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References

- [1] SOME/IP Protocol Specification
AUTOSAR_PRS_SOMEIPProtocol
- [2] Information technology – Universal Coded Character Set (UCS)
<http://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 TPS_AdaptivePlatformTimingExtensions

[constr_4569]{DRAFT} Restricted usage of functions [The functions *TIMEX_occurs*, *TIMEX_hasOccurred*, *TIMEX_timeSinceLastOccurrence*, *TIMEX_angleSinceLastOccurrence*, and *TIMEX_modeActive* can only be used for occurrence expressions, which are applied to events of type *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 *TimingDescriptionEvents*.

]()

[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 *AutosarOperationArgumentInstances* 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 spec-

ified such that the following holds: $0 \leq \text{minNumberOfOccurrences} \leq \text{maxNumberOfOccurrences}$.

]()

[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: $0 < \text{minimumInterArrivalTime} \leq \text{patternLength}$.

]()

[constr_4576]{DRAFT} Specifying pattern length, pattern jitter and pattern period

[The pattern length, pattern jitter and pattern period shall be specified such that the following holds: $\text{patternLength} + \text{patternJitter} < \text{patternPeriod}$.

]()

[constr_4577]{DRAFT} TDEventVfb shall reference PortPrototypeBlueprint only in Blueprints [An event type `TDEventVfb` only shall reference `PortPrototypeBlueprint` in blueprints.

]()

[constr_4578]{DRAFT} Only VfbTiming shall be a Blueprint [Only the `VfbTiming` is blueprintable.

]()

[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: $0 \leq \max(\text{offset}) \leq \text{patternLength}$.

]()

[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: $\text{patternLength} + \text{patternJitter} < \text{patternPeriod}$.

]()

[constr_4591]{DRAFT} Use only Numericals in TEventOccurrenceExpression
 [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 `TEventVariableDataPrototype`. 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`.

]()

2.2 TPS_ManifestSpecification

[constr_1473]{DRAFT} No support for PRPortPrototype [A `ServiceInterface` shall not be referenced by a `PRPortPrototype` in the role `providedRequiredInterface`.

]()

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

Attributes of SwDataDefProps	Root Elem.		Attribute Existence per Category
	<code>ApplicationAssocMapDataType</code>	<code>ApplicationAssocMapElement</code>	<code>ASSOCIATIVE_MAP</code>
<code>additionalNativeTypeQualifier</code>			
<code>annotation</code>	x	x	*
<code>baseType</code>			
<code>compuMethod</code>			
<code>dataConstr</code>			
<code>displayFormat</code>	x	x	0..1
<code>implementationDataType</code>			
<code>invalidValue</code>			



△

stepSize			
swAddrMethod			
swAlignment			
swBitRepresentation			
swCalibrationAccess			
swCalprmAxisSet			
swComparisonVariable			
swDataDependency			
swHostVariable			
swImplPolicy			
swIntendedResolution			
swInterpolationMethod			
swIsVirtual			
swPointerTargetProps			
swRecordLayout			
swRefreshTiming			
swTextProps			
swValueBlockSize			
unit			
valueAxisDataType			
Other Attributes below the Root Element			
key: ApplicationAssocMapElement	x		1
value: ApplicationAssocMapElement	x		1

]()

[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`.

]()

[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`.

]()

[constr_1488]{DRAFT} Initialization of a `DataPrototype` typed by an `ApplicationAssocMapDataType` [A `DataPrototype` typed by an `ApplicationAssocMapDataType` shall only be initialized by an `ApplicationAssocMapValueSpecification`.

]()

[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.

]()

[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]).

]()

[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`.

]()

[constr_1494]{DRAFT} Initial value for `event` [An `ServiceInterface.event` shall **not** have an `initValue`.

]()

[constr_1507]{DRAFT} `PortInterfaceToDataTypeMapping` is only applicable to `ServiceInterface` or `PersistencyKeyValueStorageInterface` [Port-InterfaceToDataTypeMapping.portInterface shall only refer to **either** a `ServiceInterface` **or** a `PersistencyKeyValueStorageInterface`.

]()

[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`.

]()

[constr_1543]{DRAFT} Only one physical address per `SoftwareCluster.diagnosticDeploymentProps` [Each `SoftwareClusterDiagnosticDeploymentProps` shall only aggregate one `SoftwareClusterDiagnosticAddress` where the value of attribute `addressSemantics` is set to `SoftwareClusterDiagnosticAddressSemanticsEnum.physicalAddress`.

]()

[constr_1549]{DRAFT} Value of `ProcessorCore.coreId` [The value of `ProcessorCore.coreId` shall be unique in the context of the enclosing `Processor`.

]()

[constr_1550]{DRAFT} Reference from `Process` to `ProcessDesign` [Each `ProcessDesign` shall only be referenced from a single `Process`.

]()

[constr_1551]{DRAFT} Existence of `DataPrototypeInServiceInterfaceRef.dataPrototype` vs. `DataPrototypeInServiceInterfaceRef.elementInImplDatatype` [For every given `DataPrototypeInServiceInterfaceRef`, either the aggregation `DataPrototypeInServiceInterfaceRef.dataPrototype` or `DataPrototypeInServiceInterfaceRef.elementInImplDatatype` shall exist.

]()

[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`.

]()

[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`.

]()

[constr_1555]{DRAFT} Restriction applicable for `PersistencyPortPrototypeToKeyValueStorageMapping.portPrototype` [The reference `PersistencyPortPrototypeToKeyValueStorageMapping.portPrototype` shall only be used for a `PortPrototype` typed by a `PersistencyKeyValueStorageInterface`.

]()

[constr_1556]{DRAFT} Restriction applicable for `PersistencyPortPrototypeToFileStorageMapping.portPrototype` [The reference `PersistencyPortPrototypeToFileStorageMapping.portPrototype` shall only be used for a `PortPrototype` typed by a `PersistencyFileStorageInterface`.

]()

[constr_1560]{DRAFT} Usage of `SoftwareClusterDesign.requiredARElement` [The reference `SoftwareClusterDesign.requiredARElement` shall not be used to refer to another `SoftwareClusterDesign` or even `SoftwareCluster`.

]()

[constr_1566]{DRAFT} Usage of `SoftwareCluster.containedARElement` [The reference `SoftwareCluster.containedARElement` shall not be used to refer to a `SoftwareCluster` or a `SoftwareClusterDesign`.

]()

[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 `UserDefinedCommunicationConnector`.

]()

[constr_1571]{DRAFT} `CppImplementationDataType` is limited [The usage of a `CppImplementationDataType` is limited to the context of `AdaptiveAppli-`

`cationSwComponentTypes` and `CompositionSwComponentTypes` defined in the context of an `Executable`.

]()

[constr_1572]{DRAFT} Usage of `SwDataDefProps.implementationDataType` within a `CppImplementationDataType` [Within the scope of a `CppImplementationDataType` the reference `CppImplementationDataType.swDataDefProps.implementationDataType` shall not exist.

]()

[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.

]()

[constr_1578]{DRAFT} Applicable data categories [

Category	Applicable to ...								Description
	<code>ApplicationArrayDataType</code>	<code>ApplicationRecordDataType</code>	<code>ApplicationPrimitiveDataType</code>	<code>ApplicationRecordElement</code>	<code>ApplicationArrayElement</code>	<code>ApplicationValueSpecification</code>	<code>StdCppImplementationDataType</code>	<code>CustomCppImplementationDataType</code>	
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 <code>CppImplementationDataType.typeReference</code>).
STRUCTURE		x		x	x		x		Holds one or several further elements which can have different <code>AutosarDataTypes</code> . See also [TPS_MANI_03180].
VARIANT							x	x	Can hold values of different data types. It is similar to <code>STRUCTURE</code> except that all of its members start at the same location in memory. A <code>VARIANT</code> data prototype can contain only one of its elements at a time and represents a type-safe union. The size of the <code>VARIANT</code> 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].





Category	Applicable to ...								Description
	ApplicationArrayDataType	ApplicationRecordDataType	ApplicationPrimitiveDataType	ApplicationRecordElement	ApplicationArrayElement	ApplicationValueSpecification	StdCppImplementationDataType	CustomCppImplementationDataType	
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.

]()

[constr_1579]{DRAFT} **SwDataDefProps** applicable to **CppImplementation-DataTypes** 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									





Attributes of SwDataDefProps	Root Element	Attribute Existence per Category							
	CppImplementationDataType	VALUE	TYPE_REFERENCE	STRUCTURE	VARIANT	ARRAY	VECTOR	ASSOCIATIVE_MAP	STRING
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									
Other Attributes									
subElement: CppImplementationDataTypeElement	x			1..*					
templateArgument	x				1..*	1	1..*	2..*	0..1
typeReference	x		1						

]()

[constr_1581]{DRAFT} Value of **fileElement.fileName** [Within the scope of any given **PersistencyFileStorageInterface**, the value of all **fileElement.fileName** shall be unique.

]()

[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`.

]()

[constr_1589]{DRAFT} Value of `file.fileName` [Within the scope of any given `PersistencyFileStorage`, the value of all `file.fileName` shall be unique.

A `fileName` is considered unique if there are no other `fileNames` with **exactly** the same sequence of characters¹.

]()

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

]()

[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`.

]()

[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`.

]()

[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`

¹The characters “x” and “X” are not considered as identical characters for this purpose.

- `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`.

]()

[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`.

]()

[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`.

]()

[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`.

]()

[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`.

]()

[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`.

]()

[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 `Application-`

`RecordDataType` then further `TlvDataIdDefinition.tlvRecordElement` shall exist **for all** elements of the given `ApplicationRecordDataType` and all affected `TlvDataIdDefinition` shall be aggregated by the same `TransformationPropsToServiceInterfaceElementMapping`.

]()

[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`.

]()

[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).

]()

[constr_1606]{DRAFT} Processes with mutual `ExecutionDependency`s [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`.

]()

[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`.

]()

[constr_1614]{DRAFT} Existence of attribute `TransformationPropsToServiceInterfaceElementMapping.transformationProps.sessionHandling` [The attribute `ApSomeEipTransformationProps.sessionHandling` shall only exist if the `TransformationPropsToServiceInterfaceElementMapping` that

refers to the respective `ApSomeipTransformationProps` in the role `transformationProps` does **not** refer to a `ClientServerOperation` in the role `method`.

]()

[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`.

]()

[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`.

]()

[constr_1625]{DRAFT} Existence of reference `ApApplicationError.errorDomain` [For each `ApApplicationError`, the reference `errorDomain` shall exist.

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.

]()

[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.

]()

[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`).

]()

[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.

]()

[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`

]()

[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`

]()

[constr_1661]{DRAFT} Multiplicity of `OsModuleInstantiation.resourceGroup` [Any given `OsModuleInstantiation` shall always define at least one `resourceGroup`.

]()

[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.

]()

[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.

]()

[constr_1666]{DRAFT} References from `PersistencyPortPrototypeToKeyValueStorageMapping` to `PersistencyKeyValueStorage` [Each `PersistencyKeyValueStorage` shall only be referenced by at most one `PersistencyPortPrototypeToKeyValueStorageMapping`.

]()

[constr_1667]{DRAFT} References from `PersistencyPortPrototypeToFileStorageMapping` to `PersistencyFileStorage` [Each `Persisten-`

`cyFileStorage` shall only be referenced by at most one `PersistencyPortPrototypeToFileStorageMapping`.

]()

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

	8	16	32	64
<code>CRC_J1850</code>	X			
<code>CRC_CCITT_FALSE</code>		X		
<code>CRC_ETHERNET</code>			X	
<code>CRC_0x42F0E1EBA9EA3693</code>				X
<code>CRC_8H2F</code>	X			
<code>CRC_16ARC</code>		X		
<code>CRC_32P4</code>			X	

]()

[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`.

]()

[constr_1675]{DRAFT} Existence of attribute `ApSomeipTransformationProps.stringEncoding` [The attribute `TransformationPropsToServiceInterfaceElementMapping.transformationProps.stringEncoding` shall only exist for a `event`, `method` or `field` (referenced by the same `TransformationPropsToServiceInterfaceElementMapping`) that consists of or contains a `DataPrototype` typed by a `CppImplementationDataType` of category `STRING`.

]()

[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`.

]()

[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.

]()

[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]

]()

[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`).

]()

[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`.

]()

[constr_1690]{DRAFT} `SoftwareCluster` shall only be referenced by a single **SoftwarePackage.** [Each `SoftwareCluster` shall only be referenced by a single `SoftwarePackage`.

]()

[constr_1691]{DRAFT} UcmModuleInstantiation.identifier shall be unique
[The value of attribute `UcmModuleInstantiation.identifier` shall be unique for each `Machine` in a given vehicle.

]()

[constr_1692]{DRAFT} Value of schedulingPriority [The value of attribute `StartupConfig.schedulingPriority` shall be set to a positive integer value.

]()

[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`.

]()

[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`.

]()

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

- `fireAndForget`
- `possibleApError`
- `possibleApErrorSet`

]()

[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 n^{th} 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`.

]()

[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.

]()

[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 `PersistencyRedundancyHandling` aggregated by the corresponding `PersistencyDeployment`.

]()

[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.

]()

[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`.

]()

[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`.

]()

[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`.

]()

[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`.

]()

[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.

]()

[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.

]()

[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.

]()

[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.

]()

[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.

]()

[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.]
]()

[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

]()

[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`.

]()

[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]`.]

]()

[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 integration into a `SoftwareCluster` is finished**.]

]()

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

]()

[constr_1770]{DRAFT} Value of `ProvidedSomeipServiceInstance.serviceInstanceId` [For each `ProvidedSomeipServiceInstance.serviceInstanceId`, the value shall be in the range 0..65534.

]()

[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.

]()

[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`. [\[constr_1784\]](#) 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`.

]()

[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 `ModeDeclarationGroupPrototype` (as context) that is also referenced by the same `SoftwareCluster` in the role `claimedFunctionGroup`.

]()

[constr_1788]{DRAFT} Restriction to `SoftwareCluster` of category `PLATFORM_CORE` [On each `Machine`, only a single `SoftwareCluster` of category `PLATFORM_CORE` shall be deployed.

]()

[constr_1789]{DRAFT} Scope of machine Function Group [The `functionGroup` that represents the Function Group group (see [\[TPS_MANI_01330\]](#)) shall

only be referenced in the role `claimedFunctionGroup` by a `SoftwareCluster` of category `PLATFORM_CORE`.

]()

[constr_3287]{DRAFT} Mandatory information of a `ProvidedSomeipServiceInstance` [The `ProvidedSomeipServiceInstance` shall always define the `serviceInstanceId`.

]()

[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].

]()

[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`.

]()

[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 `serviceInterface` that contains the `ServiceMethodDeployment`.

]()

[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`.

]()

[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`.

]()

[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`.

]()

[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`.

]()

[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`.

]()

[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`.

]()

[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`.

]()

[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 Ma-

`chineDesign` with a `SomeipServiceInstanceToMachineMapping` with a configured `tcpPort`.

}]()

[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.

}]()

[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*.

}]()

[constr_3351]{DRAFT} SOME/IP segmentation allowed for `udp SomeipEventDeployments` [Attribute `SomeipEventDeployment.maximumSegmentLength` shall only be used if the value of attribute `SomeipEventDeployment.transportProtocol` is set to `udp`.

}]()

[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`.

}]()

[constr_3353]{DRAFT} Restriction in usage of `ApSomeipTransformationProps.sizeOfArrayLengthField` [The value of the attribute `sizeOfArrayLengthField` shall be either 0, 1, 2 or 4.

}]()

[constr_3354]{DRAFT} Restriction in usage of `ApSomeipTransformationProps.sizeOfStructLengthField` [The value of the attribute `sizeOfStructLengthField` shall be either 0, 1, 2 or 4.

}]()

[constr_3355]{DRAFT} Restriction in usage of `ApSomeipTransformationProps.sizeOfUnionLengthField` [The value of the attribute `sizeOfUnionLengthField` shall be either 0, 1, 2 or 4.

}]()

[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.

]()

[constr_3357]{DRAFT} Restriction in usage of `ApSomeipTransformationProps.sizeOfUnionTypeSelectorField` [The value of the attribute `sizeOfUnionTypeSelectorField` shall be either 1, 2 or 4.

]()

[constr_3359]{DRAFT} `RPortPrototypeProps` are related only to `RPortPrototypes` [The `RPortPrototypeProps` shall be aggregated only by a `RPortPrototype` in the role `portPrototypeProps`.

]()

[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.

]()

[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`.

]()

[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`.

]()

[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.

]()

[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.

]()

[constr_3369]{DRAFT} `FieldMapping.setterOperation` reference [The `FieldMapping` shall only contain the `setterOperation` reference if the `hasSetter` attribute in the referenced `field` is set to true.

]()

[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.

]()

[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.

]()

[constr_3372]{DRAFT} Restriction in usage of `ApSomeipTransformationProps.sizeOfStringLengthField` [The value of the attribute `sizeOfStringLengthField` shall be either 0, 1, 2 or 4.

]()

[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`.

]()

[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`.

]()

[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.

]()

[constr_3391]{DRAFT} `ServiceInterfaceElementSecureComConfig` references to `ServiceInterfaceDeployment` elements [`ServiceInterfaceElementSecureComConfig` element shall be defined for exactly one `ServiceInter-`

`face` element and shall therefore contain only one single reference to an element defined in the scope of a `ServiceInterfaceDeployment`.

]()

[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.

]()

[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`.

]()

[constr_3394]{DRAFT} Default value for start-up timeout on the `Machine` is not configurable [The attribute `enterTimeoutValue` that is available in the `EnterExitTimeout` is not allowed to be used if the `EnterExitTimeout` is aggregated by the `Machine` in the role `defaultApplicationTimeout`.

]()

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

]()

[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`.

]()

[constr_3408]{DRAFT} Value range of `SomeipEventDeployment.eventId` [The value of `eventId` shall be in the range of 0..32767.

]()

[constr_3409]{DRAFT} Value range of `SomeipMethodDeployment.methodId`
 [The value of `methodId` shall be in the range of 0..32767.

]()

[constr_3410]{DRAFT} Value range of `SomeipServiceInterfaceDeployment.serviceInterfaceId`
 [The value of `serviceInterfaceId` shall be in the range of 0..65535.

]()

[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.

]()

[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	
	Usage in <code>DoIpInstantiation</code>	Usage in <code>DltLogSink</code>
<code>PlatformModuleEthernetEndpointConfiguration</code> attributes		
<code>tcpPort</code>	Optional	Optional
<code>udpPort</code>	Optional	Optional
<code>ipv4MulticastIpAddress</code>	N/A	N/A
<code>ipv6MulticastIpAddress</code>	N/A	N/A
<code>communicationConnector</code>	Mandatory	Mandatory

]()

[constr_3415]{DRAFT} Value range of `loadBalancingPriority`
 [The value of `loadBalancingPriority` shall be in the range of 0..65535.

]()

[constr_3416]{DRAFT} Value range of `loadBalancingWeight`
 [The value of `loadBalancingWeight` shall be in the range of 0..65535.

]()

[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`.

]()

[constr_3418]{DRAFT} `UserDefinedMethodDeployments` aggregated by a `UserDefinedFieldDeployment`
 [A `UserDefinedMethodDeployment` that is ag-

gregated by a `UserDefinedFieldDeployment` in the role `get` or `set` shall not reference a `ClientServerOperation` in the role `method`.

]()

[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`.

]()

[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`

]()

[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`.

]()

[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].

]()

[constr_3425]{DRAFT} Restriction of `DoIpInstantiations` on a `Machine` [Each `Machine` shall aggregate at most one `DoIpInstantiation` in the role `moduleInstantiation`.

]()

[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`.

]()

[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`.

]()

[constr_3434]{DRAFT} Aggregation of `templateArguments` for a `VECTOR` [`CppImplementationDataType` of category `VECTOR` that boils down to `ara::core::Vector` shall aggregate

- one `templateArgument` that defines the type of elements contained in the `CppImplementationDataType` of category `VECTOR` with the `templateType` reference.
- optionally one additional `templateArgument` that defines the `Allocator` with the `allocator` reference.

]()

[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`.

]()

[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.

]()

[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`.

]()

[constr_3462]{DRAFT} `CppTemplateArgument.templateType` reference to `StdCppImplementationDataType` of category `STRUCTURE` and the `inplace` flag [`CppTemplateArgument.templateType` that points to a `StdCppImplemen-`

`tationDataType` of category `STRUCTURE` shall have the `inplace` attribute set to **false**.

]()

[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`.

]()

[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 `TlsSecureComProps` has the category `TLS_SERVER`.

]()

[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.

]()

[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`.

]()

[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

[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].

[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].

[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].

[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].

]()

[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].

]()

[constr_3528]{DRAFT} Value range of `domainId` [The value of `domainId` at `DdsProvidedServiceInstance` and `domainId` at `DdsRequiredServiceInstance` shall be in the range of a signed 32-bit integer.

]()

[constr_3529]{DRAFT} Value range of `serviceInstanceId` [The value of `serviceInstanceId` shall be in the range of 0..65535.

]()

[constr_3530]{DRAFT} Mandatory definition of `checkpointId` [The `checkpointId` shall be defined for every `PhmCheckpoint` element.

]()

[constr_3532]{DRAFT} Mandatory definition of `statusId` [The `statusId` shall be defined for every `PhmHealthChannelStatus` element.

]()

[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 `ServiceInstanceToMachineMapping` refer to the same `CommunicationConnector`.

]()

[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`.

]()

[constr_3540]{DRAFT} `SupervisionCheckpoint` in supervision graph [Each `SupervisionCheckpoint` shall only be part of one supervision graph in the context of an identical `SupervisionMode`.

]()

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

]()

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

]()

[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.

]()

[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.

]()

[constr_3553]{DRAFT} Existence of ServiceInstanceToSignalMapping for an field with signalBased serialization [If a field is referenced by a Someip-

`FieldDeployment` 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`.

]()

[constr_3554]{DRAFT} E2E protection configuration check [If the `SignalServiceTranslationEventProps.safeTranslation` equals true then the signal-based payload shall have an EndToEnd profile defined.

]()

[constr_3555]{DRAFT} No support for `useAsCryptographicIPdu` is true [The signal/service translation does not support the case where the `PduTriggering` is referencing a `SecuredIPdu` where the attribute `useAsCryptographicIPdu` is set to true.

]()

[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.

]()

[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`.

]()

[constr_3561]{DRAFT} `minimumMinorVersion` and `RequiredSomeipServiceInstance.requiredMinorVersion` value [The `RequiredSomeipServiceInstance.requiredMinorVersion` shall not have the value `ANY` if `versionDrivenFindBehavior` = `minimumMinorVersion`.

]()

[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.

]()

[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`.

]()

[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`.

]()

[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.

]()

[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`.

]()

[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 manifest creation 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`.

]()

[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`.

]()

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

]()

[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 integration into a `SoftwareCluster` 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`.

]()

[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`.

]()

[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.

]()

[constr_3628]{DRAFT} Reference to Function Group State from a `SupervisionModeCondition` [If a Function Group State is referenced by a `SupervisionModeCondition` 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`.

]()

[constr_3629]{DRAFT} Identical Function Group in the scope of a `GlobalSupervision` [Within the context of one `GlobalSupervision`, all `SupervisionModeCondition` 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).

]()

[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).

]()

[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`.

]()

[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.

]()

[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`

}]()

[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 integration into a `SoftwareCluster` is finished.**

}]()

[constr_3635]{DRAFT} Mandatory attributes of `DeadlineSupervision` [The following attributes of `DeadlineSupervision` shall be defined **at the time when the integration into a `SoftwareCluster` is finished:**

- `transition`
- `minDeadline`
- `maxDeadline`

}]()

[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`.

