=FCInteractions			
Base	*ARElement*, *ARObject*, *CollectableElement*, *FunctionalClusterInteractsWithFunctionalClusterMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDeployment Element*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
contractVersion	StrongRevisionLabel String	0..1	attr	This attribute represents the contract version that is used to determine whether the Persistency configuration experienced structural changes and is also used for the check for data type compatibility.
functional Cluster	NonOsModule Instantiation	0..1	ref	This reference identifies the client functional cluster that wants to use persistency.
maxNumberOf Files	PositiveInteger	0..1	attr	This attribute represents the definition of an upper bound for the handling of files at run-time in the context of the enclosing FunctionalClusterInteractsWithPersistency DeploymentMapping.
persistency Access	FunctionalCluster PersistencyAccess Enum	0..1	attr	This attribute represents the definition of the persistency access of all kinds of persisted data at run-time in the context of the enclosing FunctionalClusterInteractsWith PersistencyDeploymentMapping.
persistency Deployment	PersistencyDeployment	0..1	ref	This reference identifies the applicable Persistency Deployment.
process	Process	0..1	ref	"This reference identifies the applicable process.

Table A.218: FunctionalClusterInteractsWithPersistencyDeploymentMapping

Class	**GlobalSupervision**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This element defines a collection of AliveSupervisions, DeadlineSupervisions, and LogicalSupervisions in order to provide an aggregated supervision state.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	PlatformHealthManagementContribution.globalSupervision			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
alive Supervision	AliveSupervision	*	aggr	Collection of AliveSupervisions in the context of this GlobalSupervision.
deadline Supervision	DeadlineSupervision	*	aggr	Collection of DeadlineSupervisions in the context of this GlobalSupervision.
logical Supervision	LogicalSupervision	*	aggr	Collection of LogicalSupervisions in the context of this GlobalSupervision.

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Class	**GlobalSupervision**			
noCheckpoint Supervision	NoCheckpoint Supervision	*	aggr	Definition of No Checkpoint Supervision.
noSupervision	NoSupervision	*	aggr	Collection of NoSupervisions in the context of this Global Supervision.
supervision Mode	SupervisionMode	*	aggr	Collection of SupervisionModes in the context of this GlobalSupervision. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=supervisionMode.shortName
transition	CheckpointTransition	*	aggr	Collection of CheckpointTransitions in the context of this GlobalSupervision.

Table A.219: GlobalSupervision

Class	**GlobalTimeDomain**			
Package	M2::AUTOSARTemplates::SystemTemplate::GlobalTime			
Note	This represents the ability to define a global time domain. **Tags:** atp.recommendedPackage=GlobalTimeDomains			
Base	*ARElement*, *ARObject*, *CollectableElement*, *FibexElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
debounceTime	TimeValue	0..1	attr	Defines the minimum amount of time between two time sync messages are transmitted.
domainId	PositiveInteger	0..1	attr	This represents the ID of the GlobalTimeDomain used in the network messages sent on behalf of global time management.
gateway	GlobalTimeGateway	*	aggr	A GlobalTimeGateway may exist in the context of a GlobalTimeDomain to actively update the global time information as it is routed from one GlobalTimeDomain to another. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=gateway.shortName, gateway.variation Point.shortLabel vh.latestBindingTime=postBuild
globalTime CorrectionProps	GlobalTimeCorrection Props	0..1	aggr	Defintion of attributes for rate and offset correction.
globalTime Domain Property	AbstractGlobalTime DomainProps	0..1	aggr	Additional properties of the GlobalTimeDomain. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=globalTimeDomainProperty, globalTime DomainProperty.variationPoint.shortLabel vh.latestBindingTime=postBuild
globalTime Master	GlobalTimeMaster	0..1	aggr	This represents the single master of a GlobalTime Domain. A GlobalTimeDomain may have no GlobalTime Domain.master, e.g. when it gets its time from a GPS receiver. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=globalTimeMaster.shortName, globalTime Master.variationPoint.shortLabel vh.latestBindingTime=postBuild

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Class	**GlobalTimeDomain**			
globalTimeSub Domain	GlobalTimeDomain	*	ref	By this means it is possible to create a hierarchy of sub Domains where one global time domain can declare one or more other global time domains as its subDomains. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=globalTimeSubDomain.globalTimeDomain, globalTimeSubDomain.variationPoint.shortLabel vh.latestBindingTime=postBuild
network SegmentId	NetworkSegment Identification	0..1	aggr	Defines the numerical identification of a GlobalTime sub domain.
offsetTime Domain	GlobalTimeDomain	0..1	ref	Reference to a synchronized time domain this offset time domain is based on. The reference source is the offset time domain. The reference target is the synchronized time domain.
pduTriggering	PduTriggering	0..1	ref	This PduTriggering will be taken to transmit the global time information from a GlobalTimeMaster to a the associated GlobalTimeSlaves. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=pduTriggering.pduTriggering, pdu Triggering.variationPoint.shortLabel vh.latestBindingTime=postBuild
slave	GlobalTimeSlave	*	aggr	This represents the collections of slaves of the Global TimeDomain. A GlobalTimeDomain may have no Global TimeDomain.slaves, e.g. when it propagates its time directly to sub domains. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=slave.shortName, slave.variationPoint.short Label vh.latestBindingTime=postBuild
syncLoss Timeout	TimeValue	0..1	attr	This attribute describes the timeout for the situation that the time synchronization gets lost in the scope of the time domain.

Table A.220: GlobalTimeDomain

Class	***Grant*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IdentityAccessManagement			
Note	This meta-class serves as the abstract base class for defining specific Grants **Tags:** atp.Status=candidate			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Subclasses	*ComGrant*, ComOfferServiceGrant, *RawDataStreamGrant*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.221: Grant

Class	***HealthChannel*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This element defines the source of a health channel.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	HealthChannelExternalStatus, HealthChannelSupervision			
Aggregated by	PlatformHealthManagementContribution.healthChannel			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
recovery Notification	RecoveryNotification	*	ref	Defines the RecoveryNotification for this HealthChannel.

Table A.222: HealthChannel

Class	**HealthChannelExternalStatus**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This element defines a health channel representing the status of an external health channel.			
Base	*ARObject*, *HealthChannel*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	PlatformHealthManagementContribution.healthChannel			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
healthChannel	RPortPrototype	0..1	iref	Refers to the HealthChannel. **Stereotypes:** atpUriDef **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef
notifiedStatus	HealthChannelExternal ReportedStatus	*	aggr	This is a list of statuses which shall trigger the Recovery Notification of this HealthChannelExternalStatus.
process	Process	0..1	ref	Defines the Process this Health Channel shall be monitored.

Table A.223: HealthChannelExternalStatus

Class	**HealthChannelSupervision**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This element defines a health channel representing the status of a PhmSupervision.			
Base	*ARObject*, *HealthChannel*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	PlatformHealthManagementContribution.healthChannel			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
supervision	GlobalSupervision	0..1	ref	Reference to the GlobalSupervision as source for the health channel.

Table A.224: HealthChannelSupervision

Class	**IPSecRule**			
Package	M2::AUTOSARTemplates::SystemTemplate::SecureCommunication			
Note	This element defines an IPsec rule that describes communication traffic that is monitored, protected and filtered.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	IPSecConfig.ipSecRule			
Attribute	***Type***	***Mult.***	***Kind***	***Note***

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Class	**IPSecRule**			
direction	Communication DirectionType	0..1	attr	This attribute defines the direction in which the traffic is monitored. If this attribute is not set a bidirectional traffic monitoring is assumed.
headerType	IPsecHeaderTypeEnum	0..1	attr	Header type specifying the IPsec security mechanism.
ipProtocol	IPsecIpProtocolEnum	0..1	attr	This attribute defines the relevant IP protocol used in the Security Policy Database (SPD) entry.
localCertificate	CryptoService Certificate	*	ref	This reference identifies the applicable certificate used for a local authentication.
localId	String	0..1	attr	This attribute defines how the local participant should be identified for authentication.
localPortRange End	PositiveInteger	0..1	attr	This attribute restricts the traffic monitoring and defines an end value for the local port range. If this attribute is not set then this rule shall be effective for all local ports. Please note that port ranges are currently not supported in the AUTOSAR AP's operating system backend. If AP systems are involved, each IPsec rule may only contain a single port.
localPortRange Start	PositiveInteger	0..1	attr	This attribute restricts the traffic monitoring and defines a start value for the local port range. If this attribute is not set then this rule shall be effective for all local ports. Please note that port ranges are currently not supported in the AUTOSAR AP's operating system backend. If AP systems are involved, each IPsec rule may only contain a single port.
mode	IPsecModeEnum	0..1	attr	This attribute defines the type of the connection.
policy	IPsecPolicyEnum	0..1	attr	An IPsec policy defines the rules that determine which type of IP traffic needs to be secured using IPsec and how that traffic is secured.
preSharedKey	CryptoServiceKey	0..1	ref	This reference identifies the applicable cryptograhic key used for authentication.
priority	PositiveInteger	0..1	attr	This attribute defines the priority of the IPSecRule (SPD entry). The processing of entries is based on priority, starting with the highest priority "0".
remote Certificate	CryptoService Certificate	*	ref	This reference identifies the applicable certificate used for a remote authentication.
remoteId	String	0..1	attr	This attribute defines how the remote participant should be identified for authentication.
remoteIp Address	NetworkEndpoint	*	ref	Definition of the remote NetworkEndpoint. With this reference the connection between the local Network Endpoint and the remote NetworkEndpoint is described on which the traffic is monitored.
remotePort RangeEnd	PositiveInteger	0..1	attr	This attribute restricts the traffic monitoring and defines an end value for the remote port range. If this attribute is not set then this rule shall be effective for all local ports. Please note that port ranges are currently not supported in the AUTOSAR AP's operating system backend. If AP systems are involved, each IPsec rule may only contain a single port.

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Class	**IPSecRule**			
remotePort RangeStart	PositiveInteger	0..1	attr	This attribute restricts the traffic monitoring and defines a start value for the remote port range. If this attribute is not set then this rule shall be effective for all local ports. Please note that port ranges are currently not supported in the AUTOSAR AP's operating system backend. If AP systems are involved, each IPsec rule may only contain a single port.

Table A.225: IPSecRule

Class	**ISignal**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication			
Note	Signal of the Interaction Layer. The RTE supports a "signal fan-out" where the same System Signal is sent in different SignalIPdus to multiple receivers. To support the RTE "signal fan-out" each SignalIPdu contains ISignals. If the same System Signal is to be mapped into several SignalIPdus there is one ISignal needed for each ISignalToIPduMapping. ISignals describe the Interface between the Precompile configured RTE and the potentially Postbuild configured Com Stack (see ECUC Parameter Mapping). In case of the SystemSignalGroup an ISignal shall be created for each SystemSignal contained in the SystemSignalGroup. **Tags:** atp.recommendedPackage=ISignals			
Base	*ARElement*, *ARObject*, *CollectableElement*, *FibexElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
data Transformation	DataTransformation	0..1	ref	Optional reference to a DataTransformation which represents the transformer chain that is used to transform the data that shall be placed inside this ISignal. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=dataTransformation.dataTransformation, dataTransformation.variationPoint.shortLabel vh.latestBindingTime=codeGenerationTime
dataTypePolicy	DataTypePolicyEnum	0..1	attr	With the aggregation of SwDataDefProps an ISignal specifies how it is represented on the network. This representation follows a particular policy. Note that this causes some redundancy which is intended and can be used to support flexible development methodology as well as subsequent integrity checks. If the policy "networkRepresentationFromComSpec" is chosen the network representation from the ComSpec that is aggregated by the PortPrototype shall be used. If the "override" policy is chosen the requirements specified in the PortInterface and in the ComSpec are not fulfilled by the networkRepresentationProps. In case the System Description doesn't use a complete Software Component Description (VFB View) the "legacy" policy can be chosen.

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Class	**ISignal**			
initValue	ValueSpecification	0..1	aggr	Optional definition of a ISignal's initValue in case the System Description doesn't use a complete Software Component Description (VFB View). This supports the inclusion of legacy system signals. This value can be used to configure the Signal's "Init Value". If a full DataMapping exist for the SystemSignal this information may be available from a configured Sender ComSpec and ReceiverComSpec. In this case the initvalues in SenderComSpec and/or ReceiverComSpec override this optional value specification. Further restrictions apply from the RTE specification.
iSignalProps	ISignalProps	0..1	aggr	Additional optional ISignal properties that may be stored in different files. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=iSignalProps
iSignalType	ISignalTypeEnum	0..1	attr	This attribute defines whether this iSignal is an array that results in a UINT8_N / UINT8_DYN ComSignalType in the COM configuration or a primitive type.
length	UnlimitedInteger	0..1	attr	Size of the signal in bits. The size needs to be derived from the mapped VariableDataPrototype according to the mapping of primitive DataTypes to BaseTypes as used in the RTE. Indicates maximum size for dynamic length signals. The ISignal length of zero bits is allowed.
network Representation Props	SwDataDefProps	0..1	aggr	Specification of the actual network representation. The usage of SwDataDefProps for this purpose is restricted to the attributes compuMethod and baseType. The optional baseType attributes "memAllignment" and "byteOrder" shall not be used. The attribute "dataTypePolicy" in the SystemTemplate element defines whether this network representation shall be ignored and the information shall be taken over from the network representation of the ComSpec. If "override" is chosen by the system integrator the network representation can violate against the requirements defined in the PortInterface and in the network representation of the ComSpec. In case that the System Description doesn't use a complete Software Component Description (VFB View) this element is used to configure "ComSignalDataInvalid Value" and the Data Semantics. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=networkRepresentationProps
systemSignal	SystemSignal	0..1	ref	Reference to the System Signal that is supposed to be transmitted in the ISignal.
timeout Substitution Value	ValueSpecification	0..1	aggr	Defines and enables the ComTimeoutSubstituition for this ISignal.

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Class	**ISignal**			
transformationISignalProps	TransformationISignalProps	*	aggr	A transformer chain consists of an ordered list of transformers. The ISignal specific configuration properties for each transformer are defined in the TransformationISignalProps class. The transformer configuration properties that are common for all ISignals are described in the TransformationTechnology class. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=transformationISignalProps

Table A.226: ISignal

Class	**ISignalGroup**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication			
Note	SignalGroup of the Interaction Layer. The RTE supports a "signal fan-out" where the same System Signal Group is sent in different SignalIPdus to multiple receivers. An ISignalGroup refers to a set of ISignals that shall always be kept together. A ISignalGroup represents a COM Signal Group. Therefore it is recommended to put the ISignalGroup in the same Package as ISignals (see atp.recommendedPackage) **Tags:** atp.recommendedPackage=ISignalGroup			
Base	*ARElement*, *ARObject*, *CollectableElement*, *FibexElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
comBasedSignalGroupTransformation	DataTransformation	0..1	ref	Optional reference to a DataTransformation which represents the transformer chain that is used to transform the data that shall be placed inside this ISignalGroup based on the COMBasedTransformer approach. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=comBasedSignalGroupTransformation.dataTransformation, comBasedSignalGroupTransformation.variationPoint.shortLabel vh.latestBindingTime=codeGenerationTime
iSignal	ISignal	*	ref	Reference to a set of ISignals that shall always be kept together.
systemSignalGroup	SystemSignalGroup	0..1	ref	Reference to the SystemSignalGroup that is defined on VFB level and that is supposed to be transmitted in the ISignalGroup.
transformationISignalProps	TransformationISignalProps	*	aggr	A transformer chain consists of an ordered list of transformers. The ISignalGroup specific configuration properties for each transformer are defined in the TransformationISignalProps class. The transformer configuration properties that are common for all ISignal Groups are described in the TransformationTechnology class. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=transformationISignalProps

Table A.227: ISignalGroup

Class	**ISignalIPdu**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication			
Note	Represents the IPdus handled by Com. The ISignalIPdu assembled and disassembled in AUTOSAR COM consists of one or more signals. In case no multiplexing is performed this IPdu is routed to/from the Interface Layer. A maximum of one dynamic length signal per IPdu is allowed. **Tags:** atp.recommendedPackage=Pdus			
Base	*ARElement*, *ARObject*, *CollectableElement*, *FibexElement*, *IPdu*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Pdu*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
iPduTiming Specification	IPduTiming	0..1	aggr	Timing specification for Com IPdus (Transmission Modes). This information is mandatory for the sender in a System Extract. This information may be omitted on receivers in a System Extract. atpVariation: The timing of a Pdu can vary. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=iPduTimingSpecification, iPduTiming Specification.variationPoint.shortLabel vh.latestBindingTime=postBuild
iSignalToPdu Mapping	ISignalToIPduMapping	*	aggr	Definition of SignalToIPduMappings included in the Signal IPdu. atpVariation: The content of a PDU can be variable. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=iSignalToPduMapping.shortName, iSignalTo PduMapping.variationPoint.shortLabel vh.latestBindingTime=postBuild
unusedBit Pattern	Integer	0..1	attr	AUTOSAR COM and AUTOSAR IPDUM are filling not used areas of an IPDU with this bit-pattern. This attribute is mandatory to avoid undefined behavior. This byte-pattern will be repeated throughout the IPdu.

Table A.228: ISignalIPdu

Class	**ISignalPort**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication			
Note	Connectors reception or send port on the referenced channel referenced by an ISignalTriggering. If different timeouts or DataFilters for ISignals need to be specified several ISignalPorts may be created.			
Base	*ARObject*, *CommConnectorPort*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*CommunicationConnector*.ecuCommPortInstance			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
dataFilter	DataFilter	0..1	aggr	Optional specification of a signal COM filter at the receiver side in case that the System Description doesn't use a complete Software Component Description (VFB View). This supports the inclusion of legacy system signals. If a full DataMapping exist for the SystemSignal this information may be available from a configured ReceiverComSpec. In this case the ReceiverComSpec overrides this optional specification.
ddsQosProfile	DdsCpQosProfile	0..1	ref	Reference to the DDS Qos profile used for this ISignal. **Tags:** atp.Status=candidate

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Class	**ISignalPort**			
firstTimeout	TimeValue	0..1	attr	• ISignalPort with communicationDirection = in: Optional first timeout value in seconds for the reception of the ISignal. • ISignalPort with communicationDirection = out: Optional first timeout value in seconds for transmission deadline monitoring.
handleInvalid	HandleInvalidEnum	0..1	attr	This attribute defines how invalidation is applied to the ISignals received in the context of this ISignalPort.
timeout	TimeValue	0..1	attr	• ISignalPort with communicationDirection = in: Optional timeout value in seconds for the reception of the ISignal. The attribute value is used to configure the Com Timeout in the COM module. The RTE ignores this attribute. The timeout can also be specified with the NonqueuedReceiverComSpec.aliveTimeout attribute. If a full DataMapping exists for the SystemSignal and the value is available in the configured ReceiverComSpec, then the timeout value in the ReceiverComSpec overrides this optional timeout specification during the creation of the Base Ecu Configuration of the COM module. • ISignalPort with communicationDirection = out: Optional timeout value in seconds for the transmission of the ISignal. The attribute value is used to configure the ComTimeout in the COM module. The RTE ignores this attribute. The timeout can also be specified with the ender ComSpec.transmissionAcknowledge.timeout attribute. If a full DataMapping exists for the SystemSignal and the value is available in the configured SenderComSpec, then the timeout value in the SenderComSpec overrides this optional timeout specification during the creation of the Base Ecu Configuration of the COM module. This attribute can be used in the following cases: • legacy signal where the System Description doesn't use a complete Software Component Description (VFB View) and where the DataMapping is missing. • bus monitoring use cases in which the DataMapping is ignored.

Table A.229: ISignalPort

Class	**ISignalToIPduMapping**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication			
Note	An ISignalToIPduMapping describes the mapping of ISignals to ISignalIPdus and defines the position of the ISignal within an ISignalIPdu.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	ISignalIPdu.iSignalToPduMapping, NmPdu.iSignalToIPduMapping			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
iSignal	ISignal	0..1	ref	Reference to a ISignal that is mapped into the ISignal IPdu. Each ISignal contained in the ISignalGroup shall be mapped into an IPdu by an own ISignalToIPduMapping. The references to the ISignal and to the ISignalGroup in an ISignalToIPduMapping are mutually exclusive.

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Class	**ISignalToIPduMapping**			
iSignalGroup	ISignalGroup	0..1	ref	Reference to an ISignalGroup that is mapped into the SignalIPdu. If an ISignalToIPduMapping for an ISignal Group is defined, only the UpdateIndicationBitPosition and the transferProperty is relevant. The startPosition and the packingByteOrder shall be ignored. Each ISignal contained in the ISignalGroup shall be mapped into an IPdu by an own ISignalToIPduMapping. The references to the ISignal and to the ISignalGroup in an ISignalToIPduMapping are mutually exclusive.
packingByte Order	ByteOrderEnum	0..1	attr	This parameter defines the order of the bytes of the signal and the packing into the SignalIPdu. The byte ordering "Little Endian" (MostSignificantByteLast), "Big Endian" (MostSignificantByteFirst) and "Opaque" can be selected. For opaque data endianness conversion shall be configured to Opaque. The value of this attribute impacts the absolute position of the signal into the SignalIPdu (see the startPosition attribute description). For an ISignalGroup the packingByteOrder is irrelevant and shall be ignored.
startPosition	UnlimitedInteger	0..1	attr	This parameter is necessary to describe the bitposition of a signal within an SignalIPdu. It denotes the least significant bit for "Little Endian" and the most significant bit for "Big Endian" packed signals within the IPdu (see the description of the packingByteOrder attribute). In AUTOSAR the bit counting is always set to "sawtooth" and the bit order is set to "Decreasing". The bit counting in byte 0 starts with bit 0 (least significant bit). The most significant bit in byte 0 is bit 7. Please note that the way the bytes will be actually sent on the bus does not impact this representation: they will always be seen by the software as a byte array. If a mapping for the ISignalGroup is defined, this attribute is irrelevant and shall be ignored.
transferProperty	TransferPropertyEnum	0..1	attr	Defines how the referenced ISignal contributes to the send triggering of the ISignalIPdu.
update IndicationBit Position	UnlimitedInteger	0..1	attr	The UpdateIndicationBit indicates to the receivers that the signal (or the signal group) was updated by the sender. Length is always one bit. The UpdateIndicationBitPosition attribute describes the position of the update bit within the SignalIPdu. For Signals of a ISignalGroup this attribute is irrelevant and shall be ignored. Note that the exact bit position of the updateIndicationBit Position is linked to the value of the attribute packingByte Order because the method of finding the bit position is different for the values mostSignificantByteFirst and most SignificantByteLast. This means that if the value of packingByteOrder is changed while the value of update IndicationBitPosition remains unchanged the exact bit position of updateIndicationBitPosition within the enclosing ISignalIPdu still undergoes a change. This attribute denotes the least significant bit for "Little Endian" and the most significant bit for "Big Endian" packed signals within the IPdu (see the description of the packingByteOrder attribute). In AUTOSAR the bit counting is always set to "sawtooth" and the bit order is set to "Decreasing". The bit counting in byte 0 starts with bit 0 (least significant bit). The most significant bit in byte 0 is bit 7.

Table A.230: ISignalToIPduMapping

Class	**ISignalTriggering**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication			
Note	A ISignalTriggering allows an assignment of ISignals to physical channels.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*PhysicalChannel*.iSignalTriggering			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
iSignal	ISignal	0..1	ref	This reference shall be used if an ISignal is transported on the PhysicalChannel. This reference forms an XOR relationship with the ISignalTriggering-ISignalGroup reference.
iSignalGroup	ISignalGroup	0..1	ref	This reference shall be used if an ISignalGroup is transported on the PhysicalChannel. This reference forms an XOR relationship with the ISignal Triggering-ISignal reference.
iSignalPort	ISignalPort	*	ref	References to the ISignalPort on every ECU of the system which sends and/or receives the ISignal. References for both the sender and the receiver side shall be included when the system is completely defined.

Table A.231: ISignalTriggering

Class	**IamModuleInstantiation**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IdentityAccessManagement			
Note	This meta-class represents the ability to define a definition of an IAM instantiation. **Tags:** atp.Status=candidate			
Base	*ARObject*, *AdaptiveModuleInstantiation*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *NonOsModuleInstantiation*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, Machine.moduleInstantiation			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
grant	Grant	*	ref	This reference identifies the applicable Grants for this Iam ModuleInstantiation. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=grant atp.Status=candidate
localCom AccessControl Enabled	Boolean	0..1	attr	This switch activates the policy enforcement in Communication Management on local applications. **Tags:** atp.Status=candidate
remoteAccess ControlEnabled	Boolean	0..1	attr	This switch activates the check of the remote subject. **Tags:** atp.Status=candidate

Table A.232: IamModuleInstantiation

Class	***Identifiable*** (abstract)
Package	M2::AUTOSARTemplates::GenericStructure::GeneralTemplateClasses::Identifiable
Note	Instances of this class can be referred to by their identifier (within the namespace borders). In addition to this, Identifiables are objects which contribute significantly to the overall structure of an AUTOSAR description. In particular, Identifiables might contain Identifiables.
Base	*ARObject*, *MultilanguageReferrable*, *Referrable*

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Class	***Identifiable*** (abstract)			
Subclasses	ARPackage, *AbstractDoIpLogicAddressProps*, *AbstractEvent*, *AbstractImplementationDataTypeElement*, *AbstractSecurityEventFilter*, *AbstractSecurityIdsmInstanceFilter*, *AbstractServiceInstance*, *Abstract SignalBasedToISignalTriggeringMapping*, AdaptiveSwcInternalBehavior, ApApplicationEndpoint, ApplicationEndpoint, ApplicationError, AppliedStandard, ArtifactChecksum, ArtifactLocator, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpFeature*, AutosarOperationArgumentInstance, AutosarVariable Instance, *BuildActionEntity*, BuildActionEnvironment, Chapter, CheckpointTransition, ClassContent Conditional, ClientIdDefinition, ClientServerOperation, Code, *CollectableElement*, ComManagement Mapping, *CommConnectorPort*, *CommunicationConnector*, *CommunicationController*, Compiler, ConsistencyNeeds, ConsumedEventGroup, CouplingPort, *CouplingPortStructuralElement*, Crypto Certificate, CryptoKeySlot, CryptoProvider, *CryptoServiceMapping*, DataPrototypeGroup, Data Transformation, DdsCpDomain, DdsCpPartition, DdsCpQosProfile, DdsCpTopic, DdsDomainRange, DependencyOnArtifact, *DiagEventDebounceAlgorithm*, DiagnosticAuthTransmitCertificateEvaluation, DiagnosticConnectedIndicator, DiagnosticDataElement, DiagnosticDebounceAlgorithmProps, Diagnostic FunctionInhibitSource, DiagnosticParameterElement, *DiagnosticRoutineSubfunction*, DiagnosticSovd MethodPrimitive, DltApplication, DltArgument, DltMessage, DoIpInterface, DoIpLogicAddress, DoIp RoutingActivation, E2EProfileConfiguration, End2EndEventProtectionProps, End2EndMethodProtection Props, EndToEndProtection, EthernetWakeupSleepOnDatalineConfig, EventHandler, EventMapping, ExclusiveArea, *ExecutableEntity*, *ExecutionTime*, FMAttributeDef, FMFeatureMapAssertion, FMFeature MapCondition, FMFeatureMapElement, FMFeatureRelation, FMFeatureRestriction, FMFeatureSelection, FieldMapping, FireAndForgetMethodMapping, FlexrayArTpNode, FlexrayTpPduPool, *FrameTriggering*, GeneralParameter, GlobalSupervision, GlobalTimeGateway, *GlobalTimeMaster*, *GlobalTimeSlave*, *HealthChannel*, *HeapUsage*, HwAttributeDef, HwAttributeLiteralDef, HwPin, HwPinGroup, *IEEE1722Tp AcfBus*, *IEEE1722TpAcfBusPart*, IPSecRule, IPv6ExtHeaderFilterList, ISignalToIPduMapping, ISignal Triggering, *IdentCaption*, ImpositionTime, InternalTriggeringPoint, Keyword, LifeCycleState, Linker, Mac MulticastGroup, MacSecKayParticipant, McDataInstance, MemorySection, MemoryUsage, Method Mapping, ModeDeclaration, ModeDeclarationMapping, ModeSwitchPoint, NetworkEndpoint, *NmCluster*, *NmNode*, *PackageableElement*, ParameterAccess, PduActivationRoutingGroup, PduToFrameMapping, PduTriggering, PerInstanceMemory, *PersistencyDeploymentElement*, *PersistencyInterfaceElement*, *Phm Supervision*, *PhysicalChannel*, PortGroup, *PortInterfaceMapping*, PossibleErrorReaction, ProcessTo MachineMapping, Processor, ProcessorCore, PskIdentityToKeySlotMapping, ResourceConsumption, ResourceGroup, RootSwClusterDesignComponentPrototype, RootSwComponentPrototype, RootSw CompositionPrototype, RptComponent, RptContainer, RptExecutableEntity, RptExecutableEntityEvent, RptExecutionContext, RptProfile, RptServicePoint, RunnableEntityGroup, *SdgAttribute*, SdgClass, Sec OcJobMapping, SecOcJobRequirement, SecureCommunicationAuthenticationProps, *Secure CommunicationDeployment*, SecureCommunicationFreshnessProps, SecurityEventContextProps, *ServiceEventDeployment*, *ServiceFieldDeployment*, ServiceInterfaceElementSecureComConfig, *Service MethodDeployment*, *ServiceNeeds*, SignalServiceTranslationEventProps, SignalServiceTranslation Props, SocketAddress, SoftwarePackageStep, SomeipEventGroup, SomeipProvidedEventGroup, SomeipTpChannel, *SpecElementReference*, *StackUsage*, *StateManagementActionItem*, State ManagementActionList, StateManagementStateNotification, *StateManagementStateRequest*, Static SocketConnection, StructuredReq, SupervisionCheckpoint, SupervisionMode, SupervisionMode Condition, SwGenericAxisParamType, SwServiceArg, SwcServiceDependency, SystemMapping, *Time BaseResource*, *TimingClock*, TimingClockSyncAccuracy, TimingCondition, *TimingConstraint*, *Timing Description*, TimingExtensionResource, TimingModeInstance, TlsCryptoCipherSuite, TlsCryptoCipher SuiteProps, TlsJobMapping, Topic1, TpAddress, TraceableTable, TraceableText, *TracedFailure*, *TransformationProps*, TransformationTechnology, Trigger, UcmDescription, UcmRetryStrategy, Ucm Step, VariableAccess, VariationPointProxy, VehicleRolloutStep, ViewMap, VlanConfig, WaitPoint			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
adminData	AdminData	0..1	aggr	This represents the administrative data for the identifiable object. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=adminData xml.sequenceOffset=-40
annotation	Annotation	*	aggr	Possibility to provide additional notes while defining a model element (e.g. the ECU Configuration Parameter Values). These are not intended as documentation but are mere design notes. **Tags:** xml.sequenceOffset=-25

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Class	***Identifiable*** (abstract)			
category	CategoryString	0..1	attr	The category is a keyword that specializes the semantics of the Identifiable. It affects the expected existence of attributes and the applicability of constraints. **Tags:** xml.sequenceOffset=-50
desc	MultiLanguageOverview Paragraph	0..1	aggr	This represents a general but brief (one paragraph) description what the object in question is about. It is only one paragraph! Desc is intended to be collected into overview tables. This property helps a human reader to identify the object in question. More elaborate documentation, (in particular how the object is built or used) should go to "introduction". **Tags:** xml.sequenceOffset=-60
introduction	DocumentationBlock	0..1	aggr	This represents more information about how the object in question is built or is used. Therefore it is a DocumentationBlock. **Tags:** xml.sequenceOffset=-30
uuid	String	0..1	attr	The purpose of this attribute is to provide a globally unique identifier for an instance of a meta-class. The values of this attribute should be globally unique strings prefixed by the type of identifier. For example, to include a DCE UUID as defined by The Open Group, the UUID would be preceded by "DCE:". The values of this attribute may be used to support merging of different AUTOSAR models. The form of the UUID (Universally Unique Identifier) is taken from a standard defined by the Open Group (was Open Software Foundation). This standard is widely used, including by Microsoft for COM (GUIDs) and by many companies for DCE, which is based on CORBA. The method for generating these 128-bit IDs is published in the standard and the effectiveness and uniqueness of the IDs is not in practice disputed. If the id namespace is omitted, DCE is assumed. An example is "DCE:2fac1234-31f8-11b4-a222-08002b34c003". The uuid attribute has no semantic meaning for an AUTOSAR model and there is no requirement for AUTOSAR tools to manage the timestamp. **Tags:** xml.attribute=true

Table A.233: Identifiable

Class	***IdsPlatformInstantiation*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IntrusionDetectionSystem			
Note	This meta-class acts as an abstract base class for platform modules that implement the intrusion detection system. **Tags:** atp.Status=candidate			
Base	*ARObject*, *AdaptiveModuleInstantiation*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *NonOsModuleInstantiation*, *Referrable*			
Subclasses	IdsmModuleInstantiation			
Aggregated by	*AtpClassifier*.atpFeature, Machine.moduleInstantiation			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
network Interface	PlatformModule EthernetEndpoint Configuration	*	ref	This association contains the network configuration that shall be applied to an instance of an IDS entity. **Tags:** atp.Status=candidate

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Class	***IdsPlatformInstantiation*** (abstract)			
timeBase	TimeBaseResource	0..1	ref	This reference identifies the applicable time base resource. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=timeBase.timeBaseResource, time Base.variationPoint.shortLabel atp.Status=candidate vh.latestBindingTime=systemDesignTime

Table A.234: IdsPlatformInstantiation

Class	**IdsmContextProviderInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class provides the ability to define a PortInterface for providing a Context for security events in the context of the intrusion detection system. **Tags:** atp.recommendedPackage=IdsmPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *IdsmAbstractPortInterface*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.235: IdsmContextProviderInterface

Class	**IdsmContextProviderMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IntrusionDetectionSystem			
Note	This meta-class represents the ability to define a mapping between an IdsMInstance and a Process on deployment level to a given PortPrototype that is typed by a IdsmContextProviderInterface. **Tags:** atp.recommendedPackage=IdsmProviderMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
idsPlatform Instantiation	IdsPlatformInstantiation	0..1	ref	This represents the IdsM functional cluster. **Tags:** atp.Status=candidate
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This reference identifies the mapped PortPrototype in the application software. **Stereotypes:** atpUriDef **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
process	Process	0..1	ref	This reference identifies the process in which the application runs.