}]()

[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 `ISignalTriggering` which in turn refers to an `ISignalPort` with `communicationDirection` equal to `out`.

}]()

[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 at the time when the integration into a `SoftwareCluster` is finished.

For each `SupervisionMode` the attribute `expiredSupervisionTolerance` shall exist at the time when the integration into a `SoftwareCluster` is finished.

]()

[constr_3640]{DRAFT} Existence of `SupervisionMode.modeCondition` [For each `SupervisionMode` the attribute `modeCondition` shall exist at the time when the integration into a `SoftwareCluster` is finished.

]()

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

	<code>DdsProvidedServiceInstance</code>	<code>ProvidedSomeipServiceInstance</code>	<code>ProvidedUserDefinedServiceInstance</code>	<code>DdsRequiredServiceInstance</code>	<code>RequiredSomeipServiceInstance</code>	<code>RequiredUserDefinedServiceInstance</code>
<code>DdsServiceInterfaceDeployment</code>	Yes	No	Yes	Yes	No	Yes
<code>SomeipServiceInterfaceDeployment</code>	No	Yes	Yes	No	Yes	Yes
<code>UserDefinedServiceInterfaceDeployment</code>	No	No	Yes	No	No	Yes
<code>DdsServiceInstanceToMachineMapping</code>	Yes	No	No	Yes	No	No
<code>SomeipServiceInstanceToMachineMapping</code>	No	Yes	No	No	Yes	No
<code>UserDefinedServiceInstanceToMachineMapping</code>	No	Yes	Yes	No	Yes	Yes

]()

[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`.

]()

[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.

]()

[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.

]()

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

]()

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

]()

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

]()

[constr_3650]{DRAFT} `headerId` required in case of Arbitrary Message Header [If [TPS_MANI_03577] applies, then the respective `SocketConnectionIpduIdentifier.headerId` shall be defined.

]()

[constr_3674]{DRAFT} Existence of `NoSupervision.targetPhmSupervisedEntity` [For each `NoSupervision` the attribute `targetPhmSupervisedEntity` shall exist at the time when the integration into a `SoftwareCluster` is finished.

]()

[constr_3675]{DRAFT} Existence of `NoSupervision.process` [For each `NoSupervision` the attribute `process` shall exist at the time when the integration into a `SoftwareCluster` 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.

]()

[constr_3677]{DRAFT} `ComGrants` referencing DDS Service Instances [`ComGrants` associated with `DdsProvidedServiceInstances` or `DdsRequiredSer-`

`viceInstances` via the `serviceInstance` attribute shall not be referenced by `IamModuleInstantiation.grant`, since access control in the DDS Network Binding is delegated to DDS Security.

]()

[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`

]()

[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`, `DdsServiceInterfaceDeployment.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`.

]()

[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`

]()

[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.terminationBehav-`

ior 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`.

]()

[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 [IdsPlatformInstantiation](#), 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_3733]{DRAFT} Upper multiplicity of aggregation in the role [ServiceInstanceToSignalMapping.methodMapping](#) [In the context of [ServiceInstanceToSignalMapping](#), the aggregation in the role [methodMapping](#) 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 [DoIpNetworkCon-](#)

figuration, 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].

]()

[constr_5004]{DRAFT} Mapping of a `Process` to a `Machine` is mandatory in the Execution Manifest [Each `Process` shall be mapped by a `ProcessToMachineMapping` to one `Machine`.

]()

[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`.

]()

[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`.

]()

[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`.

]()

[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`.

]()

[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

]()

[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

]()

[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.

]()

[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`.

]()

[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.

]()

[constr_5042]{DRAFT} No data type mapping for CppImplementationDataType of category VARIANT [An `ApplicationDataType` shall never be mapped to a `CppImplementationDataType` of category VARIANT.

]()

[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 therefore not be mapped to a `CppImplementationDataType`.

]()

[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`.

]()

[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`.

]()

[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.

]()

[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`.

]()

[constr_5052]{DRAFT} `ProvidedSomeipServiceInstances` of the same service Interface on one Machine [`ProvidedSomeipServiceInstances` that are referring to the same `SomeipServiceInterfaceDeployment` 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`.

]()

[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`.

]()

[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`.

]()

[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.

]()

[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.

]()

[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`.

]()

[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 `Someip-ProvidedEventGroups` 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`.

]()

[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`.

]()

[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`).

]()

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

- `nmMsgCycleTime`
- `nmNetworkTimeout`
- `nmRepeatMessageTime`
- `nmWaitBusSleepTime`
- `communicationCluster`

]()

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

]()

[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`.

]()

[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.

]()

[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

]()

[constr_5240]{DRAFT} Restriction applicable for [CryptoProviderToPortPrototypeMapping.portPrototype](#) [The reference [CryptoProviderToPortPrototypeMapping.portPrototype](#) shall only be used for an [RPortPrototype](#) typed by a [CryptoProviderInterface](#).

]()

[constr_5241]{DRAFT} Restriction applicable for [CryptoKeySlotToPortPrototypeMapping.portPrototype](#) [The reference [CryptoKeySlotToPortPrototypeMapping.portPrototype](#) shall only be used for an [RPortPrototype](#) typed by a [CryptoKeySlotInterface](#).

]()

[constr_5242]{DRAFT} Restriction applicable for [CryptoCertificateToPortPrototypeMapping.portPrototype](#) [The reference [CryptoCertificateToPortPrototypeMapping.portPrototype](#) shall only be used for an [RPortPrototype](#) typed by a [CryptoCertificateInterface](#).

]()

[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.

]()

[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 [TlsSecureComProps](#) has the category [TLS_CLIENT](#).

]()

[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](#).

]()

[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 ...					
	<code>DltLogSink.logChannelId</code>	<code>DltLogSink.endpointConfiguration</code>	<code>DltLogSink.path</code>	<code>DltLogSink.bufferOutput</code>	<code>DltLogSink.nonVerboseMode</code>	<code>DltLogSink.segmentationSupported</code>
<code>DLT_LOGSINK_REMOTE</code>	x					
<code>DLT_LOGSINK_DLT</code>	x	x			x	x
<code>DLT_LOGSINK_FILE</code>			x			
<code>DLT_LOGSINK_CONSOLE</code>				x		

]()

[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`.

]()

[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`.

]()

[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`.

]()

[constr_5287]{DRAFT} Restriction applicable for `DltLogSinkToPortPrototypeMapping.pPortPrototype` [The reference `DltLogSinkToPortPrototypeMapping.pPortPrototype` shall only be used for a `PPortPrototype` typed by a `ServiceInterface`.

]()

[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`.

]()

[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`.

]()

[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.

]()

[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`.

]()

[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.

]()

[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 `SomeipEventDeployment.serializer` is set to `signalBased` then a `ServiceInstanceToSignalMapping` shall exist with `triggerMapping` referring to the `trigger` in the role `trigger`.

]()

[constr_5324]{DRAFT} `MachineDesign.communicationController` aggregation restriction [`MachineDesign` is only allowed to aggregate an `EthernetCommunicationController` in the role `communicationController`.

]()

[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.

]()

[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.

]()

[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 `ProvidedSomeipServiceInstance` in the role `serviceInterfaceDeployment` shall be referenced from exactly one `SomeipProvidedEventGroup` aggregated in the role `pro-`

videdEventGroup in the scope of the enclosing ProvidedSomeipService-Instance.

]()

[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.

]()

[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].

]()

[constr_5348]{DRAFT} 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]{DRAFT} 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]{DRAFT} 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]{DRAFT} 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 any time in the workflow.

]()

[constr_5352]{DRAFT} 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 any time in the workflow.

]()

[constr_5353]{DRAFT} DdsRule.readerEntityId and DdsRule.writerEntityId value restriction [The value of `DdsRule.readerEntityId` and `DdsRule.writerEntityId` 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 any time in the workflow.

]()

[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.

]()

[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**.

]()

[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**.

]()

[constr_5358]{DRAFT} AdaptiveFirewallToPortPrototypeMapping.rPortPrototype restriction [The **AdaptiveFirewallToPortPrototypeMapping** is only allowed to reference a **RPortPrototype** that is typed by the **FirewallStateSwitchInterface**. This rule shall be imposed at any time in the workflow.

]()

[constr_6815]{DRAFT} Existence of CppTemplateArgument.templateType for CppImplementationDataType of category STRING [In a **CppImplementationDataType** of category **STRING**, the reference **templateType** shall not exist.

]()

[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`.

]()

[constr_10003]{DRAFT} Restriction for the existence of `DiagnosticDataPortMapping.diagnosticDataIdentifier` vs. `DiagnosticDataPortMapping.diagnosticDataElement` [For each `DiagnosticDataPortMapping`, either the reference in the role `diagnosticDataIdentifier` or `diagnosticDataElement` shall exist.

]()

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

]()

[constr_10008]{DRAFT} Value of `ProcessExecutionError.executionError` [The value of attribute `ProcessExecutionError.executionError` shall at least be set to 1 (or higher).

]()

[constr_10021]{DRAFT} Existence of IdsmModuleInstantiation [On each Machine, only one instance of the Intrusion Detection System Manager (modeled by IdsmModuleInstantiation) shall exist.

]()

[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.

]()

[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.

]()

[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 manifest is complete.

]()

[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.

]()

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

]()

[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`.

]()

[constr_10048]{DRAFT} Existence of reference from `DiagnosticMonitorPortMapping` to `DiagnosticEvent` [Each `DiagnosticEvent` shall only be referenced by exactly one `DiagnosticMonitorPortMapping`.

]()

[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`.

]()

[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`.

]()

[constr_10051]{DRAFT} Existence of reference from `DiagnosticOperationCyclePortMapping` to `DiagnosticOperationCycle` [Each `DiagnosticOperationCycle`

tionCycle shall only be referenced by exactly one DiagnosticOperationCycle-PortMapping

]()

[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.

]()

[constr_10053]{DRAFT} Existence of reference from DiagnosticEnableConditionPortMapping to DiagnosticEnableCondition [Each DiagnosticEnableCondition shall only be referenced by at most one DiagnosticEnableConditionPortMapping

]()

[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.

]()

[constr_10055]{DRAFT} Existence of reference from DiagnosticClearConditionPortMapping to DiagnosticClearCondition [Each DiagnosticClearCondition shall only be referenced by at most one DiagnosticClearConditionPortMapping

]()

[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.

]()

[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.

]()

[constr_10058]{DRAFT} Restriction for the applicability of DiagnosticSecurityLevelPortMapping [If a PPortPrototype is referenced by a Diagnostic-

SecurityLevelPortMapping, then the PPortPrototype shall be typed by a DiagnosticSecurityLevelInterface.

]()

[constr_10059]{DRAFT} Existence of reference from DiagnosticSecurityLevelPortMapping to DiagnosticSecurityLevel [Each DiagnosticSecurityLevel shall only be referenced by exactly one DiagnosticSecurityLevelPortMapping.

]()

[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

]()

[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.

]()

[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](#)

]()

[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.

]()

[constr_10064]{DRAFT} Existence of [DiagnosticServiceValidationMapping.pPortPrototypeInExecutable](#) [A [PPortPrototype](#) referenced in the role [DiagnosticServiceValidationMapping.pPortPrototypeInExecutable](#) shall be typed by a [DiagnosticServiceValidationInterface](#).

]()

[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](#).

]()

[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](#).

]()

[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.

]()

[constr_10076]{DRAFT} Existence of **RawDataStreamEthernetUdpCredentials.udpPort** [In the context of **RawDataStreamEthernetUdpCredentials**, the attribute **udpPort** shall exist 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.

]()

[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.

]()

[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.

]()

[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.

]()

[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 manifest is complete.

]()

[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`

]()

[constr_10093]{DRAFT} Existence of reference from `DiagnosticAuthenticationPortMapping` to `DiagnosticAuthentication` [Each `DiagnosticAuthentication` shall only be referenced by exactly one `DiagnosticAuthenticationPortMapping`.

]()

[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`

]()

[constr_10095]{DRAFT} Existence of reference from `DiagnosticExternalAuthenticationPortMapping` to `DiagnosticAuthentication` [Each `DiagnosticAuthentication` shall only be referenced by exactly one `DiagnosticExternalAuthenticationPortMapping`.

]()

[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`

]()

[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`.

]()

[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.

]()

[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.

]()

[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 exist 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_10111]{DRAFT} Existence of attribute `DiagnosticAuthentication.authenticationTimeout` [Attribute `DiagnosticAuthentication.authenticationTimeout` shall exist **at the time when the manifest is complete**.

]()

[constr_10113]{DRAFT} Restriction for the existence of `ExecutableLoggingImplementationProps` [The aggregation of `ExecutableLoggingImplementationProps` in the role `Executable.implementationProps` is only allowed for an `Executable` where attribute `category` is set to the value `PLATFORM_LEVEL`.

]()

[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 `swDataDefinitionProps` 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 **PersistencyRedundancyChecksum**, the reference in the role **algorithmFamily** shall exist at the time before the generation of the ara API starts.

`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 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_10156]{DRAFT} Multiplicity of reference in the role [ComFindServiceGrantDesign.requiredServicePort](#) [For each [ComFindServiceGrantDesign](#), the reference in the role [requiredServicePort](#) 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 `SynchronizedTimeBaseProvider`, the reference in the role `networkTimeProvider` shall exist at the time when the creation of the manifest is finished.

`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_10229]{DRAFT} Multiplicity of reference in the role `SignalBasedMethodToISignalTriggeringMapping.method` [For each `SignalBasedMethodToISignalTriggeringMapping`, the reference in the role `method` 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 `SignalServiceTranslation-EventProps.secureTranslation` [For each `SignalServiceTranslation-EventProps`, 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 `Persistency-DeploymentToCryptoKeySlotMapping.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 `SoftwareClusterDependency-CompareCondition.compareType` [For each `SoftwareClusterDependency-CompareCondition`, 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 `iden-`

`tifier` 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 at-

tribute `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.representedMod-`

`elElement` 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.start` and `stop` [For each `StateManagementStateMachineActionItem`, at most one of the two references

- `start`
- `stop`

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 `StateManagementFunctionGroupSwitchNotificationInterface` 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 attribute `StateManagementStateRequest.stateRequestPort` [For each `StateManagementStateRequest`, the aggregation 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`.

]()

[constr_10400]{DRAFT} Existence of [SovdServerInstantiation.componentQualifier](#) [For each [SovdServerInstantiation](#), attribute [componentQualifier](#) 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_10406]{DRAFT} Existence of [DeterministicSyncMOutOfN.numberOfConnectedClients](#) [For each [DeterministicSyncMOutOfN](#), attribute [numberOfConnectedClients](#) shall exist at the time when the creation of the manifest is finished.

]()

[constr_10407]{DRAFT} Existence of `DeterministicSyncMOutOfN.minimumNumberOfRequests` [For each `DeterministicSyncMOutOfN`, attribute `minimumNumberOfRequests` shall exist at the time when the creation of the manifest is finished.

]()

[constr_10408]{DRAFT} Existence of `DeterministicSyncMasterToTimeBaseConsumerMapping.deterministicSyncMaster` [For each `DeterministicSyncMasterToTimeBaseConsumerMapping`, the reference in the role `deterministicSyncMaster` shall exist at the time when the creation of the manifest is finished.

]()

[constr_10409]{DRAFT} Existence of `DeterministicSyncMasterToTimeBaseConsumerMapping.timeBaseConsumer` [For each `DeterministicSyncMasterToTimeBaseConsumerMapping`, the reference in the role `timeBaseConsumer` 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 any time in the workflow.

]()

[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.

]()

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, ProvidedServiceInstance			
Aggregated by	ServiceInstanceCollectionSet.serviceInstance			





Class	AbstractServiceInstance (abstract)			
Attribute	Type	Mult.	Kind	Note
capabilityRecord	TagWithOptionalValue	*	aggr	A sequence of records to store arbitrary name/value pairs conveying additional information about the named service. Stereotypes: atpSplittable; 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.
methodActivationRoutingGroup	PduActivationRoutingGroup	0..1	aggr	The ServiceDiscovery module is able to activate and deactivate the PDU routing for ClientServerOperations (SOME/IP methods). Stereotypes: atpSplittable; 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	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
internalBehavior	AdaptiveSwcInternalBehavior	0..1	aggr	This aggregation represents the internal behavior of the AdaptiveApplicationSwComponentType for the AUTOSAR adaptive platform. Stereotypes: atpSplittable; atpVariation Tags: atp.Splitkey=internalBehavior.shortName, internalBehavior.variationPoint.shortLabel vh.latestBindingTime=preCompileTime

Table A.5: 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, PackageableElement, Referrable , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
firewall	AdaptiveFirewallModuleInstantiation	0..1	ref	Reference to the Firewall module Tags: atp.Status=candidate
rPortPrototype	RPortPrototype	0..1	ref	Reference to RPortPrototype typed by a FirewallModeSwitchInterface Tags: atp.Status=candidate

Table A.6: 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, PackageableElement, Referrable , UploadablePackageElement			
Subclasses	ProvidedApServiceInstance , RequiredApServiceInstance			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
e2eEventProtectionProps	End2EndEventProtectionProps	*	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 serviceInterface.
e2eMethodProtectionProps	End2EndMethodProtectionProps	*	aggr	This aggregation allows to protect a method or a field getter or a field setter that is defined inside of the ServiceInterface that is referenced by the ServiceInstance in the role serviceInterface
secureComConfig	ServiceInterfaceElementSecureComConfig	*	aggr	Configuration settings to secure the communication of ServiceInterface elements.
serviceInterfaceDeployment	ServiceInterfaceDeployment	0..1	ref	Reference to a ServiceInterfaceDeployment that identifies the ServiceInterface that is represented by the ServiceInstance.

Table A.7: AdaptivePlatformServiceInstance

Class	AgeConstraint			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingConstraint::AgeConstraint			
Note	The AgeConstraint is used to impose a constraint on an Timing Description Event referenced by the scope. A minimum and a maximum age can be specified.			
Base	ARObject, Identifiable , MultilanguageReferrable, Referrable , TimingConstraint, Traceable			
Aggregated by	TimingExtension.timingGuarantee, TimingExtension.timingRequirement			





Class	AgeConstraint			
Attribute	Type	Mult.	Kind	Note
maximum	MultidimensionalTime	0..1	aggr	The maximum age.
minimum	MultidimensionalTime	0..1	aggr	The minimum age.
scope	TimingDescriptionEvent	0..1	ref	The scope of an AgeConstraint is any TimingDescription Event that indicates any receipt of data.

Table A.8: 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
aliveReferenceCycle	TimeValue	0..1	attr	Time period at which the Alive Supervision mechanism compares the amount of received Alive Indications for the SupervisionCheckpoint against the expectedAliveIndications.
checkpoint	SupervisionCheckpoint	0..1	ref	Reference to a checkpoint in the context of Alive Supervision.
expectedAliveIndications	PositiveInteger	0..1	attr	Defines the amount of expected Alive Indications of the SupervisionCheckpoint within the aliveReferenceCycle.
failedReferenceCyclesTolerance	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 SupervisionCheckpoint 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 SupervisionCheckpoint that are acceptable to be missing to the expectedAliveIndications within the aliveReferenceCycle.
terminatingCheckpoint	SupervisionCheckpoint	0..1	ref	Reference to the SupervisionCheckpoint which is defined as the terminating checkpoint of this AliveSupervision.
terminatingCheckpointTimeoutUntilTermination	TimeValue	0..1	attr	Defines the time a process shall terminate after it has announced its start of termination by reporting terminatingCheckpoint.

Table A.9: AliveSupervision

Class	Allocator
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CplusplusImplementationDataType
Note	<p>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.</p> <p>Tags:atp.recommendedPackage=Allocators</p>
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable , PackageableElement , Referrable
Aggregated by	ARPackage.element





Class	Allocator			
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.10: 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.11: 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 , PackageableElement , 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 AdaptivePlatformApplicationError.
errorDomain	ApApplicationErrorDomain	0..1	ref	This reference represents the error domain of the Ap ApplicationError.

Table A.12: 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 , PackageableElement , Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note





Class	ApApplicationErrorDomain			
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.13: 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.14: 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.
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





Class	ApSomeipTransformationProps			
isDynamicLengthFieldSize	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.
sessionHandling	SOMEIPTransformerSessionHandlingEnum	0..1	attr	Defines whether the SOME/IP transformer shall use session handling for Sender/Receiver communication.
sizeOfArrayLengthField	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.
sizeOfStringLengthField	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.
sizeOfStructLengthField	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.
sizeOfUnionLengthField	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.
sizeOfUnionTypeSelectorField	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	BaseTypeEncodingString	0..1	attr	Configures the encoding for SOME/IP serialization for the referenced dataPrototype in case of an String.

Table A.15: 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, AtpBlueprintable, AtpClassifier, AtpType, AutosarDataType , CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
dynamicArraySizeProfile	String	0..1	attr	Specifies the profile which the array will follow if it is a variable size array.
element	ApplicationArrayElement	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.16: 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	ApplicationArrayType.element , AtpClassifier.atpFeature			
Attribute	Type	Mult.	Kind	Note
arraySizeHandling	ArraySizeHandlingEnum	0..1	attr	The way how the size of the array is handled.
arraySizeSemantics	ArraySizeSemanticsEnum	0..1	attr	This attribute controls how the information about the array size shall be interpreted.
indexDataType	ApplicationPrimitiveDataType	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.
maxNumberOfElements	PositiveInteger	0..1	attr	The maximum number of elements that the array can contain. Stereotypes: atpVariation Tags: vh.latestBindingTime=preCompileTime

Table A.17: 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, AtpBlueprintable, AtpClassifier, AtpType, AutosarDataType , CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
key	ApplicationAssocMapElement	0..1	aggr	Key element of the map that is used to uniquely identify the value of the map.
value	ApplicationAssocMapElement	0..1	aggr	Value element of the map that stores the content associated to a key.

Table A.18: 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.19: 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 ApplicationAssocMapDataType.			
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.20: 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 , 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 , StateManagementCompareCondition.compareValue , SwDataDefProps.invalidValue , VariableDataPrototype.initValue			
Attribute	Type	Mult.	Kind	Note
mapElement Tuple (ordered)	ApplicationAssocMapElementValueSpecification	*	aggr	This aggregation represents the initial values for the elements of the ApplicationAssocMapValueSpecification.

Table A.21: 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.22: ApplicationCompositeDataType

Class	ApplicationDataType (abstract)			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes			
Note	<p>ApplicationDataType defines a data type from the application point of view. Especially it should be used whenever something "physical" is at stake.</p> <p>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, endianness, etc.</p> <p>It should be possible to model the application level aspects of a VFB system by using ApplicationDataTypes only.</p>			
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.23: ApplicationDataType

Class	ApplicationPrimitiveDataType			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes			
Note	<p>A primitive data type defines a set of allowed values.</p> <p>Tags: atp.recommendedPackage=ApplicationDataTypes</p>			
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.24: ApplicationPrimitiveDataType

Class	ApplicationRecordDataType			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes			
Note	<p>An application data type which can be decomposed into prototypes of other application data types.</p> <p>Tags: atp.recommendedPackage=ApplicationDataTypes</p>			
Base	ARElement, ARObject, ApplicationCompositeDataType , ApplicationDataType , AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, AutosarDataType , CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
element (ordered)	ApplicationRecordElement	*	aggr	<p>Specifies an element of a record.</p> <p>The aggregation of ApplicationRecordElement is subject to variability with the purpose to support the conditional existence of elements inside a ApplicationrecordDataType.</p> <p>Stereotypes: atpSplitable; atpVariation</p> <p>Tags: atp.Splitkey=element.shortName, element.variation Point.shortLabel vh.latestBindingTime=preCompileTime</p>

Table A.25: 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	<p>This attribute represents the ability to declare the enclosing ApplicationRecordElement as optional. This means the that, at runtime, the ApplicationRecordElement may or may not have a valid value and shall therefore be ignored.</p> <p>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.</p>

Table A.26: ApplicationRecordElement

Class	ApplicationValueSpecification			
Package	M2::AUTOSARTemplates::CommonStructure::Constants			
Note	<p>This meta-class represents values for DataPrototypes typed by ApplicationDataTypes (this includes in particular compound primitives).</p> <p>For further details refer to ASAM CDF 2.0. This meta-class corresponds to some extent with SW-INSTANCE in ASAM CDF 2.0.</p>			
Base	ARObject, CompositeRuleBasedValueArgument, ValueSpecification			
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 , PersistenceDataRequiredComSpec.initValue , PersistenceKeyValuePair.initValue , PortDefinedArgumentValue.value , PortPrototypeBlueprintInitValue.value , RecordValueSpecification.field , 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	<p>This represents the axis values of a Compound Primitive Data Type (curve or map).</p> <p>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.</p>
swValueCont	SwValueCont	0..1	aggr	This represents the values of a Compound Primitive Data Type.