Table A.236: IdsmContextProviderMapping

Class	**IdsmModuleInstantiation**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IntrusionDetectionSystem			
Note	This meta-class defines the attributes for the IdsM configuration on a specific machine. **Tags:** atp.Status=candidate			
Base	*ARObject*, *AdaptiveModuleInstantiation*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *IdsPlatformInstantiation*, *MultilanguageReferrable*, *NonOsModuleInstantiation*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, Machine.moduleInstantiation			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
reportable SecurityEvent	SecurityEventMapping	*	ref	Collection of reportable instances of security events. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=reportableSecurityEvent atp.Status=candidate

Table A.237: IdsmModuleInstantiation

Class	**IdsmTimestampProviderInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class provides the ability to define a PortInterface for providing a timestamp for security events in the context of the intrusion detection system. **Tags:** atp.recommendedPackage=IdsmPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *IdsmAbstractPortInterface*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.238: IdsmTimestampProviderInterface

Class	**IdsmTimestampProviderMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IntrusionDetectionSystem			
Note	This meta-class represents the ability to define a mapping between an IdsMInstance and a Process on deployment level to a given PortPrototype that is typed by a IdsmTimestampProviderInterface. **Tags:** atp.recommendedPackage=IdsmProviderMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
idsPlatform Instantiation	IdsPlatformInstantiation	0..1	ref	This represents the IdsM functional cluster. **Tags:** atp.Status=candidate
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This reference identifies the mapped PortPrototype in the application software. **Stereotypes:** atpUriDef **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
process	Process	0..1	ref	This reference identifies the process in which the application runs.

Table A.239: IdsmTimestampProviderMapping

Class	**InterfaceMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SystemDesign			
Note	This meta-class collects the mappings of elements of a single ServiceInterface to PortInterface elements of the AUTOSAR Classic Platform. **Tags:** atp.recommendedPackage=InterfaceMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
eventMapping	EventMapping	*	aggr	Mapping of a VariableDataPrototype in a SenderReceiver Interface to an Event in a ServiceInterface.
fieldMapping	FieldMapping	*	aggr	Mapping of a Field in a ServiceInterface to ClientServer Operations that represent the getter and setter methods and to a VariableDataPrototype that represents the notifier in the Field.
fireAndForget MethodMapping	FireAndForgetMethod Mapping	*	aggr	Mapping of a Fire&Forget Method that is located in a ServiceInterface to a VariableDataPrototype in a Sender ReceiverInterface or to a Trigger in a TriggerInterface.
methodMapping	MethodMapping	*	aggr	Mapping of a ClientServerOperation in a ClientServer Interface to a Method in a ServiceInterface.

Table A.240: InterfaceMapping

Class	**Ipv4Configuration**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::EthernetTopology			
Note	Internet Protocol version 4 (IPv4) configuration.			
Base	*ARObject*, *NetworkEndpointAddress*			
Aggregated by	NetworkEndpoint.networkEndpointAddress			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
assignment Priority	PositiveInteger	0..1	attr	Priority of assignment (1 is highest). If a new address from an assignment method with a higher priority is available, it overwrites the IP address previously assigned by an assignment method with a lower priority.
defaultGateway	Ip4AddressString	0..1	attr	IP address of the default gateway.
dnsServer Address	Ip4AddressString	*	attr	IP addresses of preconfigured DNS servers. **Tags:** xml.namePlural=DNS-SERVER-ADDRESSES
ipAddressKeep Behavior	IpAddressKeepEnum	0..1	attr	Defines the lifetime of a dynamically fetched IP address.
ipv4Address	Ip4AddressString	0..1	attr	IPv4 Address. Notation: 255.255.255.255. The IP Address shall be declared in case the ipv4AddressSource is FIXED and thus no auto-configuration mechanism is used.
ipv4Address Source	Ipv4AddressSource Enum	0..1	attr	Defines how the node obtains its IP address.
networkMask	Ip4AddressString	0..1	attr	Network mask. Notation 255.255.255.255
ttl	PositiveInteger	0..1	attr	Lifespan of data (0..255). The purpose of the TimeToLive field is to avoid a situation in which an undeliverable datagram keeps circulating on a system.

Table A.241: Ipv4Configuration

Class	**Ipv6Configuration**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::EthernetTopology			
Note	Internet Protocol version 6 (IPv6) configuration.			
Base	*ARObject*, *NetworkEndpointAddress*			
Aggregated by	NetworkEndpoint.networkEndpointAddress			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
assignment Priority	PositiveInteger	0..1	attr	Priority of assignment (1 is highest). If a new address from an assignment method with a higher priority is available, it overwrites the IP address previously assigned by an assignment method with a lower priority.
defaultRouter	Ip6AddressString	0..1	attr	IP address of the default router.
dnsServer Address	Ip6AddressString	*	attr	IP addresses of pre configured DNS servers. **Tags:** xml.namePlural=DNS-SERVER-ADDRESSES
enableAnycast	Boolean	0..1	attr	This attribute is used to enable anycast addressing (i.e. to one of multiple receivers).
hopCount	PositiveInteger	0..1	attr	The distance between two hosts. The hop count n means that n gateways separate the source host from the destination host (Range 0..255)
ipAddressKeep Behavior	IpAddressKeepEnum	0..1	attr	Defines the lifetime of a dynamically fetched IP address.
ipAddressPrefix Length	PositiveInteger	0..1	attr	IPv6 prefix length defines the part of the IPv6 address that is the network prefix.
ipv6Address	Ip6AddressString	0..1	attr	IPv6 Address. Notation: FFFF:...:FFFF. The IP Address shall be declared in case the ipv6AddressSource is FIXED and thus no auto-configuration mechanism is used.
ipv6Address Source	Ipv6AddressSource Enum	0..1	attr	Defines how the node obtains its IP address.

Table A.242: Ipv6Configuration

Class	**LTMessageCollectionToPortPrototypeMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::LogAndTrace			
Note	This mapping element assigns a collection of Log or Trace messages to a PortPrototype of an application. **Tags:** atp.recommendedPackage=LTMessageCollectionToPortPrototypeMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
logAndTrace Message CollectionSet	LogAndTraceMessage CollectionSet	0..1	ref	Reference to a Collection of Log or Trace messages
rPortPrototype	RPortPrototype	0..1	ref	Reference to the RPortPrototype to which Log or Trace messages are assigned.

Table A.243: LTMessageCollectionToPortPrototypeMapping

Class	**LogAndTraceInstantiation**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::LogAndTrace			
Note	This meta-class defines the attributes for the Log&Trace configuration on a specific machine.			
Base	*ARObject*, *AdaptiveModuleInstantiation*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *NonOsModuleInstantiation*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, Machine.moduleInstantiation			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
dltEcu	DltEcu	0..1	ref	Reference to the Ecu representation in the Log And Trace Extract.
logSink	DltLogSink	*	ref	Reference to output sinks for log or trace messages that are produced on the Machine.
sessionId Support	Boolean	0..1	attr	This attribute defines whether the sessionId is used or not.
timeBase Resource	TimeBaseResource	*	ref	This reference is used to describe to which time base the Log and Trace module has access. From the Time Base Resource the Log and Trace module gets the needed information to generate the time stamp.

Table A.244: LogAndTraceInstantiation

Class	**LogAndTraceInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class provides the ability to implement a PortInterface for support of Logging or Tracing. **Tags:** atp.recommendedPackage=PortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.245: LogAndTraceInterface

Class	**LogicalSupervision**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	Defines a LogicalSupervision graph consisting of transitions, initial- and final checkpoints.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *PhmSupervision*, *Referrable*			
Aggregated by	GlobalSupervision.logicalSupervision			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
finalCheckpoint	SupervisionCheckpoint	*	ref	Reference to the final Checkpoint(s) for this Logical Supervision. **Tags:** xml.sequenceOffset=20
initialCheckpoint	SupervisionCheckpoint	*	ref	Reference to the initial Checkpoint(s) for this Logical Supervision. **Tags:** xml.sequenceOffset=10
transition	CheckpointTransition	*	ref	Reference to the transitions for this LogicalSupervision. **Tags:** xml.sequenceOffset=30

Table A.246: LogicalSupervision

Class	**Machine**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::MachineManifest			
Note	Machine that represents an Adaptive Autosar Software Stack. **Tags:** atp.recommendedPackage=Machines			
Base	*ARElement*, *ARObject*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDeployment Element*, *UploadablePackageElement*			
Aggregated by	ARPackage.element, *AtpClassifier*.atpFeature			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
default Application Timeout	EnterExitTimeout	0..1	aggr	This aggregation defines a default timeout in the context of a given Machine with respect to the launching and termination of applications.
environment Variable	TagWithOptionalValue	*	aggr	This aggregation represents the collection of environment variables that shall be added to the environment defined on the level of the enclosing Machine. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=environmentVariable
machineDesign	MachineDesign	0..1	ref	Reference to the MachineDesign this Machine is implementing.
module Instantiation	AdaptiveModule Instantiation	*	aggr	Configuration of Adaptive Autosar module instances that are running on the machine. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=moduleInstantiation.shortName
processor	Processor	*	aggr	This represents the collection of processors owned by the enclosing machine.
secure Communication Deployment	SecureCommunication Deployment	*	aggr	Deployment of secure communication protocol configuration settings to crypto module entities. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=secureCommunication Deployment.shortName
trustedPlatform Executable LaunchBehavior	TrustedPlatform ExecutableLaunch BehaviorEnum	0..1	attr	This attribute controls the behavior of how authentication affects the ability to launch for each Executable.

Table A.247: Machine

Class	**MachineDesign**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SystemDesign			
Note	This meta-class represents the ability to define requirements on a Machine in the context of designing a system. **Tags:** atp.recommendedPackage=MachineDesigns			
Base	*ARElement*, *ARObject*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *CollectableElement*, *Fibex Element*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesign Element*, *UploadablePackageElement*			
Aggregated by	ARPackage.element, *AtpClassifier*.atpFeature			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
accessControl	AccessControlEnum	0..1	attr	This attribute defines how the access restriction to the Service Instance is defined.
communication Connector	Communication Connector	*	aggr	This aggregation defines the network connection of the machine. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=communicationConnector.shortName

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Class	**MachineDesign**			
communication Controller	Communication Controller	*	aggr	CommunicationControllers of the Machine that are used for description of 10-Base-T1S topologies **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=communicationController.shortName
ethIpProps	EthIpProps	*	ref	Machine specific IP attributes.
pncPrepare SleepTimer	TimeValue	0..1	attr	Time in seconds the PNC state machine shall wait in PNC_PREPARE_SLEEP.
pnResetTimer	TimeValue	0..1	attr	Specifies the runtime of the reset timer in seconds. This reset time is valid for the reset of PN requests.
service Discovery Config	ServiceDiscovery Configuration	*	aggr	Set of service discovery configuration settings that are defined on the machine for individual Communication Connectors. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=serviceDiscoveryConfig
tcpIpIcmpProps	EthTcpIpIcmpProps	*	ref	Machine specific ICMP (Internet Control Message Protocol) attributes
tcpIpProps	EthTcpIpProps	*	ref	Machine specific Tcplp Stack attributes.

Table A.248: MachineDesign

Class	**MachineTiming**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::Timing::TimingExtensions			
Note	This meta-class represents the timing view for a machine. **Tags:** atp.Status=draft atp.recommendedPackage=TimingExtensions			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *TimingExtension*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
machine	Machine	0..1	ref	This defines the scope of a MachineTiming. All corresponding timing descriptions and constraints shall be defined within this scope. **Tags:** atp.Status=draft

Table A.249: MachineTiming

Class	**ModeDeclaration**			
Package	M2::AUTOSARTemplates::CommonStructure::ModeDeclaration			
Note	Declaration of one Mode. The name and semantics of a specific mode is not defined in the meta-model.			
Base	*ARObject*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, ModeDeclarationGroup.modeDeclaration			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
value	PositiveInteger	0..1	attr	The RTE shall take the value of this attribute for generating the source code representation of this Mode Declaration.

Table A.250: ModeDeclaration

Class	**ModeDeclarationGroup**			
Package	M2::AUTOSARTemplates::CommonStructure::ModeDeclaration			
Note	A collection of Mode Declarations. Also, the initial mode is explicitly identified. **Tags:** atp.recommendedPackage=ModeDeclarationGroups			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
initialMode	ModeDeclaration	0..1	ref	The initial mode of the ModeDeclarationGroup. This mode is active before any mode switches occurred.
mode Declaration	ModeDeclaration	*	aggr	The ModeDeclarations collected in this ModeDeclaration Group. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=modeDeclaration.shortName, mode Declaration.variationPoint.shortLabel vh.latestBindingTime=blueprintDerivationTime

Table A.251: ModeDeclarationGroup

Class	**ModeDeclarationGroupPrototype**			
Package	M2::AUTOSARTemplates::CommonStructure::ModeDeclaration			
Note	The ModeDeclarationGroupPrototype specifies a set of Modes (ModeDeclarationGroup) which is provided or required in the given context.			
Base	*ARObject*, *AtpFeature*, *AtpPrototype*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, BswModuleDescription.providedModeGroup, BswModuleDescription.required ModeGroup, FirewallStateSwitchInterface.firewallStateMachine, FunctionGroupSet.functionGroup, Mode SwitchInterface.modeGroup, Process.processStateMachine, StateManagementStateNotification.state Machine			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
type	ModeDeclarationGroup	0..1	tref	The "collection of ModeDeclarations" (= ModeDeclaration Group) supported by a component **Stereotypes:** isOfType

Table A.252: ModeDeclarationGroupPrototype

Class	**ModeInProcessInstanceRef**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest::InstanceRefs			
Note				
Base	*ARObject*, *AtpInstanceRef*			
Aggregated by	ExecutionDependency.processState			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
base	Process	0..1	ref	**Stereotypes:** atpDerived **Tags:** xml.sequenceOffset=10
contextMode Declaration GroupPrototype	ModeDeclarationGroup Prototype	0..1	ref	**Tags:** xml.sequenceOffset=20
targetMode Declaration	ModeDeclaration	0..1	ref	**Tags:** xml.sequenceOffset=30

Table A.253: ModeInProcessInstanceRef

Class	**NetworkEndpoint**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::EthernetTopology			
Note	The network endpoint defines the network addressing (e.g. IP-Address or MAC multicast address).			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	EthernetPhysicalChannel.networkEndpoint			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
fullyQualified DomainName	String	0..1	attr	Defines the fully qualified domain name (FQDN) e.g. some.example.host.
ipSecConfig	IPSecConfig	0..1	aggr	Optional IPSec configuration that provides security services for IP packets.
network Endpoint Address	NetworkEndpoint Address	*	aggr	Definition of a Network Address. **Tags:** xml.name Plural=NETWORK-ENDPOINT-ADDRESSES
priority	PositiveInteger	0..1	attr	Defines the frame priority where values from 0 (best effort) to 7 (highest) are allowed.

Table A.254: NetworkEndpoint

Class	**NetworkHandlePortMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation			
Note	This class is used to associate a PortPrototype with a network handle in order to control the network handle from the PortPrototype **Tags:** atp.recommendedPackage=NetworkHandleMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
networkHandle	NmNetworkHandle	0..1	ref	This reference identifies the applicable network handle.
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This reference identifies the applicable PortPrototype in the context of an enclosing Executable. **Stereotypes:** atpUriDef **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
process	Process	0..1	ref	This reference identifies the process applicable for the state management

Table A.255: NetworkHandlePortMapping

Class	**NetworkManagementPortInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This PortInterface shall be used to submit triggers to the state management **Tags:** atp.recommendedPackage=NetworkManagementInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.256: NetworkManagementPortInterface

Class	***NmCluster*** (abstract)			
Package	M2::AUTOSARTemplates::SystemTemplate::NetworkManagement			
Note	Set of NM nodes coordinated with use of the NM algorithm.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	CanNmCluster, FlexrayNmCluster, UdpNmCluster			
Aggregated by	NmConfig.nmCluster			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
communication Cluster	CommunicationCluster	0..1	ref	Association to a CommunicationCluster in the topology description.
nmNode	NmNode	*	aggr	Collection of NmNodes of the NmCluster. atpVariation: Derived, because NmNode can be variable. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=nmNode.shortName, nmNode.variation Point.shortLabel vh.latestBindingTime=postBuild
nmPnc Participation	Boolean	0..1	attr	Defines whether this NmCluster contributes to the partial network mechanism.
pncCluster VectorLength	PositiveInteger	0..1	attr	Optionally defines the length of the PNC Vector per CommunicationCluster (and VLAN in case of UdpNm). If not defined then System.pncVectorLength applies. Should only make the PNC Vector shorter (or same length as defined in System.pncVectorLength).

Table A.257: NmCluster

Class	**NmConfig**			
Package	M2::AUTOSARTemplates::SystemTemplate::NetworkManagement			
Note	Contains the all configuration elements for AUTOSAR Nm. **Tags:** atp.recommendedPackage=NmConfigs			
Base	*ARElement*, *ARObject*, *CollectableElement*, *FibexElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
nmCluster	NmCluster	*	aggr	Collection of NM Clusters atpVariation: Derived, because cluster can be variable. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=nmCluster.shortName, nmCluster.variation Point.shortLabel vh.latestBindingTime=postBuild

Table A.258: NmConfig

Enumeration	**NmHandleMappingDirectionEnum**
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation
Note	This enumeration provides direction values for the mapping of NM handles to function group states.
Aggregated by	NmHandleToFunctionGroupStateMapping.mappingDirection
Literal	***Description***

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Enumeration	**NmHandleMappingDirectionEnum**
functionGroupState ToNmHandle	The purpose of the mapping is to indicate which function group state requires network access. **Tags:** atp.EnumerationLiteralIndex=0
nmHandleActiveTo FunctionGroupState	The purpose of the mapping is to indicate that the function group shall be switched to a given state if the network handle becomes active. **Tags:** atp.EnumerationLiteralIndex=2
nmHandleInactive ToFunctionGroup State	The purpose of the mapping is to indicate that the function group shall be switched to a given state if the network handle becomes inactive. **Tags:** atp.EnumerationLiteralIndex=1

Table A.259: NmHandleMappingDirectionEnum

Class	**NmHandleToFunctionGroupStateMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation			
Note	This meta-class represents the ability to create a mapping between an NmNetworkHandle and a collection of function group states. This way, the impact of function groups on the network management can be specified. **Tags:** atp.recommendedPackage=NmHandleToFunctionGroupStateMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
functionGroup State	ModeDeclaration	*	iref	This reference identifies the collection of function group states in the context of the mapping. **InstanceRef implemented by:** FunctionGroupStateIn FunctionGroupSetInstanceRef
mapping Direction	NmHandleMapping DirectionEnum	0..1	attr	This attribute describes the direction of the mapping.
nmHandle	NmNetworkHandle	0..1	ref	This reference identifies the applicable NmNetwork Handle in the context of the mapping.

Table A.260: NmHandleToFunctionGroupStateMapping

Class	**NmInteractsWithSmMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	This mapping represents an interaction from network management to state management. **Tags:** atp.Status=draft atp.recommendedPackage=FCInteractions			
Base	*ARElement*, *ARObject*, *CollectableElement*, *FunctionalClusterInteractsWithFunctionalClusterMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDeployment Element*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
nmNetwork Handle	NmNetworkHandle	0..1	ref	This reference identifies the network management handle that wants to interact with state management. **Tags:** atp.Status=draft

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Class	NmInteractsWithSmMapping			
stateRequest	StateManagementState Request	0..1	ref	This reference identifies the state management state request that is involved in the interaction with the network management. **Tags:** atp.Status=draft

Table A.261: NmInteractsWithSmMapping

Class	NoCheckpointSupervision			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	Defines explicitly that NO supervision shall be applied for a set of SupervisionCheckpoints.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *PhmSupervision*, *Referrable*			
Aggregated by	GlobalSupervision.noCheckpointSupervision			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
checkpoint	SupervisionCheckpoint	*	ref	Reference to the set of SupervisionCheckpoints which shall not be considered for any kind of supervision.

Table A.262: NoCheckpointSupervision

Class	NoSupervision			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	Defines explicitly that NO supervision shall be applied for a specific Supervised Entity instance.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *PhmSupervision*, *Referrable*			
Aggregated by	GlobalSupervision.noSupervision			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
process	Process	0..1	ref	Reference to the Process this NoSupervision applies to.
targetPhm Supervised Entity	RPortPrototype	0..1	iref	Instance reference to the RPortPrototype which represents the Supervised Entity instance. **Stereotypes:** atpUriDef **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.263: NoSupervision

Class	***NonOsModuleInstantiation*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation			
Note	This meta-class defines the abstract attributes for the configuration of an adaptive autosar module other than the OS module.			
Base	*ARObject*, *AdaptiveModuleInstantiation*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	AdaptiveFirewallModuleInstantiation, CryptoModuleInstantiation, DoIpInstantiation, GenericModule Instantiation, IamModuleInstantiation, *IdsPlatformInstantiation*, LogAndTraceInstantiation, Nm Instantiation, *SovdModuleInstantiation*, StateManagementModuleInstantiation, TimeSyncModule Instantiation, *UcmModuleInstantiation*			
Aggregated by	*AtpClassifier*.atpFeature, Machine.moduleInstantiation			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
–	–	–	–	–

Table A.264: NonOsModuleInstantiation

Primitive	**Numerical**
Package	M2::AUTOSARTemplates::GenericStructure::GeneralTemplateClasses::PrimitiveTypes
Note	This primitive specifies a numerical value. It can be denoted in different formats such as Decimal, Octal, Hexadecimal, Float. See the xsd pattern for details. The value can be expressed in octal, hexadecimal, binary representation. Negative numbers can only be expressed in decimal or float notation. **Tags:** xml.xsd.customType=NUMERICAL-VALUE xml.xsd.pattern=(0[xX][0-9a-fA-F]+)|(0[0-7]+)|(0[bB][0-1]+)|(([+\-]?[1-9][0-9]+(\.[0-9]+)?|[+\-]?[0-9](\.[0-9]+)?)([eE]([+\-]?)[0-9]+)?)|\.0|INF|-INF|NaN xml.xsd.type=string

Table A.265: Numerical

Class	**NumericalValueSpecification**			
Package	M2::AUTOSARTemplates::CommonStructure::Constants			
Note	A numerical ValueSpecification which is intended to be assigned to a Primitive data element. Note that the numerical value is a variant, it can be computed by a formula.			
Base	*ARObject*, *ValueSpecification*			
Aggregated by	ApplicationAssocMapElementValueSpecification.key, ApplicationAssocMapElementValueSpecification.value, ArrayValueSpecification.element, CalibrationParameterValue.applInitValue, CalibrationParameterValue.implInitValue, ConstantSpecification.valueSpec, CryptoServiceKey.developmentValue, DiagnosticEnvDataCondition.compareValue, DiagnosticEnvDataElementCondition.compareValue, FieldSenderComSpec.initValue, ISignal.initValue, ISignal.timeoutSubstitutionValue, NonqueuedReceiverComSpec.initValue, NonqueuedReceiverComSpec.timeoutSubstitutionValue, NonqueuedSenderComSpec.initValue, NvProvideComSpec.ramBlockInitValue, NvProvideComSpec.romBlockInitValue, NvRequireComSpec.initValue, ParameterDataPrototype.initValue, ParameterProvideComSpec.initValue, ParameterRequireComSpec.initValue, PersistencyDataRequiredComSpec.initValue, PersistencyKeyValuePair.initValue, PortDefinedArgumentValue.value, PortPrototypeBlueprintInitValue.value, RecordValueSpecification.field, SomeipEventDeployment.eventReceptionDefaultValue, *StateManagementCompareCondition*.compareValue, SwDataDefProps.invalidValue, VariableDataPrototype.initValue			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
value	Numerical	0..1	attr	This is the value itself. **Stereotypes:** atpVariation **Tags:** vh.latestBindingTime=preCompileTime

Table A.266: NumericalValueSpecification

Class	**OsModuleInstantiation**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModuleImplementation			
Note	This meta-class defines the attributes for the OS configuration on a specific machine.			
Base	*ARObject*, *AdaptiveModuleInstantiation*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, Machine.moduleInstantiation			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
osArtiAdapterLaunchBehavior	OsArtiAdapterLaunchBehaviorEnum	0..1	attr	This attribute controls the startup behavior of the OS/ARTI Adapter. **Tags:** atp.Status=candidate
resourceGroup	ResourceGroup	*	aggr	This represents the collection of ResourceGroups owned by the enclosing OsModuleImplementation.
supportedTimerGranularity	TimeValue	0..1	attr	This attribute describes the supported timer granularity (TimeValue of one tick).

Table A.267: OsModuleInstantiation

Class	**PPortPrototype**			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Components			
Note	Component port providing a certain port interface.			
Base	*ARObject*, *AbstractProvidedPortPrototype*, *AtpBlueprintable*, *AtpFeature*, *AtpPrototype*, *Identifiable*, *MultilanguageReferrable*, *PortPrototype*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, *SwComponentType*.port			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
provided Interface	PortInterface	0..1	tref	The interface that this port provides. **Stereotypes:** isOfType

Table A.268: PPortPrototype

Class	**PRPortPrototype**			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Components			
Note	This kind of PortPrototype can take the role of both a required and a provided PortPrototype.			
Base	*ARObject*, *AbstractProvidedPortPrototype*, *AbstractRequiredPortPrototype*, *AtpBlueprintable*, *Atp Feature*, *AtpPrototype*, *Identifiable*, *MultilanguageReferrable*, *PortPrototype*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, *SwComponentType*.port			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
provided Required Interface	PortInterface	0..1	tref	This represents the PortInterface used to type the PRPort Prototype **Stereotypes:** isOfType

Table A.269: PRPortPrototype

Class	**PassThroughSwConnector**			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Composition			
Note	This kind of SwConnector can be used inside a CompositionSwComponentType to connect two delegation PortPrototypes.			
Base	*ARObject*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *SwConnector*			
Aggregated by	*AtpClassifier*.atpFeature, CompositionSwComponentType.connector			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
providedOuter Port	AbstractProvidedPort Prototype	0..1	ref	This represents the provided outer delegation Port Prototype of the PassThroughSwConnector.
requiredOuter Port	AbstractRequiredPort Prototype	0..1	ref	This represents the required outer delegation Port Prototype of the PassThroughSwConnector.
serviceInterface Element Mapping	ServiceInterface ElementMapping	*	ref	Reference to a ServiceInterfaceElementMapping specifying the mapping of unequal named Service Interface elements of the two different ServiceInterfaces typing the two PortPrototypes which are referenced by the PassThroughSwConnector.