Table A.27: 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 , Multilanguage Referrable , Referrable			
Aggregated by	AtpClassifier.atpFeature, ClientServerOperation.argument			
Attribute	Type	Mult.	Kind	Note
direction	ArgumentDirection Enum	0..1	attr	This attribute specifies the direction of the argument prototype.
serverArgument ImplPolicy	ServerArgumentImpl PolicyEnum	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.28: ArgumentDataPrototype

Enumeration	ArgumentDirectionEnum
Package	M2::AUTOSARTemplates::GenericStructure::GeneralTemplateClasses::PrimitiveTypes
Note	Use cases: <ul style="list-style-type: none"> 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.29: 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.30: ArraySizeSemanticsEnum

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	1	attr	This attribute describes the location of the artifact.

Table A.31: 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: atpSplittable Tags: atp.Splitkey=swDataDefProps

Table A.32: AutosarDataType

Class	AutosarOperationArgumentInstance			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription::TimingDescriptionEvents::TDEventOccurrenceExpression::InstanceRefsUsage			
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: <ul style="list-style-type: none"> 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
operation Argument Instance	DataPrototype	0..1	iref	This is the reference to the instanceRef definition. InstanceRef implemented by: OperationArgumentInComponentInstanceRef

Table A.33: AutosarOperationArgumentInstance

Class	AutosarVariableInstance			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription::TimingDescriptionEvents::TDEventOccurrenceExpression::InstanceRefsUsage			
Note	<p>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:</p> <ul style="list-style-type: none"> • 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	<p>This is the reference to the instanceRef definition.</p> <p>InstanceRef implemented by: VariableInComponent InstanceRef</p>

Table A.34: 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	<p>This is the actual definition of the base type.</p> <p>Tags: xml.roleElement=false xml.roleWrapperElement=false xml.sequenceOffset=20 xml.typeElement=false xml.typeWrapperElement=false</p>

Table A.35: 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
baseTypeEncoding	BaseTypeEncodingString	0..1	attr	<p>This specifies, how an object of the current BaseType is encoded, e.g. in an ECU within a message sequence.</p> <p>Tags:xml.sequenceOffset=90</p>
baseTypeSize	PositiveInteger	0..1	attr	<p>Describes the length of the data type specified in the container in bits.</p> <p>Tags:xml.sequenceOffset=70</p>
byteOrder	ByteOrderEnum	0..1	attr	<p>This attribute specifies the byte order of the base type.</p> <p>Tags:xml.sequenceOffset=110</p>





Class	BaseTypeDirectDefinition			
memAlignment	PositiveInteger	0..1	attr	<p>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".</p> <p>Tags:xml.sequenceOffset=100</p>
native Declaration	NativeDeclarationString	0..1	attr	<p>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</p> <p>BaseType with shortName: "MyUnsignedInt" native Declaration: "unsigned short"</p> <p>Results in</p> <p>typedef unsigned short MyUnsignedInt;</p> <p>If the attribute is not defined the referring Implementation DataTypes will not be generated as a typedef by RTE.</p> <p>If a nativeDeclaration type is given it shall fulfill the characteristic given by baseTypeEncoding and baseType Size.</p> <p>This is required to ensure the consistent handling and interpretation by software components, RTE, COM and MCM systems.</p> <p>Tags:xml.sequenceOffset=120</p>

Table A.36: BaseTypeDirectDefinition

Class	CanXIProps			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SystemDesign			
Note	<p>This meta-class is used to configure Machine specific CAN XL attributes.</p> <p>Tags:atp.recommendedPackage=CanXIProps</p>			
Base	ARElement, ARObjekt, CollectableElement, Identifiable , MultilanguageReferrable, Packageable Element, Referrable			
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.
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.
canXIBaudrate	PositiveInteger	0..1	attr	Specifies the data segment CAN XL baud rate of the CAN XL controller in bits/s.
canXIConfig	CanControllerXI Configuration	0..1	aggr	CAN XL configuration parameters for the CAN XL controller.
canXIConfig Reqs	CanControllerXI Configuration Requirements	0..1	aggr	CAN XL configuration parameter requirements for the CAN XL controller.

Table A.37: CanXIProps

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.38: 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.variation Point.shortLabel vh.latestBindingTime=blueprintDerivationTime
fireAndForget	Boolean	0..1	attr	This attribute defines whether this method is a fire&forget method (true) or not (false). Tags: atp.Status=draft
possibleApError	ApApplicationError	*	ref	This reference identifies AdaptivePlatformApplication Errors as a possible error raised by the enclosing Client ServerOperation. Tags: atp.Status=draft
possibleApError Set	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. Tags: atp.Status=draft

Table A.39: 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			
Aggregated by	ARPackage.element			





Class	ComEventGrant			
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.40: 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.41: 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			
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





Class	ComFieldGrant			
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.42: 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	<i>ARElement</i> , <i>ARObject</i> , <i>CollectableElement</i> , ComGrantDesign , <i>GrantDesign</i> , Identifiable , <i>Multilanguage Referrable</i> , <i>PackageableElement</i> , 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: FieldInExecutableInstanceRef
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.43: ComFieldGrantDesign

Class	ComFindServiceGrantDesign			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::GrantDesign::ComGrant			
Note	This meta-class represents the ability to define a Grant for finding a service. Tags: atp.Status=candidate atp.recommendedPackage=GrantDesigns			
Base	<i>ARElement</i> , <i>ARObject</i> , <i>CollectableElement</i> , <i>GrantDesign</i> , Identifiable , <i>MultilanguageReferrable</i> , <i>PackageableElement</i> , Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
requiredService Port	RPortPrototype	0..1	iref	This instanceRef identifies the RPortPrototype on which the service shall be found. Tags: atp.Status=candidate InstanceRef implemented by: RPortPrototypeInExecutableInstanceRef

Table A.44: ComFindServiceGrantDesign

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			
Base	ARElement, ARObject, CollectableElement, Grant , Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Subclasses	ComEventGrant , ComFieldGrant , ComMethodGrant			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
remoteSubject	AbstractIamRemoteSubject	*	ref	This optional reference defines the remoteSubject that is allowed to access the defined Object via the Grant. Tags: atp.Status=candidate
serviceInstance	AdaptivePlatformServiceInstance	0..1	ref	This reference identifies the applicable AdaptivePlatformServiceInstance for which the grant applies. Tags: atp.Status=candidate

Table A.45: 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	AbstractIamRemoteSubject	*	ref	This optional reference defines the remoteSubject that is allowed to access the defined Object via the Grant. Tags: atp.Status=candidate

Table A.46: 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			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
design	ComMethodGrantDesign	0..1	ref	This reference identifies the ComMethodGrantDesign that the enclosing ComMethodGrant was created from. Stereotypes: atpUriDef Tags: atp.Status=candidate





Class	ComMethodGrant			
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.47: 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 , Multilanguage Referrable, 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.48: 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			
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.49: 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
providedServicePort	PPortPrototype	0..1	iref	This instanceRef identifies the PPortPrototype on which the service shall be offered. Tags: atp.Status=candidate InstanceRef implemented by: PPortPrototypeInExecutableInstanceRef

Table A.50: ComOfferServiceGrantDesign

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 , MultilanguageReferrable, 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: TriggerInExecutableInstanceRef

Table A.51: 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
communicationDirection	CommunicationDirectionType	1	attr	Communication Direction of the Connector Port (input or output Port).

Table A.52: CommConnectorPort

Class	<<atpVariation>> CommunicationCluster (abstract)			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreTopology			
Note	<p>The CommunicationCluster is the main element to describe the topological connection of communicating ECUs.</p> <p>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.</p> <p>A CommunicationCluster aggregates one or more physical channels.</p> <p>Tags:vh.latestBindingTime=postBuild</p>			
Base	ARObject, CollectableElement, FibexElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
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	1..*	aggr	<p>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.</p> <p>Note: This atpSplittable property has no atp.Splitkey due to atpVariation (PropertySetPattern).</p> <p>Stereotypes: atpSplittable; atpVariation</p> <p>Tags:vh.latestBindingTime=systemDesignTime</p>
protocolName	String	0..1	attr	The name of the protocol used.
protocolVersion	String	0..1	attr	The version of the protocol used.

Table A.53: CommunicationCluster

Class	CommunicationConnector (abstract)			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreTopology			
Note	<p>The connection between the referencing ECU and the referenced channel via the referenced controller.</p> <p>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.</p> <p>Note: Several CommunicationConnectors can be assigned to one PhysicalChannel in the scope of one ECU Instance.</p>			
Base	ARObject, Identifiable , MultilanguageReferrable, Referrable			
Subclasses	AbstractCanCommunicationConnector, EthernetCommunicationConnector , FlexrayCommunicationConnector, 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	<p>Bit mask for NM-Pdu Payload used to configure the NM filter mask for the Network Management.</p> <p>Tags:atp.Status=draft</p>

Table A.54: CommunicationConnector

Enumeration	CommunicationDirectionType
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication
Note	Describes the communication direction.
Aggregated by	CommConnectorPort.communicationDirection , IPSecRule.direction , ISignalIPduGroup.communicationDirection
Literal	Description
in	Reception (Input) Tags: atp.EnumerationLiteralIndex=0
out	Transmission (Output) Tags: atp.EnumerationLiteralIndex=1

Table A.55: CommunicationDirectionType

Class	CompositionSwComponentType			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Composition			
Note	A CompositionSwComponentType aggregates SwComponentPrototypes (that in turn are typed by SwComponentTypes) as well as SwConnectors for primarily connecting SwComponentPrototypes among each others and towards the surface of the CompositionSwComponentType. By this means, 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	SwComponentPrototype	*	aggr	The instantiated components that are part of this composition. Stereotypes: atpSplitable; atpVariation Tags: atp.Splitkey=component.shortName, component.variationPoint.shortLabel vh.latestBindingTime=postBuild
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.variationPoint.shortLabel vh.latestBindingTime=postBuild
constantValueMapping	ConstantSpecificationMappingSet	*	ref	Reference to the ConstantSpecificationMapping to be applied for initValues of PPortComSpecs and RPortComSpec. Stereotypes: atpSplitable Tags: atp.Splitkey=constantValueMapping





Class	CompositionSwComponentType			
dataTypeMapping	DataTypeMappingSet	*	ref	Reference to the DataTypeMapping to be applied for the used ApplicationDataTypes in ServiceInterfaces. Stereotypes: atpSplitable Tags: atp.Splitkey=dataTypeMapping

Table A.56: CompositionSwComponentType

Class	CompuMethod			
Package	M2::MSR::AsamHdo::ComputationMethod			
Note	<p>This meta-class represents the ability to express the relationship between a physical value and the mathematical representation.</p> <p>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.</p> <p>Tags: atp.recommendedPackage=CompuMethods</p>			
Base	ARElement, ARObjekt, AtpBlueprint, AtpBlueprintable, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
compuInternalToPhys	Compu	0..1	aggr	This specifies the computation from internal values to physical values. Tags: xml.sequenceOffset=80
compuPhysToInternal	Compu	0..1	aggr	This represents the computation from physical values to the internal values. Tags: 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.57: CompuMethod

Class	ConcretePatternEventTriggering			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingConstraint::EventTriggeringConstraint			
Note	The ConcretePatternEventTriggering describes the behavior of an event, which occurs following a precisely known pattern.			
Base	ARObject, EventTriggeringConstraint, Identifiable , MultilanguageReferrable, Referrable , TimingConstraint, 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. Tags: xml.name=TIME-VALUE xml.roleElement=true xml.sequenceOffset=10 xml.typeElement=false





Class	ConcretePatternEventTriggering			
patternJitter	MultidimensionalTime	0..1	aggr	The optional parameter "Pattern Jitter" specifies the 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 "Pattern Period".
patternLength	MultidimensionalTime	0..1	aggr	The length of the observed time interval. Tags: xml.sequenceOffset=20
patternPeriod	MultidimensionalTime	0..1	aggr	The optional parameter "Pattern Period" specifies the time distance between the beginnings of subsequent repetitions of the given concrete pattern.

Table A.58: 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 , StateManagementCompareCondition.compareValue , SwDataDefProps.invalidValue , VariableDataPrototype.initValue			
Attribute	Type	Mult.	Kind	Note
constant	ConstantSpecification	0..1	ref	The referenced constant.

Table A.59: ConstantReference

Class	CpplImplementationDataType (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CpplImplementationDataType			
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 , CpplImplementationDataTypeContextTarget , Identifiable , MultilanguageReferrable , PackageableElement , Referrable			
Subclasses	CustomCpplImplementationDataType , StdCpplImplementationDataType			
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 CpplImplementationDataType has array semantics. Stereotypes: atpVariation Tags: vh.latestBindingTime=preCompileTime
headerFile	String	0..1	attr	Configuration of the Header File with the custom class declaration.





Class	CplusplusImplementationDataType (abstract)			
namespace (ordered)	SymbolProps	*	aggr	This aggregation allows for the definition an own namespace for the enclosing CplusplusImplementationDataType.
subElement (ordered)	CplusplusImplementationDataTypeElement	*	aggr	This represents the collection of sub-elements of the enclosing CplusplusImplementationDataType
template Argument (ordered)	CplusplusTemplateArgument	*	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 CplusplusImplementationDataType is contributed to the language binding.
typeReference	CplusplusImplementationDataType	0..1	ref	This reference shall be defined to define a type reference (a.k.a. typedef).

Table A.60: CplusplusImplementationDataType

Class	CplusplusImplementationDataTypeElement			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CplusplusImplementationDataType			
Note	Declares a data object which is locally aggregated. Such an element can only be used within the scope where it is aggregated. A CplusplusImplementationDataTypeElement is used to represent an element of a structure, defining its type.			
Base	ARObject, AbstractImplementationDataTypeElement, AtpClassifier, AtpFeature, AtpStructureElement, CplusplusImplementationDataTypeContextTarget, Identifiable, MultilanguageReferrable, Referrable			
Aggregated by	AtpClassifier.atpFeature, CplusplusImplementationDataType.subElement			
Attribute	Type	Mult.	Kind	Note
isOptional	Boolean	0..1	attr	This attribute represents the ability to declare the enclosing CplusplusImplementationDataTypeElement as optional. This means the that, at runtime, the CplusplusImplementationDataTypeElement may or may not have a valid value and shall therefore be ignored. The underlying runtime software provides means to set the CplusplusImplementationDataTypeElement as not valid at the sending end of a communication and determine its validity at the receiving end.
typeReference	CplusplusImplementationDataTypeElementQualifier	0..1	aggr	This aggregation defines the type of the CplusplusImplementationDataTypeElement and determines whether in C++ the CplusplusImplementationDataTypeElement is defined inside or outside of the enclosing CplusplusImplementationDataType.

Table A.61: CplusplusImplementationDataTypeElement

Class	CplusplusImplementationDataTypeElementQualifier			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CplusplusImplementationDataType			
Note	This element qualifies the typeReference of the CplusplusImplementationDataTypeElement to the CplusplusImplementationDataType.			
Base	ARObject			
Aggregated by	CplusplusImplementationDataTypeElement.typeReference			
Attribute	Type	Mult.	Kind	Note





Class	CppImplementationDataTypeElementQualifier			
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	CppImplementationDataType	0..1	ref	This reference defines a type reference.

Table A.62: 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 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	CppImplementationDataType	0..1	ref	This reference identifies the data type of the specific template argument required for the language binding.

Table A.63: 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.64: 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.65: 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 , 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.66: 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





Class	CryptoKeySlotAllowedModification			
maxNumberOfAllowedUpdates	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.67: 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
allowedKeyslotUsage	String	0..1	attr	This attribute defines for which operations the KeySlot may be used. Tags: atp.Status=candidate

Table A.68: 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
allocateShadowCopy	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





Class	CryptoKeySlotInterface			
cryptoAlgId	String	0..1	attr	<p>This attribute defines a crypto algorithm restriction (kAlgId Any means without restriction). The algorithm can be specified partially: family & length, mode, padding.</p> <p>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.</p> <p>Tags:atp.Status=candidate</p>
cryptoObjectType	CryptoObjectTypeEnum	0..1	attr	<p>Object type that can be stored in the slot. If this field contains "Undefined" then mSlotCapacity must be provided and larger then 0</p> <p>Tags:atp.Status=candidate</p>
keySlotAllowedModification	CryptoKeySlotAllowedModification	0..1	aggr	<p>Restricts how this keySlot may be used</p> <p>Tags:atp.Status=candidate</p>
keySlotContentAllowedUsage	CryptoKeySlotContentAllowedUsage	*	aggr	<p>Restriction of allowed usage of a key stored to the slot.</p> <p>Tags:atp.Status=candidate</p>
slotCapacity	PositiveInteger	0..1	attr	<p>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.</p> <p>"0" means slot size can be deduced from cryptoObjectType and cryptoAlgId.</p> <p>Tags:atp.Status=candidate</p>
slotType	CryptoKeySlotTypeEnum	0..1	attr	<p>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.</p> <p>Tags:atp.Status=candidate</p>

Table A.69: CryptoKeySlotInterface

Class	CryptoKeySlotToPortPrototypeMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::CryptoDeployment			
Note	<p>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.</p> <p>Tags:atp.recommendedPackage=CryptoKeySlotToPortPrototypeMappings</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , 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	<p>This reference represents the mapped PortPrototype.</p> <p>InstanceRef implemented by:RPortPrototypeInExecutableInstanceRef</p>
process	Process	0..1	ref	This reference represents the process required as context for the mapping.

Table A.70: 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.71: 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, PackageableElement, Referrable , 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: RPortPrototypeInExecutableInstanceRef
process	Process	0..1	ref	This reference represents the process required as context for the mapping.

Table A.72: 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, PackageableElement, Referrable			
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
maximumLength	PositiveInteger	0..1	attr	This attribute represents the ability to define the maximum length of the certificate in bytes.
nextHigherCertificate	CryptoServiceCertificate	0..1	ref	The reference identifies the next higher certificate in the certificate chain.





Class	CryptoServiceCertificate			
serverName Identification	String	0..1	attr	<p>Server Name Indication (SNI) is needed if the IP address hosts multiple servers (on the same port), each of them using a different certificate.</p> <p>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.</p>

Table A.73: CryptoServiceCertificate

Class	CustomCppImplementationDataType			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CppImplementationDataType			
Note	<p>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.</p> <p>Tags:atp.recommendedPackage=CppImplementationDataTypes</p>			
Base	ARElement , ARObject , AbstractImplementationDataType , AtpBlueprint , AtpBlueprintable , AtpClassifier , AtpType , AutosarDataType , CollectableElement , CpplImplementationDataType , CpplImplementationDataTypeContextTarget , Identifiable , MultilanguageReferrable , PackageableElement , Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.74: CustomCppImplementationDataType

Class	DataConstr			
Package	M2::MSR::AsamHdo::Constraints::GlobalConstraints			
Note	<p>This meta-class represents the ability to specify constraints on data.</p> <p>Tags:atp.recommendedPackage=DataConstrs</p>			
Base	ARElement , ARObject , AtpBlueprint , AtpBlueprintable , CollectableElement , Identifiable , MultilanguageReferrable , PackageableElement , Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
dataConstrRule	DataConstrRule	*	aggr	<p>This is one particular rule within the data constraints.</p> <p>Tags: xml.roleElement=true xml.roleWrapperElement=true xml.sequenceOffset=30 xml.typeElement=false xml.typeWrapperElement=false </p>

Table A.75: 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





Class	DataConstrRule			
constrLevel	Integer	0..1	attr	<p>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.</p> <p>The lower the level, the more stringent the check.</p> <p>Used to distinguish hard or soft limits.</p> <p>Tags:xml.sequenceOffset=20</p>
internalConstrs	InternalConstrs	0..1	aggr	<p>Describes the limitations applicable on the internal domain (as opposed to the physical domain).</p> <p>Tags:xml.sequenceOffset=40</p>
physConstrs	PhysConstrs	0..1	aggr	<p>Describes the limitations applicable on the physical domain (as opposed to the internal domain).</p> <p>Tags:xml.sequenceOffset=30</p>

Table A.76: 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	<p>This property allows to specify data definition properties which apply on data prototype level.</p> <p>Stereotypes: atpSplitable</p> <p>Tags:atp.Splitkey=swDataDefProps</p>

Table A.77: DataPrototype

Class	DataPrototypeInServiceInterfaceInstanceRef			
Package	M2::AUTOSARTemplates::AdaptivePlatform::General::SomethingInPortInterfaceInstanceRef			
Note				
Base	ARObject, AtpInstanceRef, DataPrototypeInPortInterfaceInstanceRef			
Aggregated by	DataPrototypeInPortInterfaceRef.dataPrototypeInServiceInterface, DataPrototypeInServiceInterfaceRef .dataPrototype, SignalBasedFireAndForgetMethodToSignalTriggeringMapping .dataPrototypeInMethodArgumentInstanceRef			
Attribute	Type	Mult.	Kind	Note
base	ServiceInterface	0..1	ref	Stereotypes: atpDerived
contextData Prototype (ordered)	ApplicationCompositeElementDataPrototype	*	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.78: 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	SignalBasedEventElementToSignalTriggeringMapping.dataPrototypeInServiceInterfaceRef , SignalBasedFieldToSignalTriggeringMapping.dataPrototypeInServiceInterfaceRef , SomeIpDataPrototypeTransformationProps.dataPrototype			
Attribute	Type	Mult.	Kind	Note
dataPrototype	DataPrototype	0..1	iref	<p>This element represents the ability to:</p> <ul style="list-style-type: none"> refer to a DataPrototype in the context of a ServiceInterface. refer to the internal structure of a DataPrototype in which is typed by an ApplicationDatatype the context of a ServiceInterface. <p>InstanceRef implemented by: DataPrototypeInServiceInterfaceInstanceRef</p>
elementInImplDatatype	PortInterfaceElementInImplementationDatatypeRef	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.79: DataPrototypeInServiceInterfaceRef

Class	DataTypeMap			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes			
Note	This class represents the relationship between ApplicationDataType and its implementing AbstractImplementationDataType.			
Base	ARObject			
Aggregated by	DataTypeMappingSet.dataTypeMap			
Attribute	Type	Mult.	Kind	Note
applicationDataType	ApplicationDataType	0..1	ref	This is the corresponding ApplicationDataType
implementationDataType	AbstractImplementationDataType	0..1	ref	This is the corresponding AbstractImplementationDataType.

Table A.80: DataTypeMap

Class	DataTypeMappingSet			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes			
Note	<p>This class represents a list of mappings between ApplicationDataTypes and ImplementationDataTypes. In addition, it can contain mappings between ImplementationDataTypes and ModeDeclarationGroups.</p> <p>Tags:atp.recommendedPackage=DataTypeMappingSets</p>			
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 ApplicationDataType and its AbstractImplementationDataType.





Class	DataTypeMappingSet			
modeRequestTypeMap	ModeRequestTypeMap	*	aggr	This is one particular association between an Mode DeclarationGroup and its AbstractImplementationData Type.

Table A.81: 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.82: 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
eventTopicAccessRule	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.
transportProtocol	String	*	attr	This attribute defines over which Transport Layer Protocol(s) this event is intended to be sent.

Table A.83: 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	ServiceEventDeployment	0..1	ref	Reference to an event that is provided.

Table A.84: 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	ServiceFieldDeployment	0..1	ref	Reference to the field.

Table A.85: DdsFieldQosProps

Enumeration	DdsProtectionKindEnum			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::SecureCommunication			
Note	Supported cryptographic transformations (extended).			
Aggregated by	DdsSecureGovernance.discoveryProtectionKind , DdsSecureGovernance.livelinessProtectionKind , DdsSecureGovernance.rtpsProtectionKind , DdsTopicAccessRule.dataProtectionKind , DdsTopicAccessRule.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			
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.86: 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 , 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.
fieldNotifierQos Props	DdsFieldQosProps	*	aggr	List of configuration properties for Field notifiers that are provided by the Service Instance.





Class	DdsProvidedServiceInstance			
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.87: 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.88: 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 , 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.89: DdsRequiredServiceInstance

Class	DdsRule			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Firewall			
Note	Configuration of a DDS firewall rule Tags: atp.Status=candidate			





Class	DdsRule			
Base	<i>ARObject</i>			
Aggregated by	FirewallRule.ddsRule			
Attribute	Type	Mult.	Kind	Note
appld	PositiveInteger	0..1	attr	Filter for DDSI-RTPS messages in which the appld 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 majorProtocolVersion in the DDSI-RTPS header matches. Tags: atp.Status=candidate
minorProtocolVersion	PositiveInteger	0..1	attr	Filter for DDSI-RTPS messages in which the minorProtocolVersion 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
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
submessageType	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.90: 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	<i>ARElement</i> , <i>ARObject</i> , <i>CollectableElement</i> , Identifiable , <i>MultilanguageReferrable</i> , <i>PackageableElement</i> , Referrable , <i>SecureComProps</i>			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note





Class	DdsSecureComProps			
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.91: 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	<i>ARElement, ARObject, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable, UploadablePackageElement</i>			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
allowUnauthenticatedParticipants	Boolean	0..1	attr	Defines whether unauthenticated participants can join this domain. Tags: atp.Status=candidate
discoveryProtectionKind	DdsProtectionKindEnum	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
enableJoinAccessControl	Boolean	0..1	attr	Defines whether access control is to be enforced upon joining this domain. Tags: atp.Status=candidate
identityCertificateAuthority	CryptoCertificate	0..1	ref	Certificate representing the identity certificate authority applicable to the domain(s) specified by domainIds. Tags: atp.Status=candidate
livelinessProtectionKind	DdsProtectionKindEnum	0..1	attr	Defines the kind of cryptographic transformation to apply in DDS liveliness communication. Tags: atp.Status=candidate
permissionCertificateAuthority	CryptoCertificate	0..1	ref	Certificate representing the permissions certificate authority applicable to the domain(s) specified by domainIds. Tags: atp.Status=candidate
rtpsProtectionKind	DdsProtectionKindEnum	0..1	attr	Defines the kind of cryptographic transformation to apply to whole DDS RTPS. Tags: atp.Status=candidate

Table A.92: 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.93: 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.94: 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> Partitions: - Topics: ara.com://services/<InterfaceId>/<InstanceId>/<TopicName> Tags: atp.EnumerationLiteralIndex=1

Table A.95: 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, PackageableElement, Referrable , ServiceInstanceToMachineMapping , UploadablePackageElement			
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.96: 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 , 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.
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.97: 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, PackageableElement, Referrable , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note





Class	DdsTopicAccessRule			
dataProtectionKind	DdsProtectionKind Enum	0..1	attr	Defines the data protection policy applicable to metadata related to the DDS Topic(s).
enableDiscoveryProtection	Boolean	0..1	attr	Defines whether discovery protection mechanisms should apply to the DDS Topic(s).
enableLivelinessProtection	Boolean	0..1	attr	Defines whether liveliness protection mechanisms should apply to the DDS Topic(s).
enableReadAccessControl	Boolean	0..1	attr	Defines whether read access control mechanisms should apply to the DDS Topic(s).
enableWriteAccessControl	Boolean	0..1	attr	Defines whether write access control mechanisms should apply to the DDS Topic(s).
metadataProtectionKind	DdsProtectionKind Enum	0..1	attr	Defines the data protection policy applicable to metadata related to the DDS Topic(s).

Table A.98: 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
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.99: DeadlineSupervision

Class	DeterministicSyncMOutOfN			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::DeterministicSync			
Note	This meta-class has the ability to configure an N-out-of-M verification in the context of a deterministic sync master. Tags: atp.Status=draft			
Base	ARObject, DeterministicSyncVerificationPolicy			
Aggregated by	DeterministicSyncMaster.verificationMethod			
Attribute	Type	Mult.	Kind	Note
minimumNumberOfRequests	PositiveInteger	0..1	attr	The minimum number of received requests that is sufficient to continue the calculation of next cycle. This attribute represents the M in the M-out-of-N verification method. Tags: atp.Status=draft





Class	DeterministicSyncMOutOfN			
numberOfConnectedClients	PositiveInteger	0..1	attr	This attribute represents the number of deterministic clients that are connected to the deterministic sync master. this attribute represents the N in the M-out-of-N verification method. Tags: atp.Status=draft

Table A.100: DeterministicSyncMOutOfN

Class	DeterministicSyncMasterToTimeBaseConsumerMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::DeterministicSync			
Note	This meta-class has the ability to create an association between a deterministic sync master and the time-base consumer that is used to provide the sync master with a time base for creating time stamps for certain use cases. Tags: atp.Status=draft atp.recommendedPackage=FCInteractions			
Base	ARElement, ARObject, CollectableElement, FunctionalClusterInteractsWithFunctionalClusterMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable, UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
deterministicSyncMaster	DeterministicSyncMaster	0..1	ref	This reference identifies the deterministic sync master in the scope of the mapping. Tags: atp.Status=draft
timeBaseConsumer	SynchronizedTimeBaseConsumer	0..1	ref	This reference identifies the time base consumer in the scope of the mapping. Tags: atp.Status=draft

Table A.101: DeterministicSyncMasterToTimeBaseConsumerMapping

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	DiagnosticAuthenticationConfiguration, DiagnosticDeAuthentication, DiagnosticProofOfOwnership, DiagnosticVerifyCertificateBidirectional, DiagnosticVerifyCertificateUnidirectional			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
authenticationClass	DiagnosticAuthenticationClass	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 DiagnosticServiceInstance. The subclasses that affected by this pattern implement references to the applicable "class"-role that substantiate this abstract reference.
authenticationTimeout	TimeValue	0..1	attr	This attribute defines the time that the authentication state is maintained in default-session if there is no communication from the authenticated client.

Table A.102: DiagnosticAuthentication

Class	DiagnosticAuthenticationInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	<p>This meta-class represents the ability to implement a focused PortInterface for handling the diagnostic service "authentication" on the adaptive platform.</p> <p>Tags:atp.recommendedPackage=DiagnosticPortInterfaces</p>			
Base	<i>ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, DiagnosticPortInterface, Identifiable, MultilanguageReferrable, PackageableElement, PortInterface, Referrable</i>			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
—	—	—	—	—

Table A.103: DiagnosticAuthenticationInterface

Class	DiagnosticAuthenticationPortMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	<p>This mapping class identifies the PortPrototype in the application software that handles the client authentication.</p> <p>Tags:atp.recommendedPackage=DiagnosticPortMappings</p>			
Base	<i>ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, DiagnosticSwMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable</i>			
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	<p>This aggregation allows for the usage of the Diagnostic AuthenticationPortMapping on the AUTOSAR adaptive platform.</p> <p>Stereotypes: atp.UriDefInstanceRef implemented by:P PortPrototypeInExecutableInstanceRef</p>
process	ProcessDesign	0..1	ref	<p>Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable.</p> <p>Stereotypes: atp.Splitable Tags:atp.Splitkey=process</p>

Table A.104: DiagnosticAuthenticationPortMapping

Class	DiagnosticClearCondition			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticClearCondition			
Note	<p>This meta-class describes a clear condition for diagnostic purposes.</p> <p>Tags:atp.recommendedPackage=DiagnosticConditions</p>			
Base	<i>ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticCondition, Identifiable, MultilanguageReferrable, PackageableElement, Referrable</i>			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
—	—	—	—	—

Table A.105: DiagnosticClearCondition

Class	DiagnosticClearConditionPortMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	<p>Defines to which SWC service ports with DiagnosticsClearConditionNeeds the DiagnosticClearCondition is mapped.</p> <p>Tags:atp.recommendedPackage=DiagnosticMappings</p>			
Base	<i>ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, DiagnosticSwMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable</i>			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
clearCondition	DiagnosticClearCondition	0..1	ref	Reference to the ClearCondition which is mapped to a SWC service port with DiagnosticClearConditionNeeds.
process	ProcessDesign	0..1	ref	<p>Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable.</p> <p>Stereotypes: atp.Splitable Tags:atp.Splitkey=process</p>
rPortPrototypeInExecutable	RPortPrototype	0..1	iref	<p>This aggregation allows for the usage of the DiagnosticClearConditionMapping on the AUTOSAR adaptive platform.</p> <p>Stereotypes: atp.UriDefInstanceRef implemented by:RPortPrototypeInExecutableInstanceRef</p>

Table A.106: DiagnosticClearConditionPortMapping

Class	DiagnosticComControl			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::DiagnosticService::CommunicationControl			
Note	<p>This represents an instance of the "Communication Control" diagnostic service.</p> <p>Tags:atp.recommendedPackage=DiagnosticCommunicationControls</p>			
Base	<i>ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticServiceInstance, Identifiable, MultilanguageReferrable, PackageableElement, Referrable</i>			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
comControlClass	DiagnosticComControlClass	0..1	ref	<p>This reference substantiates that abstract reference in the role serviceClass for this specific concrete class.</p> <p>Thereby, the reference represents the ability to access shared attributes among all DiagnosticComControl in the given context.</p>
customSubFunctionNumber	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.107: DiagnosticComControl

Class	DiagnosticConditionInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	<p>This meta-class represents the ability to implement a PortInterface to process requests for diagnostic conditions on the adaptive platform.</p> <p>Tags:atp.recommendedPackage=DiagnosticPortInterfaces</p>			
Base	<i>ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, DiagnosticPortInterface, Identifiable, MultilanguageReferrable, PackageableElement, PortInterface, Referrable</i>			





Class	DiagnosticConditionInterface			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.108: DiagnosticConditionInterface

Class	DiagnosticContributionSet			
Package	M2::AUTOSARTemplates::DiagnosticExtract::DiagnosticContribution			
Note	<p>This meta-class represents a root node of a diagnostic extract. It bundles a given set of diagnostic model elements. The granularity of the DiagnosticContributionSet is arbitrary in order to support the aspect of decentralized configuration, i.e. different contributors can come up with an own DiagnosticContributionSet.</p> <p>Tags:atp.recommendedPackage=DiagnosticContributionSets</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
common Properties	DiagnosticCommon Props	0..1	aggr	<p>This attribute represents a collection of diagnostic properties that are shared among the entire DiagnosticContributionSet.</p> <p>Stereotypes: atp.Splittable Tags:atp.Splitkey=commonProperties</p>
element	DiagnosticCommon Element	*	ref	<p>This represents a DiagnosticCommonElement considered in the context of the DiagnosticContributionSet</p> <p>Stereotypes: atp.Splittable; atp.Variation Tags: atp.Splitkey=element.diagnosticCommonElement, element.variationPoint.shortLabel vh.latestBindingTime=postBuild</p>
serviceTable	DiagnosticServiceTable	*	ref	<p>This represents the collection of DiagnosticServiceTables to be considered in the scope of this DiagnosticContributionSet.</p> <p>Stereotypes: atp.Splittable; atp.Variation Tags: atp.Splitkey=serviceTable.diagnosticServiceTable, serviceTable.variationPoint.shortLabel vh.latestBindingTime=postBuild</p>

Table A.109: DiagnosticContributionSet

Class	DiagnosticCustomServiceInstance			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::DiagnosticService::CustomServiceInstance			
Note	<p>This meta-class has the ability to define an instance of a custom diagnostic service.</p> <p>Tags:atp.recommendedPackage=DiagnosticCustomInstances</p>			
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.110: 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.111: DiagnosticDTCInformationInterface

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.112: DiagnosticDataElementInterface

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.113: 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			





Class	DiagnosticDataIdentifierInterface			
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.114: 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
diagnosticDataElement	DiagnosticDataElement	0..1	ref	This reference represents the applicable DiagnosticDataElement.
diagnosticDataIdentifier	DiagnosticDataIdentifier	0..1	ref	This reference represents the applicable DiagnosticDataIdentifier.
pPortPrototypeInExecutable	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: atp.UriDefInstanceRef implemented by:PPortPrototypeInExecutableInstanceRef
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: atp.Splitable Tags: atp.Splitkey=process

Table A.115: 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
customSubFunctionNumber	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.





Class	DiagnosticEcuReset			
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.116: DiagnosticEcuReset

Class	DiagnosticEnableCondition			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dem::DiagnosticCondition			
Note	Specification of an enable condition. Tags: atp.recommendedPackage=DiagnosticConditions			
Base	ARElement, ARObjct, CollectableElement, DiagnosticCommonElement, DiagnosticCondition, Identifiable, MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.117: DiagnosticEnableCondition

Class	DiagnosticEnableConditionPortMapping			
Package	M2::AUTOSARTemplates::DiagnosticExtract::DiagnosticMapping			
Note	Defines to which SWC service ports with DiagnosticEnableConditionNeeds the DiagnosticEnable Condition is mapped. Tags: atp.recommendedPackage=DiagnosticMappings			
Base	ARElement, ARObjct, 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 with DiagnosticEnableConditionNeeds.
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=draft
rPortPrototype InExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic EnableConditionPortMapping on the AUTOSAR adaptive platform. Stereotypes: atpUriDef Tags: atp.Status=draft InstanceRef implemented by: RPortPrototypeIn ExecutableInstanceRef

Table A.118: 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
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 Tags: atp.Status=draft InstanceRef implemented by: PPortPrototypeIn ExecutableInstanceRef
process	ProcessDesign	0..1	ref	This reference identifies the applicable ProcessDesign. Tags: atp.Status=draft
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.119: 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





Class	DiagnosticEvent			
confirmation Threshold	PositiveInteger	0..1	attr	<p>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.</p> <p>Stereotypes: atpVariation Tags: vh.latestBindingTime=preCompileTime</p>
connected Indicator	DiagnosticConnected Indicator	*	aggr	<p>Event specific description of Indicators.</p> <p>Stereotypes: atpSplitable; atpVariation Tags: atp.Splitkey=connectedIndicator.shortName, connected Indicator.variationPoint.shortLabel vh.latestBindingTime=postBuild</p>
prestorage FreezeFrame	Boolean	0..1	attr	<p>This attribute describes whether the Prestorage of Freeze Frames is supported by the assigned event or not.</p> <p>True: Prestorage of FreezeFrames is supported False: Prestorage of FreezeFrames is not supported</p>
prestored FreezeFrame StoredInNvm	Boolean	0..1	attr	<p>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)</p>
recoverableIn SameOperation Cycle	Boolean	0..1	attr	<p>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.</p>

Table A.120: DiagnosticEvent

Class	DiagnosticEventInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	<p>This meta-class represents the ability to implement a PortInterface to access the properties of diagnostic events on the adaptive platform.</p> <p>Tags: atp.recommendedPackage=DiagnosticPortInterfaces</p>			
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.121: DiagnosticEventInterface

Class	DiagnosticEventPortMapping			
Package	M2::AUTOSARTemplates::DiagnosticExtract::DiagnosticMapping			
Note	Defines to which SWC service ports with DiagnosticEventInfoNeeds 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 with DiagnosticEventInfoNeeds.
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: atp.Splitable Tags: atp.Splitkey=process atp.Status=draft
rPortPrototypeInExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the DiagnosticEventPortMapping on the AUTOSAR adaptive platform. Stereotypes: atp.UriDef Tags: atp.Status=draft InstanceRef implemented by: RPortPrototypeInExecutableInstanceRef

Table A.122: 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.123: 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=DiagnosticPortMappings			
Base	ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, DiagnosticSwMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note





Class	DiagnosticExternalAuthenticationPortMapping			
diagnostic Authentication	Diagnostic Authentication	0..1	ref	Reference to the DiagnosticAuthentication 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 ClientAuthenticationPortMapping on the AUTOSAR adaptive platform. Stereotypes: atpUriDefInstanceRef implemented by: R PortPrototypeInExecutableInstanceRef

Table A.124: 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, ARObjct, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, DiagnosticPortInterface, Identifiable , MultilanguageReferrable, PackageableElement, PortInterface , Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.125: DiagnosticIndicatorInterface

Class	DiagnosticIndicatorPortMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	Defines to which SWC service ports with DiagnosticsIndicatorNeeds the DiagnosticIndicator is mapped. Tags: atp.recommendedPackage=DiagnosticMappings			
Base	ARElement, ARObjct, 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 with DiagnosticIndicatorNeeds.
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: atpUriDefInstanceRef implemented by: R PortPrototypeInExecutableInstanceRef

Table A.126: DiagnosticIndicatorPortMapping

Class	DiagnosticMemoryDestinationPortMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	<p>Defines to which SWC service ports with DiagnosticsEventInfoNeeds the DiagnosticMemoryDestination is mapped.</p> <p>Tags:atp.recommendedPackage=DiagnosticMappings</p>			
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 with DiagnosticEventInfoNeeds.
process	ProcessDesign	0..1	ref	<p>Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable.</p> <p>Stereotypes: atp.Splitable Tags:atp.Splitkey=process</p>
rPortPrototype InExecutable	RPortPrototype	0..1	iref	<p>This aggregation allows for the usage of the Diagnostic MemoryDestinationMapping on the AUTOSAR adaptive platform.</p> <p>Stereotypes: atp.UriDefInstanceRef implemented by:R PortPrototypeInExecutableInstanceRef</p>

Table A.127: DiagnosticMemoryDestinationPortMapping

Class	DiagnosticMonitorInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	<p>This meta-class represents the ability to implement a monitor-focused PortInterface for diagnostics on the adaptive platform.</p> <p>Tags:atp.recommendedPackage=DiagnosticPortInterfaces</p>			
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: DiagnosticMonitorInterface

Class	DiagnosticMonitorPortMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	<p>Defines to which SWC service port the Diagnostic Monitor is mapped.</p> <p>Tags:atp.recommendedPackage=DiagnosticPortMappings</p>			
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.





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: atpUriDefInstanceRef implemented by: R PortPrototypeInExecutableInstanceRef

Table A.129: DiagnosticMonitorPortMapping

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.130: 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.131: DiagnosticOperationCycleInterface

Class	DiagnosticOperationCyclePortMapping			
Package	M2::AUTOSARTemplates::DiagnosticExtract::DiagnosticMapping			
Note	Defines to which SWC service ports with DiagnosticOperationCycleNeeds 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





Class	DiagnosticOperationCyclePortMapping			
operationCycle	DiagnosticOperation Cycle	0..1	ref	Reference to the DiagnosticOperationCycle that is assigned to SWC service ports with DiagnosticOperation CycleNeeds.
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=draft
rPortPrototype InExecutable	RPortPrototype	0..1	iref	This aggregation allows for the usage of the Diagnostic OperationCyclePortMapping on the AUTOSAR adaptive platform. Stereotypes: atpUriDef Tags: atp.Status=draft InstanceRef implemented by: RPortPrototypeIn ExecutableInstanceRef

Table A.132: 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	<i>ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable</i>			
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.133: 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	<i>ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMemory AddressableRangeAccess, DiagnosticMemoryByAddress, DiagnosticServiceInstance, Identifiable, MultilanguageReferrable, PackageableElement, Referrable</i>			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note





Class	DiagnosticRequestDownload			
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.134: 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.135: 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, DiagnosticMemory AddressableRangeAccess, 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.136: 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			





Class	DiagnosticRoutineControl			
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.137: 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.138: 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 , MultilanguageReferrable, 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.139: DiagnosticSecurityLevel

Class	DiagnosticSecurityLevelInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	<p>This meta-class represents the ability to implement a security-level-focused PortInterface for diagnostics on the adaptive platform.</p> <p>Tags:atp.recommendedPackage=DiagnosticPortInterfaces</p>			
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.140: DiagnosticSecurityLevelInterface

Class	DiagnosticSecurityLevelPortMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	<p>Defines to which SWC service ports with DiagnosticsCommunicationSecurityNeeds the Diagnostic SecurityLevel is mapped.</p> <p>Tags:atp.recommendedPackage=DiagnosticMappings</p>			
Base	ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, DiagnosticSwMapping , Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
pPortPrototypeInExecutable	PPortPrototype	0..1	iref	<p>This aggregation allows for the usage of the Diagnostic SecurityLevelMapping on the AUTOSAR adaptive platform.</p> <p>Stereotypes: atp.UriDefInstanceRef implemented by:P PortPrototypeInExecutableInstanceRef</p>
process	ProcessDesign	0..1	ref	<p>Reference to the representation of a Process that is required because the mapping could be different for different Processes referring to a specific Executable.</p> <p>Stereotypes: atp.Splitable Tags:atp.Splitkey=process</p>
securityLevel	DiagnosticSecurityLevel	0..1	ref	<p>Reference to the SecurityLevelwhich is mapped to a SWC service port with DiagnosticCommunicationSecurity Needs.</p>

Table A.141: DiagnosticSecurityLevelPortMapping

Class	DiagnosticServiceGenericMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	<p>This meta-class represents the ability to implement a generic generic mapping for select diagnostics services on the adaptive platform.</p> <p>Tags:atp.recommendedPackage=DiagnosticServiceMappings</p>			
Base	ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, DiagnosticSwMapping , Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
diagnosticServiceInstance	DiagnosticServiceInstance	0..1	ref	<p>Reference to the ServiceInstance mapped to a SWC service port.</p>





Class	DiagnosticServiceGenericMapping			
pPortPrototype InExecutable	PPortPrototype	0..1	iref	This aggregation allows for the usage of the DiagnosticServiceGenericMapping on the AUTOSAR adaptive platform. Stereotypes: atpUriDefInstanceRef implemented by:P PortPrototypeInExecutableInstanceRef
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.142: 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 , MultilanguageReferrable, PackageableElement, Referrable			
Subclasses	DiagnosticAuthentication , DiagnosticClearDiagnosticInformation, DiagnosticClearResetEmissionRelatedInfo, DiagnosticComControl , DiagnosticControlDTCSetting, DiagnosticCustomServiceInstance , DiagnosticDataByIdentifier , DiagnosticDynamicallyDefineDataIdentifier, DiagnosticEcuReset , DiagnosticIOControl, DiagnosticMemoryByAddress , DiagnosticReadDTCInformation, DiagnosticReadDataByPeriodicID, DiagnosticRequestControlOfOnBoardDevice, DiagnosticRequestCurrentPowertrainData, DiagnosticRequestEmissionRelatedDTC, DiagnosticRequestEmissionRelatedDTCPermanentStatus, DiagnosticRequestFileTransfer , DiagnosticRequestOnBoardMonitoringTestResults, DiagnosticRequestPowertrainFreezeFrameData, DiagnosticRequestVehicleInfo, DiagnosticResponseOnEvent, DiagnosticRoutineControl , DiagnosticSecurityAccess, DiagnosticSessionControl			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
access Permission	DiagnosticAccess Permission	0..1	ref	This represents the collection of DiagnosticAccessPermissions that allow for the execution of the referencing DiagnosticServiceInstance..
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 DiagnosticServiceInstance. The subclasses that affected by this pattern implement references to the applicable "class"-role that substantiate this abstract reference. Stereotypes: atpAbstract

Table A.143: 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			
Aggregated by	SoftwareClusterDiagnosticDeploymentProps.validationConfiguration			
Attribute	Type	Mult.	Kind	Note





Class	DiagnosticServiceValidationConfiguration			
manufacturer ValidationOrder (ordered)	DiagnosticServiceValidationMapping	*	ref	This reference defines the order in which validations created by manufacturer are executed.
supplier ValidationOrder (ordered)	DiagnosticServiceValidationMapping	*	ref	This reference defines the order in which validations created by supplier are executed.