Table A.270: PassThroughSwConnector

Class	**PduTriggering**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication			
Note	The PduTriggering describes on which channel the IPdu is transmitted. The Pdu routing by the PduR is only allowed for subclasses of IPdu. Depending on its relation to entities such channels and clusters it can be unambiguously deduced whether a fan-out is handled by the Pdu router or the Bus Interface. If the fan-out is specified between different clusters it shall be handled by the Pdu Router. If the fan-out is specified between different channels of the same cluster it shall be handled by the Bus Interface.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*PhysicalChannel*.pduTriggering			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
iPdu	Pdu	0..1	ref	Reference to the Pdu for which the PduTriggering is defined. One I-Pdu can be triggered on different channels (PduR fan-out). The Pdu routing by the PduR is only allowed for subclasses of IPdu. Nevertheless is the reference to the Pdu element necessary since the PduTriggering element is also used to specify the sending and receiving connections to Ecu Ports.
iPduPort	IPduPort	*	ref	References to the IPduPort on every ECU of the system which sends and/or receives the I-PDU. References for both the sender and the receiver side shall be included when the system is completely defined.
iSignal Triggering	ISignalTriggering	*	ref	This reference provides the relationship to the ISignal Triggerings that are implemented by the PduTriggering. The reference is optional since no ISignalTriggering can be defined for DCM and Multiplexed Pdus. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=iSignalTriggering.iSignalTriggering, iSignal Triggering.variationPoint.shortLabel vh.latestBindingTime=postBuild
secOcCrypto Mapping	SecOcCryptoService Mapping	0..1	ref	This reference identifies the crypto profile applicable to the usage (send, receive) of the also referenced Secured IPdu. Obviously, this reference is only applicable if the Pdutriggering also references a SecuredIPdu in the role i Pdu.
triggerIPduSend Condition	TriggerIPduSend Condition	*	aggr	Defines the trigger for the Com_TriggerIPDUSend API call. Only if all defined TriggerIPduSendConditions evaluate to true (AND associated) the Com_Trigger IPDUSend API shall be called.

Table A.271: PduTriggering

Class	**PeriodicEventTriggering**			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingConstraint::EventTriggeringConstraint			
Note	Describes the behavior of an event with a strict periodic occurrence pattern, given by `period`. Additionally, it is possible to soften the strictness of the periodic occurrence behavior by specifying a `jitter`, so that there can be a deviation from the `period` up to the size of the `jitter`.			
Base	*ARObject*, *EventTriggeringConstraint*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *Timing Constraint*, *Traceable*			
Aggregated by	*TimingExtension*.timingGuarantee, *TimingExtension*.timingRequirement			
Attribute	***Type***	***Mult.***	***Kind***	***Note***

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Class	**PeriodicEventTriggering**			
jitter	MultidimensionalTime	0..1	aggr	The maximum deviation of the periodic event occurrence. **Tags:** xml.sequenceOffset=20
minimumInter ArrivalTime	MultidimensionalTime	0..1	aggr	The minimum time distance between subsequent consecutive occurrences of the associated event. If the `minimumInterArrivalTime` is less than the `period` minus the `jitter`, then the `minimumInterArrivalTime` has no effect on the properties of the constraint. **Tags:** xml.sequenceOffset=10
period	MultidimensionalTime	0..1	aggr	The periodic distance between subsequent occurrences of the event. **Tags:** xml.sequenceOffset=30

Table A.272: PeriodicEventTriggering

Class	**PersistencyDataElement**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::Persistency			
Note	This meta-class represents the ability to formally specify a piece of data that is subject to persistency in the context of the enclosing PersistencyKeyValueStorageInterface. PersistencyDataElement represents also a key-value pair of the deployed PersistencyKeyValueStorage and provides an initial value.			
Base	*ARObject*, *AtpFeature*, *AtpPrototype*, *AutosarDataPrototype*, *DataPrototype*, *Identifiable*, *MultilanguageReferrable*, *PersistencyInterfaceElement*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, PersistencyKeyValueStorageInterface.dataElement			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.273: PersistencyDataElement

Class	**PersistencyDataRequiredComSpec**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ComSpec			
Note	This meta-class represents the ability to define port-specific attributes for supporting use cases of data persistency on the required side.			
Base	*ARObject*, *RPortComSpec*			
Aggregated by	*AbstractRequiredPortPrototype*.requiredComSpec, PortPrototypeBlueprint.requiredComSpec			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
dataElement	PersistencyData Element	0..1	ref	This refrence represents the PersistencyDataElement for which the PersistencyDataRequiredComSpec applies.
initValue	ValueSpecification	0..1	aggr	This aggregation represents the definition of an initial value for the PersistencyDataElement referenced by the enclosing PersistencyDataRequiredComSpec

Table A.274: PersistencyDataRequiredComSpec

Class	***PersistencyDeployment*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	This abstract meta-class serves as a base class for concrete classes representing different aspects of persistency.			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadableExclusivePackageElement*, *UploadablePackageElement*			
Subclasses	PersistencyFileStorage, PersistencyKeyValueStorage			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
deploymentUri (ordered)	PersistencyDeployment Uri	*	aggr	This aggregation represents the collection of URIs relevant for the enclosing PersistencyDeployment.
maximum AllowedSize	PositiveUnlimitedInteger	0..1	attr	The value of this attribute represents the maximum size (unit: bytes) allowed at deployment time for the enclosing PersistencyDeployment.
minimum SustainedSize	PositiveInteger	0..1	attr	The value of this attribute represents the minimum size (unit: bytes) guaranteed at deployment time for the enclosing PersistencyDeployment.
redundancy Handling	PersistencyRedundancy Handling	*	aggr	This aggregation represents the chosen approaches to handle redundancy.
updateStrategy	PersistencyCollection LevelUpdateStrategy Enum	0..1	attr	This attribute shall be used to specify the update strategy of the respective PersistencyDeployment as a whole.
version	StrongRevisionLabel String	0..1	attr	The attribute represents the version of the `PersistencyFileStorage` or `PersistencyKeyValueStorage`.

Table A.275: PersistencyDeployment

Class	***PersistencyDeploymentElement*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	This abstract meta-class serves as a base class for concrete classes representing different aspects of elements of a `PersistencyDeployment`.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	PersistencyFile, PersistencyKeyValuePair			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
updateStrategy	PersistencyElement LevelUpdateStrategy Enum	0..1	attr	This attribute can be used to specify the update strategy of the respective PersistencyDeploymentElement.

Table A.276: PersistencyDeploymentElement

Class	**PersistencyDeploymentToCryptoKeySlotMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::CryptoDeployment			
Note	This meta-class represents the ability to define a mapping between the PersistencyDeployment and a CryptoKeySlot. **Tags:** atp.recommendedPackage=FCInteractions			
Base	*ARElement*, *ARObject*, *CollectableElement*, *FunctionalClusterInteractsWithFunctionalClusterMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDeployment Element*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***

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Class	**PersistencyDeploymentToCryptoKeySlotMapping**			
cryptoAlgorithm String	String	0..1	attr	This attribute defines the cryptographic algorithm used for hashing, encryption, decryption, signature/MAC verification, or MAC generation.
cryptoKeySlot	CryptoKeySlot	0..1	ref	This reference represents the mapped CryptoKeySlot.
keySlotUsage	CryptoKeySlotUsage Enum	0..1	attr	This attribute defines the role of the keySlot assignment.
persistency Deployment	PersistencyDeployment	0..1	ref	This reference represents the mapped Persistency Deployment.
verificationHash	String	0..1	attr	This attribute defines the hash of the storage used in case of verification.

Table A.277: PersistencyDeploymentToCryptoKeySlotMapping

Enumeration	**PersistencyElementLevelUpdateStrategyEnum**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::Persistency
Note	This enumeration provides possible values for the update strategy on element level.
Aggregated by	*PersistencyDeploymentElement*.updateStrategy, *PersistencyInterfaceElement*.updateStrategy
Literal	*Description*
delete	The update strategy is to delete the value of the respective data item. **Tags:** atp.EnumerationLiteralIndex=2
keepExisting	The update strategy is to keep the existing value of the respective data item. **Tags:** atp.EnumerationLiteralIndex=1
overwrite	The update strategy is to overwrite the respective data item. **Tags:** atp.EnumerationLiteralIndex=0

Table A.278: PersistencyElementLevelUpdateStrategyEnum

Class	**PersistencyFile**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	This meta-class represents the model of a file as part of the persistency on deployment level. **Tags:** atp.recommendedPackage=PersistencyFiles			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *PersistencyDeploymentElement*, *Referrable*			
Aggregated by	PersistencyFileStorage.file			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
contentUri	UriString	0..1	attr	This attribute represents the URI that identifies the initial content of the PersistencyFile.
fileName	String	0..1	attr	This attribute holds filename part of the storage location for the PersistencyFile, e.g. file on the file system.

Table A.279: PersistencyFile

Class	**PersistencyFileElement**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::Persistency
Note	This meta-class has the ability to represent a file at design time such that it is possible to configure the behavior for accessing the represented file at run-time.
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *PersistencyInterfaceElement*, *Referrable*

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Class	PersistencyFileElement			
Aggregated by	PersistencyFileStorageInterface.fileElement			
Attribute	Type	Mult.	Kind	Note
contentUri	UriString	0..1	attr	This attribute represents the URI that identifies the initial content of the PersistencyFile.
fileName	String	0..1	attr	This attribute holds the filename part of the storage location, e.g. file on the file system.

Table A.280: PersistencyFileElement

Class	PersistencyFileStorage			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	This meta-class comes with the ability to define a collection of single files (directory) that creates the deployment-side counterpart to a `PortPrototype` typed by a `PersistencyFileStorageInterface`. **Tags:** atp.recommendedPackage=PersistencyFileStorages			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *PersistencyDeployment*, *Referrable*, *UploadableDeploymentElement*, *UploadableExclusive PackageElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
file	PersistencyFile	*	aggr	This aggregation represents the collection of files aggregated by the PersistencyFileStorage.

Table A.281: PersistencyFileStorage

Class	PersistencyFileStorageInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::Persistency			
Note	This meta-class provides the ability to implement a PortInterface for supporting persistency use cases for files. **Tags:** atp.recommendedPackage=PersistencyFileStorageInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PersistencyInterface*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
fileElement	PersistencyFileElement	*	aggr	This aggregation represents the collection of Persistency FileStorages in the context of the enclosing Persistency FileStorageInterface.
maxNumberOf Files	PositiveInteger	0..1	attr	This attribute represents the definition of an upper bound for the handling of files at run-time in the context of the enclosing PersistencyFileStorageInterface.

Table A.282: PersistencyFileStorageInterface

Class	*PersistencyInterface* (abstract)
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::Persistency
Note	This meta-class provides the abstract ability to define a PortInterface for the support of persistency use cases.

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Class	***PersistencyInterface*** (abstract)			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Subclasses	PersistencyFileStorageInterface, PersistencyKeyValueStorageInterface			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
contractVersion	StrongRevisionLabel String	0..1	attr	This attribute represents the contract version that is used to determine whether the Persistency configuration experienced structural changes and is also used for the check for data type compatibility.
minimum SustainedSize	PositiveInteger	0..1	attr	The value of this attribute represents the minimum size (unit: bytes) required at design time for the enclosing PersistencyInterface.
redundancy	PersistencyRedundancy Enum	0..1	attr	This attribute represents a requirement towards the redundancy of storage.
redundancy Handling	PersistencyRedundancy Handling	*	aggr	This aggregation represents the chosen approaches to handle redundancy for the various use cases implemented by subclasses
updateStrategy	PersistencyCollection LevelUpdateStrategy Enum	0..1	attr	This attribute can be used to specify the update strategy of the respective PersistencyInterface as a whole.

Table A.283: PersistencyInterface

Class	***PersistencyInterfaceElement*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::Persistency			
Note	This meta-class provides the abstract ability to define an element of a PortInterface for the support of persistency use cases.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	PersistencyDataElement, PersistencyFileElement			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
updateStrategy	PersistencyElement LevelUpdateStrategy Enum	0..1	attr	This attribute can be used to specify the update strategy of the respective PersistencyInterfaceElement.

Table A.284: PersistencyInterfaceElement

Class	**PersistencyKeyValueDataTypeMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::Persistency			
Note	This meta-class represents the ability to define a mapping between an existing data type in a key-value-storage stored by a previous version to a new data type used on application software level in the current version.			
Base	*ARObject*, *Describable*			
Aggregated by	PersistencyKeyValueStorageInterface.dataTypeMapping			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
currentData Type	AutosarDataType	0..1	ref	This reference identifies the current data type for an existing key-value-pair in the context of the enclosing PersistencyKeyValueStorageInterface.
previous ContractVersion	StrongRevisionLabel String	0..1	attr	This attribute identifies the contract version in which the previousDataType was used.

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Class	PersistencyKeyValueDataTypeMapping			
previousData Type	AutosarDataType	0..1	ref	This reference identifies the previous data type in a key-value-pair existing in the context of the enclosing PersistencyKeyValueStorageInterface.

Table A.285: PersistencyKeyValueDataTypeMapping

Class	PersistencyKeyValuePair			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	This meta-class represents the ability to formally model a key-value pair in the context of the deployment of persistency.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *PersistencyDeploymentElement*, *Referrable*			
Aggregated by	PersistencyKeyValueStorage.keyValuePair			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
initValue	ValueSpecification	0..1	aggr	This aggregation represents the ability to define an initial value for the value side of the key-value pair. Please note that it does not make sense to configure an initial value if the `PersistencyDeploymentElement.updateStrategy` is set to the value `delete`.
valueDataType	AbstractImplementationDataType	0..1	ref	This reference represents the data type applicable for the value of the key-value pair.

Table A.286: PersistencyKeyValuePair

Class	PersistencyKeyValueStorage			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	This meta-class represents the ability to model a key-value storage on deployment level. **Tags:** atp.recommendedPackage=PersistencyKeyValueStorages			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PersistencyDeployment*, *Referrable*, *UploadableDeploymentElement*, *UploadableExclusivePackageElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
keyValuePair	PersistencyKeyValuePair	*	aggr	This aggregation represents the key-value-pairs owned by the enclosing `PersistencyKeyValueStorage`.

Table A.287: PersistencyKeyValueStorage

Class	PersistencyKeyValueStorageInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::Persistency			
Note	This meta-class provides the ability to implement a `PortInterface` for supporting persistency use cases for data. **Tags:** atp.recommendedPackage=PersistencyKeyValueStorageInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PersistencyInterface*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	**Type**	**Mult.**	**Kind**	**Note**

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Class	**PersistencyKeyValueStorageInterface**			
dataElement	PersistencyData Element	*	aggr	This aggregation represents the collection of Persistency DataElements in the context of the enclosing Persistency KeyValueStorageInterface.
dataTypeFor Serialization	AbstractImplementation DataType	*	ref	This reference identifies the AbstractImplementationData Types that shall be supported for storing in a key-value storage in addition to the types already determined from tha aggregation of PersistencyDataElement.
dataType Mapping	PersistencyKeyValue DataTypeMapping	0..1	aggr	This aggregation provides a collection of replacement rules for data types used in the context of the enclosing PersistencyKeyValueStorageInterface.

Table A.288: PersistencyKeyValueStorageInterface

Class	***PersistencyPortPrototypeToDeploymentMapping*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	This abstract bas class implements the shared functionality of all mapping between a `PortPrototype`, a `Process`, and a specific subclass of `PersistencyDeployment`.			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadableExclusivePackageElement*, *UploadablePackageElement*			
Subclasses	PersistencyPortPrototypeToFileStorageMapping, PersistencyPortPrototypeToKeyValueStorageMapping			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
portPrototype	PortPrototype	0..1	iref	This reference represents the mapped PortPrototype. **InstanceRef implemented by:** PortPrototypeIn ExecutableInstanceRef
process	Process	0..1	ref	This reference represents the process required as context for the mapping.

Table A.289: PersistencyPortPrototypeToDeploymentMapping

Class	**PersistencyPortPrototypeToFileStorageMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	This meta-class represents the ability to define a mapping between a collection of files on deployment level to a given `PortPrototype`. **Tags:** atp.recommendedPackage=PersistencyPortPrototypeToFileStorageMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *PersistencyPortPrototypeToDeploymentMapping*, *Referrable*, *UploadableDeploymentElement*, *UploadableExclusivePackageElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
fileStorage	PersistencyFileStorage	0..1	ref	This reference represents the mapped file storage.

Table A.290: PersistencyPortPrototypeToFileStorageMapping

Class	**PersistencyPortPrototypeToKeyValueStorageMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	This meta-class represents the ability to define a mapping between a PortPrototype and a key-value storage. **Tags:** atp.recommendedPackage=PersistencyPortPrototypeToKeyValueStorageMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *PersistencyPortPrototypeToDeploymentMapping*, *Referrable*, *UploadableDeploymentElement*, *UploadableExclusivePackageElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
keyValue Storage	PersistencyKeyValue Storage	0..1	ref	This reference represents the mapped key-value storage.

Table A.291: PersistencyPortPrototypeToKeyValueStorageMapping

Class	***PersistencyRedundancyChecksum*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	Abstract class that defines the common attributes for implementations of redundancy.			
Base	*ARObject*, *PersistencyRedundancyHandling*			
Subclasses	PersistencyRedundancyCrc, PersistencyRedundancyHash			
Aggregated by	*PersistencyDeployment*.redundancyHandling, *PersistencyInterface*.redundancyHandling			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
algorithmFamily	String	0..1	attr	This attribute identifies the algorithm family that is used to execute the CRC/Hash.
length	PositiveInteger	0..1	attr	This attribute describes the length of the CRC/Hash in the unit bits.

Table A.292: PersistencyRedundancyChecksum

Enumeration	**PersistencyRedundancyEnum**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ComSpec
Note	This meta-class provides a way to specify in which way redundancy shall be applied on collection level.
Aggregated by	*PersistencyInterface*.redundancy
Literal	***Description***
none	This value represents the requirement that redundancy measures are not applied on persistency storage level. **Tags:** atp.EnumerationLiteralIndex=1
redundant	This value represents the requirement that redundancy measures are applied on persistency storage level. The nature of the redundant persistent storage is not further qualified and subject to integrator decisions. **Tags:** atp.EnumerationLiteralIndex=0
redundantPer Element	This value represents the requirement that redundancy measures are applied on key-value level of a key-value storage or on file level of a file storage. The nature of the redundancy used on the persistent storage is not further qualified and subject to integrator decisions. **Tags:** atp.EnumerationLiteralIndex=2

Table A.293: PersistencyRedundancyEnum

Class	***PersistencyRedundancyHandling*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	This abstract base class represents a formal description of redundancy.			
Base	*ARObject*			
Subclasses	*PersistencyRedundancyChecksum*, PersistencyRedundancyMOutOfN			
Aggregated by	*PersistencyDeployment*.redundancyHandling, *PersistencyInterface*.redundancyHandling			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
scope	PersistencyRedundancyHandlingScopeEnum	0..1	attr	This attribute controls the scope in which the redundancy handling is applied.

Table A.294: PersistencyRedundancyHandling

Enumeration	**PersistencyRedundancyHandlingScopeEnum**
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency
Note	This meta-class provides values to control the scope of redundancy measures in the persistency deployment
Aggregated by	*PersistencyRedundancyHandling*.scope
Literal	***Description***
persistencyRedundancyHandlingScopeElement	The redundancy handling shall be applied on element level (key-value pair and file). **Tags:** atp.EnumerationLiteralIndex=0
persistencyRedundancyHandlingScopeStorage	The redundancy handling shall be applied on storage (key-value storage and file storage) level. **Tags:** atp.EnumerationLiteralIndex=1

Table A.295: PersistencyRedundancyHandlingScopeEnum

Class	**PersistencyRedundancyMOutOfN**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	This meta-class provides the ability to describe redundancy via an "M out of N" approach. In this case N is the number of copies created and M is the minimum number of identical copies to justify a reliable read access to the data.			
Base	*ARObject*, *PersistencyRedundancyHandling*			
Aggregated by	*PersistencyDeployment*.redundancyHandling, *PersistencyInterface*.redundancyHandling			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
m	PositiveInteger	0..1	attr	This attribute represents the "M" coordinate in the "M out of N" scheme.
n	PositiveInteger	0..1	attr	This attribute represents the "N" coordinate in the "M out of N" scheme.

Table A.296: PersistencyRedundancyMOutOfN

Class	**PhmCheckpoint**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface
Note	This meta-class provides the ability to implement a checkpoint for interaction with the Platform Health Management Supervised Entity.
Base	*ARObject*, *AtpFeature*, *Identifiable*, *MultilanguageReferrable*, *Referrable*
Aggregated by	*AtpClassifier*.atpFeature, PhmSupervisedEntityInterface.checkpoint

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Class	PhmCheckpoint			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
checkpointId	PositiveInteger	0..1	attr	Defines the numeric value which is used to indicate the reporting of this Checkpoint to the Phm.

Table A.297: PhmCheckpoint

Class	PhmCheckpointInExecutableInstanceRef			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealth Management::InstanceRefs			
Note				
Base	*ARObject*, *AtpInstanceRef*			
Aggregated by	SupervisionCheckpoint.phmCheckpoint			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
base	Executable	0..1	ref	**Stereotypes:** atpDerived; atpUriDef **Tags:** xml.sequenceOffset=10
context Component Prototype (ordered)	SwComponent Prototype	*	ref	**Stereotypes:** atpUriDef **Tags:** xml.sequenceOffset=30
contextRootSw Component Prototype	RootSwComponent Prototype	0..1	ref	**Stereotypes:** atpUriDef **Tags:** xml.sequenceOffset=20
contextRPort Prototype	RPortPrototype	0..1	ref	**Stereotypes:** atpUriDef **Tags:** xml.sequenceOffset=40
targetPhm Checkpoint	PhmCheckpoint	0..1	ref	**Stereotypes:** atpUriDef **Tags:** xml.sequenceOffset=50

Table A.298: PhmCheckpointInExecutableInstanceRef

Class	PhmHealthChannelInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class provides the ability to implement a PortInterface for interaction with the Platform Health Management Health Channel. **Tags:** atp.recommendedPackage=PlatformHealthManagementInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PlatformHealthManagementInterface*, *Port Interface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
status	PhmHealthChannel Status	*	aggr	Defines the possible set of status information available to the health channel.

Table A.299: PhmHealthChannelInterface

Class	**PhmHealthChannelRecoveryNotificationInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class represents a PortInterface that can be taken for implementing a PHM HealthChannel notification. **Tags:** atp.recommendedPackage=PlatformHealthManagementInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PhmAbstractRecoveryNotificationInterface*, *PlatformHealthManagementInterface*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.300: PhmHealthChannelRecoveryNotificationInterface

Class	**PhmHealthChannelStatus**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	The PhmHealthChannelStatus specifies one possible status of the health channel.			
Base	*ARObject*, *AtpFeature*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, PhmHealthChannelInterface.status			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
statusId	PositiveInteger	0..1	attr	Defines the numeric value which is used to indicate the indication of this status the Phm.
triggers Recovery Notification	Boolean	0..1	attr	Defines whether this PhmHealthChannelStatus shall cause the Phm to trigger the Health Channel recovery notification. • true: Indicates unhealthy state. Phm to trigger the Health Channel recovery notification when the Health channel status changes to this state. • false: Indicates healthy state. Phm not to trigger the Health Channel recovery notification when the Health channel status changes to this state.

Table A.301: PhmHealthChannelStatus

Class	***PhmStateReference*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	Definition of state dependency.			
Base	*ARObject*			
Subclasses	FunctionGroupPhmStateReference			
Aggregated by	SupervisionModeCondition.stateReference			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.302: PhmStateReference

Class	**PhmSupervisedEntityInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class provides the ability to implement a PortInterface for interaction with the Platform Health Management Supervised Entity. **Tags:** atp.recommendedPackage=PlatformHealthManagementInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PlatformHealthManagementInterface*, *Port Interface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
checkpoint	PhmCheckpoint	*	aggr	Defines the set of checkpoints which can be reported on this supervised entity.

Table A.303: PhmSupervisedEntityInterface

Class	***PhmSupervision*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	Defines explicitly that NO supervision shall be applied for a set of SupervisionCheckpoints.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	AliveSupervision, DeadlineSupervision, LogicalSupervision, NoCheckpointSupervision, NoSupervision			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.304: PhmSupervision

Class	**PhmSupervisionRecoveryNotificationInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class represents a PortInterface that can be taken for implementing a PHM Supervision notification. **Tags:** atp.recommendedPackage=PlatformHealthManagementInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PhmAbstractRecoveryNotificationInterface*, *PlatformHealthManagementInterface*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.305: PhmSupervisionRecoveryNotificationInterface

Class	**PlatformHealthManagementContribution**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This element defines a contribution to the Platform Health Management. **Tags:** atp.recommendedPackage=PlatformHealthManagementContributions			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***

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Class	**PlatformHealthManagementContribution**			
checkpoint	SupervisionCheckpoint	*	aggr	Collection of checkpoints in the context of a Platform HealthManagementContribution. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=checkpoint.shortName xml.sequenceOffset=10
global Supervision	GlobalSupervision	*	aggr	Collection of GlobalSupervisions in the context of a PlatformHealthManagementContribution. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=globalSupervision.shortName xml.sequenceOffset=30
healthChannel	HealthChannel	*	aggr	Collection of HealthChannels in the context of a Platform HealthManagementContribution. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=healthChannel.shortName xml.sequenceOffset=40
supervision ModeCondition	SupervisionMode Condition	*	aggr	Collection of SupervisionModeConditions in the context of a PlatformHealthManagementContribution. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=supervisionModeCondition.shortName xml.sequenceOffset=20

Table A.306: PlatformHealthManagementContribution

Class	**PlatformModuleEthernetEndpointConfiguration**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation			
Note	This meta-class defines the attributes for the configuration of a port, protocol type and IP address of the communication on a VLAN. **Tags:** atp.recommendedPackage=PlatformModuleEndpointConfigurations			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *PlatformModuleEndpointConfiguration*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
communication Connector	EthernetCommunication Connector	0..1	ref	Reference to the CommunicationConnector (VLAN) for which the network configuration is defined.
ipv4MulticastIp Address	Ip4AddressString	0..1	attr	Multicast IPv4 Address to which the message will be transmitted.
ipv6MulticastIp Address	Ip6AddressString	0..1	attr	Multicast IPv6 Address to which the message will be transmitted.
secureCom PropsForTcp	SecureComProps	0..1	ref	Reference to communication security configuration settings that are valid for the tcp unicast endpoint (Tcp Port + unicast IP Address) defined by the PlatformModule EthernetEndpointConfiguration.
secureCom PropsForUdp	SecureComProps	0..1	ref	Reference to communication security configuration settings that are valid for the udp unicast endpoint (Udp Port + unicast IP Address) defined by the PlatformModule EthernetEndpointConfiguration.
tcpPort	ApApplicationEndpoint	0..1	ref	This reference allows to configure a tcp port number.
udpPort	ApApplicationEndpoint	0..1	ref	This reference allows to configure a udp port number.

Table A.307: PlatformModuleEthernetEndpointConfiguration

Class	**PncMapping**			
Package	M2::AUTOSARTemplates::SystemTemplate::PncMapping			
Note	Describes a mapping between one or several Virtual Function Clusters onto Partial Network Clusters. A Virtual Function Cluster is realized by a PortGroup. A Partial Network Cluster is realized by one or more ServiceInstances.			
Base	*ARObject*, *Describable*			
Aggregated by	SystemMapping.pncMapping			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
ident	PncMappingIdent	0..1	aggr	This adds the ability to become referrable to PncMapping.
physical Channel	PhysicalChannel	*	ref	This reference maps the partial network to a communication channel. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=physicalChannel
pncConsumed Provided ServiceInstance Group	ConsumedProvided ServiceInstanceGroup	*	ref	ConsumedProvidedServiceInstanceGroup used in a Partial Network Cluster. This reference is optional, since this could be used for starting and stopping Consumed ProvidedServiceInstanceGroup according the requested partial network, but is not necessarily needed. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=pncConsumedProvidedServiceInstance Group.consumedProvidedServiceInstanceGroup, pnc ConsumedProvidedServiceInstanceGroup.variation Point.shortLabel vh.latestBindingTime=postBuild
pncIdentifier	PositiveInteger	0..1	attr	Identifer of the Partial Network Cluster. This number represents the absolute bit position of this Partial Network Cluster in the NM Pdu.
pncWakeup Enable	Boolean	0..1	attr	If this parameter is available and set to true then this PNC will be woken up as soon as a channel wakeup occurs on a channel where this PNC is assigned to. This is ensured by adding this PNC to the corresponding channel wakeup sources during upstream mapping.
serviceInstance	AdaptivePlatform ServiceInstance	*	ref	Reference to ServiceInstances that are participating in a Partial Network Cluster.
shortLabel	Identifier	0..1	attr	This attribute specifies an identifying shortName for the PncMapping. It shall be unique in the System scope.
vfc	PortGroup	*	iref	Virtual Function Cluster to be mapped onto a Partial Network Cluster. This reference is optional in case that the System Description doesn't use a complete Software Component Description (VFB View). This supports the inclusion of legacy systems. **InstanceRef implemented by:** PortGroupInSystem InstanceRef

Table A.308: PncMapping

Class	***PortInterface*** (abstract)
Package	M2::AUTOSARTemplates::SWComponentTemplate::PortInterface
Note	Abstract base class for an interface that is either provided or required by a port of a software component.
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*

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Class	***PortInterface*** (abstract)			
Subclasses	*AbstractRawDataStreamInterface*, *AbstractSynchronizedTimeBaseInterface*, ClientServerInterface, *CryptoInterface*, *DataInterface*, *DiagnosticPortInterface*, FirewallStateSwitchInterface, *IdsmAbstractPort Interface*, LogAndTraceInterface, ModeSwitchInterface, NetworkManagementPortInterface, *Persistency Interface*, *PlatformHealthManagementInterface*, ServiceInterface, *StateManagementPortInterface*, TriggerInterface			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
namespace (ordered)	SymbolProps	*	aggr	This represents the SymbolProps used for the definition of a hierarchical namespace applicable for the generation of code artifacts out of the definition of a ServiceInterface. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=namespace.shortName

Table A.309: PortInterface

Class	**PortInterfaceToDataTypeMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class represents the ability to associate a PortInterface with a DataTypeMappingSet. This association is needed for the generation of header files in the scope of a single PortInterface. The association is intentionally made outside the scope of the PortInterface itself because the designers of a PortInterface most likely will not want to add details about the level of ImplementationDataType. **Tags:** atp.recommendedPackage=PortInterfaceToDataTypeMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
dataType MappingSet	DataTypeMappingSet	*	ref	This represents the reference to the applicable data TypemappingSet **Tags:** atp.StatusComment=Reserved for adaptive platform
portInterface	PortInterface	0..1	ref	This represents the reference to the applicable Port Interface **Tags:** atp.StatusComment=Reserved for adaptive platform

Table A.310: PortInterfaceToDataTypeMapping

Class	***PortPrototype*** (abstract)			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Components			
Note	Base class for the ports of an AUTOSAR software component. The aggregation of PortPrototypes is subject to variability with the purpose to support the conditional existence of ports.			
Base	*ARObject*, *AtpBlueprintable*, *AtpFeature*, *AtpPrototype*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	*AbstractProvidedPortPrototype*, *AbstractRequiredPortPrototype*			
Aggregated by	*AtpClassifier*.atpFeature, *SwComponentType*.port			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
clientServer Annotation	ClientServerAnnotation	*	aggr	Annotation of this PortPrototype with respect to client/ server communication.