Table A.144: 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.145: 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: atp.UriDefInstanceRef implemented by:P PortPrototypeInExecutableInstanceRef
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: atp.Splitable Tags: atp.Splitkey=process

Table A.146: DiagnosticServiceValidationMapping

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	<i>ARElement</i> , <i>ARObject</i> , <i>CollectableElement</i> , <i>DiagnosticCommonElement</i> , <i>DiagnosticMapping</i> , <i>Identifiable</i> , <i>MultilanguageReferrable</i> , <i>PackageableElement</i> , <i>Referrable</i>			
Subclasses	<i>DiagnosticAuthenticationPortMapping</i> , <i>DiagnosticClearConditionPortMapping</i> , <i>DiagnosticDataPortMapping</i> , <i>DiagnosticEnableConditionPortMapping</i> , <i>DiagnosticEventPortMapping</i> , <i>DiagnosticExternalAuthenticationPortMapping</i> , <i>DiagnosticFimFunctionMapping</i> , <i>DiagnosticIndicatorPortMapping</i> , <i>DiagnosticMemoryDestinationPortMapping</i> , <i>DiagnosticMonitorPortMapping</i> , <i>DiagnosticOperationCyclePortMapping</i> , <i>DiagnosticSecurityLevelPortMapping</i> , <i>DiagnosticServiceDataMapping</i> , <i>DiagnosticServiceGenericMapping</i> , <i>DiagnosticServiceSwMapping</i> , <i>DiagnosticServiceValidationMapping</i> , <i>DiagnosticSovdAuthorizationPortMapping</i> , <i>DiagnosticSovdProximityChallengePortMapping</i>			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.147: 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	<i>ARElement</i> , <i>ARObject</i> , <i>CollectableElement</i> , <i>DiagnosticCommonElement</i> , <i>DiagnosticTroubleCode</i> , <i>Identifiable</i> , <i>MultilanguageReferrable</i> , <i>PackageableElement</i> , <i>Referrable</i>			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
considerPtoStatus	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.
dtcProps	DiagnosticTroubleCodeProps	0..1	ref	Defined properties associated with the DemDTC.
eventObdReadinessGroup	NameToken	0..1	attr	This attribute specifies the Event OBD Readiness group for PID \$01 and PID \$41 computation. This attribute is only applicable for emission-related ECUs.
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.
severity	DiagnosticUdsSeverityEnum	0..1	attr	DTC severity according to ISO 14229-1.
udsDtcValue	PositiveInteger	0..1	attr	Unique Diagnostic Trouble Code value for UDS. Stereotypes: atpVariation Tags: vh.latestBindingTime=preCompileTime
wwhObdDtcClass	DiagnosticWwhObdDtcClassEnum	0..1	attr	This attribute is used to identify (if applicable) the corresponding severity class of an WWH-OB DTC. Stereotypes: atpVariation Tags: vh.latestBindingTime=preCompileTime

Table A.148: 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
clearConditionGroup	DiagnosticClearConditionGroup	0..1	ref	This reference identifies the applicable DiagnosticClearConditionGroup.
troubleCodeUds	DiagnosticTroubleCodeUds	0..1	ref	This reference identifies the DiagnosticTroubleCodeUds that are relevant for the mapping.

Table A.149: 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
applicationDescription	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: atp.Splitable; atp.Variation Tags: atp.Splitkey=context.dltContext, context.variation Point.shortLabel vh.latestBindingTime=systemDesignTime

Table A.150: 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, PackageableElement, Referrable, UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
dltApplication	DltApplication	0..1	ref	Reference to a DltApplication that defines the applicationId
process	Process	0..1	ref	Reference to the process that is assigned to a Log And Trace applicationId.

Table A.151: 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, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
contextDescription	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.
dltMessage	DltMessage	*	ref	Group of Log and Trace Messages assigned to the Dlt Context Stereotypes: atpSplittable; atpVariation Tags: atp.Splitkey=dltMessage.dltMessage, dltMessage.variationPoint.shortLabel vh.latestBindingTime=systemDesignTime

Table A.152: 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, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
application	DltApplication	*	aggr	Application on DltEcu that provides log or trace data. Stereotypes: atpSplittable; atpVariation Tags: atp.Splitkey=application.shortName, application.variationPoint.shortLabel vh.latestBindingTime=systemDesignTime
eculd	String	0..1	attr	This attribute defines the name of the ECU for use within the Dlt protocol.

Table A.153: 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, PackageableElement, Referrable , 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.





Class	DltLogSink			
defaultLogThreshold	LogTraceDefaultLogLevelEnum	0..1	attr	This attribute allows to set a log level Threshold for Log Level filtering.
defaultTraceState	Boolean	0..1	attr	This attributes defines the default trace status.
endpointConfiguration	PlatformModuleEthernetEndpointConfiguration	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.
nonVerboseMode	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".
segmentationSupported	Boolean	0..1	attr	If enabled, segmentation will be used for DLT messages that are larger than EthernetCommunicationConnector.maximumTransmissionUnit referenced via DltLogSink.endpointConfiguration.

Table A.154: 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, ARObjct, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
dltContext	DltContext	0..1	ref	Assignment 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: PPortPrototypeInExecutableInstanceRef
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: RPortPrototypeInExecutableInstanceRef

Table A.155: DltLogSinkToPortPrototypeMapping

Enumeration	DolpEidRetrievalEnum
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation
Note	Enumeration with options to retrieve EID.
Aggregated by	DolpNetworkConfiguration.eidRetrieval
Literal	Description
eidUseApi	API DiagnosticDoIPEntityIdentification is used to retrieve eid Tags: atp.EnumerationLiteralIndex=1
eidUseConfigValue	eid is configured manually by DolpInstantiation.eid Tags: atp.EnumerationLiteralIndex=2
eidUseMac	MAC of the network interface is used as eid Tags: atp.EnumerationLiteralIndex=0

Table A.156: DolpEidRetrievalEnum

Class	DolpInstantiation			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation			
Note	This meta-class defines the attributes for the DoIP configuration on a specific machine.			
Base	<i>ARObject</i> , <i>AdaptiveModuleInstantiation</i> , <i>AtpClassifier</i> , <i>AtpFeature</i> , <i>AtpStructureElement</i> , <i>Identifiable</i> , <i>MultilanguageReferrable</i> , <i>NonOsModuleInstantiation</i> , <i>Referrable</i>			
Aggregated by	<i>AtpClassifier.atpFeature</i> , 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	DolpNetwork Configuration	*	aggr	Network interface specific DoIP properties.
request Configuration	DolpRequest 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.157: DolpInstantiation

Class	DolpNetworkConfiguration			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation			
Note	This element collects DoIP properties that are network interface specific.			
Base	ARObject			
Aggregated by	DolpInstantiation.networkInterface			
Attribute	Type	Mult.	Kind	Note
eidRetrieval	DolpEidRetrievalEnum	0..1	attr	This attribute defines how DoIP Entity Identification is retrieved.
isActivationLine Dependent	Boolean	0..1	attr	This attribute defines whether the network interface <ul style="list-style-type: none"> 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 13400-2:2012. 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 13400-2:2012.
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 13400-2:2012.
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 13400-2:2012.
vehicle Announcement Count	PositiveInteger	0..1	attr	Number of vehicle announcement messages on IP address assignment. Represents parameter A_DoIP_Announce_Num of ISO 13400-2:2012.
vehicle Announcement Interval	TimeValue	0..1	attr	Time to wait in [s] for sending subsequent vehicle announcement messages. Represents parameter A_DoIP_Announce_Interval of ISO 13400-2:2012.
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.158: DolpNetworkConfiguration

Class	DolpRequestConfiguration
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.





Class	DolpRequestConfiguration			
Base	ARObject			
Aggregated by	DolpInstantiation.requestConfiguration			
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.159: DolpRequestConfiguration

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, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
transitToInvalidExtended	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.160: 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
clearFromValidToInvalid	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.
e2eProfileCompatibilityProps	E2EProfileCompatibilityProps	0..1	ref	Reference to additional settings for the E2E state machine.
maxDeltaCounter	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.





Class	E2EProfileConfiguration			
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.
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.161: 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.162: 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.163: 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.164: 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
apApplicationEndpoint	ApApplicationEndpoint	*	aggr	Collection of Application Addresses that are used on the CommunicationConnector. Tags: atp.Status=draft
canXIProps	CanXIProps	*	ref	If the Ethernet frames handled by this Ethernet CommunicationConnector are tunneled through CAN XL, then this reference shall refer the CanXIProps which contains the specific configuration parameters of the CAN XL controller of the physical CAN XL connection to be used for tunneling. Tags: atp.Status=draft
maximumTransmissionUnit	PositiveInteger	0..1	attr	This attribute specifies the maximum transmission unit in bytes.
neighborCacheSize	PositiveInteger	0..1	attr	This attribute specifies the size of neighbor cache or ARP table in units of entries.
pathMtuEnabled	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.
unicastNetworkEndpoint	NetworkEndpoint	*	ref	Network Endpoint that defines the IPAddress of the machine. Tags: atp.Status=draft

Table A.165: 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
canXIConfig	AbstractCanCommunicationController	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 CanControllerXIConfiguration 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	EthernetMacLayerTypeEnum	0..1	attr	Specifies the mac layer type of the ethernet controller.
macUnicastAddress	MacAddressString	0..1	attr	Media Access Control address (MAC address) that uniquely identifies each EthernetCommunicationController in the network.
maximumReceiveBufferLength	Integer	0..1	attr	Determines the maximum receive buffer length (frame length) in bytes.





Class	<<atpVariation>> EthernetCommunicationController			
maximum TransmitBuffer Length	Integer	0..1	attr	Determines the maximum transmit buffer length (frame length) in bytes.
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). Tags: atp.Status=draft
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. Tags: atp.Status=draft

Table A.166: 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.167: 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	EthernetCommunicationConnector	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.168: 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 , UploadablePackageElement			
Subclasses	EthernetRawDataStreamClientMapping, EthernetRawDataStreamServerMapping			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
localEndpointConfig	EthernetRawDataStreamLocalEndpointConfig	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.
tlsSecureComProps	TlsSecureComProps	0..1	ref	This reference provides the ability to define TLS-related properties for the enclosing SocketRawDataStreamMapping.

Table A.169: 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
multicastCredentials	RawDataStreamEthernetUdpCredentials	0..1	aggr	This aggregation represents the configuration of multicast credentials for communication with a remote raw data stream client.
unicastUdpCredentials	RawDataStreamEthernetUdpCredentials	0..1	aggr	This aggregation represents the configuration of a remote raw data stream client that communicates via unicast over UDP.

Table A.170: 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 , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
remoteClientConfig	EthernetRawDataStreamRemoteClientConfig	0..1	aggr	This aggregation is used to configure the credentials of the remote client.

Table A.171: 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			
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.
version	StrongRevisionLabel String	0..1	attr	Version of the executable.

Table A.172: 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.173: ExecutableLoggingImplementationProps

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





Class	ExecutionDependency			
processState	ModeDeclaration	0..1	iref	This represent the applicable modeDeclaration that represents an ProcessState. InstanceRef implemented by: ModelInProcessInstanceRef

Table A.174: 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 , Multilanguage Referrable, 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.175: 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.
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.176: 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.177: 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.178: 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, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
bucketSize	PositiveInteger	0..1	attr	This attribute defines the capacity of the queue for rate limitation (leaky-bucket Algorithm). Tags: atp.Status=candidate
dataLinkLayerRule	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
dolpRule	DolpRule	0..1	aggr	Configuration of firewall rules for DoIP messages Tags: atp.Status=candidate
networkLayerRule	NetworkLayerRule	0..1	aggr	Configuration of rules on the Network Layer Tags: atp.Status=candidate
payloadBytePatternRule	PayloadBytePatternRule	*	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
transportLayerRule	TransportLayerRule	0..1	aggr	Configuration of rules on the Transport Layer Tags: atp.Status=candidate

Table A.179: 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





Class	FirewallRuleProps			
matchingRule (ordered)	FirewallRule	*	ref	This element defines a rule expression against which the network traffic is matched. Tags: atp.Status=candidate

Table A.180: 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.181: 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.182: 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			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
functionGroup	ModeDeclarationGroup Prototype	*	aggr	This aggregation represents the collection of function groups.

Table A.183: 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
contextMode Declaration GroupPrototype	ModeDeclarationGroup Prototype	0..1	ref	Tags: xml.sequenceOffset=10
targetMode Declaration	ModeDeclaration	0..1	ref	Tags: xml.sequenceOffset=20

Table A.184: 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, UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
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.185: 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.





Class	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.
noCheckpoint Supervision	NoCheckpointSupervision	*	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.186: GlobalSupervision

Class	GlobalTimeDomain			
Package	M2::AUTOSARTemplates::SystemTemplate::GlobalTime			
Note	This represents the ability to define a global time domain. Tags: atp.recommendedPackage=GlobalTimeDomains			
Base	ARObject, CollectableElement, FibexElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
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	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.variationPoint.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, globalTimeDomainProperty.variationPoint.shortLabel vh.latestBindingTime=postBuild





Class	GlobalTimeDomain			
globalTimeMaster	GlobalTimeMaster	0..1	aggr	<p>This represents the single master of a GlobalTime Domain. A GlobalTimeDomain may have no GlobalTimeDomain.master, e.g. when it gets its time from a GPS receiver.</p> <p>Stereotypes: atpSplitable; atpVariation</p> <p>Tags: atp.Splitkey=globalTimeMaster.shortName, globalTimeMaster.variationPoint.shortLabel vh.latestBindingTime=postBuild</p>
globalTimeSubDomain	GlobalTimeDomain	*	ref	<p>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.</p> <p>Stereotypes: atpSplitable; atpVariation</p> <p>Tags: atp.Splitkey=globalTimeSubDomain.globalTimeDomain, globalTimeSubDomain.variationPoint.shortLabel vh.latestBindingTime=postBuild</p>
networkSegmentId	NetworkSegmentIdentification	0..1	aggr	<p>Defines the numerical identification of a GlobalTime sub domain.</p>
offsetTimeDomain	GlobalTimeDomain	0..1	ref	<p>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.</p>
pduTriggering	PduTriggering	0..1	ref	<p>This PduTriggering will be taken to transmit the global time information from a GlobalTimeMaster to a the associated GlobalTimeSlaves.</p> <p>Stereotypes: atpSplitable; atpVariation</p> <p>Tags: atp.Splitkey=pduTriggering.pduTriggering, pduTriggering.variationPoint.shortLabel vh.latestBindingTime=postBuild</p>
slave	GlobalTimeSlave	*	aggr	<p>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.</p> <p>Stereotypes: atpSplitable; atpVariation</p> <p>Tags: atp.Splitkey=slave.shortName, slave.variationPoint.shortLabel vh.latestBindingTime=postBuild</p>
syncLossTimeout	TimeValue	0..1	attr	<p>This attribute describes the timeout for the situation that the time synchronization gets lost in the scope of the time domain.</p>

Table A.187: GlobalTimeDomain

Class	Grant (abstract)
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IdentityAccessManagement
Note	<p>This meta-class serves as the abstract base class for defining specific Grants</p> <p>Tags:atp.Status=candidate</p>
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable
Subclasses	ComFindServiceGrant, ComGrant , ComOfferServiceGrant , RawDataStreamGrant
Aggregated by	ARPackage.element





Class	Grant (abstract)			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.188: 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.189: 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: atpUriDefInstanceRef implemented by: RPortPrototypeInExecutableInstanceRef
notifiedStatus	HealthChannelExternalReportedStatus	*	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.190: 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.191: 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
direction	CommunicationDirectionType	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	CryptoServiceCertificate	*	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 cryptographic 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	CryptoServiceCertificate	*	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.





Class	IPSecRule			
remotePortRangeEnd	PositiveInteger	0..1	attr	<p>This attribute restricts the traffic monitoring and defines an end value for the remote port range.</p> <p>If this attribute is not set then this rule shall be effective for all local ports.</p> <p>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.</p>
remotePortRangeStart	PositiveInteger	0..1	attr	<p>This attribute restricts the traffic monitoring and defines a start value for the remote port range.</p> <p>If this attribute is not set then this rule shall be effective for all local ports.</p> <p>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.</p>

Table A.192: IPSecRule

Class	ISignal			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication			
Note	<p>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.</p> <p>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.</p> <p>ISignals describe the Interface between the Precompile configured RTE and the potentially Postbuild configured Com Stack (see ECUC Parameter Mapping).</p> <p>In case of the SystemSignalGroup an ISignal shall be created for each SystemSignal contained in the SystemSignalGroup.</p> <p>Tags:atp.recommendedPackage=ISignals</p>			
Base	ARObject, CollectableElement, FibexElement, Identifiable , MultilanguageReferrable , PackageableElement , Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
dataTransformation	DataTransformation	0..1	ref	<p>Optional reference to a DataTransformation which represents the transformer chain that is used to transform the data that shall be placed inside this ISignal.</p> <p>Stereotypes: atpSplitable; atpVariation</p> <p>Tags: atp.Splitkey=dataTransformation.dataTransformation, dataTransformation.variationPoint.shortLabel vh.latestBindingTime=codeGenerationTime</p>





Class	ISignal			
dataTypePolicy	DataTypePolicyEnum	1	attr	<p>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.</p> <p>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.</p>
initValue	ValueSpecification	0..1	aggr	<p>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.</p> <p>This value can be used to configure the Signal's "Init Value".</p> <p>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.</p>
iSignalProps	ISignalProps	0..1	aggr	<p>Additional optional ISignal properties that may be stored in different files.</p> <p>Stereotypes: atpSplittable Tags: atp.Splitkey=iSignalProps</p>
iSignalType	ISignalTypeEnum	0..1	attr	<p>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.</p>
length	UnlimitedInteger	1	attr	<p>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.</p> <p>The ISignal length of zero bits is allowed.</p>
network Representation Props	SwDataDefProps	0..1	aggr	<p>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.</p> <p>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.</p> <p>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.</p> <p>In case that the System Description doesn't use a complete Software Component Description (VFB View)</p>





Class	ISignal			
				<p>this element is used to configure [△] "ComSignalDataInvalid Value" and the Data Semantics.</p> <p>Stereotypes: atpSplitable Tags: atp.Splitkey=networkRepresentationProps</p>
systemSignal	SystemSignal	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 ComTimeoutSubstitution for this ISignal.
transformation ISignalProps	TransformationISignal Props	*	aggr	<p>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.</p> <p>Stereotypes: atpSplitable Tags: atp.Splitkey=transformationISignalProps</p>

Table A.193: ISignal

Class	ISignalGroup			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication			
Note	<p>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.</p> <p>An ISignalGroup refers to a set of ISignals that shall always be kept together. A ISignalGroup represents a COM Signal Group.</p> <p>Therefore it is recommended to put the ISignalGroup in the same Package as ISignals (see atp.recommendedPackage)</p> <p>Tags: atp.recommendedPackage=ISignalGroup</p>			
Base	ARObject, CollectableElement, FibexElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
comBased SignalGroup Transformation	DataTransformation	0..1	ref	<p>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.</p> <p>Stereotypes: atpSplitable; atpVariation Tags: atp.Splitkey=comBasedSignalGroupTransformation.dataTransformation, comBasedSignalGroupTransformation.variationPoint.shortLabel vh.latestBindingTime=codeGenerationTime</p>
iSignal	ISignal	*	ref	Reference to a set of ISignals that shall always be kept together.
systemSignal Group	SystemSignalGroup	1	ref	Reference to the SystemSignalGroup that is defined on VFB level and that is supposed to be transmitted in the ISignalGroup.





Class	ISignalGroup			
transformation ISignalProps	TransformationISignal Props	*	aggr	<p>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.</p> <p>Stereotypes: atpSplittable Tags: atp.Splitkey=transformationISignalProps</p>

Table A.194: ISignalGroup

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.
firstTimeout	TimeValue	0..1	attr	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 enderComSpec.transmissionAcknowledge.timeout attribute. If a full DataMapping exists for the SystemSignal and the value is available in the configured SenderComSpec, then





Class	ISignalPort			
				<p>the timeout value in the SenderComSpec overrides this optional timeout specification during the creation of the Base Ecu Configuration of the COM module.</p> <p>This attribute can be used in the following cases:</p> <ul style="list-style-type: none"> legacy signal where the System Description doesn't use a complete Software Component Description (VFB View) and where the Data Mapping is missing. bus monitoring use cases in which the Data Mapping is ignored.