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Class	***PortPrototype*** (abstract)			
delegatedPort Annotation	DelegatedPort Annotation	0..1	aggr	Annotations on this delegated port.
ioHwAbstraction Server Annotation	IoHwAbstractionServer Annotation	*	aggr	Annotations on this IO Hardware Abstraction port.
modePort Annotation	ModePortAnnotation	*	aggr	Annotations on this mode port.
nvDataPort Annotation	NvDataPortAnnotation	*	aggr	Annotations on this non voilatile data port.
parameterPort Annotation	ParameterPort Annotation	*	aggr	Annotations on this parameter port.
portPrototype Props	PortPrototypeProps	0..1	aggr	This attribute allows for the definition of further qualification of the semantics of a PortPrototype.
senderReceiver Annotation	SenderReceiver Annotation	*	aggr	Collection of annotations of this ports sender/receiver communication.
triggerPort Annotation	TriggerPortAnnotation	*	aggr	Annotations on this trigger port.

Table A.311: PortPrototype

Class	***PortPrototypeProps*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationStructure			
Note	This meta-class represents the ability to define a further qualification of semantics of sub-classes of Port Prototype.			
Base	*ARObject*			
Subclasses	RPortPrototypeProps			
Aggregated by	*PortPrototype*.portPrototypeProps			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.312: PortPrototypeProps

Class	**Process**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest			
Note	This meta-class provides information required to execute the referenced `Executable`. **Tags:** atp.recommendedPackage=Processes			
Base	*ARElement*, *ARObject*, *AbstractExecutionContext*, *AtpClassifier*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDeploymentElement*, *Uploadable PackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
design	ProcessDesign	0..1	ref	This reference represents the identification of the design-time representation for the Process that owns the reference.
executable	Executable	*	ref	Reference to executable that is executed in the process. **Stereotypes:** atpUriDef
functionCluster Affiliation	String	0..1	attr	This attribute specifies which functional cluster the Process is affiliated with.

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Class	**Process**			
numberOf RestartAttempts	PositiveInteger	0..1	attr	This attribute defines how often a process shall be restarted if the start fails. numberOfRestartAttempts = "0" OR Attribute not existing, start once numberOfRestartAttempts = "1", start a second time
preMapping	Boolean	0..1	attr	This attribute describes whether the executable is preloaded into the memory.
processState Machine	ModeDeclarationGroup Prototype	0..1	aggr	Set of Process States that are defined for the process.
securityEvent	SecurityEventDefinition	*	ref	The reference identifies the collection of SecurityEvents that can be reported by the Process. **Stereotypes:** atpSplitable; atpUriDef **Tags:** atp.Splitkey=securityEvent atp.Status=candidate
stateDependent StartupConfig	StateDependentStartup Config	*	aggr	Applicable startup configurations.

Table A.313: Process

Class	**ProcessArgument**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest			
Note	This meta-class has the ability to define command line arguments for processing by the Main function.			
Base	*ARObject*			
Aggregated by	StartupConfig.processArgument			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
argument	String	0..1	attr	This represents one command-line argument to be processed by the executable software.

Table A.314: ProcessArgument

Class	**ProcessDesign**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ProcessDesign			
Note	This meta-class has the ability to stand in for a Process at the time when the Process does not yet exist. But its future existence already needs to be considered during design phase and for that a dedicated model element is required.. **Tags:** atp.recommendedPackage=ProcessDesigns			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
executable	Executable	*	ref	Reference to executable that is executed in the process.

Table A.315: ProcessDesign

Class	**ProcessDesignToMachineDesignMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SystemDesign			
Note	This element is used in the design phase to predefine a mapping of a process to a machine. Such a mapping may be overruled in the deployment phase. **Tags:** atp.recommendedPackage=ProcessDesignToMachineDesignMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
machineDesign	MachineDesign	0..1	ref	This reference identifies the MachineDesign in the context of the ProcessDesignToMachineDesignMapping.
processDesign	ProcessDesign	0..1	ref	This reference identifies the ProcessDesign in the context of the ProcessDesignToMachineDesignMapping.

Table A.316: ProcessDesignToMachineDesignMapping

Class	**ProcessExecutionError**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest			
Note	This meta-class has the ability to describe the value of a execution error along with a documentation of its semantics. **Tags:** atp.recommendedPackage=ProcessExecutionErrors			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
executionError	PositiveInteger	0..1	attr	This attribute defines the numeric value which Execution Management and Platform Health Management reports to State Management if the Process terminates unexpectedly or violates its supervision. It shall give further error information for error recovery.

Table A.317: ProcessExecutionError

Class	**ProcessToMachineMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::MachineManifest			
Note	This meta-class has the ability to associate a Process with a Machine. This relation involves the definition of further properties, e.g. timeouts.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	ProcessToMachineMappingSet.processToMachineMapping			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
design	ProcessDesignTo MachineDesignMapping	0..1	ref	This reference represents the identification of the design-time representation for the ProcessToMachine Mapping that owns the reference.
machine	Machine	0..1	ref	This reference identifies the Machine in the context of the ProcessToMachineMapping.
nonOsModule Instantiation	NonOsModule Instantiation	0..1	ref	This supports the optional case that the process represents a platform module.
persistency CentralStorage URI	UriString	0..1	attr	This attribute identifies a central place for the mapped Process to store the list of available storages and version information.
process	Process	0..1	ref	This reference identifies the Process in the context of the ProcessToMachineMapping.

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Class	ProcessToMachineMapping			
shallNotRunOn	ProcessorCore	*	ref	This reference indicates a collection of cores onto which the mapped process shall not be executing.
shallRunOn	ProcessorCore	*	ref	This reference indicates a collection of cores onto which the mapped process shall be executing.

Table A.318: ProcessToMachineMapping

Class	Processor			
Package	M2::AUTOSARTemplates::AdaptivePlatform::MachineManifest			
Note	This represents a processor for the execution of an AUTOSAR adaptive platform			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	Machine.processor			
Attribute	Type	Mult.	Kind	Note
core	ProcessorCore	*	aggr	This represents the collection of cores owned by the enclosing processor.

Table A.319: Processor

Class	ProcessorCore			
Package	M2::AUTOSARTemplates::AdaptivePlatform::MachineManifest			
Note	This meta-class represents the ability to model a processor core for the execution of an AUTOSAR adaptive platform.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	Processor.core			
Attribute	Type	Mult.	Kind	Note
coreId	PositiveInteger	0..1	attr	This attribute represents a numerical value assigned to the specific core. The value can be taken e.g. for use in a bitmask.

Table A.320: ProcessorCore

Class	***ProvidedApServiceInstance*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	This meta-class represents the ability to describe the existence and configuration of a provided service instance in an abstract way.			
Base	*ARElement*, *ARObject*, *AdaptivePlatformServiceInstance*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesignElement*, *Uploadable PackageElement*			
Subclasses	DdsProvidedServiceInstance, ProvidedSomeipServiceInstance, ProvidedUserDefinedServiceInstance			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.321: ProvidedApServiceInstance

Class	**ProvidedSomeipServiceInstance**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	This meta-class represents the ability to describe the existence and configuration of a provided service instance in a concrete implementation on top of SOME/IP. **Tags:** atp.recommendedPackage=ServiceInstances			
Base	*ARElement*, *ARObject*, *AdaptivePlatformServiceInstance*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *ProvidedApServiceInstance*, *Referrable*, *Uploadable DesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
capability Record (ordered)	TagWithOptionalValue	*	aggr	A sequence of records to store arbitrary name/value pairs conveying additional information about the named service.
eventProps	SomeipEventProps	*	aggr	Configuration settings for individual events that are provided by the ServiceInstance.
loadBalancing Priority	PositiveInteger	0..1	attr	This attribute is used to specify the priority in the load balancing option of SOME/IP that is added to the Offer Service. When a client searches for all service instances of a service, the client shall choose the service instance with highest priority if one is defined.
loadBalancing Weight	PositiveInteger	0..1	attr	This attribute is used to specify the weight in the load balancing option of SOME/IP that is added to the Offer Service. When a client searches for all service instances of a service, the client shall choose the service instance with highest priority if one is defined. If several service instances exist with the highest priority the service instance shall be chosen based on the weights of the service instances.
method ResponseProps	SomeipMethodProps	*	aggr	Configuration settings for individual methods that are provided by the ServiceInstance.
priority	PositiveInteger	0..1	attr	This attribute defines the VLAN frame priority for SOME/IP messages that are resulting from this ProvidedSomeip ServiceInstance (Method and Event communication). Values from 0 (best effort) to 7 (highest) are allowed.
providedEvent Group	SomeipProvidedEvent Group	*	aggr	List of EventGroups that are provided by the Service Instance.
sdServerConfig	SomeipSdServer ServiceInstanceConfig	0..1	ref	Server specific configuration settings relevant for the SOME/IP service discovery.
serviceInstance Id	PositiveInteger	0..1	attr	Identification number that is used by SOME/IP service discovery to identify the instance of the service. The value 65535 for service instance id is reserved and should not be used.

Table A.322: ProvidedSomeipServiceInstance

Class	**ProvidedUserDefinedServiceInstance**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment
Note	This meta-class represents the ability to describe the existence and configuration of a provided service instance in a concrete implementation that is not standardized by AUTOSAR. **Tags:** atp.recommendedPackage=ServiceInstances

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Class	ProvidedUserDefinedServiceInstance			
Base	*ARElement*, *ARObject*, *AdaptivePlatformServiceInstance*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *ProvidedApServiceInstance*, *Referrable*, *Uploadable DesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.323: ProvidedUserDefinedServiceInstance

Class	RPortPrototype			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Components			
Note	Component port requiring a certain port interface.			
Base	*ARObject*, *AbstractRequiredPortPrototype*, *AtpBlueprintable*, *AtpFeature*, *AtpPrototype*, *Identifiable*, *MultilanguageReferrable*, *PortPrototype*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, *SwComponentType*.port			
Attribute	Type	Mult.	Kind	Note
required Interface	PortInterface	0..1	tref	The interface that this port requires. **Stereotypes:** isOfType

Table A.324: RPortPrototype

Class	RPortPrototypeProps			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationStructure			
Note	PortPrototypeProps for a RPort.			
Base	*ARObject*, *PortPrototypeProps*			
Aggregated by	*PortPrototype*.portPrototypeProps			
Attribute	Type	Mult.	Kind	Note
searchIntention	SearchIntentionEnum	0..1	attr	This attribute is used to specify the intention of the developer of the enclosing software-component in terms of whether the respective PortPrototype shall be use to search for a specific service instance or all instances of the given service. Please note that the value of this attribute does not create a binding contract. The actual search behavior is defined as part of the service instance manifest.

Table A.325: RPortPrototypeProps

Class	RawDataStreamEthernetTcpUdpCredentials			
Package	M2::AUTOSARTemplates::AdaptivePlatform::RawDataStreamMapping			
Note	This-meta-class represents the ability to create a configuration of network credentials for a raw data stream connection over TCP and UDP (inherited from base class).			
Base	*ARObject*, *AbstractRawDataStreamEthernetCredentials*, *Describable*			
Aggregated by	EthernetRawDataStreamRemoteServerConfig.unicastCredentials			
Attribute	Type	Mult.	Kind	Note
tcpPort	PositiveInteger	0..1	attr	This attribute represents the configuration of a TCP port number.

Table A.326: RawDataStreamEthernetTcpUdpCredentials

Class	**RawDataStreamEthernetUdpCredentials**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::RawDataStreamMapping			
Note	This-meta-class represents the ability to create a configuration of network credentials for a raw data stream connection over UDP.			
Base	*ARObject*, *AbstractRawDataStreamEthernetCredentials*, *Describable*			
Aggregated by	EthernetRawDataStreamRemoteClientConfig.multicastCredentials, EthernetRawDataStreamRemoteClientConfig.unicastUdpCredentials, EthernetRawDataStreamRemoteServerConfig.multicastCredentials			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.327: RawDataStreamEthernetUdpCredentials

Class	**RecordValueSpecification**			
Package	M2::AUTOSARTemplates::CommonStructure::Constants			
Note	Specifies the values for a record.			
Base	*ARObject*, *CompositeValueSpecification*, *ValueSpecification*			
Aggregated by	ApplicationAssocMapElementValueSpecification.key, ApplicationAssocMapElementValueSpecification.value, ArrayValueSpecification.element, CalibrationParameterValue.applInitValue, CalibrationParameterValue.implInitValue, CompositeRuleBasedValueSpecification.argument, ConstantSpecification.valueSpec, CryptoServiceKey.developmentValue, DiagnosticEnvDataCondition.compareValue, DiagnosticEnvDataElementCondition.compareValue, FieldSenderComSpec.initValue, ISignal.initValue, ISignal.timeoutSubstitutionValue, NonqueuedReceiverComSpec.initValue, NonqueuedReceiverComSpec.timeoutSubstitutionValue, NonqueuedSenderComSpec.initValue, NvProvideComSpec.ramBlockInitValue, NvProvideComSpec.romBlockInitValue, NvRequireComSpec.initValue, ParameterDataPrototype.initValue, ParameterProvideComSpec.initValue, ParameterRequireComSpec.initValue, PersistencyDataRequiredComSpec.initValue, PersistencyKeyValuePair.initValue, PortDefinedArgumentValue.value, PortPrototypeBlueprintInitValue.value, RecordValueSpecification.field, SomeipEventDeployment.eventReceptionDefaultValue, *StateManagementCompareCondition*.compareValue, SwDataDefProps.invalidValue, VariableDataPrototype.initValue			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
field (ordered)	ValueSpecification	*	aggr	The value for a single record field. This could also be mapped explicitly to a record element of the data type using the shortName of the ValueSpecification. But this would introduce a relationship to the data type that is too strong. As of now, it is only important that the structure of the data type matches the structure of the Value Specification independently of the shortNames. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=field, field.variationPoint.shortLabel vh.latestBindingTime=preCompileTime

Table A.328: RecordValueSpecification

Class	**RecoveryNotification**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This meta-class represents a PHM action that can trigger a recovery operation inside a piece of State Management software. **Tags:** atp.recommendedPackage=RecoveryNotifications			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***

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Class	RecoveryNotification			
recovery Notification Timeout	TimeValue	0..1	attr	The maximum acceptable amount of time (in seconds), Platform Health Management waits for an acknowledgement by State Management after sending the notification.

Table A.329: RecoveryNotification

Class	RecoveryNotificationToPPortPrototypeMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This meta-class represents the ability to associate a RecoveryNotification to a PPortPrototype while also being able to identify the respective Process in which the actual recovery executes. **Tags:** atp.recommendedPackage=RecoveryNotificationMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
process	Process	0..1	ref	Reference to the process which represents the State Management instance that the recovery notification shall be applied to.
recoveryAction	PPortPrototype	0..1	iref	This reference identifies the PortPrototype to be addressed as part of a PHM recovery. **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
recovery Notification	RecoveryNotification	0..1	ref	This reference identifies the applicable Recovery Notification to be mapped.

Table A.330: RecoveryNotificationToPPortPrototypeMapping

Class	ReferenceValueSpecification			
Package	M2::AUTOSARTemplates::CommonStructure::Constants			
Note	Specifies a reference to a data prototype to be used as an initial value for a pointer in the software.			
Base	*ARObject*, *ValueSpecification*			
Aggregated by	ApplicationAssocMapElementValueSpecification.key, ApplicationAssocMapElementValueSpecification.value, ArrayValueSpecification.element, CalibrationParameterValue.applInitValue, CalibrationParameter Value.implInitValue, ConstantSpecification.valueSpec, CryptoServiceKey.developmentValue, Diagnostic EnvDataCondition.compareValue, DiagnosticEnvDataElementCondition.compareValue, FieldSenderCom Spec.initValue, ISignal.initValue, ISignal.timeoutSubstitutionValue, NonqueuedReceiverComSpec.init Value, NonqueuedReceiverComSpec.timeoutSubstitutionValue, NonqueuedSenderComSpec.initValue, NvProvideComSpec.ramBlockInitValue, NvProvideComSpec.romBlockInitValue, NvRequireComSpec.init Value, ParameterDataPrototype.initValue, ParameterProvideComSpec.initValue, ParameterRequireCom Spec.initValue, PersistencyDataRequiredComSpec.initValue, PersistencyKeyValuePair.initValue, Port DefinedArgumentValue.value, PortPrototypeBlueprintInitValue.value, RecordValueSpecification.field, SomeipEventDeployment.eventReceptionDefaultValue, *StateManagementCompareCondition*.compare Value, SwDataDefProps.invalidValue, VariableDataPrototype.initValue			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
referenceValue	DataPrototype	0..1	ref	The referenced data prototype.

Table A.331: ReferenceValueSpecification

Class	***Referrable*** (abstract)			
Package	M2::AUTOSARTemplates::GenericStructure::GeneralTemplateClasses::Identifiable			
Note	Instances of this class can be referred to by their identifier (while adhering to namespace borders).			
Base	*ARObject*			
Subclasses	*AtpDefinition*, BswDistinguishedPartition, *BswModuleCallPoint*, BswModuleClientServerEntry, BswVariableAccess, CouplingPortTrafficClassAssignment, *CppImplementationDataTypeContextTarget*, *DiagnosticEnvModeElement*, EthernetPriorityRegeneration, ExclusiveAreaNestingOrder, *HwDescriptionEntity*, *ImplementationProps*, ModeTransition, *MultilanguageReferrable*, NmNetworkHandle, PncMappingIdent, *SingleLanguageReferrable*, SoConIPduIdentifier, SocketConnectionBundle, SomeipRequiredEventGroup, TimeSyncServerConfiguration, TpConnectionIdent			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
shortName	Identifier	1	attr	This specifies an identifying shortName for the object. It needs to be unique within its context and is intended for humans but even more for technical reference. **Stereotypes:** atpIdentityContributor **Tags:** xml.enforceMinMultiplicity=true xml.sequenceOffset=-100
shortNameFragment	ShortNameFragment	*	aggr	This specifies how the Referrable.shortName is composed of several shortNameFragments. **Tags:** xml.sequenceOffset=-90

Table A.332: Referrable

Class	***RequiredApServiceInstance*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	This meta-class represents the ability to describe the existence and configuration of a required service instance in an abstract way.			
Base	*ARElement*, *ARObject*, *AdaptivePlatformServiceInstance*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Subclasses	DdsRequiredServiceInstance, RequiredSomeipServiceInstance, RequiredUserDefinedServiceInstance			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.333: RequiredApServiceInstance

Class	**RequiredSomeipServiceInstance**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	This meta-class represents the ability to describe the existence and configuration of a required service instance in a concrete implementation on top of SOME/IP. **Tags:** atp.recommendedPackage=ServiceInstances			
Base	*ARElement*, *ARObject*, *AdaptivePlatformServiceInstance*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *RequiredApServiceInstance*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
blocklistedVersion	SomeipServiceVersion	*	aggr	Collection of blocklisted versions.

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Class	**RequiredSomeipServiceInstance**			
capability Record (ordered)	TagWithOptionalValue	*	aggr	A sequence of records to store arbitrary name/value pairs conveying additional information about the named service.
methodRequest Props	SomeipMethodProps	*	aggr	Configuration settings for individual methods that are requested by the ServiceInstance.
requiredEvent Group	SomeipRequiredEvent Group	*	aggr	List of EventGroups that are used by the RequiredService Instance.
requiredMinor Version	AnyVersionString	0..1	attr	This attribute is used to configure for which minor version of the SomeIp ServiceInterface the Service Discovery will search. Value can be set to a number that represents the Minor Version of the searched service or to ANY.
requiredService InstanceId	AnyServiceInstanceId	0..1	attr	This attribute represents the ability to describe the required service instance ID.
sdClientConfig	SomeipSdClientService InstanceConfig	0..1	ref	Client specific configuration settings relevant for the SOME/IP service discovery.
versionDriven FindBehavior	ServiceVersion AcceptanceKindEnum	0..1	attr	Defines the service discovery find behavior.

Table A.334: RequiredSomeipServiceInstance

Class	**RequiredUserDefinedServiceInstance**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	This meta-class represents the ability to describe the existence and configuration of a required service instance in a concrete implementation that is not standardized by AUTOSAR. **Tags:** atp.recommendedPackage=ServiceInstances			
Base	*ARElement*, *ARObject*, *AdaptivePlatformServiceInstance*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *RequiredApServiceInstance*, *Uploadable DesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.335: RequiredUserDefinedServiceInstance

Class	**ResourceGroup**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation			
Note	This meta-class represents a resource group that limits the resource usage of a collection of processes.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	OsModuleInstantiation.resourceGroup			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
cpuUsage	PositiveInteger	0..1	attr	CPU resource limit in percentage of the total CPU capacity on the machine.
memUsage	PositiveInteger	0..1	attr	Memory limit in bytes.

Table A.336: ResourceGroup

Class	**RootSwComponentPrototype**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationStructure			
Note	The RootSwCompositionPrototype represents the top-level-composition of software components within an Executable. The contained SwComponentPrototypes are fully specified by their SwComponentTypes (including Port Prototypes, PortInterfaces, VariableDataPrototypes, etc.).			
Base	*ARObject*, *AtpFeature*, *AtpPrototype*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, Executable.rootSwComponentPrototype			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
applicationType	SwComponentType	0..1	tref	This SwComponentType acts as the Type of the RootSw ComponentPrototype. **Stereotypes:** isOfType

Table A.337: RootSwComponentPrototype

Class	**SdClientConfig**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::ObsoleteModel			
Note	Client configuration for Service-Discovery. **Tags:** atp.Status=obsolete atp.recommendedPackage=SdConfigs			
Base	*ARObject*			
Aggregated by	ConsumedEventGroup.sdClientConfig, ConsumedServiceInstance.sdClientConfig			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
capability Record	TagWithOptionalValue	*	aggr	A sequence of records to store arbitrary name/value pairs conveying additional information about the named service. Capability records shall only be existing if the respective SdClientConfig is composed by a Consumed ServiceInstance (see constr_3260). **Tags:** atp.Status=obsolete
clientService MajorVersion	PositiveInteger	0..1	attr	Major version number of the Service.
clientService MinorVersion	PositiveInteger	0..1	attr	Minor version number of the Service.
initialFind Behavior	InitialSdDelayConfig	0..1	aggr	Controls initial find behavior of clients. **Tags:** atp.Status=obsolete
request ResponseDelay	RequestResponseDelay	0..1	aggr	Maximum/Minimum allowable response delay to entries received by multicast in seconds. **Tags:** atp.Status=obsolete
ttl	PositiveInteger	0..1	attr	TTL for Request and Subscribe messages.

Table A.338: SdClientConfig

Class	**SdServerConfig**
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::ObsoleteModel
Note	Server configuration for Service-Discovery. **Tags:** atp.Status=obsolete atp.recommendedPackage=SdConfigs
Base	*ARObject*

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Class	**SdServerConfig**			
Aggregated by	EventHandler.sdServerConfig, ProvidedServiceInstance.sdServerConfig			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
capability Record	TagWithOptionalValue	*	aggr	A sequence of records to store arbitrary name/value pairs conveying additional information about the named service. Capability records shall only be existing if the respective SdServerConfig is composed by a Provided ServiceInstance (see constr_3259). **Tags:** atp.Status=obsolete
initialOffer Behavior	InitialSdDelayConfig	0..1	aggr	Controls offer behavior of the server. **Tags:** atp.Status=obsolete
offerCyclicDelay	TimeValue	0..1	attr	Optional attribute to define cyclic offers. Cyclic offer is active, if the delay is set (in seconds).
request ResponseDelay	RequestResponseDelay	0..1	aggr	Maximum/Minimum allowable response delay to entries received by multicast in seconds. **Tags:** atp.Status=obsolete
serverService MajorVersion	PositiveInteger	0..1	attr	Major version number of the Service.
serverService MinorVersion	PositiveInteger	0..1	attr	Minor version number of the Service.
ttl	PositiveInteger	0..1	attr	Time to live. Shall be a positive value (sInt32).

Table A.339: SdServerConfig

Class	**SecOcJobRequirement**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::SecureCommunication			
Note	Requirements for the cryptographic job that need to be executed.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	SecOcSecureComProps.jobRequirement			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
secOcJob Semantic	SecOcJobSemantic Enum	0..1	attr	This attribute defines the cryptographic algorithm that needs to be supported.

Table A.340: SecOcJobRequirement

Class	**SecOcSecureComProps**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::SecureCommunication			
Note	Configuration of AUTOSAR SecOC. **Tags:** atp.recommendedPackage=SecureComProps			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *SecureComProps*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
authentication	CryptoServicePrimitive	0..1	ref	This reference defines the authentication algorithm used for MAC generation and verification.

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Class	**SecOcSecureComProps**			
authentication VerifyAttempts	PositiveInteger	0..1	attr	This attribute defines the additional number of authentication attempts that are to be carried out when the generation of the authentication information failed for a given message. If zero is set than only one authentication attempt is done.
authInfoTx Length	PositiveInteger	0..1	attr	This attribute defines the length in bits of the authentication code to be included in the payload of the authenticated Message.
freshnessValue Length	PositiveInteger	0..1	attr	This attribute defines the complete length in bits of the Freshness Value.
freshnessValue TxLength	PositiveInteger	0..1	attr	This attribute defines the length in bits of the Freshness Value to be included in the payload of the secured message.
jobRequirement	SecOcJobRequirement	*	aggr	Collection of cryptographic job requirements.

Table A.341: SecOcSecureComProps

Class	***SecureComProps*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::SecureCommunication			
Note	This meta-class defines a communication security protocol and its configuration settings.			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Subclasses	DdsSecureComProps, SecOcSecureComProps, TlsSecureComProps			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.342: SecureComProps

Class	**SecuredIPdu**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication			
Note	If useAsCryptographicPdu is not set or set to false this IPdu contains the payload of an Authentic IPdu supplemented by additional Authentication Information (Freshness Counter and an Authenticator). If useAsCryptographicPdu is set to true this IPdu contains the Authenticator for a payload that is transported in a separate message. The separate Authentic IPdu is described by the Pdu that is referenced with the payload reference from this SecuredIPdu. **Tags:** atp.recommendedPackage=Pdus			
Base	*ARElement*, *ARObject*, *CollectableElement*, *FibexElement*, *IPdu*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Pdu*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
authentication Props	SecureCommunication AuthenticationProps	0..1	ref	Reference to authentication properties that are valid for this SecuredIPdu.

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Class	**SecuredIPdu**			
dynamic RuntimeLength Handling	Boolean	0..1	attr	Defines whether the length information for handling this SecuredIPdu with SecuredIPdu.useSecuredPdu Header=noHeader is taken from the configuration or from the actually provided length information during runtime. true: SecuredIPdu length information is taken from the actually provided length information during runtime. false: SecuredIPdu length information is taken from the configuration.
freshnessProps	SecureCommunication FreshnessProps	0..1	ref	Reference to freshness properties that are valid for this SecuredIPdu.
payload	PduTriggering	0..1	ref	Reference to a Pdu that will be protected against unauthorized manipulation and replay attacks.
secure Communication Props	SecureCommunication Props	0..1	aggr	Specific configuration properties for this SecuredIPdu.
useAs Cryptographic IPdu	Boolean	0..1	attr	If this attribute is set to true the SecuredIPdu contains the Authentication Information for an AuthenticIPdu that is transmitted in a separate message. The AuthenticIPdu contains the original payload, i.e. the secured data. If this attribute is set to false this SecuredIPdu contains the payload of an Authentic IPdu supplemented by additional Authentication Information.
useSecuredPdu Header	SecuredPduHeader Enum	0..1	attr	This attribute defines the size of the header which is inserted into the SecuredIPdu. If this attribute is set to anything but noHeader, the SecuredIPdu contains the Secured I-PDU Header to indicate the length of the AuthenticIPdu. The AuthenticIPdu contains the original payload, i.e. the secured data.