Table A.195: ISignalPort

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 ISignalTriggering-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.196: 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	<p>This reference identifies the applicable Grants for this IamModuleInstantiation.</p> <p>Stereotypes: atpSplittable Tags: atp.Splitkey=grant atp.Status=candidate</p>





Class	IamModuleInstantiation			
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.197: 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
Subclasses	ARPackage, AbstractDolpLogicAddressProps , AbstractEvent , AbstractImplementationDataTypeElement , AbstractSecurityEventFilter , AbstractSecurityIdsmInstanceFilter , AbstractServiceInstance , AbstractSignalBasedToSignalTriggeringMapping , AdaptiveSwcInternalBehavior , ApApplicationEndpoint , ApplicationEndpoint , ApplicationError , ArtifactChecksum , ArtifactLocator , AtpBlueprint , AtpBlueprintable , AtpClassifier , AtpFeature , AutosarOperationArgumentInstance , AutosarVariableInstance , BuildActionEntity , BuildActionEnvironment , Chapter , CheckpointTransition , ClassContentConditional , ClientIdDefinition , ClientServerOperation , Code , CollectableElement , ComManagementMapping , CommConnectorPort , CommunicationConnector , CommunicationController , Compiler , ConsistencyNeeds , ConsumedEventGroup , CouplingPort , CouplingPortStructuralElement , CryptoCertificate , CryptoKeySlot , CryptoProvider , CryptoServiceMapping , DataPrototypeGroup , DataTransformation , DdsDomainRange , DependencyOnArtifact , DeterministicClientResourceNeeds , DiagEventDebounceAlgorithm , DiagnosticConnectedIndicator , DiagnosticDataElement , DiagnosticDebounceAlgorithmProps , DiagnosticFunctionInhibitSource , DiagnosticParameterElement , DiagnosticRoutineSubfunction , DltApplication , DltArgument , DltMessage , DolpInterface , DolpLogicAddress , DolpRoutingActivation , E2EProfileConfiguration , End2EndEventProtectionProps , End2EndMethodProtectionProps , EndToEndProtection , EthernetWakeUp , SleepOnDataLineConfig , EventHandler , EventMapping , ExclusiveArea , ExecutableEntity , ExecutionTime , FMAttributeDef , FMFeatureMapAssertion , FMFeatureMapCondition , FMFeatureMapElement , FMFeatureRelation , FMFeatureRestriction , FMFeatureSelection , FieldMapping , FireAndForgetMethodMapping , FlexrayArTpNode , FlexrayTpPduPool , FrameTriggering , GeneralParameter , GlobalSupervision , GlobalTimeGateway , GlobalTimeMaster , GlobalTimeSlave , HealthChannel , HeapUsage , HwAttributeDef , HwAttributeLiteralDef , HwPin , HwPinGroup , IPSecRule , IPv6ExtHeaderFilterList , ISignalToIPduMapping , ISignalTriggering , IdentCaption , InternalTriggeringPoint , Keyword , LifeCycleState , Linker , MacMulticastGroup , MacSecKeyParticipant , McDataInstance , MemorySection , MemoryUsage , MethodMapping , ModeDeclaration , ModeDeclarationMapping , ModeSwitchPoint , NetworkEndpoint , NmCluster , NmNode , PackageableElement , ParameterAccess , PduActivationRoutingGroup , PduToFrameMapping , PduTriggering , PerInstanceMemory , PersistencyDeploymentElement , PersistencyInterfaceElement , PhmSupervision , PhysicalChannel , PortGroup , PortInterfaceMapping , PossibleErrorReaction , ProcessToMachineMapping , Processor , ProcessorCore , PskIdentityToKeySlotMapping , ResourceConsumption , ResourceGroup , RootSwClusterDesignComponentPrototype , RootSwComponentPrototype , RootSwCompositionPrototype , RptComponent , RptContainer , RptExecutableEntity , RptExecutableEntityEvent , RptExecutionContext , RptProfile , RptServicePoint , RunnableEntityGroup , SdgAttribute , SdgClass , SecOcJobMapping , SecOcJobRequirement , SecureCommunicationAuthenticationProps , SecureCommunicationDeployment , SecureCommunicationFreshnessProps , SecurityEventContextProps , ServiceEventDeployment , ServiceFieldDeployment , ServiceInterfaceElementSecureComConfig , ServiceMethodDeployment , ServiceNeeds , SignalServiceTranslationEventProps , SignalServiceTranslationProps , SocketAddress , SoftwarePackageStep , SomeipEventGroup , SomeipProvidedEventGroup , SomeipTpChannel , SpecElementReference , StackUsage , StateManagementActionItem , StateManagementActionList , StateManagementStateNotification , StateManagementStateRequest , StaticSocketConnection , StructuredReq , SupervisionCheckpoint , SupervisionMode , SupervisionModeCondition , SwGenericAxisParamType , SwServiceArg , SwcServiceDependency , SystemMapping , TimeBaseResource , TimingClock , TimingClockSyncAccuracy , TimingCondition , TimingConstraint , TimingDescription , TimingExtensionResource , TimingModelInstance , TlsCryptoCipherSuite , TlsCryptoCipherSuiteProps , TlsJobMapping , Topic1 , TpAddress , TraceableTable , TraceableText , TracedFailure , TransformationProps , TransformationTechnology , Trigger , UcmDescription , UcmRetryStrategy , UcmStep , VariableAccess , VariationPointProxy , VehicleRolloutStep , ViewMap , VlanConfig , WaitPoint





Class	Identifiable (abstract)			
Attribute	Type	Mult.	Kind	Note
adminData	AdminData	0..1	aggr	<p>This represents the administrative data for the identifiable object.</p> <p>Stereotypes: atpSplitable</p> <p>Tags: atp.Splitkey=adminData xml.sequenceOffset=-40</p>
annotation	Annotation	*	aggr	<p>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.</p> <p>Tags:xml.sequenceOffset=-25</p>
category	CategoryString	0..1	attr	<p>The category is a keyword that specializes the semantics of the Identifiable. It affects the expected existence of attributes and the applicability of constraints.</p> <p>Tags:xml.sequenceOffset=-50</p>
desc	MultiLanguageOverviewParagraph	0..1	aggr	<p>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.</p> <p>More elaborate documentation, (in particular how the object is built or used) should go to "introduction".</p> <p>Tags:xml.sequenceOffset=-60</p>
introduction	DocumentationBlock	0..1	aggr	<p>This represents more information about how the object in question is built or is used. Therefore it is a DocumentationBlock.</p> <p>Tags:xml.sequenceOffset=-30</p>
uuid	String	0..1	attr	<p>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.</p> <p>Tags:xml.attribute=true</p>

Table A.198: 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
timeBase	TimeBaseResource	0..1	ref	This reference identifies the applicable time base resource. Stereotypes: atpSplitable; atpVariation Tags: atp.Splitkey=timeBase.timeBaseResource, timeBase.variationPoint.shortLabel atp.Status=candidate vh.latestBindingTime=systemDesignTime

Table A.199: IdsPlatformInstantiation

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 , IdsmPlatformInstantiation , 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.200: IdsmModuleInstantiation

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 , PackageableElement , 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.





Class	InterfaceMapping			
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	FireAndForgetMethodMapping	*	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.201: 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.202: 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.





Class	Ipv6Configuration			
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.203: 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.204: 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.





Class	LogAndTraceInstantiation			
sessionIdSupport	Boolean	0..1	attr	This attribute defines whether the sessionId is used or not.
timeBaseResource	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.205: 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.206: 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.207: 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			
Aggregated by	ARPackage.element, AtpClassifier.atpFeature			
Attribute	Type	Mult.	Kind	Note





Class	Machine			
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.208: 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	ARObject, AtpClassifier, AtpFeature, AtpStructureElement, CollectableElement, FibexElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable			
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
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
ethlpProps	EthlpProps	*	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.





Class	MachineDesign			
serviceDiscoveryConfig	ServiceDiscoveryConfiguration	*	aggr	Set of service discovery configuration settings that are defined on the machine for individual Communication Connectors. Stereotypes: atpSplitable Tags: atp.Splitkey=serviceDiscoveryConfig
tcplplcmpProps	EthTcplplcmpProps	*	ref	Machine specific ICMP (Internet Control Message Protocol) attributes
tcplpProps	EthTcplpProps	*	ref	Machine specific Tcplp Stack attributes.

Table A.209: MachineDesign

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.210: 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			
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.
modeDeclaration	ModeDeclaration	*	aggr	The ModeDeclarations collected in this ModeDeclaration Group. Stereotypes: atpSplitable; atpVariation Tags: atp.Splitkey=modeDeclaration.shortName, modeDeclaration.variationPoint.shortLabel vh.latestBindingTime=blueprintDerivationTime

Table A.211: 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			





Class	ModeDeclarationGroupPrototype			
Aggregated by	AtpClassifier.atpFeature, BswModuleDescription.providedModeGroup, BswModuleDescription.requiredModeGroup, FirewallStateSwitchInterface.firewallStateMachine, FunctionGroupSet.functionGroup, ModeSwitchInterface.modeGroup, Process.processStateMachine, StateManagementStateNotification.stateMachine			
Attribute	Type	Mult.	Kind	Note
type	ModeDeclarationGroup	0..1	tref	The "collection of ModeDeclarations" (= ModeDeclaration Group) supported by a component Stereotypes: isOfType

Table A.212: ModeDeclarationGroupPrototype

Class	ModelnProcessInstanceRef			
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
contextModeDeclarationGroupPrototype	ModeDeclarationGroupPrototype	0..1	ref	Tags: xml.sequenceOffset=20
targetModeDeclaration	ModeDeclaration	0..1	ref	Tags: xml.sequenceOffset=30

Table A.213: ModelnProcessInstanceRef

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
fullyQualifiedDomainName	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.
networkEndpointAddress	NetworkEndpointAddress	1..*	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.214: NetworkEndpoint

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). Tags: atp.Status=draft

Table A.215: NmCluster

Class	NmConfig			
Package	M2::AUTOSARTemplates::SystemTemplate::NetworkManagement			
Note	Contains the all configuration elements for AUTOSAR Nm. Tags: atp.recommendedPackage=NmConfigs			
Base	ARObject, CollectableElement , FibexElement , Identifiable , MultilanguageReferrable , PackageableElement , Referrable			
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.216: NmConfig

Enumeration	NmHandleMappingDirectionEnum			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModuleImplementation			
Note	This enumeration provides direction values for the mapping of NM handles to function group states.			
Aggregated by	NmHandleToFunctionGroupStateMapping.mappingDirection			





Enumeration	NmHandleMappingDirectionEnum
Literal	Description
functionGroupStateToNmHandle	The purpose of the mapping is to indicate which function group state requires network access. Tags: atp.EnumerationLiteralIndex=0
nmHandleActiveToFunctionGroupState	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
nmHandleInactiveToFunctionGroupState	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.217: NmHandleMappingDirectionEnum

Class	NmHandleToFunctionGroupStateMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModuleImplementation			
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, PackageableElement, Referrable , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
functionGroupState	ModeDeclaration	*	iref	This reference identifies the collection of function group states in the context of the mapping. InstanceRef implemented by: FunctionGroupStateInFunctionGroupSetInstanceRef
mappingDirection	NmHandleMappingDirectionEnum	0..1	attr	This attribute describes the direction of the mapping.
nmHandle	NmNetworkHandle	0..1	ref	This reference identifies the applicable NmNetworkHandle in the context of the mapping.

Table A.218: NmHandleToFunctionGroupStateMapping

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.219: 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: atpUriDefInstanceRef implemented by:RPortPrototypeInExecutableInstanceRef

Table A.220: NoSupervision

Class	NonOsModuleInstantiation (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModuleImplementation			
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 , DeterministicSyncInstantiation , DolpInstantiation , GenericModuleInstantiation , IamModuleInstantiation , IdsPlatformInstantiation , LogAndTraceInstantiation , NmInstantiation , SovdModuleInstantiation , StateManagementModuleInstantiation , TimeSyncModuleInstantiation , UcmModuleInstantiation			
Aggregated by	AtpClassifier.atpFeature , Machine.moduleInstantiation			
Attribute	Type	Mult.	Kind	Note
—	—	—	—	—

Table A.221: NonOsModuleInstantiation

Primitive	Numerical
Package	M2::AUTOSARTemplates::GenericStructure::GeneralTemplateClasses::PrimitiveTypes
Note	<p>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.</p> <p>The value can be expressed in octal, hexadecimal, binary representation. Negative numbers can only be expressed in decimal or float notation.</p> <p>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</p>

Table A.222: Numerical

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			





Class	OsModuleInstantiation			
Aggregated by	AtpClassifier.atpFeature, Machine.moduleInstantiation			
Attribute	Type	Mult.	Kind	Note
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.223: 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
providedInterface	PortInterface	0..1	tref	The interface that this port provides. Stereotypes: isOfType

Table A.224: 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, AtpFeature, AtpPrototype, Identifiable , MultilanguageReferrable , PortPrototype , Referrable			
Aggregated by	AtpClassifier.atpFeature, SwComponentType.port			
Attribute	Type	Mult.	Kind	Note
providedRequiredInterface	PortInterface	0..1	tref	This represents the PortInterface used to type the PRPortPrototype Stereotypes: isOfType

Table A.225: 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
providedOuterPort	AbstractProvidedPortPrototype	0..1	ref	This represents the provided outer delegation PortPrototype of the PassThroughSwConnector.
requiredOuterPort	AbstractRequiredPortPrototype	0..1	ref	This represents the required outer delegation PortPrototype of the PassThroughSwConnector.





Class	PassThroughSwConnector			
serviceInterfaceElementMapping	ServiceInterfaceElementMapping	*	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. Tags: atp.Status=draft

Table A.226: PassThroughSwConnector

Class	PduTriggering			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication			
Note	<p>The PduTriggering describes on which channel the IPdu is transmitted. The Pdu routing by the PduR is only allowed for subclasses of IPdu.</p> <p>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.</p> <p>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.</p>			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Aggregated by	PhysicalChannel.pduTriggering			
Attribute	Type	Mult.	Kind	Note
iPdu	Pdu	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.
iSignalTriggering	ISignalTriggering	*	ref	This reference provides the relationship to the ISignalTriggerings that are implemented by the PduTriggering. The reference is optional since no ISignalTriggering can be defined for DCM and Multiplexed Pdus. Stereotypes: atpSplittable; atpVariation Tags: atp.Splitkey=iSignalTriggering.iSignalTriggering, iSignalTriggering.variationPoint.shortLabel vh.latestBindingTime=postBuild
secOcCryptoMapping	SecOcCryptoServiceMapping	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.
triggerIPduSendCondition	TriggerIPduSendCondition	*	aggr	Defines the trigger for the Com_TriggerIPDUSend API call. Only if all defined TriggerIPduSendConditions evaluate to true (AND associated) the Com_TriggerIPDUSend API shall be called.

Table A.227: PduTriggering

Class	PeriodicEventTriggering			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingConstraint::EventTriggeringConstraint			
Note	<p>The PeriodicEventTriggering describes the behavior of an event with a strict periodic occurrence pattern, given by the period attribute.</p> <p>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.</p>			
Base	ARObject, EventTriggeringConstraint, Identifiable , MultilanguageReferrable, Referrable , TimingConstraint, Traceable			
Aggregated by	TimingExtension.timingGuarantee, TimingExtension.timingRequirement			
Attribute	Type	Mult.	Kind	Note
jitter	MultidimensionalTime	0..1	aggr	<p>The maximum jitter of the periodic event occurrence.</p> <p>Tags:xml.sequenceOffset=20</p>
minimumInterArrivalTime	MultidimensionalTime	0..1	aggr	<p>The minimum time distance between two consecutive occurrences of the associated event.</p> <p>Tags:xml.sequenceOffset=10</p>
period	MultidimensionalTime	0..1	aggr	<p>The period of the event occurrence.</p> <p>Tags:xml.sequenceOffset=30</p>

Table A.228: PeriodicEventTriggering

Class	PersistencyDataElement			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::Persistency			
Note	<p>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.</p> <p>PersistencyDataElement represents also a key-value pair of the deployed PersistencyKeyValueStorage and provides an initial value.</p>			
Base	ARObject, AtpFeature, AtpPrototype, AutosarDataPrototype, DataPrototype , Identifiable , MultilanguageReferrable, PersistencyInterfaceElement , Referrable			
Aggregated by	AtpClassifier.atpFeature, PersistencyKeyValueStorageInterface.dataElement			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.229: 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	PersistencyDataElement	0..1	ref	This reference 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.230: 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, PackageableElement, Referrable , 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 PersistencyFile Storage or PersistencyKeyValueStorage.

Table A.231: 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.232: 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 , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note





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.233: 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.234: 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.235: 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				





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.236: 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 , PackageableElement , PersistencyDeployment , Referrable , UploadableExclusivePackageElement , 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.237: 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.238: 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.			
Base	ARElement , ARObject , AtpBlueprint , AtpBlueprintable , AtpClassifier , AtpType , CollectableElement , Identifiable , MultilanguageReferrable , PackageableElement , PortInterface , Referrable			





Class	PersistencyInterface (abstract)			
Subclasses	PersistencyFileStorageInterface , PersistencyKeyValueStorageInterface			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
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	PersistencyRedundancyEnum	0..1	attr	This attribute represents a requirement towards the redundancy of storage.
redundancy Handling	PersistencyRedundancyHandling	*	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.239: 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	PersistencyElementLevelUpdateStrategyEnum	0..1	attr	This attribute can be used to specify the update strategy of the respective PersistencyInterfaceElement.

Table A.240: 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.
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.
previous Executable Version	StrongRevisionLabel String	0..1	attr	This attribute identifies the version of the Executable in which the previousDataType was used.

Table A.241: 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.242: 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 , 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.243: 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
dataElement	PersistencyDataElement	*	aggr	This aggregation represents the collection of PersistencyDataElements in the context of the enclosing PersistencyKeyValueStorageInterface.
dataTypeForSerialization	AbstractImplementationDataType	*	ref	This reference identifies the AbstractImplementationDataTypes that shall be supported for storing in a key-value storage in addition to the types already determined from the aggregation of PersistencyDataElement.
dataTypeMapping	PersistencyKeyValueDataTypeMapping	0..1	aggr	This aggregation provides a collection of replacement rules for data types used in the context of the enclosing PersistencyKeyValueStorageInterface.

Table A.244: 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, PackageableElement, Referrable , 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: PortPrototypeInExecutableInstanceRef
process	Process	0..1	ref	This reference represents the process required as context for the mapping.

Table A.245: 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, PackageableElement, PersistencyPortPrototypeToDeploymentMapping , Referrable , 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.246: 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, PackageableElement, PersistencyPortPrototypeToDeploymentMapping , Referrable , UploadableExclusivePackageElement , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
keyValueStorage	PersistencyKeyValueStorage	0..1	ref	This reference represents the mapped key-value storage.

Table A.247: 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.248: 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.249: 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.250: 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
persistency Redundancy HandlingScope Element	The redundancy handling shall be applied on element level (key-value pair and file). Tags: atp.EnumerationLiteralIndex=0
persistency Redundancy HandlingScope Storage	The redundancy handling shall be applied on storage (key-value storage and file storage) level. Tags: atp.EnumerationLiteralIndex=1

Table A.251: 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.252: 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			
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.253: PhmCheckpoint

Class	PhmCheckpointInExecutableInstanceRef			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealth Management::InstanceRefs			
Note				
Base	ARObject , AtpInstanceRef			
Aggregated by	SupervisionCheckpoint.phmCheckpoint			
Attribute	Type	Mult.	Kind	Note





Class	PhmCheckpointInExecutableInstanceRef			
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.254: 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.255: 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.256: 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			





Class	PhmHealthChannelStatus			
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	<p>Defines whether this PhmHealthChannelStatus shall cause the Phm to trigger the Health Channel recovery notification.</p> <p>True: Indicates unhealthy state. Phm to trigger the Health Channel recovery notification when the Health channel status changes to this state.</p> <p>False: Indicates healthy state. Phm not to trigger the Health Channel recovery notification when the Health channel status changes to this state.</p>

Table A.257: 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.258: PhmStateReference

Class	PhmSupervisedEntityInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	<p>This meta-class provides the ability to implement a PortInterface for interaction with the Platform Health Management Supervised Entity.</p> <p>Tags:atp.recommendedPackage=PlatformHealthManagementInterfaces</p>			
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.259: 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			





Class	PhmSupervision (abstract)			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.260: 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.261: 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, PackageableElement, Referrable, UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
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





Class	PlatformHealthManagementContribution			
supervision ModeCondition	SupervisionModeCondition	*	aggr	Collection of SupervisionModeConditions in the context of a PlatformHealthManagementContribution. Stereotypes: atpSplitable Tags: atp.Splitkey=supervisionModeCondition.shortName xml.sequenceOffset=20

Table A.262: PlatformHealthManagementContribution

Class	PlatformModuleEthernetEndpointConfiguration			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModuleImplementation			
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	<i>ARElement, ARObject, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, PlatformModuleEndpointConfiguration, Referrable</i>			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
communication Connector	EthernetCommunicationConnector	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.
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.263: 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	<i>ARObject, Describable</i>			
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.





Class	PncMapping			
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=pncConsumedProvidedServiceInstanceGroup.consumedProvidedServiceInstanceGroup, pncConsumedProvidedServiceInstanceGroup.variationPoint.shortLabel vh.latestBindingTime=postBuild
pncIdentifier	PositiveInteger	1	attr	Identifier 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. Tags: atp.Status=draft
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.264: 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			
Subclasses	AbstractRawDataStreamInterface, AbstractSynchronizedTimeBaseInterface, ClientServerInterface, CryptoInterface, DataInterface, DiagnosticPortInterface, FirewallStateSwitchInterface , LogAndTraceInterface , ModeSwitchInterface, PersistenceInterface , PlatformHealthManagementInterface, SecurityEventReportInterface, 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 atp.Status=draft

Table A.265: PortInterface

Class	PortInterfaceToDataTypeMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	<p>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.</p> <p>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.</p> <p>Tags:atp.recommendedPackage=PortInterfaceToDataTypeMappings</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
dataTypeMappingSet	DataTypeMappingSet	*	ref	<p>This represents the reference to the applicable data TypemappingSet</p> <p>Tags:atp.StatusComment=Reserved for adaptive platform</p>
portInterface	PortInterface	0..1	ref	<p>This represents the reference to the applicable Port Interface</p> <p>Tags:atp.StatusComment=Reserved for adaptive platform</p>

Table A.266: PortInterfaceToDataTypeMapping

Class	PortPrototype (abstract)			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Components			
Note	<p>Base class for the ports of an AUTOSAR software component.</p> <p>The aggregation of PortPrototypes is subject to variability with the purpose to support the conditional existence of ports.</p>			
Base	ARObject, AtpBlueprintable, AtpFeature, AtpPrototype, Identifiable , MultilanguageReferrable, Referrable			
Subclasses	AbstractProvidedPortPrototype, AbstractRequiredPortPrototype			
Aggregated by	AtpClassifier.atpFeature, SwComponentType.port			
Attribute	Type	Mult.	Kind	Note
clientServerAnnotation	ClientServerAnnotation	*	aggr	Annotation of this PortPrototype with respect to client/server communication.
delegatedPortAnnotation	DelegatedPortAnnotation	0..1	aggr	Annotations on this delegated port.
ioHwAbstractionServerAnnotation	IoHwAbstractionServerAnnotation	*	aggr	Annotations on this IO Hardware Abstraction port.
modePortAnnotation	ModePortAnnotation	*	aggr	Annotations on this mode port.
nvDataPortAnnotation	NvDataPortAnnotation	*	aggr	Annotations on this non volatile data port.
parameterPortAnnotation	ParameterPortAnnotation	*	aggr	Annotations on this parameter port.
portPrototypeProps	PortPrototypeProps	0..1	aggr	<p>This attribute allows for the definition of further qualification of the semantics of a PortPrototype.</p> <p>Tags:atp.Status=draft</p>
senderReceiverAnnotation	SenderReceiverAnnotation	*	aggr	Collection of annotations of this ports sender/receiver communication.
triggerPortAnnotation	TriggerPortAnnotation	*	aggr	Annotations on this trigger port.

Table A.267: PortPrototype

Class	PortPrototypeBlueprint			
Package	M2::AUTOSARTemplates::CommonStructure::StandardizationTemplate::BlueprintDedicated::PortPrototypeBlueprint			
Note	<p>This meta-class represents the ability to express a blueprint of a PortPrototype by referring to a particular PortInterface. This blueprint can then be used as a guidance to create particular PortPrototypes which are defined according to this blueprint. By this it is possible to standardize application interfaces without the need to also standardize software-components with PortPrototypes typed by the standardized Port Interfaces.</p> <p>Tags:atp.recommendedPackage=PortPrototypeBlueprints</p>			
Base	ARElement, ARObject, AtpBlueprint, AtpClassifier, AtpFeature, AtpStructureElement, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element, AtpClassifier.atpFeature			
Attribute	Type	Mult.	Kind	Note
initValue	PortPrototypeBlueprint InitValue	*	aggr	This specifies the init values for the dataElements in the particular PortPrototypeBlueprint.
interface	PortInterface	1	ref	This is the interface for which the blueprint is defined. It may be a blueprint itself or a standardized PortInterface
providedComSpec	PPortComSpec	*	aggr	Provided communication attributes per interface element (data element or operation).
requiredComSpec	RPortComSpec	*	aggr	Required communication attributes, one for each interface element.