Table A.343: SecuredIPdu

Class	**SecurityEventDefinition**			
Package	M2::AUTOSARTemplates::SecurityExtractTemplate			
Note	This meta-class defines a security-related event as part of the intrusion detection system. **Tags:** atp.Status=candidate atp.recommendedPackage=SecurityEventDefinitions			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *IdsCommonElement*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
eventSymbol Name	SymbolProps	0..1	aggr	This aggregation defines optionally an alternative Event Name for the SecurityEventDefinition in case there is a collision of shortNames. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=eventSymbolName.shortName atp.Status=candidate
id	PositiveInteger	0..1	attr	This attribute represents the numerical identification of the defined security event. The identification shall be unique within the scope of the IDS. **Tags:** atp.Status=candidate

Table A.344: SecurityEventDefinition

Class	**SecurityEventMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IntrusionDetectionSystem			
Note	This meta-class represents a reportable instance of a security event. **Tags:** atp.Status=candidate atp.recommendedPackage=SecurityEventMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
id	PositiveInteger	0..1	attr	This attribute defines the numerical identification of the security event subject to deployment. **Tags:** atp.Status=candidate
process	Process	0..1	ref	This reference identifies the process in which context the seurity event is reported. **Tags:** atp.Status=candidate
reportingPort Prototype	RPortPrototype	0..1	iref	This instanceRef identifies the portPrototype over which the security event is reported. **Stereotypes:** atpUriDef **Tags:** atp.Status=candidate **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.345: SecurityEventMapping

Enumeration	**SerializationTechnologyEnum**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment
Note	This enumeration allows to choose a Serialization Technology.
Aggregated by	SomeipEventDeployment.serializer
Literal	***Description***
signalBased	Signal-Based serializer. **Tags:** atp.EnumerationLiteralIndex=1
someip	SOME/IP Serializer **Tags:** atp.EnumerationLiteralIndex=0

Table A.346: SerializationTechnologyEnum

Class	***ServiceEventDeployment*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	This abstract meta-class represents the ability to specify a deployment of an Event to a middleware transport layer.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	DdsEventDeployment, SomeipEventDeployment, UserDefinedEventDeployment			
Aggregated by	*ServiceInterfaceDeployment*.eventDeployment			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
event	VariableDataPrototype	0..1	ref	Reference to an Event that is deployed to a middleware transport layer. **Stereotypes:** atpUriDef

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Class	***ServiceEventDeployment*** (abstract)			
trigger	Trigger	0..1	ref	Reference to a Trigger that is deployed to a middleware transport layer. **Stereotypes:** atpUriDef

Table A.347: ServiceEventDeployment

Class	***ServiceFieldDeployment*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	This abstract meta-class represents the ability to specify a deployment of a Field to a middleware transport layer.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	DdsFieldDeployment, SomeipFieldDeployment, UserDefinedFieldDeployment			
Aggregated by	*ServiceInterfaceDeployment*.fieldDeployment			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
field	Field	0..1	ref	Reference to a Field that is deployed to a middleware transport layer. **Stereotypes:** atpUriDef

Table A.348: ServiceFieldDeployment

Class	***ServiceInstanceToMachineMapping*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceMapping			
Note	This meta-class represents the ability to map one or several AdaptivePlatformServiceInstances to a CommunicationConnector of a Machine.			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Subclasses	DdsServiceInstanceToMachineMapping, SomeipServiceInstanceToMachineMapping, UserDefined ServiceInstanceToMachineMapping			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
communication Connector	Communication Connector	0..1	ref	Reference to the Machine to which the ServiceInstance is mapped.
secOcCom PropsFor Multicast	SecOcSecureCom Props	*	ref	Reference to communication security configuration settings that are valid for the udp multicast endpoint (Port + Multicast IP Address) defined by the ServiceInstanceTo MachineMapping.
secureCom PropsForTcp	SecureComProps	0..1	ref	Reference to communication security configuration settings that are valid for the tcp unicast endpoint (Tcp Port + Unicast IP Address) defined by the Service InstanceToMachineMapping.
secureCom PropsForUdp	SecureComProps	0..1	ref	Reference to communication security configuration settings that are valid for the udp unicast endpoint (Udp Port + Unicast IP Address) defined by the Service InstanceToMachineMapping.
serviceInstance	AdaptivePlatform ServiceInstance	*	ref	Reference to a ServiceInstance that is mapped to the Machine.

Table A.349: ServiceInstanceToMachineMapping

Class	**ServiceInstanceToPortPrototypeMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceMapping			
Note	This meta-class represents the ability to assign a transport layer dependent ServiceInstance to a Port Prototype. With this mapping it is possible to define how specific PortPrototypes are represented in the middleware in terms of service configuration. **Tags:** atp.recommendedPackage=ServiceInstanceToPortPrototypeMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
portPrototype	PortPrototype	0..1	iref	Reference to a specific PortPrototype that represents the ServiceInstance. **Stereotypes:** atpUriDef **InstanceRef implemented by:** PortPrototypeIn ExecutableInstanceRef
process	Process	0..1	ref	Reference to the Process in which the enclosing Service InstanceToPortPrototypeMapping is executed. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=process
processDesign	ProcessDesign	0..1	ref	Reference to the ProcessDesign in which the Executable that contains the SoftwareComponent and the referenced PortPrototype is executed. **Stereotypes:** atpUriDef
serviceInstance	AdaptivePlatform ServiceInstance	0..1	ref	Reference to a ServiceInstance that is represented in the Software Component by the mapped group of Port Prototypes.

Table A.350: ServiceInstanceToPortPrototypeMapping

Class	**ServiceInstanceToSignalMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SignalBasedCommunication			
Note	This meta-class is defined for a specific ServiceInstance and contains the mappings of elements of a ServiceInterface for which the ServiceInstance is defined to individual ISignalTriggerings. **Tags:** atp.Status=candidate atp.recommendedPackage=ServiceInstanceToSignalMapping			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
eventElement Mapping	SignalBasedEvent ElementToISignal TriggeringMapping	*	aggr	Mapping of an event or an element inside of the event to an ISignalTriggering. **Tags:** atp.Status=candidate
fieldMapping	SignalBasedFieldToI SignalTriggering Mapping	*	aggr	Mapping of a field to ISignalTriggerings. **Tags:** atp.Status=candidate
fireAndForget MethodMapping	SignalBasedFireAnd ForgetMethodToISignal TriggeringMapping	*	aggr	Mapping of an ISignalTriggering being part of a fire and forget message to a ClientServerOperation. **Tags:** atp.Status=candidate

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Class	**ServiceInstanceToSignalMapping**			
serviceInstance	AdaptivePlatform ServiceInstance	0..1	ref	Reference to a ServiceInstance from which the corresponding ServiceInterface elements will be transported in the signal-based way over a communication medium. **Tags:** atp.Status=candidate
triggerMapping	SignalBasedTriggerToI SignalTriggering Mapping	*	aggr	Mapping of a trigger to an ISignalTriggering. **Tags:** atp.Status=candidate

Table A.351: ServiceInstanceToSignalMapping

Class	**ServiceInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This represents the ability to define a PortInterface that consists of a heterogeneous collection of methods, events and fields. **Tags:** atp.recommendedPackage=ServiceInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
event	VariableDataPrototype	*	aggr	This represents the collection of events defined in the context of a ServiceInterface. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=event.shortName, event.variationPoint.short Label vh.latestBindingTime=blueprintDerivationTime xml.sequenceOffset=30
field	Field	*	aggr	This represents the collection of fields defined in the context of a ServiceInterface. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=field.shortName, field.variationPoint.short Label vh.latestBindingTime=blueprintDerivationTime xml.sequenceOffset=40
majorVersion	PositiveInteger	0..1	attr	Major version of the service contract. **Tags:** xml.sequenceOffset=10
method	ClientServerOperation	*	aggr	This represents the collection of methods defined in the context of a ServiceInterface. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=method.shortName, method.variation Point.shortLabel vh.latestBindingTime=blueprintDerivationTime xml.sequenceOffset=50
minorVersion	PositiveInteger	0..1	attr	Minor version of the service contract. **Tags:** xml.sequenceOffset=20

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Class	**ServiceInterface**			
trigger	Trigger	*	aggr	This represents the collection of triggers defined in the context of a ServiceInterface. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=trigger.shortName, trigger.variation Point.shortLabel vh.latestBindingTime=blueprintDerivationTime xml.sequenceOffset=60

Table A.352: ServiceInterface

Class	***ServiceInterfaceDeployment*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	Middleware transport layer specific configuration settings for the ServiceInterface and all contained ServiceInterface elements.			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Subclasses	DdsServiceInterfaceDeployment, SomeipServiceInterfaceDeployment, UserDefinedServiceInterface Deployment			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
event Deployment	ServiceEvent Deployment	*	aggr	Middleware transport layer specific configuration settings for an Event that is defined in the ServiceInterface. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=eventDeployment.shortName, event Deployment.variationPoint.shortLabel vh.latestBindingTime=blueprintDerivationTime
fieldDeployment	ServiceField Deployment	*	aggr	Middleware transport layer specific configuration settings for a Field that is defined in the ServiceInterface. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=fieldDeployment.shortName, field Deployment.variationPoint.shortLabel vh.latestBindingTime=blueprintDerivationTime
method Deployment	ServiceMethod Deployment	*	aggr	Middleware transport layer specific configuration settings for a method that is defined in the ServiceInterface. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=methodDeployment.shortName, method Deployment.variationPoint.shortLabel vh.latestBindingTime=blueprintDerivationTime
serviceInterface	ServiceInterface	0..1	ref	Reference to a ServiceInterface that is deployed to a middleware transport layer. **Stereotypes:** atpUriDef

Table A.353: ServiceInterfaceDeployment

Class	***ServiceInterfaceElementMapping*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ServiceInterfaceMapping			
Note	This abstract meta-class acts as base class for the mapping of specific elements of a ServiceInterface.			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*			
Subclasses	ServiceInterfaceEventMapping, ServiceInterfaceFieldMapping, ServiceInterfaceMethodMapping, ServiceInterfaceTriggerMapping			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.354: ServiceInterfaceElementMapping

Class	**ServiceInterfaceElementSecureComConfig**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::SecureCommunication			
Note	This element allows to secure the communication of the referenced ServiceInterface element.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*AdaptivePlatformServiceInstance*.secureComConfig			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
dataId	PositiveInteger	0..1	attr	This attribute defines a unique numerical identifier for the referenced ServiceInterface element.
event	ServiceEvent Deployment	0..1	ref	Reference to an event that is protected by a security protocol.
fieldNotifier	ServiceField Deployment	0..1	ref	Reference to a field notifier that is protected by a security protocol.
freshnessValue Id	PositiveInteger	0..1	attr	This attribute defines the Id of the Freshness Value.
getterCall	ServiceField Deployment	0..1	ref	Reference to a field getter call message that is protected by a security protocol.
getterReturn	ServiceField Deployment	0..1	ref	Reference to a field getter return message that is protected by a security protocol.
methodCall	ServiceMethod Deployment	0..1	ref	Reference to a method call message that is protected by a security protocol.
methodReturn	ServiceMethod Deployment	0..1	ref	Reference to a method return message that is protected by a security protocol.
securedRx Verification	Boolean	0..1	attr	This attribute defines whether the ServiceInterface element shall verify its security credentials during reception.
setterCall	ServiceField Deployment	0..1	ref	Reference to a field setter call message that is protected by a security protocol.
setterReturn	ServiceField Deployment	0..1	ref	Reference to a field setter return message that is protected by a security protocol.

Table A.355: ServiceInterfaceElementSecureComConfig

Class	**ServiceInterfaceEventMapping**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ServiceInterfaceMapping
Note	This meta-class allows to define a mapping between events of ServiceInterfaces that are mapped to each other by the ServiceInterfaceMapping. **Tags:** atp.recommendedPackage=ServiceInterfaceElementMappings

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Class	ServiceInterfaceEventMapping			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *ServiceInterfaceElementMapping*			
Aggregated by	ARPackage.element			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
sourceEvent	VariableDataPrototype	0..1	ref	Reference to an event that is contained in the source ServiceInterface.
targetEvent	VariableDataPrototype	0..1	ref	Reference to an event that is contained in the composite ServiceInterface.

Table A.356: ServiceInterfaceEventMapping

Class	ServiceInterfaceFieldMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ServiceInterfaceMapping			
Note	This meta-class allows to define a mapping between fields of ServiceInterfaces that are mapped to each other by the ServiceInterfaceMapping. **Tags:** atp.recommendedPackage=ServiceInterfaceElementMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *ServiceInterfaceElementMapping*			
Aggregated by	ARPackage.element			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
sourceField	Field	0..1	ref	Reference to a field that is contained in the source ServiceInterface.
targetField	Field	0..1	ref	Reference to a field that is contained in the composite ServiceInterface.

Table A.357: ServiceInterfaceFieldMapping

Class	ServiceInterfaceMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ServiceInterfaceMapping			
Note	Specifies one ServiceInterfaceMapping that allows to define that a ServiceInterface is composite of several other ServiceInterfaces. **Tags:** atp.recommendedPackage=ServiceInterfaceMappings			
Base	*ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *Identifiable*, *MultilanguageReferrable*, *PortInterfaceMapping*, *Referrable*			
Aggregated by	PortInterfaceMappingSet.portInterfaceMapping			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
composite ServiceInterface	ServiceInterface	0..1	ref	This represents the composite ServiceInterface.
sourceService Interface	ServiceInterface	*	ref	ServiceInterface that is mapped into the composite ServiceInterface.

Table A.358: ServiceInterfaceMapping

Class	ServiceInterfaceMethodMapping
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ServiceInterfaceMapping
Note	This meta-class allows to define a mapping between methods of ServiceInterfaces that are mapped to each other by the ServiceInterfaceMapping. **Tags:** atp.recommendedPackage=ServiceInterfaceElementMappings

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Class	**ServiceInterfaceMethodMapping**			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *ServiceInterfaceElementMapping*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
sourceMethod	ClientServerOperation	0..1	ref	Reference to a method that is contained in the source ServiceInterface.
targetMethod	ClientServerOperation	0..1	ref	Reference to a method that is contained in the composite ServiceInterface.

Table A.359: ServiceInterfaceMethodMapping

Class	**ServiceInterfaceTriggerMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ServiceInterfaceMapping			
Note	This meta-class allows to define a mapping between triggers of ServiceInterfaces that are mapped to each other by the ServiceInterfaceMapping. **Tags:** atp.recommendedPackage=ServiceInterfaceElementMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *ServiceInterfaceElementMapping*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
sourceTrigger	Trigger	0..1	ref	Reference to a trigger that is contained in the source ServiceInterface.
targetTrigger	Trigger	0..1	ref	Reference to a trigger that is contained in the target ServiceInterface.

Table A.360: ServiceInterfaceTriggerMapping

Class	***ServiceMethodDeployment*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	This abstract meta-class represents the ability to specify a deployment of a Method to a middleware transport layer.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	SomeipMethodDeployment, UserDefinedMethodDeployment			
Aggregated by	*ServiceInterfaceDeployment*.methodDeployment			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
method	ClientServerOperation	0..1	ref	Reference to a method that is deployed to a middleware transport layer. **Stereotypes:** atpUriDef

Table A.361: ServiceMethodDeployment

Class	**ServiceTiming**
Package	M2::AUTOSARTemplates::AdaptivePlatform::Timing::TimingExtensions
Note	This meta-class represents the timing view for one or more service instances. **Tags:** atp.Status=draft atp.recommendedPackage=TimingExtensions

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Class	**ServiceTiming**			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *TimingExtension*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
serviceInstance	AdaptivePlatform ServiceInstance	*	ref	This defines the scope of a ServiceTiming. All corresponding timing descriptions and constraints shall be defined within this scope. **Tags:** atp.Status=draft

Table A.362: ServiceTiming

Enumeration	**ServiceVersionAcceptanceKindEnum**
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::ServiceInstances
Note	Defined the possible acceptance kinds for required service instances.
Aggregated by	ConsumedServiceInstance.versionDrivenFindBehavior, RequiredSomeipServiceInstance.version DrivenFindBehavior
Literal	*Description*
exactOrAnyMinor Version	Search for ANY or specific minor version service instance and select either ALL returned service instances (in case of ANY) or exactly the specific minor version service instances defined in required MinorVersion. **Tags:** atp.EnumerationLiteralIndex=0
minimumMinor Version	Search for ANY minor version service instance and select only those service instances which have an equal or greater minor version than given in requiredMinorVersion. **Tags:** atp.EnumerationLiteralIndex=1

Table A.363: ServiceVersionAcceptanceKindEnum

Class	**SignalBasedEventElementToISignalTriggeringMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SignalBasedCommunication			
Note	This meta-class defines the mapping of a ServiceInterface event or an element that is defined inside of the event in case that the datatype is composite to an ISignalTriggering. **Tags:** atp.Status=candidate			
Base	*ARObject*, *AbstractSignalBasedToISignalTriggeringMapping*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	ServiceInstanceToSignalMapping.eventElementMapping			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
dataPrototypeIn ServiceInterface Ref	DataPrototypeInService InterfaceRef	0..1	aggr	Reference to a DataPrototype or to an internal structure of a DataPrototype in the context of a ServiceInterface. **Tags:** atp.Status=candidate
filter	DataFilter	0..1	aggr	Defines an optional filter to be applied during translation. **Tags:** atp.Status=candidate
iSignal Triggering	ISignalTriggering	0..1	ref	Reference to the ISignalTriggering that is used to transport a piece of data of an event that is defined in a ServiceInterface in a signal-based way over a communication channel. **Tags:** atp.Status=candidate

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Class	**SignalBasedEventElementToISignalTriggeringMapping**			
transmission Trigger	Boolean	0..1	attr	Defines whether the source element triggers the sending of the respective payload. **Tags:** atp.Status=candidate

Table A.364: SignalBasedEventElementToISignalTriggeringMapping

Class	**SignalBasedFieldToISignalTriggeringMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SignalBasedCommunication			
Note	This meta-class defines the mapping of a ServiceInterface field to ISignalTriggerings that represent the notifier elements on a signal-based communication channel. **Tags:** atp.Status=candidate			
Base	*ARObject*, *AbstractSignalBasedToISignalTriggeringMapping*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	ServiceInstanceToSignalMapping.fieldMapping			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
dataPrototypeIn ServiceInterface Ref	DataPrototypeInService InterfaceRef	0..1	aggr	Reference to a DataPrototype or to an internal structure of a DataPrototype in the context of a ServiceInterface. **Tags:** atp.Status=candidate
filter	DataFilter	0..1	aggr	Defines an optional filter to be applied during translation. **Tags:** atp.Status=candidate
notifierSignal Triggering	ISignalTriggering	0..1	ref	Reference to the ISignalTriggering that is used to transport a piece of data of a notifier in a signal-based way over a communication channel. **Tags:** atp.Status=candidate
transmission Trigger	Boolean	0..1	attr	Defines whether the source notifier element triggers the sending of the respective payload. **Tags:** atp.Status=candidate

Table A.365: SignalBasedFieldToISignalTriggeringMapping

Class	**SignalBasedFireAndForgetMethodToISignalTriggeringMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SignalBasedCommunication			
Note	This meta-class defines the mapping of a ServiceInterface fire and forget method part to an ISignal Triggering. **Tags:** atp.Status=candidate			
Base	*ARObject*, *AbstractSignalBasedToISignalTriggeringMapping*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	ServiceInstanceToSignalMapping.fireAndForgetMethodMapping			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
dataPrototypeIn Method Argument InstanceRef	DataPrototype	0..1	iref	Instance reference to a (potentially structured) member of a ClientServerOperation. **Tags:** atp.Status=candidate **InstanceRef implemented by:** DataPrototypeInService InterfaceInstanceRef
iSignal Triggering	ISignalTriggering	0..1	ref	Reference to an ISignalTriggering being part of a fire and forget message. **Tags:** atp.Status=candidate

Table A.366: SignalBasedFireAndForgetMethodToISignalTriggeringMapping

Class	**SignalBasedTriggerToISignalTriggeringMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SignalBasedCommunication			
Note	This meta-class defines the mapping of a ServiceInterface trigger to an ISignalTriggering. **Tags:** atp.Status=candidate			
Base	*ARObject*, *AbstractSignalBasedToISignalTriggeringMapping*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	ServiceInstanceToSignalMapping.triggerMapping			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
iSignal Triggering	ISignalTriggering	0..1	ref	Reference to the ISignalTriggering that is used to transport the trigger that is defined in a ServiceInterface in a signal-based way over a communication channel. **Tags:** atp.Status=candidate
trigger	Trigger	0..1	ref	Reference to a trigger defined in the context of a Service Interface. **Tags:** atp.Status=candidate

Table A.367: SignalBasedTriggerToISignalTriggeringMapping

Class	**SignalServiceTranslationEventProps**			
Package	M2::AUTOSARTemplates::CommonStructure::SignalServiceTranslation			
Note	This element allows to define the properties which are applicable for the signal/service translation event.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	SignalServiceTranslationProps.signalServiceTranslationEventProps			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
safeTranslation	Boolean	0..1	attr	Defined whether the translation shall happen in a safe way.
secure Translation	Boolean	0..1	attr	Defined whether the translation shall happen in a secure way.
serviceElement Mapping	AbstractSignalBasedToI SignalTriggering Mapping	*	ref	Reference to the collection of SignalBased to ISignal Triggerung mappings the properties apply to. **Tags:** atp.Status=candidate

Table A.368: SignalServiceTranslationEventProps

Class	**SignalServiceTranslationProps**			
Package	M2::AUTOSARTemplates::CommonStructure::SignalServiceTranslation			
Note	This element allows to define the properties which are applicable for the signal/service translation service.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	SignalServiceTranslationPropsSet.signalServiceTranslationProps			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
serviceControl	SignalService TranslationControlEnum	0..1	attr	Defines how the service instance control shall behave.
signalService Translation EventProps	SignalService TranslationEventProps	*	aggr	Defines properties for a single translated event.

Table A.369: SignalServiceTranslationProps

Class	**SmInteractsWithNmMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	This mapping represents an interaction from state management to network management. **Tags:** atp.Status=draft atp.recommendedPackage=FCInteractions			
Base	*ARElement*, *ARObject*, *CollectableElement*, *FunctionalClusterInteractsWithFunctionalClusterMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDeployment Element*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
actionItem	StateManagementNm ActionItem	0..1	ref	This reference identifies the action item with which the state management wants to interact with network management. **Tags:** atp.Status=draft
nmNetwork Handle	NmNetworkHandle	0..1	ref	This reference identifies the network management handle that is affected by the interaction with the state management. **Tags:** atp.Status=draft

Table A.370: SmInteractsWithNmMapping

Class	**SocketConnectionIpduIdentifier**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::ObsoleteModel			
Note	An Identifier is required in case of one port per ECU communication where multiple Pdus are transmitted over the same connection. If only one IPdu is transmitted over the connetion this attribute can be ignored. **Tags:** atp.Status=obsolete			
Base	*ARObject*			
Aggregated by	SocketConnection.pdu, SocketConnectionBundle.pdu			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
headerId	PositiveInteger	0..1	attr	If multiple Pdus are transmitted over the same connection this headerId can be used to distinguish between the different Pdus.
pduCollection PduTimeout	TimeValue	0..1	attr	Defines the timeout in seconds the PDU collection shall be transmitted at the latest after this PDU has been put into the buffer.
pduCollection Semantics	PduCollection SemanticsEnum	0..1	attr	Specifies if the referenced PduTriggering shall be collected using a queued (i.e. all PDU instances) or last-is-best (i.e. only the last PDU instance) semantics. If this attribute is not present the behavior of "queued" is assumed.
pduCollection Trigger	PduCollectionTrigger Enum	0..1	attr	Defines whether the referenced Pdu contributes to the triggering of the socket transmission if Pdu collection is enabled for this socket.
pduTriggering	PduTriggering	0..1	ref	Reference to a Pdu that is mapped to a socket connection. **Tags:** atp.Status=obsolete
routingGroup	SoAdRoutingGroup	*	ref	Reference to RoutingGroups that can be enabled or disabled. **Tags:** atp.Status=obsolete

Table A.371: SocketConnectionIpduIdentifier

Class	**SoftwareCluster**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to define an uploadable software-package, i.e. the SoftwareCluster shall contain all software and configuration for a given purpose. **Tags:** atp.recommendedPackage=SoftwareClusters			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
artifact Checksum	ArtifactChecksum	*	aggr	This aggregation carries the checksums for artifacts contained in the enclosing SoftwareCluster. Please note that the value of these checksums is only applicable at the time of configuration. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=artifactChecksum.shortName, artifact Checksum.uri
artifactLocator	ArtifactLocator	*	aggr	This aggregation represents the artifact locations that are relevant in the context of the enclosing SoftwareCluster
claimed FunctionGroup	ModeDeclarationGroup Prototype	*	ref	Each SoftwareCluster can reserve the usage of a given functionGroup such that no other SoftwareCluster is allowed to use it
conflictsTo	SoftwareCluster DependencyFormula	0..1	aggr	This aggregation handles conflicts. If it yields true then the SoftwareCluster shall not be installed. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=conflictsTo
contained ARElement	ARElement	*	ref	This reference represents the collection of model elements that cannot derive from UploadablePackage Element and that contribute to the completeness of the definition of the SoftwareCluster. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=containedARElement
containedFibex Element	FibexElement	*	ref	This allows for referencing FibexElements that need to be considered in the context of a SoftwareCluster.
contained Package Element	UploadablePackage Element	*	ref	This reference identifies model elements that are required to complete the manifest content. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=containedPackageElement
contained Process	Process	*	ref	This reference represent the processes contained in the enclosing SoftwareCluster.
dependsOn	SoftwareCluster DependencyFormula	0..1	aggr	This aggregation can be taken to identify a dependency for the enclosing SoftwareCluster. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=dependsOn
design	SoftwareClusterDesign	*	ref	This reference represents the identification of all Software ClusterDesigns applicable for the enclosing Software Cluster. **Stereotypes:** atpUriDef
diagnostic Deployment Props	SoftwareCluster DiagnosticDeployment Props	0..1	ref	This reference identifies the applicable SoftwareCluster DiagnosticDeploymentProps that are applicable for the referencing SoftwareCluster.
installation Behavior	SoftwareCluster InstallationBehavior Enum	0..1	attr	This attribute controls the behavior of the SoftwareCluster in terms of installation.

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Class	**SoftwareCluster**			
license	Documentation	*	ref	This attribute allows for the inclusion of the full text of a license of the enclosing SoftwareCluster. In many cases open source licenses require the inclusion of the full license text to any software that is released under the respective license.
module Instantiation	AdaptiveModule Instantiation	*	ref	This reference identifies AdaptiveModuleInstantiations that need to be included with the SoftwareCluster in order to establish infrastructure required for the installation of the SoftwareCluster. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=moduleInstantiation
releaseNotes	Documentation	0..1	ref	This attribute allows for the explanations of changes since the previous version. The list of changes might require the creation of multiple paragraphs of test.
typeApproval	String	0..1	attr	This attribute carries the homologation information that may be specific for a given country.
vendorId	PositiveInteger	0..1	attr	Vendor ID of this Implementation according to the AUTOSAR vendor list.
vendor Signature	CryptoService Certificate	0..1	ref	This reference identifies the certificate that represents the vendor's signature.
version	StrongRevisionLabel String	0..1	attr	This attribute can be used to describe a version information for the enclosing SoftwareCluster.

Table A.372: SoftwareCluster

Class	**SoftwareClusterDependencyCompareCondition**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to specify a concrete dependency condition in the context of a SoftwareClusterDependencyFormula.			
Base	*ARObject*, *SoftwareClusterDependencyFormulaPart*			
Aggregated by	SoftwareClusterDependencyFormula.part			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
compareType	SoftwareCluster DependencyOperator Enum	0..1	attr	This attribute identifies the semantics of the compare operator.
considerBuild Number	Boolean	0..1	attr	If this attribute is set to true then the build number shall be taken into account for the comparison. Build numbers don't have to be consecutive but could be created by some kind of hashing algorithm. In such a case it might make sense to include the build number in a test for equality but it is probably not reasonable to apply e.g. a less-than comparison.
softwareCluster	SoftwareCluster	0..1	ref	This reference identifies the SoftwareCluster to which the dependency/conflict applies.
version	StrongRevisionLabel String	0..1	attr	This attribute represents the value of a version against which the comparison shall be executed.

Table A.373: SoftwareClusterDependencyCompareCondition

Class	**SoftwareClusterDependencyFormula**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to define a dependency among SoftwareClusters.			
Base	*ARObject*, *SoftwareClusterDependencyFormulaPart*			
Aggregated by	SoftwareCluster.conflictsTo, SoftwareCluster.dependsOn, SoftwareClusterDependencyFormula.part			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
category	CategoryString	0..1	attr	This attribute specializes the semantics of the enclosing SoftwareClusterDependencyFormula.
operator	SoftwareCluster DependencyLogical OperatorEnum	0..1	attr	This logical operator can be used to relate the results of different SoftwareClusterDependencyParts.
part (ordered)	SoftwareCluster DependencyFormula Part	*	aggr	This aggregation represents the ordered collection of the parts of the SoftwareClusterDependencyFormula.

Table A.374: SoftwareClusterDependencyFormula

Class	**SoftwareClusterDesign**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SubSystemDesign			
Note	This meta-class represents the ability for the OEM to design the grouping of software uploadable to a specific target Machine. **Tags:** atp.recommendedPackage=SoftwareClusterDesigns			
Base	*ARElement*, *ARObject*, *AtpClassifier*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
contained Process	ProcessDesign	*	ref	This reference represent the ProcessDesigns contained in the enclosing SoftwareCluster. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=containedProcess
diagnostic Contribution	DiagnosticContribution Set	*	ref	This reference identifies the corresponding collection of DiagnosticContributionSet. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=diagnosticContribution
intendedTarget Machine	MachineDesign	*	ref	This reference can be taken to identify the Machine Design for which the final SoftwareCluster shall be developed. **Stereotypes:** atpUriDef
required ARElement	ARElement	*	ref	This reference represents the collection of ARElements that are required for the completeness of the definition of the SoftwareCluster. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=requiredARElement
requiredDesign Element	UploadableDesign Element	*	ref	This reference points to uploadable design elements that have been identified as relevant in the context of the enclosing SoftwareClusterDesign. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=requiredDesignElement
requiredFibex Element	FibexElement	*	ref	This reference represents the collection of fibexElements that are required for the completeness of the definition of the SoftwareCluster. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=requiredFibexElement

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Class	**SoftwareClusterDesign**			
root Composition	RootSwClusterDesign ComponentPrototype	0..1	aggr	This aggregation represents the design of the software inside the SwClusterDesign terms of the communication endpoints.

Table A.375: SoftwareClusterDesign

Class	***SoftwareClusterDiagnosticAddress*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to define a diagnostic address in an abstract form. Sub-classes are supposed to clarify how the diagnostic address shall be defined according to the applicable addressing scheme (DoIP vs. CAN TP vs. ...).			
Base	*ARObject*			
Subclasses	SoftwareClusterSovdAddress, SoftwareClusterUdsDiagnosticAddress			
Aggregated by	DiagnosticCommonProps.diagnosticAddress			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
address Semantics	SoftwareCluster DiagnosticAddress SemanticsEnum	0..1	attr	This attribute clarifies whether the address value shall be interpreted as a physical or a functional address.

Table A.376: SoftwareClusterDiagnosticAddress

Enumeration	**SoftwareClusterDiagnosticAddressSemanticsEnum**
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution
Note	This meta-class defines a list of semantics for the interpretation of diagnostic addresses in the context of a SoftwareCluster.
Aggregated by	*SoftwareClusterDiagnosticAddress*.addressSemantics
Literal	*Description*
functionalAddress	This address represents a functional address. **Tags:** atp.EnumerationLiteralIndex=1
physicalAddress	This address represents a physical address. **Tags:** atp.EnumerationLiteralIndex=0

Table A.377: SoftwareClusterDiagnosticAddressSemanticsEnum

Class	**SoftwareClusterDiagnosticDeploymentProps**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class acts as the owner of all deployment-related diagnostic properties of a SoftwareCluster. **Tags:** atp.recommendedPackage=SoftwareClusterDiagnosticProps			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
diagnostic Extract	DiagnosticContribution Set	0..1	ref	This reference identifies the DiagnosticContributionSet that is applicable for the referencing SoftwareCluster.
powerDown Time	PositiveInteger	0..1	attr	This attribute indicates the minimum time of the stand-by sequence the server will remain in the power-down sequence. The unit is seconds.

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Class	**SoftwareClusterDiagnosticDeploymentProps**			
validation Configuration	DiagnosticService ValidationConfiguration	0..1	aggr	This aggregation represents the ability to define the order of manufacturer and supplier validations in diagnostic management.

Table A.378: SoftwareClusterDiagnosticDeploymentProps

Enumeration	**SoftwareClusterInstallationBehaviorEnum**
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution
Note	This enumeration defines possible approaches for the installation behavior of a SoftwareCluster.
Aggregated by	SoftwareCluster.installationBehavior
Literal	*Description*
canBeRemoved	The enclosing SoftwareCluster can be removed from the target Machine or updated with a newer version. **Tags:** atp.EnumerationLiteralIndex=0
cannotBeRemoved	The enclosing SoftwareCluster cannot be removed from the target Machine. It can only be updated with a newer version. **Tags:** atp.EnumerationLiteralIndex=1

Table A.379: SoftwareClusterInstallationBehaviorEnum

Class	**SoftwareClusterSovdAddress**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to define a diagnostic address specifically for the SOVD case. **Tags:** atp.Status=candidate			
Base	*ARObject*, *SoftwareClusterDiagnosticAddress*			
Aggregated by	DiagnosticCommonProps.diagnosticAddress			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
component Qualifier	String	0..1	attr	This attribute is used to specify the component qualifier for the usage in an SOVD query. **Tags:** atp.Status=candidate

Table A.380: SoftwareClusterSovdAddress

Class	**SoftwarePackage**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to formalize the content of a software package. **Tags:** atp.recommendedPackage=SoftwarePackages			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
actionType	SoftwarePackageAction TypeEnum	0..1	attr	This attribute defines the action to be taken in the step of processing the enclosing SoftwarePackage.
activationAction	SoftwarePackage ActivationActionEnum	0..1	attr	This attribute governs the action to be taken after the installation of the SoftwareCluster completed.

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Class	**SoftwarePackage**			
compressed Software PackageSize	PositiveInteger	0..1	attr	This size represents the size of the compressed Software Package.
deltaPackage Applicable Version	StrongRevisionLabel String	0..1	attr	This attribute identifies the version of the included SoftwareCluster for which the enclosing SoftwarePackage can be used as a delta update
estimated DurationOf Operation	TimeValue	0..1	attr	This attribute provides an estimation about how long the operation of the SoftwarePackage is going to take for its transfer, processing and activation when updated standalone (not within an update campaign)
minimum SupportedUcm Version	RevisionLabelString	0..1	attr	This attribute identifies the minimum supported version of the UCM for this SoftwarePackage.
packagerId	PositiveInteger	0..1	attr	This attribute identifies Id of the organization that provides the packager generating the SoftwarePackage.
packager Signature	CryptoService Certificate	0..1	ref	This reference identifies the certificate that represents the packager's signature.
purposeOf Update	Documentation	0..1	ref	The referenced Documentation is supposed to provide a description of the purpose of the update.
softwareCluster	SoftwareCluster	0..1	ref	This reference identifies the SoftwareCluster that belongs to the SoftwarePackage. The nature of this relation is actually more like an aggregation than a reference. But the relation is still modelled as a reference because two ARElements cannot aggregate each other.
uncompressed SoftwareCluster Size	PositiveInteger	0..1	attr	This attribute gives an indication about the storage that has to be available on the target.

Table A.381: SoftwarePackage

Class	**SoftwarePackageStoring**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class provides the ability to specify whether and where the referenced SoftwarePackage is stored.			
Base	*ARObject*			
Aggregated by	SoftwarePackageStep.transfer			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
storing	SoftwarePackage StoringEnum	0..1	attr	This attribute clarifies whether and where the referenced SoftwarePackage is stored.
transfer	SoftwarePackage	*	ref	This reference identifies the SoftwarePackage(s) to be transferred in the enclosing SoftwarePackageStep.

Table A.382: SoftwarePackageStoring

Class	**SomeipDataPrototypeTransformationProps**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::SerializationProperties
Note	This meta-class represents the ability to define data transformation props specifically for a SOME/IP serialization for a given DataPrototype. **Tags:** atp.recommendedPackage=SomeipDataPrototypeTransformationPropss
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*

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Class	**SomeipDataPrototypeTransformationProps**			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
dataPrototype	DataPrototypeInServiceInterfaceRef	*	aggr	Collection of DataPrototypes for which the settings in SomeipDataPrototypeTransformationProps are valid. For reuse reasons the SomeipDataPrototypeTransformationProps is able to aggregate several DataPrototypes.
networkRepresentation	SwDataDefProps	0..1	aggr	Optional specification of the actual network representation for the referenced primitive DataPrototype. If a network representation is provided then the baseType available in the SwDataDefProps shall be used as input for the serialization/deserialization. If the networkRepresentation is not provided then the baseType of the AbstractImplementationDataType shall be used for the serialization/deserialization. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=networkRepresentation
someipTransformationProps	ApSomeipTransformationProps	0..1	ref	This reference represents the ability to define data transformation props specifically for a SOME/IP serialization.

Table A.383: SomeipDataPrototypeTransformationProps

Class	**SomeipEventDeployment**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	SOME/IP configuration settings for an Event.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *ServiceEventDeployment*			
Aggregated by	*ServiceInterfaceDeployment*.eventDeployment, SomeipFieldDeployment.notifier			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
burstSize	PositiveInteger	0..1	attr	Specifies the number of segments that shall be transmitted in a burst ignoring separationTime. SeparationTime will then only be applied between bursts. If not configured, SeparationTime will be applied between all frames.
eventId	PositiveInteger	0..1	attr	Unique Identifier within a ServiceInterface that identifies the Event in SOME/IP. This Identifier is sent as part of the Message ID in SOME/IP messages.
eventReceptionDefaultValue	ValueSpecification	0..1	aggr	Value used to fill the Event data on the receiver side, if less then expected data is received. The value is expected to cover the entire expected event network payload. The value specification is supposed to take the order of serialized representation of the data on the network, as opposed to the order of elements in a data type description.
maximumSegmentLength	PositiveInteger	0..1	attr	This attribute describes the length in bytes of the SOME/IP segment. This includes 8 bytes for the Request ID, Protocol Version, Interface Version, Message Type and Return Code and 4 additional SOME/IP TP bytes. If this attribute is set to a value and the data length is larger than maximumSegmentLength then the corresponding SOME/IP message will be segmented into smaller parts that are transmitted over the network.
separationTime	TimeValue	0..1	attr	Sets the duration of the minimum time in seconds SOME/IP shall wait between the transmissions of segments.

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Class	SomeipEventDeployment			
serializer	SerializationTechnology Enum	0..1	attr	Defines which serialization technology shall be used.
transport Protocol	TransportLayerProtocol Enum	0..1	attr	This attribute defines over which Transport Layer Protocol this event is intended to be sent.

Table A.384: SomeipEventDeployment

Class	SomeipEventGroup			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	Grouping of events and notification events inside a ServiceInterface in order to allow subscriptions.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	SomeipServiceInterfaceDeployment.eventGroup			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
event	SomeipEvent Deployment	*	ref	Reference to an event that is part of the EventGroup.
eventGroupId	PositiveInteger	0..1	attr	Unique Identifier that identifies the EventGroup in SOME/IP. This Identifier is sent as Eventgroup ID in SOME/IP Service Discovery messages.

Table A.385: SomeipEventGroup

Class	SomeipFieldDeployment			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	SOME/IP configuration settings for a Field.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *ServiceFieldDeployment*			
Aggregated by	*ServiceInterfaceDeployment*.fieldDeployment			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
get	SomeipMethod Deployment	0..1	aggr	This aggregation represents the setting of the get method.
notifier	SomeipEvent Deployment	0..1	aggr	This aggregation represents the settings of the notifier.
set	SomeipMethod Deployment	0..1	aggr	This aggregation represents the settings of the set method

Table A.386: SomeipFieldDeployment

Class	SomeipMethodDeployment			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	SOME/IP configuration settings for a Method.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *ServiceMethodDeployment*			
Aggregated by	*ServiceInterfaceDeployment*.methodDeployment, SomeipFieldDeployment.get, SomeipFieldDeployment.set			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
burstSize Request	PositiveInteger	0..1	attr	Specifies the number of segments for the Method Call that shall be transmitted in a burst ignoring separation Time. SeparationTime will then only be applied between bursts. If not configured, SeparationTime will be applied between all frames.

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Class	**SomeipMethodDeployment**			
burstSize Response	PositiveInteger	0..1	attr	Specifies the number of segments for the Method Response that shall be transmitted in a burst ignoring separationTime. SeparationTime will then only be applied between bursts. If not configured, SeparationTime will be applied between all frames.
maximum SegmentLength Request	PositiveInteger	0..1	attr	This attribute describes the length in bytes of one SOME/IP segment into which the Method Call Message will be divided. This length field includes 8 bytes for the Request ID, Protocol Version, Interface Version, Message Type and Return Code and 4 additional SOME/IP TP bytes. If this attribute is set to a value and the data length is larger than maximumSegmentLengthRequest then the corresponding SOME/IP message will be segmented into smaller parts that are transmitted over the network.
maximum SegmentLength Response	PositiveInteger	0..1	attr	This attribute describes the length in bytes of one SOME/IP segment into which the Method Return Message will be divided. This length field includes 8 bytes for the Request ID, Protocol Version, Interface Version, Message Type and Return Code and 4 additional SOME/IP TP bytes. If this attribute is set to a value and the data length is larger than maximumSegmentLengthResponse then the corresponding SOME/IP message will be segmented into smaller parts that are transmitted over the network.
methodId	PositiveInteger	0..1	attr	Unique Identifier within a ServiceInterface that identifies the Method in SOME/IP. This Identifier is sent as part of the Message ID in SOME/IP messages.
separationTime Request	TimeValue	0..1	attr	Sets the duration of the minimum time in seconds SOME/IP shall wait between the transmissions of segments into which the Method Call Message will be divided.
separationTime Response	TimeValue	0..1	attr	Sets the duration of the minimum time in seconds SOME/IP shall wait between the transmissions of segments into which the Method Return Message will be divided.
transport Protocol	TransportLayerProtocolEnum	0..1	attr	This attribute defines over which Transport Layer Protocol this method is intended to be sent.

Table A.387: SomeipMethodDeployment

Class	**SomeipProvidedEventGroup**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	The meta-class represents the ability to configure ServiceInstance related communication settings on the provided side for each EventGroup separately.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	ProvidedSomeipServiceInstance.providedEventGroup			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
eventGroup	SomeipEventGroup	0..1	ref	Reference to the SomeipEventGroup in the System Manifest for which the ServiceInstance related Event Group settings are valid.

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Class	**SomeipProvidedEventGroup**			
eventMulticast UdpPort	PositiveInteger	0..1	attr	UdpPort configuration that is used for Event communication in the IP-Multicast case. During SOME/IP Service Discovery: Send in the SD-SubscribeEventGroupAck Message to client (answer to SD-SubscribeEventGroup). Event: This is the destination-port where the server sends the multicast event messages if the multicastThreshold is exceeded.
ipv4MulticastIp Address	Ip4AddressString	0..1	attr	Multicast IPv4 Address that is transmitted in the Event GroupSubscribeAck message.
ipv6MulticastIp Address	Ip6AddressString	0..1	attr	Multicast IPv6 Address that is transmitted in the Event GroupSubscribeAck message.
multicast Threshold	PositiveInteger	0..1	attr	Specifies the number of subscribed clients that trigger the server to change the transmission of events to multicast. Example: If configured to 0 only unicast will be used. If configured to 1 the first client will be already served by multicast. If configured to 2 the first client will be served with unicast and as soon as the 2nd client arrives both will be served by multicast. This does not influence the handling of initial events, which are served using unicast only.
sdServerEvent GroupTiming Config	SomeipSdServerEvent GroupTimingConfig	0..1	ref	Server Timing configuration settings that are EventGroup specific.

Table A.388: SomeipProvidedEventGroup

Class	**SomeipRemoteMulticastConfig**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceMapping			
Note	This meta-class is used to statically configure the remote peer's multicast address. **Tags:** atp.Status=candidate atp.recommendedPackage=RemoteMulticastConfigs			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
eventGroup	SomeipEventGroup	*	ref	Reference to the SomeipEventGroups this Someip RemoteMulticastConfig applies to. **Tags:** atp.Status=candidate
ipv4Address	Ip4AddressString	0..1	attr	This attribute defines the multicast IPv4 address to allow a static service connection between Service Provider and Service Consumers. **Tags:** atp.Status=candidate
ipv6Address	Ip6AddressString	0..1	attr	This attribute defines the multicast IPv6 address to allow a static service connection between Service Provider and Service Consumers. **Tags:** atp.Status=candidate
udpPort	PositiveInteger	0..1	attr	This attribute defines the udpPort used for the multicast communication. **Tags:** atp.Status=candidate

Table A.389: SomeipRemoteMulticastConfig

Class	**SomeipRemoteUnicastConfig**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceMapping			
Note	This meta-class is used to statically configure the remote peer's unicast address in case that a static service connection is used and only a single remote peer exists. **Tags:** atp.Status=candidate atp.recommendedPackage=SomeipRemoteUnicastConfigs			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
eventGroup	SomeipEventGroup	*	ref	Reference to the SomeipEventGroups this Someip RemoteUnicatConfig applies to. **Tags:** atp.Status=candidate
ipv4Address	Ip4AddressString	0..1	attr	This attribute defines the IPv4 address of the remote peer to allow a static service connection between Service Provider and Service Consumer. **Tags:** atp.Status=candidate
ipv6Address	Ip6AddressString	0..1	attr	This attribute defines the IPv6 address of the remote peer to allow a static service connection between Service Provider and Service Consumer. **Tags:** atp.Status=candidate
tcpPort	PositiveInteger	0..1	attr	This attribute defines the tcpPort of the remote peer to allow a static service connection between Service Provider and Service Consumer. **Tags:** atp.Status=candidate
udpPort	PositiveInteger	0..1	attr	This attribute defines the udpPort of the remote peer to allow a static service connection between Service Provider and Service Consumer. **Tags:** atp.Status=candidate

Table A.390: SomeipRemoteUnicastConfig

Class	**SomeipRequiredEventGroup**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	The meta-class represents the ability to configure ServiceInstance related communication settings on the required side for each EventGroup separately.			
Base	*ARObject*, *Referrable*			
Aggregated by	RequiredSomeipServiceInstance.requiredEventGroup			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
eventGroup	SomeipEventGroup	0..1	ref	Reference to the SomeipEventGroup in the System Manifest for which the ServiceInstance related Event Group settings are valid.
sdClientEvent GroupTiming Config	SomeipSdClientEvent GroupTimingConfig	0..1	ref	Client Timing configuration settings that are EventGroup specific.

Table A.391: SomeipRequiredEventGroup

Class	**SomeipServiceDiscovery**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	This meta-class represents a specialization of the generic service discovery for the SOME/IP case.			
Base	*ARObject*, *ServiceDiscoveryConfiguration*			
Aggregated by	MachineDesign.serviceDiscoveryConfig			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
multicastSdIp Address	NetworkEndpoint	0..1	ref	This reference identifies the multicast IP address used for service discovery.
multicastSecure ComProps	SecureComProps	0..1	ref	Reference to a communication security protocol and its configuration settings that will provide communication security for Service Discovery messages that are transmitted using multicast, e.g. FindService message.
someipService DiscoveryPort	PositiveInteger	0..1	attr	This attribute represents the port number reserved for service discovery.
unicastSecure ComProps	SecureComProps	*	ref	Reference to a communication security protocol and its configuration settings that will provide communication security for Service Discovery messages that are transmitted using unicast, e.g. OfferService as answer to a FindService message. .

Table A.392: SomeipServiceDiscovery

Class	**SomeipServiceInstanceToMachineMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceMapping			
Note	This meta-class allows to map SomeipServiceInstances to a CommunicationConnector of a Machine. In this step the network configuration (IP Address, Transport Protocol, Port Number) for the ServiceInstance is defined. **Tags:** atp.recommendedPackage=ServiceInstanceToMachineMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *ServiceInstanceToMachineMapping*, *UploadableDesignElement*, *Uploadable PackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
remoteMulticast Config	SomeipRemote MulticastConfig	*	ref	This reference defines a remote multicast Address (IP Address, Port) that is used in a static configuration to setup the communication path between a service provider and service consumer. This reference shall ONLY be used if the remote address is determined from the configuration and not at runtime from the Service Discovery. **Tags:** atp.Status=candidate
remoteUnicast Config	SomeipRemoteUnicast Config	*	ref	In case that a static service connection is used and a single peer exists this element is used to statically configure the remote peer's address. **Tags:** atp.Status=candidate
tcpPort	ApApplicationEndpoint	0..1	ref	local TcpPort that will be used by the ServiceInstance for the communication.
udpCollection BufferSize Threshold	PositiveInteger	0..1	attr	Specifies the amount of data in bytes that shall be buffered for data transmission over the udp connection specified by this SomeipServiceInstanceToMachine Mapping. If this attribute is set to a value, then the data collection feature is enabled.
udpPort	ApApplicationEndpoint	0..1	ref	local UdpPort that will be used by the ServiceInstance for the communication.

Table A.393: SomeipServiceInstanceToMachineMapping

Class	**SomeipServiceInterfaceDeployment**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	SOME/IP configuration settings for a ServiceInterface. **Tags:** atp.recommendedPackage=ServiceInterfaceDeployments			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *ServiceInterfaceDeployment*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
eventGroup	SomeipEventGroup	*	aggr	SOME/IP EventGroups that are defined within the SOME/IP ServiceClass.
serviceInterfaceId	PositiveInteger	0..1	attr	Unique Identifier that identifies the ServiceInterface in SOME/IP. This Identifier is sent as Service ID in SOME/IP Service Discovery messages.
serviceInterfaceVersion	SomeipServiceVersion	0..1	aggr	The SOME/IP major and minor Version of the Service.

Table A.394: SomeipServiceInterfaceDeployment

Class	**SomeipServiceVersion**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::ServiceInstances			
Note	This meta-class represents the ability to describe a version of a SOME/IP Service.			
Base	*ARObject*			
Aggregated by	ConsumedServiceInstance.blocklistedVersion, RequiredSomeipServiceInstance.blocklistedVersion, SomeipServiceInterfaceDeployment.serviceInterfaceVersion			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
majorVersion	PositiveInteger	0..1	attr	Major Version of the ServiceInterface. **Tags:** xml.sequenceOffset=10
minorVersion	PositiveInteger	0..1	attr	Minor Version of the ServiceInterface. **Tags:** xml.sequenceOffset=20

Table A.395: SomeipServiceVersion

Class	***SovdGatewayEthernetCredentials*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::SOVD			
Note	This meta-class represents the ability to define Ethernet credentials for the purpose of connecting a client to an SOVD gateway. **Tags:** atp.Status=candidate			
Base	*ARObject*			
Subclasses	SovdGatewayLocalEndpointTcpConfig			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
ipv4Address	Ip4AddressString	0..1	attr	This attribute represents the IPv4 address for the case that IPv4 is used for communication between the SOVD gateway and a client. **Tags:** atp.Status=candidate
ipv6Address	Ip6AddressString	0..1	attr	This attribute represents the IPv6 address for the case that IPv6 is used for communication between the SOVD gateway and a client. **Tags:** atp.Status=candidate

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Class	***SovdGatewayEthernetCredentials*** (abstract)			
udpPort	PositiveInteger	0..1	attr	This attribute describes the port number of the port used for UDP communication. **Tags:** atp.Status=candidate

Table A.396: SovdGatewayEthernetCredentials

Class	**SovdGatewayLocalEndpointTcpConfig**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::SOVD			
Note	This meta-class provides the ability to define the TCP configuration of a local endpoint for external communication of an SOVD gateway. **Tags:** atp.Status=candidate			
Base	*ARObject*, *SovdGatewayEthernetCredentials*			
Aggregated by	SovdGatewayInstantiation.unicastCredentials			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
tcpPort	PositiveInteger	0..1	attr	This attribute describes the port number of the port used for TCP communication. **Tags:** atp.Status=candidate

Table A.397: SovdGatewayLocalEndpointTcpConfig

Class	**SovdServerInstantiation**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::SOVD			
Note	This meta-class represents the configuration of an SOVD server. **Tags:** atp.Status=candidate			
Base	*ARObject*, *AdaptiveModuleInstantiation*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *NonOsModuleInstantiation*, *Referrable*, *SovdModuleInstantiation*			
Aggregated by	*AtpClassifier*.atpFeature, Machine.moduleInstantiation			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
component Qualifier	String	0..1	attr	This attributes described the component qualifier used to compose an SOVD query. **Tags:** atp.Status=candidate

Table A.398: SovdServerInstantiation

Class	**StartupConfig**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest			
Note	This meta-class represents a reusable startup configuration for processes.. **Tags:** atp.recommendedPackage=StartupConfigs			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
environment Variable	TagWithOptionalValue	*	aggr	This aggregation represents the collection of environment variables that shall be added to the respective Process's environment prior to launch.

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Class	**StartupConfig**			
executionError	ProcessExecutionError	0..1	ref	this reference is used to identify the applicable execution error
permissionTo CreateChild Process	Boolean	0..1	attr	This attribute defines if Process is permitted to create child Processes. When setting this parameter to true two things should be kept in mind: 1) safety and security implication of this configuration, 2) the fact that Process will assume management responsibilities for child Processes (i.e. it will be responsible for terminating Processes that it creates).
process Argument (ordered)	ProcessArgument	*	aggr	This aggregation represents the collection of command-line arguments applicable to the enclosing StartupConfig.
scheduling Policy	String	0..1	attr	This attribute represents the ability to define the scheduling policy for the initial thread of the application.
scheduling Priority	Integer	0..1	attr	This is the scheduling priority requested by the application itself.
termination Behavior	TerminationBehavior Enum	0..1	attr	This attribute defines the termination behavior of the Process.
timeout	EnterExitTimeout	0..1	aggr	This aggregation can be used to specify the timeouts for launching and terminating the process depending on the StartupConfig.

Table A.399: StartupConfig

Class	**StateDependentFirewall**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Firewall			
Note	Firewall rules that are defined in a firewall state **Tags:** atp.Status=candidate atp.recommendedPackage=StateDependentFirewallRules			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
defaultAction	FirewallActionEnum	0..1	attr	This attribute defines a defaultAction in case that the VehicleMode is not yet set. **Tags:** atp.Status=candidate
firewallRule Props (ordered)	FirewallRuleProps	*	aggr	Collection of firewall rules that apply in the vehicle mode **Tags:** atp.Status=candidate
firewallState	ModeDeclaration	*	iref	Reference to firewall states in which the Firewall is active. If one of the referenced ModeDeclarations is the current firewall state then the firewall rule shall be considered as active. **Tags:** atp.Status=candidate **InstanceRef implemented by:** FirewallStateInFirwall StateSwitchInterfaceInstanceRef

Table A.400: StateDependentFirewall

Class	**StateDependentStartupConfig**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest			
Note	This meta-class defines the startup configuration for the process depending on a collection of machine states.			
Base	*ARObject*			
Aggregated by	Process.stateDependentStartupConfig			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
execution Dependency	ExecutionDependency	*	aggr	This attribute defines that all processes that are referenced via the ExecutionDependency shall be launched and shall reach a certain ProcessState before the referencing process is started.
functionGroup State	ModeDeclaration	*	iref	This represent the applicable functionGroupMode. **InstanceRef implemented by:** FunctionGroupStateIn FunctionGroupSetInstanceRef
resource Consumption	ResourceConsumption	0..1	aggr	This aggregation provides the ability to define resource consumption boundaries on a per-process-startup-config basis.
resourceGroup	ResourceGroup	0..1	ref	Reference to an applicable resource group.
startupConfig	StartupConfig	0..1	ref	Reference to a reusable startup configuration with startup parameters.

Table A.401: StateDependentStartupConfig

Class	**StateManagementActionList**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	This meta-class represents the ability to define an action list that is associated with a state of a state machine. **Tags:** atp.Status=draft			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	StateManagementModuleInstantiation.actionItemList			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
actionItem (ordered)	StateManagement ActionItem	*	aggr	This represents the collection of action items in the context of the action item list. **Tags:** atp.Status=draft
affectedState	ModeDeclaration	0..1	iref	This reference identifies the state for which the referencing action list applies. **Tags:** atp.Status=draft **InstanceRef implemented by:** ModeDeclarationInState ManagementStateNotificationInstanceRef

Table A.402: StateManagementActionList

Class	***StateManagementCompareCondition*** (abstract)
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement
Note	StateManagementCompareConditions are atomic conditions. They are based on the idea of a comparison at runtime of some variable data with something constant. The type of the comparison (==, !=, <, <=, ...) is specified in StateManagementCompareCondition.compareType. **Tags:** atp.Status=draft
Base	*ARObject*, *StateManagementCompareFormulaPart*
Subclasses	StateManagementErrorCompareRule, StateManagementTriggerCompareRule
Aggregated by	StateManagementCompareFormula.part

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Class	***StateManagementCompareCondition*** (abstract)			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
compareType	StateManagement CompareEnum	0..1	attr	This attributes represents the concrete type of the comparison. **Tags:** atp.Status=draft
compareValue	ValueSpecification	0..1	aggr	This aggregation represents the reference value against which the value obtained from request shall be compared to. **Tags:** atp.Status=draft

Table A.403: StateManagementCompareCondition

Class	***StateManagementErrorInterface*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::StateManagement			
Note	The usage of this meta-class for typing a PortPrototype indicates that the PortPrototype is used for the error provision in the context of state management on the AUTOSAR adaptive platform. **Tags:** atp.Status=draft			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*, *State ManagementPortInterface*, *StateManagementRequestInterface*			
Subclasses	StateManagemenPhmErrorInterface, StateManagementEmErrorInterface			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
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Table A.404: StateManagementErrorInterface

Class	**StateManagementFunctionGroupSwitchNotificationInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::StateManagement			
Note	The usage of this meta-class for typing a PortPrototype indicates that the PortPrototype is used for sending out a notification of a function group state change in the context of state management on the AUTOSAR adaptive platform. **Tags:** atp.Status=draft atp.recommendedPackage=StateManagementPortInterfaces			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*, *State ManagementNotificationInterface*, *StateManagementPortInterface*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
modeGroup	ModeDeclarationGroup	0..1	ref	This reference identifies the ModeDeclarationGroup that defines the individual states that that can be switched to. **Tags:** atp.Status=draft

Table A.405: StateManagementFunctionGroupSwitchNotificationInterface

Class	**StateManagementModuleInstantiation**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	This meta-class represents the deployment-level configuration of the state management on the AUTOSAR adaptive platform. **Tags:** atp.Status=draft			
Base	*ARObject*, *AdaptiveModuleInstantiation*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *NonOsModuleInstantiation*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, Machine.moduleInstantiation			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
actionItemList	StateManagement ActionList	*	aggr	This represents the collection of action item lists defined in the context of the enclosing state management module. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=actionItemList.shortName atp.Status=draft
notification	StateManagementState Notification	*	aggr	This aggregation represents the state switch notifications handled by the state manager. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=notification.shortName atp.Status=draft
request	StateManagementState Request	*	aggr	This aggregation represents the state requests handled by the state manager. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=request.shortName atp.Status=draft

Table A.406: StateManagementModuleInstantiation

Class	**StateManagementRequestError**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	This meta-class has the ability to configure the submission of an error to the state management. **Tags:** atp.Status=draft atp.recommendedPackage=StateManagementRequests			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *StateManagementStateRequest*			
Aggregated by	StateManagementModuleInstantiation.request			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
rule	StateManagement RequestRule	*	aggr	This aggregation represents the collection of rules applicable for the error request. **Tags:** atp.Status=draft

Table A.407: StateManagementRequestError

Class	**StateManagementRequestRule**
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement
Note	This meta-class represents a rule for deciding about a state change. **Tags:** atp.Status=draft
Base	*ARObject*
Aggregated by	StateManagementRequestError.rule, StateManagementRequestTrigger.rule

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Class	**StateManagementRequestRule**			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
formula	StateManagement CompareFormula	0..1	aggr	This aggregation represents the definition of the formula for the StateManagementRequestRule **Tags:** atp.Status=draft
nextState	ModeDeclaration	0..1	iref	This reference identifies the state to be switched to if the condition is fulfilled. **Tags:** atp.Status=draft **InstanceRef implemented by:** ModeDeclarationInState ManagementStateNotificationInstanceRef

Table A.408: StateManagementRequestRule

Class	**StateManagementRequestTrigger**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	This meta-class has the ability to configure a trigger request to the state management. **Tags:** atp.Status=draft			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *StateManagementStateRequest*			
Aggregated by	StateManagementModuleInstantiation.request			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
rule	StateManagement RequestRule	*	aggr	This aggregation represents the collection of rules applicable for the trigger request. **Tags:** atp.Status=draft

Table A.409: StateManagementRequestTrigger

Class	**StateManagementSetFunctionGroupStateActionItem**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	This meta-class represents a state management action item to set a specific state in a specific function group. **Tags:** atp.Status=draft			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *StateManagementActionItem*			
Aggregated by	StateManagementActionList.actionItem			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
portPrototype	PPortPrototype	0..1	iref	This reference identifies the PortPrototype over which the function group state switch shall be communicated. **Tags:** atp.Status=draft **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef
setFunction GroupState	ModeDeclaration	0..1	iref	This reference identifies the funtion group step that shall become active after the action step terminates. **Tags:** atp.Status=draft **InstanceRef implemented by:** FunctionGroupStateIn FunctionGroupSetInstanceRef