Table A.268: PortPrototypeBlueprint

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 PortPrototype.			
Base	ARObject			
Subclasses	RPortPrototypeProps			
Aggregated by	PortPrototype.portPrototypeProps			
Attribute	Type	Mult.	Kind	Note
—	—	—	—	—

Table A.269: PortPrototypeProps

Class	Process			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest			
Note	<p>This meta-class provides information required to execute the referenced executable.</p> <p>Tags:atp.recommendedPackage=Processes</p>			
Base	ARElement, ARObject, AbstractExecutionContext, AtpClassifier, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , UploadablePackageElement			
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
functionClusterAffiliation	String	0..1	attr	This attribute specifies which functional cluster the process is affiliated with.





Class	Process			
numberOfRestartAttempts	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.
processStateMachine	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 enclosing SoftwareCluster. Stereotypes: atpSplitable; atpUriDef Tags: atp.Splitkey=securityEvent atp.Status=candidate
stateDependentStartupConfig	StateDependentStartup Config	*	aggr	Applicable startup configurations.

Table A.270: 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	<i>ARObject</i>			
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.271: 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	<i>ARElement</i> , <i>ARObject</i> , <i>CollectableElement</i> , Identifiable , <i>MultilanguageReferrable</i> , <i>PackageableElement</i> , Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
deterministicClientResourceNeeds	DeterministicClientResourceNeeds	*	aggr	This aggregation represents the collection of applicable resource needs for the design of deterministic clients. Tags: atp.Status=draft
executable	Executable	*	ref	Reference to executable that is executed in the process.

Table A.272: ProcessDesign

Class	ProcessDesignToMachineDesignMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SystemDesign			
Note	<p>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.</p> <p>Tags:atp.recommendedPackage=ProcessDesignToMachineDesignMappings</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, 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.273: ProcessDesignToMachineDesignMapping

Class	ProcessExecutionError			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest			
Note	<p>This meta-class has the ability to describe the value of a execution error along with a documentation of its semantics.</p> <p>Tags:atp.recommendedPackage=ProcessExecutionErrors</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , 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.274: 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	ProcessDesignToMachineDesignMapping	0..1	ref	This reference represents the identification of the design-time representation for the ProcessToMachineMapping that owns the reference.
machine	Machine	0..1	ref	This reference identifies the Machine in the context of the ProcessToMachineMapping.
nonOsModuleInstantiation	NonOsModuleInstantiation	0..1	ref	This supports the optional case that the process represents a platform module.
persistencyCentralStorageURI	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.





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.275: 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.276: 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.277: ProcessorCore

Class	<i>ProvidedApServiceInstance</i> (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 , UploadablePackageElement			
Subclasses	DdsProvidedServiceInstance , ProvidedSomeIpServiceInstance , ProvidedUserDefinedServiceInstance			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
—	—	—	—	—

Table A.278: ProvidedApServiceInstance

Class	ProvidedSomeipServiceInstance			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	<p>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.</p> <p>Tags:atp.recommendedPackage=ServiceInstances</p>			
Base	<i>ARElement, ARObject, AdaptivePlatformServiceInstance, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, ProvidedApServiceInstance, Referrable, Uploadable PackageElement</i>			
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	<p>This attribute is used to specify the priority in the load balancing option of SOME/IP that is added to the Offer Service.</p> <p>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.</p>
loadBalancing Weight	PositiveInteger	0..1	attr	<p>This attribute is used to specify the weight in the load balancing option of SOME/IP that is added to the Offer Service.</p> <p>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.</p>
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	<p>Identification number that is used by SOME/IP service discovery to identify the instance of the service.</p> <p>The value 65535 for service instance id is reserved and should not be used.</p>

Table A.279: ProvidedSomeipServiceInstance

Class	ProvidedUserDefinedServiceInstance			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	<p>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.</p> <p>Tags:atp.recommendedPackage=ServiceInstances</p>			





Class	ProvidedUserDefinedServiceInstance			
Base	ARElement, ARObject, AdaptivePlatformServiceInstance , CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, ProvidedApServiceInstance , Referrable , Uploadable PackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.280: 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.281: 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.282: 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.283: 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.284: 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 , StateManagementCompareCondition.compareValue , SwDataDefProps.invalidValue , VariableDataPrototype.initValue			
Attribute	Type	Mult.	Kind	Note
field (ordered)	ValueSpecification	*	aggr	<p>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.</p> <p>Stereotypes: atpSplittable; atpVariation</p> <p>Tags: atp.Splitkey=field, field.variationPoint.shortLabel vh.latestBindingTime=preCompileTime</p>

Table A.285: 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 , PackageableElement , Referrable , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note





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.286: 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, ARObjct, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , 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: PPortPrototypeInExecutableInstanceRef
recovery Notification	RecoveryNotification	0..1	ref	This reference identifies the applicable Recovery Notification to be mapped.

Table A.287: 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 , 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 , StateManagementCompareCondition.compareValue , SwDataDefProps.invalidValue , VariableDataPrototype.initValue			
Attribute	Type	Mult.	Kind	Note
referenceValue	DataPrototype	0..1	ref	The referenced data prototype.

Table A.288: 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, SoConIPdulIdentifier, 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
shortName Fragment	ShortNameFragment	*	aggr	This specifies how the Referrable.shortName is composed of several shortNameFragments. Tags: xml.sequenceOffset=-90

Table A.289: 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 , UploadablePackageElement			
Subclasses	DdsRequiredServiceInstance , RequiredSomeipServiceInstance , RequiredUserDefinedServiceInstance			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.290: 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 , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
blocklisted Version	SomeipServiceVersion	*	aggr	Collection of blocklisted versions.
capability Record (ordered)	TagWithOptionalValue	*	aggr	A sequence of records to store arbitrary name/value pairs conveying additional information about the named service.





Class	RequiredSomeipServiceInstance			
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.291: 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 PackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.292: 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.293: ResourceGroup

Class	RootSwComponentPrototype			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationStructure			
Note	<p>The RootSwCompositionPrototype represents the top-level-composition of software components within an Executable.</p> <p>The contained SwComponentPrototypes are fully specified by their SwComponentTypes (including Port Prototypes, PortInterfaces, VariableDataPrototypes, etc.).</p>			
Base	ARObject, AtpFeature, AtpPrototype, Identifiable , MultilanguageReferrable , Referrable			
Aggregated by	AtpClassifier.atpFeature, Executable.rootSwComponentPrototype			
Attribute	Type	Mult.	Kind	Note
applicationType	SwComponentType	0..1	tref	<p>This SwComponentType acts as the Type of the RootSw ComponentPrototype.</p> <p>Stereotypes: isOfType</p>

Table A.294: RootSwComponentPrototype

Class	SdClientConfig			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::ObsoleteModel			
Note	<p>Client configuration for Service-Discovery.</p> <p>Tags: atp.Status=obsolete atp.recommendedPackage=SdConfigs</p>			
Base	ARObject			
Aggregated by	ConsumedEventGroup.sdClientConfig, ConsumedServiceInstance.sdClientConfig			
Attribute	Type	Mult.	Kind	Note
capability Record	TagWithOptionalValue	*	aggr	<p>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).</p> <p>Tags:atp.Status=obsolete</p>
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	<p>Controls initial find behavior of clients.</p> <p>Tags:atp.Status=obsolete</p>
request ResponseDelay	RequestResponseDelay	0..1	aggr	<p>Maximum/Minimum allowable response delay to entries received by multicast in seconds.</p> <p>Tags:atp.Status=obsolete</p>
ttl	PositiveInteger	1	attr	TTL for Request and Subscribe messages.

Table A.295: SdClientConfig

Class	SdServerConfig			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::ObsoleteModel			
Note	<p>Server configuration for Service-Discovery.</p> <p>Tags: atp.Status=obsolete atp.recommendedPackage=SdConfigs</p>			
Base	ARObject			





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.
tll	PositiveInteger	1	attr	Time to live. Shall be a positive value (sInt32).

Table A.296: 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.297: SecOcJobRequirement

Class	SecOcSecureComProps			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::SecureCommunication			
Note	Configuration of AUTOSAR SecOC. Tags: atp.recommendedPackage=SecureComProps			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable , PackageableElement , Referrable , SecureComProps			
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.





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.298: SecOcSecureComProps

Class	SecuredIPdu			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication			
Note	<p>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).</p> <p>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.</p> <p>Tags:atp.recommendedPackage=Pdus</p>			
Base	ARObject, CollectableElement, FibexElement, IPdu, Identifiable , MultilanguageReferrable, PackageableElement, Pdu, Referrable			
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.
dynamic RuntimeLength Handling	Boolean	0..1	attr	<p>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.</p> <p>true: SecuredIPdu length information is taken from the actually provided length information during runtime.</p> <p>false: SecuredIPdu length information is taken from the configuration.</p>
freshnessProps	SecureCommunication FreshnessProps	0..1	ref	Reference to freshness properties that are valid for this SecuredIPdu.
payload	PduTriggering	1	ref	Reference to a Pdu that will be protected against unauthorized manipulation and replay attacks.
secure Communication Props	SecureCommunication Props	1	aggr	Specific configuration properties for this SecuredIPdu.





Class	SecuredIPdu			
useAsCryptographicIPdu	Boolean	0..1	attr	<p>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.</p> <p>If this attribute is set to false this SecuredIPdu contains the payload of an Authentic IPdu supplemented by additional Authentication Information.</p>
useSecuredPduHeader	SecuredPduHeaderEnum	0..1	attr	<p>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.</p>

Table A.299: SecuredIPdu

Class	SecurityEventDefinition			
Package	M2::AUTOSARTemplates::SecurityExtractTemplate			
Note	<p>This meta-class defines a security-related event as part of the intrusion detection system.</p> <p>Tags: atp.Status=candidate atp.recommendedPackage=SecurityEventDefinitions</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , IdsCommonElement, MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
eventSymbolName	SymbolProps	0..1	aggr	<p>This aggregation defines optionally an alternative Event Name for the SecurityEventDefinition in case there is a collision of shortNames.</p> <p>Stereotypes: atpSplitable Tags: atp.Splitkey=eventSymbolName.shortName atp.Status=candidate</p>
id	PositiveInteger	0..1	attr	<p>This attribute represents the numerical identification of the defined security event. The identification shall be unique within the scope of the IDS.</p> <p>Tags:atp.Status=candidate</p>

Table A.300: SecurityEventDefinition

Class	SecurityEventMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IntrusionDetectionSystem			
Note	<p>This meta-class represents a reportable instance of a security event.</p> <p>Tags: atp.Status=candidate atp.recommendedPackage=SecurityEventMappings</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note





Class	SecurityEventMapping			
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 security 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.301: 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.302: 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
trigger	Trigger	0..1	ref	Reference to a Trigger that is deployed to a middleware transport layer. Stereotypes: atpUriDef

Table A.303: 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.304: 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 , UploadablePackageElement			
Subclasses	DdsServiceInstanceToMachineMapping , SomeipServiceInstanceToMachineMapping , UserDefinedServiceInstanceToMachineMapping			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
communicationConnector	CommunicationConnector	0..1	ref	Reference to the Machine to which the ServiceInstance is mapped.
secOcComPropsForMulticast	SecOcSecureComProps	*	ref	Reference to communication security configuration settings that are valid for the udp multicast endpoint (Port + Multicast IP Address) defined by the ServiceInstanceToMachineMapping.
secureComPropsForTcp	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 ServiceInstanceToMachineMapping.
secureComPropsForUdp	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 ServiceInstanceToMachineMapping.
serviceInstance	AdaptivePlatformServiceInstance	*	ref	Reference to a ServiceInstance that is mapped to the Machine.

Table A.305: ServiceInstanceToMachineMapping

Class	ServiceInstanceToPortPrototypeMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceMapping			
Note	<p>This meta-class represents the ability to assign a transport layer dependent ServiceInstance to a Port Prototype.</p> <p>With this mapping it is possible to define how specific PortPrototypes are represented in the middleware in terms of service configuration.</p> <p>Tags:atp.recommendedPackage=ServiceInstanceToPortPrototypeMappings</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable , PackageableElement , Referrable , UploadablePackageElement			





Class	ServiceInstanceToPortPrototypeMapping			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
portPrototype	PortPrototype	0..1	iref	Reference to a specific PortPrototype that represents the ServiceInstance. Stereotypes: atpUriDefInstanceRef implemented by: PortPrototypeInExecutableInstanceRef
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.306: 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			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
eventElement Mapping	SignalBasedEventElementToISignalTriggeringMapping	*	aggr	Mapping of an event or an element inside of the event to an ISignalTriggering. Tags: atp.Status=candidate
fieldMapping	SignalBasedFieldToISignalTriggeringMapping	*	aggr	Mapping of a field to ISignalTriggerings. Tags: atp.Status=candidate
fireAndForget MethodMapping	SignalBasedFireAndForgetMethodToISignalTriggeringMapping	*	aggr	Mapping of an ISignalTriggering being part of a fire and forget message to a ClientServerOperation. Tags: atp.Status=candidate
methodMapping	SignalBasedMethodToISignalTriggeringMapping	*	aggr	Mapping of a method to ISignalTriggerings. Tags: atp.Status=candidate
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





Class	ServiceInstanceToSignalMapping			
triggerMapping	SignalBasedTriggerToSignalTriggeringMapping	*	aggr	Mapping of a trigger to an ISignalTriggering. Tags: atp.Status=candidate

Table A.307: 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.shortLabel 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.shortLabel 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.variationPoint.shortLabel vh.latestBindingTime=blueprintDerivationTime xml.sequenceOffset=50
minorVersion	PositiveInteger	0..1	attr	Minor version of the service contract. Tags: xml.sequenceOffset=20
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.variationPoint.shortLabel vh.latestBindingTime=blueprintDerivationTime xml.sequenceOffset=60

Table A.308: 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, PackageableElement, Referrable , UploadablePackageElement			
Subclasses	DdsServiceInterfaceDeployment , SomeipServiceInterfaceDeployment , UserDefinedServiceInterfaceDeployment			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
event Deployment	ServiceEventDeployment	*	aggr	Middleware transport layer specific configuration settings for an Event that is defined in the ServiceInterface.
fieldDeployment	ServiceFieldDeployment	*	aggr	Middleware transport layer specific configuration settings for a Field that is defined in the ServiceInterface.
method Deployment	ServiceMethodDeployment	*	aggr	Middleware transport layer specific configuration settings for a method that is defined in the ServiceInterface.
serviceInterface	ServiceInterface	0..1	ref	Reference to a ServiceInterface that is deployed to a middleware transport layer. Stereotypes: atpUriDef

Table A.309: 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, PackageableElement, Referrable			
Subclasses	ServiceInterfaceEventMapping , ServiceInterfaceFieldMapping , ServiceInterfaceMethodMapping , ServiceInterfaceTriggerMapping			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.310: 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	ServiceEventDeployment	0..1	ref	Reference to an event that is protected by a security protocol.
fieldNotifier	ServiceFieldDeployment	0..1	ref	Reference to a field notifier that is protected by a security protocol.
freshnessValueId	PositiveInteger	0..1	attr	This attribute defines the Id of the Freshness Value.
getterCall	ServiceFieldDeployment	0..1	ref	Reference to a field getter call message that is protected by a security protocol.





Class	ServiceInterfaceElementSecureComConfig			
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.311: 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			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, 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.312: 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, PackageableElement, 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.313: 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.314: 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			
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.315: 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.316: 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.317: ServiceMethodDeployment

Enumeration	ServiceVersionAcceptanceKindEnum
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::ServiceInstances
Note	Defined the possible acceptance kinds for required service instances.
Aggregated by	ConsumedServiceInstance.versionDrivenFindBehavior, RequiredSomeipServiceInstance.versionDrivenFindBehavior
Literal	Description
exactOrAnyMinorVersion	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 requiredMinorVersion. Tags: atp.EnumerationLiteralIndex=0
minimumMinorVersion	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.318: ServiceVersionAcceptanceKindEnum

Class	SignalBasedEventElementToSignalTriggeringMapping			
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, AbstractSignalBasedToSignalTriggeringMapping , Identifiable , MultilanguageReferrable , Referrable			
Aggregated by	ServiceInstanceToSignalMapping.eventElementMapping			
Attribute	Type	Mult.	Kind	Note
dataPrototypeInServiceInterfaceRef	DataPrototypeInServiceInterfaceRef	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
iSignalTriggering	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





Class	SignalBasedEventElementToSignalTriggeringMapping			
transmission Trigger	Boolean	0..1	attr	Defines whether the source element triggers the sending of the respective payload. Tags: atp.Status=candidate

Table A.319: SignalBasedEventElementToSignalTriggeringMapping

Class	SignalBasedFieldToSignalTriggeringMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SignalBasedCommunication			
Note	This meta-class defines the mapping of a ServiceInterface field to ISignalTriggerings that represent the notifier elements, the getter call and response, the setter call and response on a signal-based communication channel. Tags: atp.Status=candidate			
Base	ARObject, AbstractSignalBasedToSignalTriggeringMapping, Identifiable , MultilanguageReferrable , Referrable			
Aggregated by	ServiceInstanceToSignalMapping.fieldMapping			
Attribute	Type	Mult.	Kind	Note
dataPrototypeInServiceInterfaceRef	DataPrototypeInServiceInterfaceRef	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
getterCallSignal	ISignalTriggering	0..1	ref	Reference to the ISignalTriggering that is used to transport the getter method call in a signal-based way over a communication channel. Tags: atp.Status=candidate
getterReturnSignal	ISignalTriggering	0..1	ref	Reference to the ISignalTriggering that is used to transport the getter method response in a signal-based way over a communication channel. Tags: atp.Status=candidate
notifierSignalTriggering	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
setterCallSignal	ISignalTriggering	0..1	ref	Reference to the ISignalTriggering that is used to transport the setter method call in a signal-based way over a communication channel. Tags: atp.Status=candidate
setterReturnSignal	ISignalTriggering	0..1	ref	Reference to the ISignalTriggering that is used to transport the setter method response 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.320: SignalBasedFieldToSignalTriggeringMapping

Class	SignalBasedFireAndForgetMethodToSignalTriggeringMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SignalBasedCommunication			
Note	This meta-class defines the mapping of a ServiceInterface fire and forget method part to an ISignalTriggering. Tags: atp.Status=candidate			
Base	ARObject, AbstractSignalBasedToSignalTriggeringMapping, Identifiable , MultilanguageReferrable , Referrable			
Aggregated by	ServiceInstanceToSignalMapping.fireAndForgetMethodMapping			
Attribute	Type	Mult.	Kind	Note
dataPrototypeInMethodArgumentInstanceRef	DataPrototype	0..1	iref	Instance reference to a (potentially structured) member of a ClientServerOperation. Tags: atp.Status=candidate InstanceRef implemented by: DataPrototypeInServiceInterfaceInstanceRef
iSignalTriggering	ISignalTriggering	0..1	ref	Reference to an ISignalTriggering being part of a fire and forget message. Tags: atp.Status=candidate

Table A.321: SignalBasedFireAndForgetMethodToSignalTriggeringMapping

Class	SignalBasedMethodToSignalTriggeringMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SignalBasedCommunication			
Note	This meta-class defines the mapping of a ServiceInterface method to a ISignalTriggering. Tags: atp.Status=candidate			
Base	ARObject, AbstractSignalBasedToSignalTriggeringMapping, Identifiable , MultilanguageReferrable , Referrable			
Aggregated by	ServiceInstanceToSignalMapping.methodMapping			
Attribute	Type	Mult.	Kind	Note
callSignalTriggering	ISignalTriggering	0..1	ref	Reference to the ISignalTriggering that is used to transport the method call in a signal-based way over a communication channel. Tags: atp.Status=candidate
method	ClientServerOperation	0..1	ref	Reference to a method defined in the context of a ServiceInterface. Tags: atp.Status=candidate
returnSignalTriggering	ISignalTriggering	0..1	ref	Reference to the ISignalTriggering that is used to transport the method response in a signal-based way over a communication channel. Tags: atp.Status=candidate

Table A.322: SignalBasedMethodToSignalTriggeringMapping

Class	SignalBasedTriggerToSignalTriggeringMapping			
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, AbstractSignalBasedToSignalTriggeringMapping, Identifiable , MultilanguageReferrable , Referrable			
Aggregated by	ServiceInstanceToSignalMapping.triggerMapping			
Attribute	Type	Mult.	Kind	Note





Class	SignalBasedTriggerToSignalTriggeringMapping			
iSignalTriggering	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.323: SignalBasedTriggerToSignalTriggeringMapping

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.
secureTranslation	Boolean	0..1	attr	Defined whether the translation shall happen in a secure way.
serviceElementMapping	AbstractSignalBasedToSignalTriggeringMapping	*	ref	Reference to the collection of SignalBased to ISignalTriggering mappings the properties apply to. Tags: atp.Status=candidate

Table A.324: 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	SignalServiceTranslationControlEnum	0..1	attr	Defines how the service instance control shall behave.
signalServiceTranslationEventProps	SignalServiceTranslationEventProps	*	aggr	Defines properties for a single translated event.

Table A.325: SignalServiceTranslationProps

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 connection this attribute can be ignored. Tags: atp.Status=obsolete			
Base	ARObject			





Class	SocketConnectionIpduIdentifier			
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.326: 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	<i>ARElement</i> , <i>ARObject</i> , <i>CollectableElement</i> , Identifiable , <i>MultilanguageReferrable</i> , <i>PackageableElement</i> , Referrable			
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. Stereotypes: atpSplitable Tags: atp.Splitkey=artifactChecksum.shortName, artifactChecksum.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





Class	SoftwareCluster			
contained ARElement	ARElement	*	ref	This reference represents the collection of model elements that cannot derive from UploadablePackageElement 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 SoftwareClusterDesigns applicable for the enclosing SoftwareCluster. Stereotypes: atpUriDef
diagnostic Deployment Props	SoftwareCluster DiagnosticDeployment Props	0..1	ref	This reference identifies the applicable SoftwareClusterDiagnosticProps for the enclosing SoftwareCluster. Note that all SoftwareClusters that share the same DiagnosticContributionSet via the reference diagnosticExtract shall also share the same SoftwareClusterDiagnosticProps.
installation Behavior	SoftwareCluster InstallationBehavior Enum	0..1	attr	This attribute controls the behavior of the SoftwareCluster in terms of installation.
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 text.
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.327: 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	SoftwareClusterDependencyOperatorEnum	0..1	attr	This attribute identifies the semantics of the compare operator.
considerBuildNumber	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	StrongRevisionLabelString	0..1	attr	This attribute represents the value of a version against which the comparison shall be executed.

Table A.328: 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	SoftwareClusterDependencyLogicalOperatorEnum	0..1	attr	This logical operator can be used to relate the results of different SoftwareClusterDependencyParts.
part (ordered)	SoftwareClusterDependencyFormulaPart	*	aggr	This aggregation represents the ordered collection of the parts of the SoftwareClusterDependencyFormula.

Table A.329: 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





Class	SoftwareClusterDesign			
contained Process	ProcessDesign	*	ref	This reference represent the ProcessDesigns contained in the enclosing SoftwareCluster. Stereotypes: atpSplitable Tags: atp.Splitkey=containedProcess
diagnostic Contribution	DiagnosticContributionSet	*	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
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
required Package Element	UploadablePackageElement	*	ref	This reference points to uploadable elements that have been identified as relevant in the context of the enclosing SoftwareClusterDesign. Stereotypes: atpSplitable Tags: atp.Splitkey=requiredPackageElement
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.330: 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	SoftwareClusterDoipDiagnosticAddress, SoftwareClusterSovdAddress			
Aggregated by	SoftwareClusterDiagnosticDeploymentProps.diagnosticAddress			
Attribute	Type	Mult.	Kind	Note
address Semantics	SoftwareClusterDiagnosticAddressSemanticsEnum	0..1	attr	This attribute clarifies whether the address value shall be interpreted as a physical or a functional address.