Table A.410: StateManagementSetFunctionGroupStateActionItem

Class	**StateManagementSleepActionItem**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	This action item can be used to universally implement afterrun. One specific use case for afterrun comes up in the context of network management. **Tags:** atp.Status=draft			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *StateManagementActionItem*			
Aggregated by	StateManagementActionList.actionItem			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
sleepTime	TimeValue	0..1	attr	This attribute represents the amount of time that the execution of the StateManagementActionItemList is supposed to go to sleep. **Tags:** atp.Status=draft

Table A.411: StateManagementSleepActionItem

Class	**StateManagementStateMachineActionItem**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	This meta-class represents a state management action item to start or stop a state machine. **Tags:** atp.Status=draft			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *StateManagementActionItem*			
Aggregated by	StateManagementActionList.actionItem			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
overrideInitial State	ModeDeclaration	0..1	iref	The referenced ModeDeclaration shall be considered the initial state of the context ModeDeclarationGroup Prototype and the corresponding reference Mode DeclarationGroup.initialMode shall be ignored. **Tags:** atp.Status=draft **InstanceRef implemented by:** ModeDeclarationInState ManagementStateNotificationInstanceRef
startState Machine	ModeDeclarationGroup Prototype	0..1	ref	This reference identifies the state machine that shall be started when the enclosing action list item is executed. **Tags:** atp.Status=draft
stopState Machine	ModeDeclarationGroup Prototype	0..1	ref	This reference identifies the state machine that shall be stopped when the enclosing action list item is executed. **Tags:** atp.Status=draft

Table A.412: StateManagementStateMachineActionItem

Class	**StateManagementStateNotification**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	This meta-class represents the ability to formalize state notifications on the AUTOSAR adaptive platform. **Tags:** atp.Status=draft			
Base	*ARObject*, *AtpClassifier*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	StateManagementModuleInstantiation.notification			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
notificationPort	PPortPrototype	0..1	iref	This instanceRef identifies the PPortPrototype over which the notification is to be conveyed. **Tags:** atp.Status=draft **InstanceRef implemented by:** PPortPrototypeIn ExecutableInstanceRef

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Class	StateManagementStateNotification			
stateMachine	ModeDeclarationGroup Prototype	0..1	aggr	This aggregation represents the existence of an actual state machine. **Tags:** atp.Status=draft

Table A.413: StateManagementStateNotification

Class	*StateManagementStateRequest* (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	This abstract class serves as the base class for state requests on the AUTOSAR adaptive platform. **Tags:** atp.Status=draft			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	StateManagementRequestError, StateManagementRequestTrigger			
Aggregated by	StateManagementModuleInstantiation.request			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
stateRequest Port	RPortPrototype	0..1	iref	This represents the RPortPrototype in the application software that is issuing the request for state change. **Tags:** atp.Status=draft **InstanceRef implemented by:** RPortPrototypeIn ExecutableInstanceRef

Table A.414: StateManagementStateRequest

Class	StateManagementTriggerCompareRule			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	This meta-class represents the configuration of a compare rule for the processing of a trigger request. **Tags:** atp.Status=draft			
Base	*ARObject*, *StateManagementCompareCondition*, *StateManagementCompareFormulaPart*			
Aggregated by	StateManagementCompareFormula.part			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
assumed CurrentState	ModeDeclaration	0..1	iref	This reference denotes the assumed current state for the given compare rule for trigger values. **Tags:** atp.Status=draft **InstanceRef implemented by:** ModeDeclarationInState ManagementStateNotificationInstanceRef

Table A.415: StateManagementTriggerCompareRule

Class	*StateManagementTriggerInterface* (abstract)
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface
Note	The usage of this meta-class for typing a PortPrototype indicates that the PortPrototype is used for the trigger provision in the context of state management on the AUTOSAR adaptive platform. **Tags:** atp.Status=draft
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*, *State ManagementPortInterface*, *StateManagementRequestInterface*
Subclasses	StateManagementDiagTriggerInterface
Aggregated by	ARPackage.element

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Class	StateManagementTriggerInterface (abstract)			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.416: StateManagementTriggerInterface

Class	StdCppImplementationDataType			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CppImplementationDataType			
Note	This meta-class represents the way to specify a data type definition that is taken as the basis for a C++ language binding to a C++ Standard Library feature. **Tags:** atp.recommendedPackage=CppImplementationDataTypes			
Base	*ARElement*, *ARObject*, *AbstractImplementationDataType*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *AutosarDataType*, *CollectableElement*, *CppImplementationDataType*, *CppImplementationDataTypeContextTarget*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.417: StdCppImplementationDataType

Class	SupervisionCheckpoint			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This element contains an instance reference to a RPortPrototype representing a checkpoint for Platform Health Management.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	PlatformHealthManagementContribution.checkpoint			
Attribute	Type	Mult.	Kind	Note
checkpointId	PositiveInteger	0..1	attr	Defines the numeric value which is used to identify the reporting of this SupervisionCheckpoint to the Phm.
phmCheckpoint	PhmCheckpoint	0..1	iref	Instance reference to the PhmCheckpoint defined in the context of a PortInterface. **Stereotypes:** atpUriDef **InstanceRef implemented by:** PhmCheckpointIn ExecutableInstanceRef
process	Process	0..1	ref	Reference to the Process this checkoint shall be monitored.

Table A.418: SupervisionCheckpoint

Class	SupervisionMode			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This element defines a SupervisionMode.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	GlobalSupervision.supervisionMode			
Attribute	Type	Mult.	Kind	Note
active Supervision	PhmSupervision	*	ref	The reference defines which PhmSupervisions shall be active in this specific SupervisionMode.

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Class	**SupervisionMode**			
expired Supervision Tolerance	TimeValue	0..1	attr	Defines in this SupervisionMode the acceptable amount of time with EXPIRED supervision status of the enclosing GlobalSupervision before it is considered STOPPED.
modeCondition	SupervisionMode Condition	0..1	ref	Reference to SupervisionModeCondition (Condition under which the configuration made under this SupervisionMode are to be applied).

Table A.419: SupervisionMode

Class	**SupervisionModeCondition**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This element defines a SupervisionModeCondition in the context of platform health management contribution.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	PlatformHealthManagementContribution.supervisionModeCondition			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
stateReference	PhmStateReference	*	aggr	Collection of stateReferences.

Table A.420: SupervisionModeCondition

Class	**SwBaseType**			
Package	M2::MSR::AsamHdo::BaseTypes			
Note	This meta-class represents a base type used within ECU software. **Tags:** atp.recommendedPackage=BaseTypes			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *BaseType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.421: SwBaseType

Class	**SwComponentPrototype**			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Composition			
Note	Role of a software component within a composition.			
Base	*ARObject*, *AtpFeature*, *AtpPrototype*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, CompositionSwComponentType.component			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
type	SwComponentType	0..1	tref	Type of the instance. **Stereotypes:** isOfType

Table A.422: SwComponentPrototype

Class	***SwComponentType*** (abstract)			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Components			
Note	Base class for AUTOSAR software components.			
Base	*ARElement*, *ARObject*, *AtpBlueprint*, *AtpBlueprintable*, *AtpClassifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*			
Subclasses	AdaptiveApplicationSwComponentType, *AtomicSwComponentType*, CompositionSwComponentType, ParameterSwComponentType			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
port	PortPrototype	*	aggr	The PortPrototypes through which this SwComponent Type can communicate. The aggregation of PortPrototype is subject to variability with the purpose to support the conditional existence of PortPrototypes. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=port.shortName, port.variationPoint.short Label vh.latestBindingTime=preCompileTime
portGroup	PortGroup	*	aggr	A port group being part of this component. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=portGroup.shortName, portGroup.variation Point.shortLabel vh.latestBindingTime=preCompileTime
swComponent Documentation	SwComponent Documentation	0..1	aggr	This adds a documentation to the SwComponentType. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=swComponentDocumentation, sw ComponentDocumentation.variationPoint.shortLabel vh.latestBindingTime=preCompileTime xml.sequenceOffset=-10

Table A.423: SwComponentType

Class	***SwConnector*** (abstract)			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Composition			
Note	The base class for connectors between ports. Connectors have to be identifiable to allow references from the system constraint template.			
Base	*ARObject*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	AssemblySwConnector, DelegationSwConnector, PassThroughSwConnector			
Aggregated by	*AtpClassifier*.atpFeature, CompositionSwComponentType.connector			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
mapping	PortInterfaceMapping	0..1	ref	Reference to a PortInterfaceMapping specifying the mapping of unequal named PortInterface elements of the two different PortInterfaces typing the two PortPrototypes which are referenced by the ConnectorPrototype.

Table A.424: SwConnector

Class	<<atpVariation>> **SwDataDefProps**
Package	M2::MSR::DataDictionary::DataDefProperties
Note	This class is a collection of properties relevant for data objects under various aspects. One could consider this class as a "pattern of inheritance by aggregation". The properties can be applied to all objects of all classes in which SwDataDefProps is aggregated. Note that not all of the attributes or associated elements are useful all of the time. Hence, the process definition (e.g. expressed with an OCL or a Document Control Instance MSR-DCI) has the task of implementing limitations. SwDataDefProps covers various aspects: • Structure of the data element for calibration use cases: is it a single value, a curve, or a map, but also the recordLayouts which specify how such elements are mapped/converted to the DataTypes in the programming language (or in AUTOSAR). This is mainly expressed by properties like swRecordLayout and swCalprmAxisSet • Implementation aspects, mainly expressed by swImplPolicy, swVariableAccessImplPolicy, swAddr Method, swPointerTagetProps, baseType, implementationDataType and additionalNativeTypeQualifier • Access policy for the MCD system, mainly expressed by swCalibrationAccess • Semantics of the data element, mainly expressed by compuMethod and/or unit, dataConstr, invalid Value • Code generation policy provided by swRecordLayout **Tags:** vh.latestBindingTime=codeGenerationTime
Base	*ARObject*
Aggregated by	*AutosarDataType*.swDataDefProps, CompositeNetworkRepresentation.networkRepresentation, *Data Prototype*.swDataDefProps, DataPrototypeTransformationProps.networkRepresentationProps, DiagnosticDataElement.swDataDefProps, DiagnosticEnvDataElementCondition.swDataDefProps, Dlt Argument.networkRepresentation, FlatInstanceDescriptor.swDataDefProps, ImplementationDataType Element.swDataDefProps, InstantiationDataDefProps.swDataDefProps, ISignal.networkRepresentation Props, McDataInstance.resultingProperties, ParameterAccess.swDataDefProps, PerInstanceMemory.sw DataDefProps, *ReceiverComSpec*.networkRepresentation, *SenderComSpec*.networkRepresentation, SomeipDataPrototypeTransformationProps.networkRepresentation, SwPointerTargetProps.swDataDef Props, SwServiceArg.swDataDefProps, SwSystemconst.swDataDefProps, SystemSignal.physicalProps

Attribute	***Type***	***Mult.***	***Kind***	***Note***
additionalNative TypeQualifier	NativeDeclarationString	0..1	attr	This attribute is used to declare native qualifiers of the programming language which can neither be deduced from the baseType (e.g. because the data object describes a pointer) nor from other more abstract attributes. Examples are qualifiers like "volatile", "strict" or "enum" of the C-language. All such declarations have to be put into one string. **Tags:** xml.sequenceOffset=235
annotation	Annotation	*	aggr	This aggregation allows to add annotations (yellow pads ...) related to the current data object. **Tags:** xml.roleElement=true xml.roleWrapperElement=true xml.sequenceOffset=20 xml.typeElement=false xml.typeWrapperElement=false
baseType	SwBaseType	0..1	ref	Base type associated with the containing data object. **Tags:** xml.sequenceOffset=50
compuMethod	CompuMethod	0..1	ref	Computation method associated with the semantics of this data object. **Tags:** xml.sequenceOffset=180
dataConstr	DataConstr	0..1	ref	Data constraint for this data object. **Tags:** xml.sequenceOffset=190

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Class	<<atpVariation>> **SwDataDefProps**			
displayFormat	DisplayFormatString	0..1	attr	This property describes how a number is to be rendered e.g. in documents or in a measurement and calibration system. **Tags:** xml.sequenceOffset=210
display Presentation	DisplayPresentation Enum	0..1	attr	This attribute controls the presentation of the related data for measurement and calibration tools.
implementation DataType	AbstractImplementation DataType	0..1	ref	This association denotes the ImplementationDataType of a data declaration via its aggregated SwDataDefProps. It is used whenever a data declaration is not directly referring to a base type. Especially • redefinition of an ImplementationDataType via a "typedef" to another ImplementationDatatype • the target type of a pointer (see SwPointerTarget Props), if it does not refer to a base type directly • the data type of an array or record element within an ImplementationDataType, if it does not refer to a base type directly • the data type of an SwServiceArg, if it does not refer to a base type directly **Tags:** xml.sequenceOffset=215
invalidValue	ValueSpecification	0..1	aggr	Optional value to express invalidity of the actual data element. **Tags:** xml.sequenceOffset=255
stepSize	Float	0..1	attr	This attribute can be used to define a value which is added to or subtracted from the value of a DataPrototype when using up/down keys while calibrating.
swAddrMethod	SwAddrMethod	0..1	ref	Addressing method related to this data object. Via an association to the same SwAddrMethod it can be specified that several DataPrototypes shall be located in the same memory without already specifying the memory section itself. **Tags:** xml.sequenceOffset=30
swAlignment	AlignmentType	0..1	attr	The attribute describes the intended typical alignment of the DataPrototype. If the attribute is not defined the alignment is determined by the swBaseType size and the memoryAllocationKeywordPolicy of the referenced Sw AddrMethod. **Tags:** xml.sequenceOffset=33
swBit Representation	SwBitRepresentation	0..1	aggr	Description of the binary representation in case of a bit variable. **Tags:** xml.sequenceOffset=60
swCalibration Access	SwCalibrationAccess Enum	0..1	attr	Specifies the read or write access by MCD tools for this data object. **Tags:** xml.sequenceOffset=70
swCalprmAxis Set	SwCalprmAxisSet	0..1	aggr	This specifies the properties of the axes in case of a curve or map etc. This is mainly applicable to calibration parameters. **Tags:** xml.sequenceOffset=90
swComparison Variable	SwVariableRefProxy	*	aggr	Variables used for comparison in an MCD process. **Tags:** xml.sequenceOffset=170 xml.typeElement=false

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Class	<<atpVariation>> **SwDataDefProps**			
swData Dependency	SwDataDependency	0..1	aggr	Describes how the value of the data object has to be calculated from the value of another data object (by the MCD system). **Tags:** xml.sequenceOffset=200
swHostVariable	SwVariableRefProxy	0..1	aggr	Contains a reference to a variable which serves as a host-variable for a bit variable. Only applicable to bit objects. **Tags:** xml.sequenceOffset=220 xml.typeElement=false
swImplPolicy	SwImplPolicyEnum	0..1	attr	Implementation policy for this data object. **Tags:** xml.sequenceOffset=230
swIntended Resolution	Numerical	0..1	attr	The purpose of this element is to describe the requested quantization of data objects early on in the design process. The resolution ultimately occurs via the conversion formula present (compuMethod), which specifies the transition from the physical world to the standardized world (and vice-versa) (here, "the slope per bit" is present implicitly in the conversion formula). In the case of a development phase without a fixed conversion formula, a pre-specification can occur through swIntendedResolution. The resolution is specified in the physical domain according to the property "unit". **Tags:** xml.sequenceOffset=240
swInterpolation Method	Identifier	0..1	attr	This is a keyword identifying the mathematical method to be applied for interpolation. The keyword needs to be related to the interpolation routine which needs to be invoked. **Tags:** xml.sequenceOffset=250
swIsVirtual	Boolean	0..1	attr	This element distinguishes virtual objects. Virtual objects do not appear in the memory, their derivation is much more dependent on other objects and hence they shall have a swDataDependency . **Tags:** xml.sequenceOffset=260
swPointerTarget Props	SwPointerTargetProps	0..1	aggr	Specifies that the containing data object is a pointer to another data object. Note: This atpSplitable property has no atp.Splitkey due to atpVariation (PropertySetPattern). **Stereotypes:** atpSplitable **Tags:** xml.sequenceOffset=280
swRecord Layout	SwRecordLayout	0..1	ref	Record layout for this data object. **Tags:** xml.sequenceOffset=290

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Class	<<atpVariation>> **SwDataDefProps**			
swRefresh Timing	MultidimensionalTime	0..1	aggr	This element specifies the frequency in which the object involved shall be or is called or calculated. This timing can be collected from the task in which write access processes to the variable run. But this cannot be done by the MCD system. So this attribute can be used in an early phase to express the desired refresh timing and later on to specify the real refresh timing. **Tags:** xml.sequenceOffset=300
swTextProps	SwTextProps	0..1	aggr	the specific properties if the data object is a text object. **Tags:** xml.sequenceOffset=120
swValueBlock Size	Numerical	0..1	attr	This represents the size of a Value Block **Stereotypes:** atpVariation **Tags:** vh.latestBindingTime=preCompileTime xml.sequenceOffset=80
swValueBlock SizeMult (ordered)	Numerical	*	attr	This attribute is used to specify the dimensions of a value block (VAL_BLK) for the case that that value block has more than one dimension. The dimensions given in this attribute are ordered such that the first entry represents the first dimension, the second entry represents the second dimension, and so on. For one-dimensional value blocks the attribute swValue BlockSize shall be used and this attribute shall not exist. **Stereotypes:** atpVariation **Tags:** vh.latestBindingTime=preCompileTime
unit	Unit	0..1	ref	Physical unit associated with the semantics of this data object. This attribute applies if no compuMethod is specified. If both units (this as well as via compuMethod) are specified the units shall be compatible. **Tags:** xml.sequenceOffset=350
valueAxisData Type	ApplicationPrimitive DataType	0..1	ref	The referenced ApplicationPrimitiveDataType represents the primitive data type of the value axis within a compound primitive (e.g. curve, map). It supersedes CompuMethod, Unit, and BaseType. **Tags:** xml.sequenceOffset=355

Table A.425: SwDataDefProps

Class	**SwPointerTargetProps**			
Package	M2::MSR::DataDictionary::DataDefProperties			
Note	This element defines, that the data object (which is specified by the aggregating element) contains a reference to another data object or to a function in the CPU code. This corresponds to a pointer in the C-language. The attributes of this element describe the category and the detailed properties of the target which is either a data description or a function signature.			
Base	*ARObject*			
Aggregated by	SwDataDefProps.swPointerTargetProps			
Attribute	***Type***	***Mult.***	***Kind***	***Note***

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Class	**SwPointerTargetProps**			
swDataDef Props	SwDataDefProps	0..1	aggr	The properties of the target data type. **Stereotypes:** atpSplitable **Tags:** atp.Splitkey=swDataDefProps xml.sequenceOffset=30
targetCategory	Identifier	0..1	attr	This specifies the category of the target: • In case of a data pointer, it shall specify the category of the referenced data. • In case of a function pointer, it could be used to denote the category of the referenced BswModuleEntry. **Tags:** xml.sequenceOffset=5

Table A.426: SwPointerTargetProps

Class	**SwTextProps**			
Package	M2::MSR::DataDictionary::DataDefProperties			
Note	This meta-class expresses particular properties applicable to strings in variables or calibration parameters.			
Base	*ARObject*			
Aggregated by	SwDataDefProps.swTextProps			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
arraySize Semantics	ArraySizeSemantics Enum	0..1	attr	This attribute controls the semantics of the arraysize for the array representing the string in an Implementation DataType. It is there to support a safe conversion between ApplicationDatatype and ImplementationDatatype, even for variable length strings as required e.g. for Support of SAE J1939.
baseType	SwBaseType	0..1	ref	This is the base type of one character in the string. In particular this baseType denotes the intended encoding of the characters in the string on level of ApplicationData Type. **Tags:** xml.sequenceOffset=30
swFillCharacter	Integer	0..1	attr	Filler character for text parameter to pad up to the maximum length swMaxTextSize. The value will be interpreted according to the encoding specified in the associated base type of the data object, e.g. 0x30 (hex) represents the ASCII character zero as filler character and 0 (dec) represents an end of string as filler character. The usage of the fill character depends on the arraySize Semantics. **Tags:** xml.sequenceOffset=40
swMaxTextSize	Integer	0..1	attr	Specifies the maximum text size in characters. Note the size in bytes depends on the encoding in the corresponding baseType. **Stereotypes:** atpVariation **Tags:** vh.latestBindingTime=preCompileTime xml.sequenceOffset=20

Table A.427: SwTextProps

Class	**SynchronizationTimingConstraint**			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingConstraint::SynchronizationTiming Constraint			
Note	This constraint is used to restrict the timing behavior of different, but correlated events or event chains, with regard to synchronization. Two scenarios are supported: • If (`synchronizationConstraintType`==`responseSynchronization`) – `TimingDescriptionEvent`s: An arbitrary number of correlated events which play the role of responses shall occur synchronously with respect to a predefined tolerance. – `TimingDescriptionEventChain`s: An arbitrary number of correlated event chains with a common stimulus, but different responses, where the responses shall occur synchronously with respect to a predefined tolerance. • If (`synchronizationConstraintType`==`stimulusSynchronization`) – `TimingDescriptionEvent`s:An arbitrary number of correlated events which play the role of stimuli shall occur synchronously with respect to a predefined tolerance. – `TimingDescriptionEventChain`s: An arbitrary number of correlated event chains with a common response, but different stimuli, where the stimuli shall occur synchronously with respect to a predefined tolerance. In case the constraint is imposed on events the following two scenarios are supported: • If (`eventOccurrenceKind`==`singleOccurrence`): any of the events shall occur only once in the given time interval. • If (`eventOccurrenceKind`==`multipleOccurrences`): any of the events may occur more than once in the given time interval. In other words multiple occurrences of an event within the given time interval are permitted.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *TimingConstraint*, *Traceable*			
Aggregated by	*TimingExtension*.timingGuarantee, *TimingExtension*.timingRequirement			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
event OccurrenceKind	EventOccurrenceKind Enum	0..1	attr	Indicates whether the referenced events shall occur only once (single occurrence) or multiple times (multiple occurrences) in the given time interval.
scope	TimingDescriptionEvent Chain	*	ref	The event chains that are in the scope of the constraint. Mutually exclusive to `scopeEvent`, see ([constr_4522]).
scopeEvent	TimingDescriptionEvent	*	ref	The events that are in the scope of the constraint. Mutually exclusive to `scope`, see ([constr_4522])
synchronization ConstraintType	SynchronizationType Enum	0..1	attr	Indicates whether the associated events of the SynchronizationTimingConstraint have a common stimulus or response.
tolerance	MultidimensionalTime	0..1	aggr	The maximum time interval, within which the synchronized events shall occur. The events may occur in any order within this time interval. The time interval starts at the point-in-time when one of the referenced events occurs.

Table A.428: SynchronizationTimingConstraint

Class	**SynchronizedTimeBaseConsumer**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::TimeSync			
Note	This meta-class represents a Synchronized Time Base Consumer.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *TimeBaseResource*			
Aggregated by	TimeSyncModuleInstantiation.timeBase			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
networkTime Consumer	GlobalTimeSlave	0..1	ref	This reference defines the GlobalTime Consumer which is synchronized with this Time Base.

Table A.429: SynchronizedTimeBaseConsumer

Class	**SynchronizedTimeBaseProvider**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::TimeSync			
Note	This meta-class represents a Synchronized Time Base Provider.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *TimeBaseResource*			
Aggregated by	TimeSyncModuleInstantiation.timeBase			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
networkTime Provider	GlobalTimeMaster	0..1	ref	This reference defines the GlobalTime Provider which is synchronized with this Time Base.
timeSync Correction	TimeSyncCorrection	0..1	aggr	This aggregation defines the attributes used for the correction of time synchronization.

Table A.430: SynchronizedTimeBaseProvider

Class	**SynchronizedTimeBaseProviderInterface**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class provides the ability to define a PortInterface for the interaction with a Time Synchronization Provider. **Tags:** atp.recommendedPackage=TimeSynchronizationInterfaces			
Base	*ARElement*, *ARObject*, *AbstractSynchronizedTimeBaseInterface*, *AtpBlueprint*, *AtpBlueprintable*, *Atp Classifier*, *AtpType*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *PortInterface*, *Referrable*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
timeBaseKind	TimeSynchronization KindEnum	0..1	attr	Defines which kind of time base is requested at this interface.

Table A.431: SynchronizedTimeBaseProviderInterface

Class	**System**			
Package	M2::AUTOSARTemplates::SystemTemplate			
Note	The top level element of the System Description. **Tags:** atp.recommendedPackage=Systems			
Base	*ARElement*, *ARObject*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element, *AtpClassifier*.atpFeature			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
fibexElement	FibexElement	*	ref	Reference to ASAM FIBEX elements specifying Communication and Topology. All Fibex Elements used within a System Description shall be referenced from the System Element. atpVariation: In order to describe a product-line, all Fibex Elements can be optional. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=fibexElement.fibexElement, fibex Element.variationPoint.shortLabel vh.latestBindingTime=postBuild
interpolation Routine MappingSet	InterpolationRoutine MappingSet	*	ref	This reference identifies the InterpolationRoutineMapping Sets that are relevant in the context of the enclosing System.

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Class	**System**			
mapping	SystemMapping	*	aggr	Aggregation of all mapping aspects relevant in the System Description. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=mapping.shortName, mapping.variation Point.shortLabel vh.latestBindingTime=postBuild
pncVector Length	PositiveInteger	0..1	attr	Length of the partial networking request release information vector (in bytes).
pncVectorOffset	PositiveInteger	0..1	attr	Absolute offset (with respect to the NM-PDU) of the partial networking request release information vector that is defined in bytes as an index starting with 0.
rootSoftware Composition	RootSwComposition Prototype	0..1	aggr	Aggregation of the root software composition, containing all software components in the System in a hierarchical structure. This element is not required when the System description is used for a network-only use-case. atpVariation: The RootSwCompositionPrototype can vary. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=rootSoftwareComposition.shortName, root SoftwareComposition.variationPoint.shortLabel vh.latestBindingTime=systemDesignTime
systemVersion	RevisionLabelString	0..1	attr	Version number of the System Description.

Table A.432: System

Class	**SystemMapping**			
Package	M2::AUTOSARTemplates::SystemTemplate			
Note	The system mapping aggregates all mapping aspects that are relevant in the System Description.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	System.mapping			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
ddsISignalTo TopicMapping	DdsCpISignalToDds TopicMapping	*	aggr	Collection of DdsISignalToDdsTopicMappings. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=ddsISignalToTopicMapping, ddsISignalTo TopicMapping.variationPoint.shortLabel atp.Status=candidate vh.latestBindingTime=postBuild
pncMapping	PncMapping	*	aggr	Mappings between Virtual Function Clusters and Partial Network Clusters. **Stereotypes:** atpSplitable; atpVariation **Tags:** atp.Splitkey=pncMapping, pncMapping.variation Point.shortLabel vh.latestBindingTime=systemDesignTime

Table A.433: SystemMapping

Class	**TDEventComplex**			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription::TimingDescriptionEvents::TDEventComplex			
Note	This is used to describe complex timing events. The context of a complex timing event either is described informally, e.g. using the documentation block, or is described formally by the associated TDEventOccurrenceExpression.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *TimingDescription*, *TimingDescriptionEvent*			
Aggregated by	*TimingExtension*.timingDescription			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.434: TDEventComplex

Class	**TDEventOccurrenceExpression**			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription::TimingDescriptionEvents::TDEventOccurrenceExpression			
Note	This is used to specify a filter on the occurrences of `TimingDescriptionEvent`s by means of a TDEventOccurrenceExpressionFormula. Filter criteria can be `variable` and `argument` values, i.e. the timing event only occurs for specific values, as well as the temporal characteristics of the occurrences of arbitrary timing events.			
Base	*ARObject*			
Aggregated by	*TimingDescriptionEvent*.occurrenceExpression			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
argument	AutosarOperationArgumentInstance	*	aggr	An occurrence expression can reference an arbitrary number of OperationArgumentPrototypes in its expression. This association aggregates instance references to OperationArgumentPrototypes which can be referenced in the expression.
formula	TDEventOccurrenceExpressionFormula	0..1	aggr	This is the expression formula which is used to describe the occurrence expression.
mode	TimingModeInstance	*	aggr	An occurrence expression can reference an arbitrary number of TimingModeInstances in its expression. This association aggregates instance references to Mode Declaration which can be referenced in the expression.
variable	AutosarVariableInstance	*	aggr	An occurrence expression can reference an arbitrary number of VariableDataPrototypes in its expression. This association aggregates instance references to VariableDataPrototypes which can be referenced in the expression.

Table A.435: TDEventOccurrenceExpression

Class	**TDEventOperation**			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription::TimingDescriptionEvents::TDEventVfb			
Note	This is used to describe timing events related to client-server communication at VFB level.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *TDEventVfb*, *TDEventVfbPort*, *TimingDescription*, *TimingDescriptionEvent*			
Aggregated by	*TimingExtension*.timingDescription			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
operation	ClientServerOperation	0..1	ref	The referenced operation.
tdEventOperationType	TDEventOperationTypeEnum	0..1	attr	The specific type of this timing event.

Table A.436: TDEventOperation

Class	**TDEventVariableDataPrototype**			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription::TimingDescriptionEvents::TDEventVfb			
Note	This is used to describe timing events related to sender-receiver communication at VFB level.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *TDEventVfb*, *TDEventVfbPort*, *TimingDescription*, *TimingDescriptionEvent*			
Aggregated by	*TimingExtension*.timingDescription			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
dataElement	VariableDataPrototype	0..1	ref	The referenced VariableDataPrototype
tdEventVariableDataPrototypeType	TDEventVariableDataPrototypeTypeEnum	0..1	attr	The specific type of this timing event.

Table A.437: TDEventVariableDataPrototype

Class	**TagWithOptionalValue**			
Package	M2::AUTOSARTemplates::GenericStructure::GeneralTemplateClasses::TagWithOptionalValue			
Note	A tagged value is a combination of a tag (key) and a value that gives supplementary information that is attached to a model element. Please note that keys without a value are allowed.			
Base	*ARObject*			
Aggregated by	*AbstractServiceInstance*.capabilityRecord, Machine.environmentVariable, ProvidedSomeipServiceInstance.capabilityRecord, RequiredSomeipServiceInstance.capabilityRecord, SdClientConfig.capabilityRecord, SdServerConfig.capabilityRecord, StartupConfig.environmentVariable			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
key	String	0..1	attr	Defines a key.
sequenceOffset	Integer	0..1	attr	The sequenceOffset attribute supports the use case where TagWithOptionalValue is aggregated as splitable. If multiple aggregations define the same value of attribute key then the order in which the value collection is merged might be significant. As an example consider the modeling of the $PATH environment variable by means of a meta class TagWithOptionalValue. The sequenceOffset describes the relative position of each contribution in the concatenated value. The contributions are sorted in increasing integer order.
value	String	0..1	attr	Defines the corresponding value.

Table A.438: TagWithOptionalValue

Enumeration	**TerminationBehaviorEnum**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest
Note	This enumeration provides options for controlling of how a Process terminates.
Aggregated by	StartupConfig.terminationBehavior
Literal	***Description***
processIsNotSelfTerminating	The Process terminates only on request from Execution Management. **Tags:** atp.EnumerationLiteralIndex=0
processIsSelfTerminating	The Process is allowed to terminate without request from Execution Management. **Tags:** atp.EnumerationLiteralIndex=1

Table A.439: TerminationBehaviorEnum

Class	**TextValueSpecification**			
Package	M2::AUTOSARTemplates::CommonStructure::Constants			
Note	The purpose of TextValueSpecification is to define the labels that correspond to enumeration values.			
Base	*ARObject*, *ValueSpecification*			
Aggregated by	ApplicationAssocMapElementValueSpecification.key, ApplicationAssocMapElementValueSpecification.value, ArrayValueSpecification.element, CalibrationParameterValue.applInitValue, CalibrationParameterValue.implInitValue, ConstantSpecification.valueSpec, CryptoServiceKey.developmentValue, DiagnosticEnvDataCondition.compareValue, DiagnosticEnvDataElementCondition.compareValue, FieldSenderComSpec.initValue, ISignal.initValue, ISignal.timeoutSubstitutionValue, MetaDataItem.metaDataItemType, NonqueuedReceiverComSpec.initValue, NonqueuedReceiverComSpec.timeoutSubstitutionValue, NonqueuedSenderComSpec.initValue, NvProvideComSpec.ramBlockInitValue, NvProvideComSpec.romBlockInitValue, NvRequireComSpec.initValue, ParameterDataPrototype.initValue, ParameterProvideComSpec.initValue, ParameterRequireComSpec.initValue, PersistencyDataRequiredComSpec.initValue, PersistencyKeyValuePair.initValue, PortDefinedArgumentValue.value, PortPrototypeBlueprintInitValue.value, RecordValueSpecification.field, SomeipEventDeployment.eventReceptionDefaultValue, *StateManagementCompareCondition*.compareValue, SwDataDefProps.invalidValue, VariableDataPrototype.initValue			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
value	VerbatimString	0..1	attr	This is the value itself. Note that vt uses the | operator to separate the values for the different bitfield masks in case that the semantics of the related DataPrototype is described by means of a BITFIELD_TEXTTABLE in the associated CompuMethod.

Table A.440: TextValueSpecification

Class	**TimeBaseProviderToPersistencyMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::TimeSync			
Note	This meta-class represents the ability to define a mapping between a TimeBaseProvider and a PersistencyDeploymentElement for the purpose of storing and retrieving the time value. **Tags:** atp.recommendedPackage=FCInteractions			
Base	*ARElement*, *ARObject*, *CollectableElement*, *FunctionalClusterInteractsWithFunctionalClusterMapping*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
cyclicBackupInterval	TimeValue	0..1	attr	Time interval in seconds to store the time base value periodically to persistence.
persistencyDeploymentElement	PersistencyDeploymentElement	0..1	ref	This reference represents the PersistencyDeploymentElement where the time value shall be stored in and retrieved from.
timeBaseProvider	SynchronizedTimeBaseProvider	0..1	ref	This reference represents the mapped TimeBaseProvider.

Table A.441: TimeBaseProviderToPersistencyMapping

Class	***TimeBaseResource*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::TimeSync			
Note	This meta-class represents the attributes of one Time Base Resource for Time Synchronization.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Subclasses	SynchronizedTimeBaseConsumer, SynchronizedTimeBaseProvider			
Aggregated by	TimeSyncModuleInstantiation.timeBase			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.442: TimeBaseResource

Class	***TimingDescriptionEvent*** (abstract)			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription			
Note	A timing event is the abstract representation of a specific system behavior – that can be observed at runtime – in the AUTOSAR specification. Timing events are used to define the scope for timing constraints. Depending on the specific scope, the view on the system, and the level of abstraction different types of events are defined. In order to avoid confusion with existing event descriptions in the AUTOSAR templates the timing specific event types use the prefix TD.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *TimingDescription*			
Subclasses	*TDEventCom*, TDEventComplex, *TDEventSLLET*, *TDEventServiceInstance*, *TDEventVfb*			
Aggregated by	*TimingExtension*.timingDescription			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
clockReference	TimingClock	0..1	ref	Optional reference to a clock that holds the time base for an TD event. **Tags:** atp.Status=draft
occurrence Expression	TDEventOccurrence Expression	0..1	aggr	The occurrence expression for this event.

Table A.443: TimingDescriptionEvent

Class	**TimingDescriptionEventChain**			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription			
Note	An event chain describes the causal order for a set of functionally dependent timing events. Each event chain has a well defined stimulus and response, which describe its start and end point. Furthermore, it can be hierarchically decomposed into an arbitrary number of sub-chains, so called *event chain segments*.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *TimingDescription*			
Aggregated by	*TimingExtension*.timingDescription			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
isPipelining Permitted	Boolean	0..1	attr	States whether the scheduled entities in an LET interval shall use pipelined execution or not i.e. "permitted pipelining property" If TRUE, then the scheduled entities must implement pipelining. If FALSE or undefined, no pipelining applies. **Tags:** atp.Status=draft
response	TimingDescriptionEvent	0..1	ref	The response event representing the point in time where the event chain is terminated. **Tags:** xml.sequenceOffset=20
segment	TimingDescriptionEvent Chain	*	ref	A composed event chain consists of an arbitrary number of sub-chains. **Tags:** xml.sequenceOffset=30
stimulus	TimingDescriptionEvent	0..1	ref	The stimulus event representing the point in time where the event chain is activated. **Tags:** xml.sequenceOffset=10

Table A.444: TimingDescriptionEventChain

Class	**TlsCryptoCipherSuite**
Package	M2::AUTOSARTemplates::SystemTemplate::SecureCommunication
Note	This meta-class represents a cipher suite for describing cryptographic operations in the context of establishing a connection of ApplicationEndpoints that is protected by TLS.

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Class	TlsCryptoCipherSuite			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	TlsCryptoServiceMapping.tlsCipherSuite, TlsSecureComProps.tlsCipherSuite			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
authentication	CryptoServicePrimitive	0..1	ref	This reference identifies the crypto service primitive for the generation and verification of MACs.
certificate	CryptoService Certificate	0..1	ref	This reference identifies the applicable local certificate.
cipherSuiteId	PositiveInteger	0..1	attr	Identification of the CipherSuite according to the IANA assignments list.
cipherSuite ShortLabel	String	0..1	attr	Name of the CipherSuite according to the IANA assignments list.
ellipticCurve	CryptoEllipticCurve Props	*	ref	This references point to the properties of elliptic curves.
encryption	CryptoServicePrimitive	0..1	ref	This reference identifies the crypto service primitive for the execution of encryption.
keyExchange	CryptoServicePrimitive	*	ref	This reference identifies the individual (i.e. per cipher suite) crypto service primitive for the execution of key exchange during the handshake phase.
keyExchange Authentication	CryptoServicePrimitive	*	ref	This reference identifies the crypto service primitives for the generation and verification of signatures during the key exchange algorithm.
priority	PositiveInteger	0..1	attr	This attribute identifies the priority of the cipher suite. Range: 1..65535. Lower values represent higher priorities.
props	TlsCryptoCipherSuite Props	0..1	aggr	The aggregated TlsCryptoCipherSuiteProps provide details for the TLS Cipher Suite.
pskIdentity	TlsPskIdentity	0..1	aggr	Pre-shared key identity shared during the handshake among the communication parties, to establish a TLS connection if the handshake is based on the existence of a pre-shared key.
remote Certificate	CryptoService Certificate	0..1	ref	This reference identifies the applicable remote certificate.
signature Scheme	CryptoSignature Scheme	*	ref	This reference points to the properties of a TLS Signature Scheme.
version	TlsVersionEnum	0..1	attr	This attribute supports the definition of the applicable version of TLS.

Table A.445: TlsCryptoCipherSuite

Class	TlsPskIdentity			
Package	M2::AUTOSARTemplates::SystemTemplate::SecureCommunication			
Note	This element is used to describe the pre-shared key shared during the handshake among the communication parties, to establish a TLS connection if the handshake is based on the existence of a pre-shared key.			
Base	*ARObject*			
Aggregated by	TlsCryptoCipherSuite.pskIdentity			
Attribute	**Type**	**Mult.**	**Kind**	**Note**
preSharedKey	CryptoServiceKey	0..1	ref	This reference identifies the applicable cryptographic key.
pskIdentity	String	0..1	attr	This attribute provides the key identification.
pskIdentityHint	String	0..1	attr	This attribute provides the identity hint for a pre-shared key.

Table A.446: TlsPskIdentity

Class	**TlsSecureComProps**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::SecureCommunication			
Note	Configuration of the Transport Layer Security protocol (TLS). **Tags:** atp.recommendedPackage=SecureComProps			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *SecureComProps*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
keyExchange	CryptoServicePrimitive	*	ref	This reference identifies the shared (i.e. applicable for each of the aggregated cipher suites) crypto service primitive for the execution of key exchange during the handshake phase.
tlsCipherSuite	TlsCryptoCipherSuite	*	aggr	Collection of supported cipher suites that are used to negotiate the security settings for a network connection defined by the ServiceInstanceToMachineMapping.

Table A.447: TlsSecureComProps

Class	**TlvDataIdDefinition**			
Package	M2::AUTOSARTemplates::SystemTemplate::Transformer			
Note	This meta-class represents the ability to define the tlvDataId.			
Base	*ARObject*			
Aggregated by	TlvDataIdDefinitionSet.tlvDataIdDefinition			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
id	PositiveInteger	0..1	attr	This attribute represents the definition of the value of the TlvDataId **Stereotypes:** atpIdentityContributor
tlvArgument	ArgumentDataPrototype	0..1	ref	This reference assigns a tlvDataId to a given argument of a ClientServerOperation.
tlv Implementation DataType Element	AbstractImplementation DataTypeElement	0..1	ref	This reference associates the definition of a TLV data id with a given AbstractImplementationDataTypeElement.
tlvRecord Element	ApplicationRecord Element	0..1	ref	This reference associates the definition of a TLV data id with a given ApplicationRecordElement.

Table A.448: TlvDataIdDefinition

Class	**TraceSwitchConfiguration**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationStructure			
Note	This class maps a DltMessage to a trace switch type. **Tags:** atp.Status=draft			
Base	*ARObject*			
Aggregated by	Executable.traceSwitchConfiguration			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
traceMessage	DltMessage	0..1	ref	Reference to the DltMessage that has to be routed in the trace switch **Tags:** atp.Status=draft

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Class	**TraceSwitchConfiguration**			
traceSwitch	TraceSwitchEnum	0..1	attr	Defines how the message is routed, either to • ARTI trace, • Logger (default), • ARTI trace and logger • None **Tags:** atp.Status=draft

Table A.449: TraceSwitchConfiguration

Class	**TransformationPropsToServiceInterfaceElementMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationStructure			
Note	This meta-class represents the ability to associate a ServiceInterface element with TransformationProps. The referenced elements of the Service Interface will be serialized according to the settings defined in the TransformationProps. **Tags:** atp.recommendedPackage=TransformationPropsToServiceInterfaceElementMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
event	VariableDataPrototype	*	ref	This represents the reference to one or several events of one ServiceInterface.
field	Field	*	ref	This represents the reference to one or several fields of one ServiceInterface.
methodCall	ClientServerOperation	*	ref	This represents the reference to one or several method calls of one ServiceInterface.
methodReturn	ClientServerOperation	*	ref	This represents the reference to one or several method return of one ServiceInterface.
tlvDataId Definition	TlvDataIdDefinitionSet	*	ref	This reference identifies the TlvDataIdDefinitions relevant for the enclosing TransformationPropsToServiceInterface Mapping.
transformation Props	TransformationProps	0..1	ref	This represents the reference to the applicable Serialization properties.
trigger	Trigger	*	ref	This represents the reference to one or several triggers of one ServiceInterface.

Table A.450: TransformationPropsToServiceInterfaceElementMapping

Enumeration	**TransportLayerProtocolEnum**
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment
Note	This enumeration allows to choose a TCP/IP transport layer protocol.
Aggregated by	SomeipEventDeployment.transportProtocol, SomeipMethodDeployment.transportProtocol
Literal	***Description***
tcp	Transmission control protocol **Tags:** atp.EnumerationLiteralIndex=1
udp	User datagram protocol **Tags:** atp.EnumerationLiteralIndex=0

Table A.451: TransportLayerProtocolEnum

Class	**Trigger**			
Package	M2::AUTOSARTemplates::CommonStructure::TriggerDeclaration			
Note	The Trigger represents a special kind of an event (without data) at which occurrence the Service Consumer shall react in a particular manner.			
Base	*ARObject*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	*AtpClassifier*.atpFeature, BswModuleDescription.releasedTrigger, BswModuleDescription.requiredTrigger, ServiceInterface.trigger, TriggerInterface.trigger			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.452: Trigger

Class	**UcmDescription**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to define an identifier for a given UCM.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	VehiclePackage.ucm			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
identifier	String	0..1	attr	This attribute represents the unique identification of the UcmIdentifier.
ucmModule Instantiation	UcmModuleInstantiation	0..1	ref	This reference identifies the applicable UcmModule Instantiation. **Stereotypes:** atpUriDef

Table A.453: UcmDescription

Class	**UcmMasterModuleInstantiation**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Ucm			
Note	This meta-class represents the ability to define the deployment of a UCM Master instantiation.			
Base	*ARObject*, *AdaptiveModuleInstantiation*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *NonOsModuleInstantiation*, *Referrable*, *UcmModuleInstantiation*			
Aggregated by	*AtpClassifier*.atpFeature, Machine.moduleInstantiation			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
block Inconsistent	UcmRetryStrategy	0..1	aggr	This attribute defines the retry strategy of the UCM Master for the case that the block is inconsistent.
serviceBusy	UcmRetryStrategy	0..1	aggr	This attribute defines the retry strategy of the UCM Master for the case that the service is busy.
updateSession Rejected	UcmRetryStrategy	0..1	aggr	This attribute defines the retry strategy of the UcmMaster for the case that the update session is rejected.

Table A.454: UcmMasterModuleInstantiation

Class	***UcmModuleInstantiation*** (abstract)
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Ucm
Note	This meta-class represents the ability to define the deployment of a UCM instantiation.
Base	*ARObject*, *AdaptiveModuleInstantiation*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *NonOsModuleInstantiation*, *Referrable*
Subclasses	UcmMasterModuleInstantiation, UcmSubordinateModuleInstantiation
Aggregated by	*AtpClassifier*.atpFeature, Machine.moduleInstantiation

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Class	***UcmModuleInstantiation*** (abstract)			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
identifier	String	0..1	attr	This represents the identification of a UCM.
maxBlockSize	PositiveInteger	0..1	attr	This attribute denotes the maximum block size (unit: bytes) used in the UCM implementation.
version	StrongRevisionLabelString	0..1	attr	This attribute defines the software version of the UCM on this platform. Note that the definition of the version is required if the ability of the SoftwarePackage to require a minimum version of the UCM is utilized.

Table A.455: UcmModuleInstantiation

Class	**UcmRetryStrategy**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Ucm			
Note	This meta-class describes the configuration of the retry strategy for a sub-class of UcmModule Implementation.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	UcmMasterModuleInstantiation.blockInconsistent, UcmMasterModuleInstantiation.serviceBusy, UcmMasterModuleInstantiation.updateSessionRejected, UcmSubordinateModuleInstantiation.prepareRollback, UcmSubordinateModuleInstantiation.prepareUpdate, UcmSubordinateModuleInstantiation.verifyUpdate			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
maximumNumberOfRetries	PositiveInteger	0..1	attr	This attribute defines the maximum number of time the UCM module instantiation shall attempt a retry.
retryIntervalTime	TimeValue	0..1	attr	This attribute defines the time (in seconds) between two retry attempts.

Table A.456: UcmRetryStrategy

Class	**UcmSubordinateModuleInstantiation**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Ucm			
Note	This meta-class represents the ability to define the deployment of a UCM Subordinate instantiation.			
Base	*ARObject*, *AdaptiveModuleInstantiation*, *AtpClassifier*, *AtpFeature*, *AtpStructureElement*, *Identifiable*, *MultilanguageReferrable*, *NonOsModuleInstantiation*, *Referrable*, *UcmModuleInstantiation*			
Aggregated by	*AtpClassifier*.atpFeature, Machine.moduleInstantiation			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
maxAvailablePersistencyStorageSpace	PositiveInteger	0..1	attr	This attribute names the maximum amount of space available for persistent data handled by the Persistency of installed packages. The UCM needs to figure out from traversing the minimum storage requirement from existing PersistencyDeployments whether specific packages can be installed from the perspective of available storage space. Note that the minimum storage requirement of PersistencyDeployment needs to include space for the handling of the storage, which shall be calculated by the tooling that creates the manifest information inside the package.
prepareRollback	UcmRetryStrategy	0..1	aggr	This attribute identifies the configuration of prepare rollback retries initiated by the Ucm Subordinate.

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Class	**UcmSubordinateModuleInstantiation**			
prepareUpdate	UcmRetryStrategy	0..1	aggr	This attribute identifies the configuration of prepare update retries initiated by the Ucm Subordinate.
verifyUpdate	UcmRetryStrategy	0..1	aggr	This attribute identifies the configuration of verify update retries initiated by the Ucm Subordinate.

Table A.457: UcmSubordinateModuleInstantiation

Class	**UdpNmCluster**			
Package	M2::AUTOSARTemplates::SystemTemplate::NetworkManagement			
Note	Udp specific NmCluster attributes			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *NmCluster*, *Referrable*			
Aggregated by	NmConfig.nmCluster			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
network Configuration	UdpNmNetwork Configuration	0..1	aggr	Configuration of a UDP port and UDP multicast IP address of the Nm communication on a VLAN.
nmCbvPosition	Integer	0..1	attr	Defines the position of the control bit vector within the Nm Pdu (Byte position). If this attribute is not configured, the Control Bit Vector is not used.
nmImmediate NmCycleTime	TimeValue	0..1	attr	Defines the immediate NmPdu cycle time in seconds which is used for nmImmediateNmTransmissions NmPdu transmissions. This attribute is only valid if nmImmediate NmTransmissions is greater one.
nmImmediate Nm Transmissions	PositiveInteger	0..1	attr	Defines the number of immediate NmPdus which shall be transmitted. If the value is zero no immediate NmPdus are transmitted. The cycle time of immediate NmPdus is defined by nmImmediateNmCycleTime.
nmMsgCycle Time	TimeValue	0..1	attr	Period of a NmPdu in seconds. It determines the periodic rate in the periodic transmission mode with bus load reduction and is the basis for transmit scheduling in the periodic transmission mode without bus load reduction.
nmNetwork Timeout	TimeValue	0..1	attr	Network Timeout for NmPdus in seconds. It denotes the time how long the UdpNm shall stay in the Network Mode before transition into Prepare Bus-Sleep Mode shall take place.
nmNidPosition	Integer	0..1	attr	Defines the byte position of the source node identifier within the NmPdu. If this attribute is not configured, the Node Identification is not used.
nmRepeat MessageTime	TimeValue	0..1	attr	Timeout for Repeat Message State in seconds. Defines the time how long the NM shall stay in the Repeat Message State.
nmUserData Length	Integer	0..1	attr	Defines the length in bytes of the user data contained in the Nm message. User data excludes the PNC bit vector.
nmUserData Offset	PositiveInteger	0..1	attr	Specifies the offset (in bytes) of the user data information in the NM message. User data excludes the PNC bit vector.
nmWaitBus SleepTime	TimeValue	0..1	attr	Timeout for bus calm down phase in seconds. It denotes the time how long the CanNm shall stay in the Prepare Bus-Sleep Mode before transition into Bus-Sleep Mode shall take place.
vlan	EthernetPhysical Channel	0..1	ref	Reference to the vlan (represented by the Ethernet PhysicalChannel) this UdpNmCluster shall apply to.

Table A.458: UdpNmCluster

Class	**UdpNmNetworkConfiguration**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SystemDesign			
Note	This meta-class defines the attributes for the configuration of a UDP port and UDP multicast IP address of the Nm communication on a VLAN.			
Base	*ARObject*			
Aggregated by	UdpNmCluster.networkConfiguration			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
ipv4MulticastIp Address	Ip4AddressString	0..1	attr	Multicast IPv4 Address to which the message will be transmitted.
ipv6MulticastIp Address	Ip6AddressString	0..1	attr	Multicast IPv6 Address to which the message will be transmitted
priority	PositiveInteger	0..1	attr	This attribute defines the VLAN frame priority for messages on the Socket defined by the udpPort and the multicast IP address. Values from 0 (best effort) to 7 (highest) are allowed.
udpPort	PositiveInteger	0..1	attr	This attribute allows to configure a udp port number that is used for reception and transmission of UdpNm messages.

Table A.459: UdpNmNetworkConfiguration

Class	***UploadableExclusivePackageElement*** (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::General			
Note	This meta-class represents an abstract base class for an uploadable package element that is not supposed to be referenced from a different software cluster.			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Subclasses	*PersistencyDeployment*, *PersistencyPortPrototypeToDeploymentMapping*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.460: UploadableExclusivePackageElement

Class	**UserDefinedCommunicationConnector**			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::CddSupport			
Note	This element allows the modeling of arbitrary Communication Connectors.			
Base	*ARObject*, *CommunicationConnector*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	EcuInstance.connector, MachineDesign.communicationConnector			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.461: UserDefinedCommunicationConnector

Class	**UserDefinedEventDeployment**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	UserDefined configuration settings for an Event.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *ServiceEventDeployment*			
Aggregated by	*ServiceInterfaceDeployment*.eventDeployment, UserDefinedFieldDeployment.notifier			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
–	–	–	–	–

Table A.462: UserDefinedEventDeployment

Class	**UserDefinedFieldDeployment**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	UserDefined configuration settings for a Field.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *ServiceFieldDeployment*			
Aggregated by	*ServiceInterfaceDeployment*.fieldDeployment			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
get	UserDefinedMethod Deployment	0..1	aggr	This aggregation represents the settings of the get method
notifier	UserDefinedEvent Deployment	0..1	aggr	This aggregation represents the settings of the notifier.
set	UserDefinedMethod Deployment	0..1	aggr	This aggregation represents the settings of the set method

Table A.463: UserDefinedFieldDeployment

Class	**UserDefinedMethodDeployment**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	UserDefined configuration settings for a Method.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*, *ServiceMethodDeployment*			
Aggregated by	*ServiceInterfaceDeployment*.methodDeployment, UserDefinedFieldDeployment.get, UserDefinedField Deployment.set			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.464: UserDefinedMethodDeployment

Class	**UserDefinedServiceInstanceToMachineMapping**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceMapping			
Note	This meta-class allows to map UserDefinedServiceInstances to a CommunicationConnector of a Machine. **Tags:** atp.recommendedPackage=ServiceInstanceToMachineMappings			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *ServiceInstanceToMachineMapping*, *UploadableDesignElement*, *Uploadable PackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.465: UserDefinedServiceInstanceToMachineMapping

Class	**UserDefinedServiceInterfaceDeployment**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	UserDefined configuration settings for a ServiceInterface. **Tags:** atp.recommendedPackage=ServiceInterfaceDeployments			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *PackageableElement*, *Referrable*, *ServiceInterfaceDeployment*, *UploadableDesignElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	*Type*	*Mult.*	*Kind*	*Note*
–	–	–	–	–

Table A.466: UserDefinedServiceInterfaceDeployment

Class	***ValueSpecification*** (abstract)			
Package	M2::AUTOSARTemplates::CommonStructure::Constants			
Note	Base class for expressions leading to a value which can be used to initialize a data object.			
Base	*ARObject*			
Subclasses	*AbstractRuleBasedValueSpecification*, ApplicationValueSpecification, *CompositeValueSpecification*, ConstantReference, NotAvailableValueSpecification, NumericalValueSpecification, ReferenceValueSpecification, TextValueSpecification			
Aggregated by	ApplicationAssocMapElementValueSpecification.key, ApplicationAssocMapElementValueSpecification.value, ArrayValueSpecification.element, CalibrationParameterValue.applInitValue, CalibrationParameterValue.implInitValue, ConstantSpecification.valueSpec, CryptoServiceKey.developmentValue, DiagnosticEnvDataCondition.compareValue, DiagnosticEnvDataElementCondition.compareValue, FieldSenderComSpec.initValue, ISignal.initValue, ISignal.timeoutSubstitutionValue, NonqueuedReceiverComSpec.initValue, NonqueuedReceiverComSpec.timeoutSubstitutionValue, NonqueuedSenderComSpec.initValue, NvProvideComSpec.ramBlockInitValue, NvProvideComSpec.romBlockInitValue, NvRequireComSpec.initValue, ParameterDataPrototype.initValue, ParameterProvideComSpec.initValue, ParameterRequireComSpec.initValue, PersistencyDataRequiredComSpec.initValue, PersistencyKeyValuePair.initValue, PortDefinedArgumentValue.value, PortPrototypeBlueprintInitValue.value, RecordValueSpecification.field, SomeipEventDeployment.eventReceptionDefaultValue, *StateManagementCompareCondition*.compareValue, SwDataDefProps.invalidValue, VariableDataPrototype.initValue			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
shortLabel	Identifier	0..1	attr	This can be used to identify particular value specifications for human readers, for example elements of a record type.

Table A.467: ValueSpecification

Class	**VariableDataPrototype**			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::DataPrototypes			
Note	A VariableDataPrototype represents a formalized generic piece of information that is typically mutable by the application software layer. VariableDataPrototype is used in various contexts and the specific context gives the otherwise generic VariableDataPrototype a dedicated semantics.			
Base	*ARObject*, *AtpFeature*, *AtpPrototype*, *AutosarDataPrototype*, *DataPrototype*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	ApplicationInterface.indication, *AtpClassifier*.atpFeature, BswInternalBehavior.arTypedPerInstanceMemory, BswModuleDescription.providedData, BswModuleDescription.requiredData, BulkNvDataDescriptor.bulkNvBlock, *InternalBehavior*.staticMemory, NvBlockDescriptor.ramBlock, NvDataInterface.nvData, SenderReceiverInterface.dataElement, ServiceInterface.event, SwcInternalBehavior.arTypedPerInstanceMemory, SwcInternalBehavior.explicitInterRunnableVariable, SwcInternalBehavior.implicitInterRunnableVariable			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
initValue	ValueSpecification	0..1	aggr	Specifies initial value(s) of the VariableDataPrototype

Table A.468: VariableDataPrototype

Class	**VehicleDriverNotification**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class provides the ability to configure a notification of the vehicle driver with respect to the update of vehicle software.			
Base	*ARObject*			
Aggregated by	VehiclePackage.driverNotification			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
approvalRequired	Boolean	0..1	attr	This attribute controls whether approval is required for the driver notification.
notificationState	VehicleDriverNotificationEnum	0..1	attr	This attribute is used to configure the notification state.

Table A.469: VehicleDriverNotification

Class	**VehiclePackage**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to define a vehicle package for executing an update campaign. **Tags:** atp.recommendedPackage=VehiclePackages			
Base	*ARElement*, *ARObject*, *CollectableElement*, *Identifiable*, *MultilanguageReferrable*, *Packageable Element*, *Referrable*, *UploadableDeploymentElement*, *UploadablePackageElement*			
Aggregated by	ARPackage.element			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
driver Notification	VehicleDriver Notification	*	aggr	This aggregation provides the ability to configure the necessary driver notifications.
estimated DurationOf Campaign	TimeValue	0..1	attr	This attribute provides an estimation about how long the campaign based on the VehiclePackage is going to take.
maximum DurationOf Campaign	TimeValue	0..1	attr	Maximum time allowed for the campaign to be active until UCM Master automatically cancels the campaign.
minimum SupportedUcm MasterVersion	RevisionLabelString	0..1	attr	This attribute identifies the minimum supported version of the UCM Master for this VehiclePackage.
packager Signature	CryptoService Certificate	0..1	ref	This reference identifies the certificate that represents the packager's signature.
repository	UriString	0..1	attr	This attribute identifies the repository where the Vehicle Package is stored.
rollout Qualification (ordered)	VehicleRolloutStep	*	aggr	This represents the rollout qualification.
ucm	UcmDescription	*	aggr	This aggregation represents the UcmDescriptions to be considered in the context of the VehiclePackage.
ucmMaster Fallback (ordered)	UcmDescription	*	ref	This reference lists the fallback order of Ucms that can take over the master role if the master goes down.
vehicle Description	Documentation	0..1	ref	This reference identifies the vehicle description.

Table A.470: VehiclePackage

Class	**VehicleRolloutStep**			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to define a rollout-condition for a vehicle update campaign.			
Base	*ARObject*, *Identifiable*, *MultilanguageReferrable*, *Referrable*			
Aggregated by	VehiclePackage.rolloutQualification			
Attribute	***Type***	***Mult.***	***Kind***	***Note***
safetyCondition	String	*	attr	This attribute represents a list of textual safety conditions (e.g.: close the driver window) that need to be fulfilled before the rollout step can proceed and need to be maintained while the campaign's rolloutQualification is executed.
ucmProcessing	UcmStep	*	aggr	This aggregation collects the UcmProcessingSteps that make up the rollout step.
violatedSafety Condition Behavior	ViolatedSafetyCondition BehaviorEnum	0..1	attr	This attribute provides options for the configuration of the reaction to a violated safety condition.

Table A.471: VehicleRolloutStep