Table A.331: 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.332: 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 , PackageableElement , Referrable , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
diagnostic Address	SoftwareClusterDiagnosticAddress	*	aggr	This aggregation represents the collection of diagnostic addresses that apply for the SoftwareCluster. Stereotypes: atpSplitable Tags: atp.Splitkey=diagnosticAddress
diagnostic Extract	DiagnosticContributionSet	0..1	ref	This reference identifies the applicable SoftwareCluster DiagnosticProps for the enclosing SoftwareCluster. Note that all SoftwareClusters that share the same DiagnosticContributionSet via the reference diagnosticExtract shall also share the same SoftwareClusterDiagnosticDeploymentProps.
external Authentication	DiagnosticExternalAuthenticationIdentification	*	aggr	This reference supports the configuration of the authentication of diagnostic clients.
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.
validation Configuration	DiagnosticServiceValidationConfiguration	0..1	aggr	This aggregation represents the ability to define the order of manufacturer and supplier validations in diagnostic management.

Table A.333: 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





Enumeration	SoftwareClusterInstallationBehaviorEnum
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.334: 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	SoftwareClusterDiagnosticDeploymentProps.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.335: 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 , PackageableElement , Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
actionType	SoftwarePackageActionTypeEnum	0..1	attr	This attribute defines the action to be taken in the step of processing the enclosing SoftwarePackage.
activationAction	SoftwarePackageActivationActionEnum	0..1	attr	This attribute governs the action to be taken after the installation of the SoftwareCluster completed.
compressed Software PackageSize	PositiveInteger	0..1	attr	This size represents the size of the compressed Software Package.
deltaPackage Applicable Version	StrongRevisionLabelString	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.
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	CryptoServiceCertificate	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.





Class	SoftwarePackage			
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.336: 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.337: 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			
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 SomeipDataPrototypeTransformation Props is able to aggregate several DataPrototypes.
network Representation	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 network Representation is not provided then the baseType of the AbstractImplementationDataType shall be used for the serialization/deserialization. Stereotypes: atp.Splitable Tags: atp.Splitkey=networkRepresentation
someip Transformation Props	ApSomeipTransformationProps	0..1	ref	This reference represents the ability to define data transformation props specifically for a SOME/IP serialization.

Table A.338: 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.
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.
serializer	SerializationTechnologyEnum	0..1	attr	Defines which serialization technology shall be used.
transportProtocol	TransportLayerProtocolEnum	0..1	attr	This attribute defines over which Transport Layer Protocol this event is intended to be sent.

Table A.339: 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	SomeipEventDeployment	*	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.340: 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





Class	SomeipFieldDeployment			
get	SomeipMethodDeployment	0..1	aggr	This aggregation represents the setting of the get method.
notifier	SomeipEventDeployment	0..1	aggr	This aggregation represents the settings of the notifier.
set	SomeipMethodDeployment	0..1	aggr	This aggregation represents the settings of the set method

Table A.341: 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 separationTime. SeparationTime will then only be applied between bursts. If not configured, SeparationTime will be applied between all frames.
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.342: 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.
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.343: 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 , PackageableElement , Referrable			
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





Class	SomeipRemoteMulticastConfig			
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.344: 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, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
eventGroup	SomeipEventGroup	*	ref	Reference to the SomeipEventGroups this Someip RemoteUnicastConfig 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.345: 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.
sdClientEventGroupTimingConfig	SomeipSdClientEventGroupTimingConfig	0..1	ref	Client Timing configuration settings that are EventGroup specific.

Table A.346: 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
multicastSdIpAddress	NetworkEndpoint	0..1	ref	This reference identifies the multicast IP address used for service discovery.
multicastSecureComProps	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.
someipServiceDiscoveryPort	PositiveInteger	0..1	attr	This attribute represents the port number reserved for service discovery.
unicastSecureComProps	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.347: 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, PackageableElement, Referrable , ServiceInstanceToMachineMapping , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note





Class	SomeipServiceInstanceToMachineMapping			
remoteMulticast Config	SomeipRemoteMulticastConfig	*	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	SomeipRemoteUnicastConfig	*	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 in case data collection is enabled.
udpPort	ApApplicationEndpoint	0..1	ref	local UdpPort that will be used by the ServiceInstance for the communication.

Table A.348: SomeipServiceInstanceToMachineMapping

Class	SomeipServiceInterfaceDeployment			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	SOME/IP configuration settings for a ServiceInterface. Tags: atp.recommendedPackage=ServiceInterfaceDeployments			
Base	<i>ARElement, ARObject, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable, ServiceInterfaceDeployment, UploadablePackageElement</i>			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
eventGroup	SomeipEventGroup	*	aggr	SOME/IP EventGroups that are defined within the SOME/IP ServiceClass.
serviceInterface Id	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.
serviceInterface Version	SomeipServiceVersion	0..1	aggr	The SOME/IP major and minor Version of the Service.

Table A.349: 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	<i>ARObject</i>			
Aggregated by	ConsumedServiceInstance.blocklistedVersion, RequiredSomeipServiceInstance.blocklistedVersion , SomeipServiceInterfaceDeployment.serviceInterfaceVersion			
Attribute	Type	Mult.	Kind	Note





Class	SomeipServiceVersion			
majorVersion	PositiveInteger	0..1	attr	Major Version of the ServiceInterface. Tags: xml.sequenceOffset=10
minorVersion	PositiveInteger	1	attr	Minor Version of the ServiceInterface. Tags: xml.sequenceOffset=20

Table A.350: 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
udpPort	PositiveInteger	0..1	attr	This attribute describes the port number of the port used for UDP communication. Tags: atp.Status=candidate

Table A.351: 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.352: 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.353: 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			
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.
executionError	ProcessExecutionError	0..1	ref	this reference is used to identify the applicable execution error
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.354: 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			
Aggregated by	ARPackage.element			





Class	StateDependentFirewall			
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.355: 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: FunctionGroupStateInFunctionGroupSetInstanceRef
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.356: 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





Class	StateManagementActionList			
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.357: 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			
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.358: 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
–	–	–	–	–

Table A.359: StateManagementErrorInterface

Class	StateManagementFunctionGroupSwitchNotificationInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::StateManagement			
Note	<p>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.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=StateManagementPortInterfaces</p>			
Base	<i>ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, PortInterface, Referrable, StateManagementNotificationInterface, StateManagementPortInterface</i>			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
modeGroup	ModeDeclarationGroup	0..1	ref	<p>This reference identifies the ModeDeclarationGroup that defines the individual states that that can be switched to.</p> <p>Tags:atp.Status=draft</p>

Table A.360: StateManagementFunctionGroupSwitchNotificationInterface

Class	StateManagementRequestError			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	<p>This meta-class has the ability to configure the submission of an error to the state management.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=StateManagementRequests</p>			
Base	<i>ARObject, Identifiable, MultilanguageReferrable, Referrable, StateManagementStateRequest</i>			
Aggregated by	StateManagementModuleInstantiation.request			
Attribute	Type	Mult.	Kind	Note
rule	StateManagementRequestRule	*	aggr	<p>This aggregation represents the collection of rules applicable for the error request.</p> <p>Tags:atp.Status=draft</p>

Table A.361: StateManagementRequestError

Class	StateManagementRequestRule			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::StateManagement			
Note	<p>This meta-class represents a rule for deciding about a state change.</p> <p>Tags:atp.Status=draft</p>			
Base	ARObject			
Aggregated by	StateManagementRequestError.rule, StateManagementRequestTrigger.rule			
Attribute	Type	Mult.	Kind	Note
formula	StateManagementCompareFormula	0..1	aggr	<p>This aggregation represents the definition of the formula for the StateManagementRequestRule</p> <p>Tags:atp.Status=draft</p>
nextState	ModeDeclaration	0..1	iref	<p>This reference identifies the state to be switched to if the condition is fulfilled.</p> <p>Tags:atp.Status=draft InstanceRef implemented by:ModeDeclarationInStateManagementStateNotificationInstanceRef</p>

Table A.362: 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	StateManagementRequestRule	*	aggr	This aggregation represents the collection of rules applicable for the trigger request. Tags: atp.Status=draft

Table A.363: 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: PPortPrototypeInExecutableInstanceRef
setFunctionGroupState	ModeDeclaration	0..1	iref	This reference identifies the function group step that shall become active after the action step terminates. Tags: atp.Status=draft InstanceRef implemented by: FunctionGroupStateInFunctionGroupSetInstanceRef

Table A.364: StateManagementSetFunctionGroupStateActionItem

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
start	ModeDeclarationGroupPrototype	0..1	iref	This reference identifies the state machine that shall be started when the enclosing action list item is executed. Tags: atp.Status=draft InstanceRef implemented by: ModeDeclarationGroupPrototypeInExecutableInstanceRef





Class	StateManagementStateMachineActionItem			
stop	ModeDeclarationGroup Prototype	0..1	iref	This reference identifies the state machine that shall be stopped when the enclosing action list item is executed. Tags: atp.Status=draft InstanceRef implemented by: ModeDeclarationGroup PrototypeInExecutableInstanceRef

Table A.365: 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, 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: PPortPrototypeInExecutableInstanceRef
stateMachine	ModeDeclarationGroup Prototype	0..1	aggr	This aggregation represents the existence of an actual state machine. Tags: atp.Status=draft

Table A.366: 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: RPortPrototypeInExecutableInstanceRef

Table A.367: 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			





Class	StateManagementTriggerCompareRule			
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.368: 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, StateManagementPortInterface, StateManagementRequestInterface			
Subclasses	StateManagementDiagTriggerInterface			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.369: StateManagementTriggerInterface

Class	StdCpplImplementationDataType			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CpplImplementationDataType			
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=CpplImplementationDataTypes			
Base	ARElement, ARObject, AbstractImplementationDataType, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, AutosarDataType, CollectableElement, CpplImplementationDataType, CpplImplementationDataTypeContextTarget, Identifiable, MultilanguageReferrable, PackageableElement, Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.370: StdCpplImplementationDataType

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.





Class	SupervisionCheckpoint			
phmCheckpoint	PhmCheckpoint	0..1	iref	Instance reference to the PhmCheckpoint defined in the context of a PortInterface. Stereotypes: atpUriDefInstanceRef implemented by: PhmCheckpointInExecutableInstanceRef
process	Process	0..1	ref	Reference to the Process this checkpoint shall be monitored.

Table A.371: 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.
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	SupervisionModeCondition	0..1	ref	Reference to SupervisionModeCondition (Condition under which the configuration made under this SupervisionMode are to be applied).

Table A.372: 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.373: SupervisionModeCondition

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	trf	Type of the instance. Stereotypes: isOfType

Table A.374: 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	<p>The PortPrototypes through which this SwComponent Type can communicate.</p> <p>The aggregation of PortPrototype is subject to variability with the purpose to support the conditional existence of PortPrototypes.</p> <p>Stereotypes: atpSplittable; atpVariation</p> <p>Tags: atp.Splitkey=port.shortName, port.variationPoint.shortLabel vh.latestBindingTime=preCompileTime</p>
portGroup	PortGroup	*	aggr	<p>A port group being part of this component.</p> <p>Stereotypes: atpSplittable; atpVariation</p> <p>Tags: atp.Splitkey=portGroup.shortName, portGroup.variationPoint.shortLabel vh.latestBindingTime=preCompileTime</p>
swComponent Documentation	SwComponent Documentation	0..1	aggr	<p>This adds a documentation to the SwComponentType.</p> <p>Stereotypes: atpSplittable; atpVariation</p> <p>Tags: atp.Splitkey=swComponentDocumentation, swComponentDocumentation.variationPoint.shortLabel vh.latestBindingTime=preCompileTime xml.sequenceOffset=-10</p>

Table A.375: 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	<p>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.</p>

Table A.376: SwConnector

Class	<<atpVariation>> SwDataDefProps			
Package	M2::MSR::DataDictionary::DataDefProperties			
Note	<p>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.</p> <p>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.</p> <p>SwDataDefProps covers various aspects:</p> <ul style="list-style-type: none"> • 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 Data Types in the programming language (or in AUTOSAR). This is mainly expressed by properties like swRecordLayout and swCalprmAxisSet • Implementation aspects, mainly expressed by swImplPolicy, swVariableAccessImplPolicy, swAddrMethod, swPointerTargetProps, 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, invalidValue • Code generation policy provided by swRecordLayout <p>Tags:vh.latestBindingTime=codeGenerationTime</p>			
Base	ARObject			
Aggregated by	AutosarDataType.swDataDefProps , CompositeNetworkRepresentation.networkRepresentation, DataPrototype.swDataDefProps , DataPrototypeTransformationProps.networkRepresentationProps, DiagnosticDataElement.swDataDefProps, DiagnosticEnvDataElementCondition.swDataDefProps , DltArgument.networkRepresentation, FlatInstanceDescriptor.swDataDefProps, ImplementationDataTypeElement.swDataDefProps, InstantiationDataDefProps.swDataDefProps, ISignal.networkRepresentationProps , McDataInstance.resultingProperties, ParameterAccess.swDataDefProps, PerInstanceMemory.swDataDefProps, ReceiverComSpec.networkRepresentation , SenderComSpec.networkRepresentation , SomeipDataPrototypeTransformationProps.networkRepresentation , SwPointerTargetProps.swDataDefProps , SwServiceArg.swDataDefProps, SwSystemconst.swDataDefProps, SystemSignal.physicalProps			
Attribute	Type	Mult.	Kind	Note
additionalNativeTypeQualifier	NativeDeclarationString	0..1	attr	<p>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.</p> <p>Tags:xml.sequenceOffset=235</p>
annotation	Annotation	*	aggr	<p>This aggregation allows to add annotations (yellow pads ...) related to the current data object.</p> <p>Tags: xml.roleElement=true xml.roleWrapperElement=true xml.sequenceOffset=20 xml.typeElement=false xml.typeWrapperElement=false </p>
baseType	SwBaseType	0..1	ref	<p>Base type associated with the containing data object.</p> <p>Tags:xml.sequenceOffset=50</p>
compuMethod	CompuMethod	0..1	ref	<p>Computation method associated with the semantics of this data object.</p> <p>Tags:xml.sequenceOffset=180</p>
dataConstr	DataConstr	0..1	ref	<p>Data constraint for this data object.</p> <p>Tags:xml.sequenceOffset=190</p>





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
displayPresentation	DisplayPresentationEnum	0..1	attr	This attribute controls the presentation of the related data for measurement and calibration tools.
implementationDataType	AbstractImplementationDataType	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 <ul style="list-style-type: none"> • 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
swBitRepresentation	SwBitRepresentation	0..1	aggr	Description of the binary representation in case of a bit variable. Tags: xml.sequenceOffset=60
swCalibrationAccess	SwCalibrationAccessEnum	0..1	attr	Specifies the read or write access by MCD tools for this data object. Tags: xml.sequenceOffset=70
swCalprmAxisSet	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
swComparisonVariable	SwVariableRefProxy	*	aggr	Variables used for comparison in an MCD process. Tags: xml.sequenceOffset=170 xml.typeElement=false





Class	<<atpVariation>> SwDataDefProps			
swDataDependency	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
swIntendedResolution	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
swInterpolationMethod	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
swPointerTargetProps	SwPointerTargetProps	0..1	aggr	Specifies that the containing data object is a pointer to another data object. Tags: xml.sequenceOffset=280
swRecordLayout	SwRecordLayout	0..1	ref	Record layout for this data object. Tags: xml.sequenceOffset=290
swRefreshTiming	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





Class	<<atpVariation>> SwDataDefProps			
swValueBlockSize	Numerical	0..1	attr	This represents the size of a Value Block Stereotypes: atpVariation Tags: vh.latestBindingTime=preCompileTime xml.sequenceOffset=80
swValueBlockSizeMult (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 swValueBlockSize 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
valueAxisDataType	ApplicationPrimitiveDataType	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.377: 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
swDataDefProps	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: <ul style="list-style-type: none"> 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.378: 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	<p>This attribute controls the semantics of the arraysize for the array representing the string in an Implementation DataType.</p> <p>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.</p>
baseType	SwBaseType	0..1	ref	<p>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.</p> <p>Tags:xml.sequenceOffset=30</p>
swFillCharacter	Integer	0..1	attr	<p>Filler character for text parameter to pad up to the maximum length swMaxTextSize.</p> <p>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.</p> <p>The usage of the fill character depends on the arraySize Semantics.</p> <p>Tags:xml.sequenceOffset=40</p>
swMaxTextSize	Integer	0..1	attr	<p>Specifies the maximum text size in characters. Note the size in bytes depends on the encoding in the corresponding baseType.</p> <p>Stereotypes: atpVariation</p> <p>Tags: vh.latestBindingTime=preCompileTime xml.sequenceOffset=20</p>

Table A.379: SwTextProps

Class	SynchronizationTimingConstraint			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingConstraint::SynchronizationTimingConstraint			
Note	<p>This constraint is used to restrict the timing behavior of different, but correlated events or event chains, with regard to synchronization.</p> <p>Thereby, in case of imposing a synchronization timing constraint on events or event chains the following two scenarios are supported:</p> <p>1) [synchronizationConstraintType=responseSynchronization] Events: An arbitrary number of correlated events which play the role of responses shall occur synchronously with respect to a predefined tolerance. Event Chains: 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.</p> <p>2) [synchronizationConstraintType=stimulusSynchronization] Events: An arbitrary number of correlated events which play the role of stimuli shall occur synchronously with respect to a predefined tolerance. Event Chains: 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.</p> <p>In case of imposing a synchronization timing constraint on events the following two scenarios are supported:</p> <p>1) [eventOccurrenceKind=singleOccurrence] Any of the events shall occur only once in the given time interval.</p> <p>2) [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.</p>			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , TimingConstraint , Traceable			
Aggregated by	TimingExtension.timingGuarantee, TimingExtension.timingRequirement			
Attribute	Type	Mult.	Kind	Note
eventOccurrenceKind	EventOccurrenceKind Enum	0..1	attr	The specific occurrence kind of an event occurring within the given time interval.
scope	TimingDescriptionEventChain	*	ref	The event chains that are in the scope of the constraint.
scopeEvent	TimingDescriptionEvent	*	ref	The events that are in the scope of the constraint.
synchronizationConstraintType	SynchronizationType Enum	0..1	attr	The specific type of this synchronization constraint.
tolerance	MultidimensionalTime	0..1	aggr	The maximum time interval, within which the synchronized events shall occur.

Table A.380: 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
networkTimeConsumer	GlobalTimeSlave	0..1	ref	This reference defines the GlobalTime Consumer which is synchronized with this Time Base.

Table A.381: 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			





Class	SynchronizedTimeBaseProvider			
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.382: 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, AtpClassifier, AtpType, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, PortInterface , Referrable			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
timeBaseKind	TimeSynchronizationKindEnum	0..1	attr	Defines which kind of time base is requested at this interface.

Table A.383: 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			
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, fibexElement.variationPoint.shortLabel vh.latestBindingTime=postBuild
interpolation Routine MappingSet	InterpolationRoutineMappingSet	*	ref	This reference identifies the InterpolationRoutineMapping Sets that are relevant in the context of the enclosing System.





Class	System			
mapping	SystemMapping	*	aggr	Aggregation of all mapping aspects relevant in the System Description. Stereotypes: atpSplitable; atpVariation Tags: atp.Splitkey=mapping.shortName, mapping.variationPoint.shortLabel vh.latestBindingTime=postBuild
pncVectorLength	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.
rootSoftwareComposition	RootSwCompositionPrototype	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, rootSoftwareComposition.variationPoint.shortLabel vh.latestBindingTime=systemDesignTime
systemVersion	RevisionLabelString	1	attr	Version number of the System Description.

Table A.384: System

Class	SystemMapping			
Package	M2::AUTOSARTemplates::SystemTemplate			
Note	The system mapping aggregates all mapping aspects that are relevant in the System Description.			
Base	<i>ARObject</i> , <i>Identifiable</i> , <i>MultilanguageReferrable</i> , <i>Referrable</i>			
Aggregated by	System.mapping			
Attribute	Type	Mult.	Kind	Note
pncMapping	PncMapping	*	aggr	Mappings between Virtual Function Clusters and Partial Network Clusters. Stereotypes: atpSplitable; atpVariation Tags: atp.Splitkey=pncMapping, pncMapping.variationPoint.shortLabel vh.latestBindingTime=systemDesignTime

Table A.385: 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	<i>ARObject</i> , <i>Identifiable</i> , <i>MultilanguageReferrable</i> , <i>Referrable</i> , <i>TimingDescription</i> , <i>TimingDescriptionEvent</i>			
Aggregated by	<i>TimingExtension.timingDescription</i>			





Class	TDEventComplex			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.386: TDEventComplex

Class	TDEventOccurrenceExpression			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription::TimingDescriptionEvents::TDEventOccurrenceExpression			
Note	This is used to specify a filter on the occurrences of TimingDescriptionEvents 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	TimingModelInstance	*	aggr	An occurrence expression can reference an arbitrary number of TimingModelInstances 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.387: TDEventOccurrenceExpression

Class	TDEventOperation			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription::TimingDescriptionEvents::TDEventVfb::Operation			
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.388: TDEventOperation

Class	TDEventVariableDataPrototype			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription::TimingDescriptionEvents::TDEventVfb::VariableDataPrototype			
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.389: TDEventVariableDataPrototype

Class	TDEventVfb (abstract)			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription::TimingDescriptionEvents::TDEventVfb			
Note	This is the abstract parent class to describe timing events at Virtual Functional Bus (VFB) level.			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , TimingDescription , TimingDescriptionEvent			
Subclasses	TDEventVfbPort , TDEventVfbReference			
Aggregated by	TimingExtension.timingDescription			
Attribute	Type	Mult.	Kind	Note
component	SwComponentPrototype	0..1	iref	The context for the scope of this timing event. InstanceRef implemented by: ComponentInCompositionInstanceRef

Table A.390: TDEventVfb

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	1	attr	Defines a key.
sequenceOffset	Integer	0..1	attr	The sequenceOffset attribute supports the use case where TagWithOptionalValue is aggregated as splittable. 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.391: 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
processIsNotSelf Terminating	The Process terminates only on request from Execution Management. Tags: atp.EnumerationLiteralIndex=0
processIsSelf Terminating	The Process is allowed to terminate without request from Execution Management. Tags: atp.EnumerationLiteralIndex=1

Table A.392: TerminationBehaviorEnum

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 , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
cyclicBackup Interval	TimeValue	0..1	attr	Time interval in seconds to store the time base value periodically to persistence.
persistency Deployment Element	PersistencyDeploymentElement	0..1	ref	This reference represents the PersistencyDeploymentElement where the time value shall be stored in and retrieved from.
timeBase Provider	SynchronizedTimeBaseProvider	0..1	ref	This reference represents the mapped TimeBase Provider.

Table A.393: TimeBaseProviderToPersistencyMapping

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	TDEventOccurrenceExpression	0..1	aggr	The occurrence expression for this event.

Table A.394: 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 <i>event chain segments</i> .			
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	TimingDescriptionEventChain	*	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.395: 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.			
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	CryptoServiceCertificate	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.





Class	TlsCryptoCipherSuite			
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	1	attr	This attribute supports the definition of the applicable version of TLS.

Table A.396: 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	1	ref	This reference identifies the applicable cryptographic key.
pskIdentity	String	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.397: 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			
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.398: 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	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.
tlvImplementationData Type Element	AbstractImplementationData TypeElement	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.399: TlvDataIdDefinition

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, PackageableElement, Referrable			
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.
method	ClientServerOperation	*	ref	This represents the reference to one or several methods 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.400: 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





Enumeration	TransportLayerProtocolEnum
tcp	Transmission control protocol Tags: atp.EnumerationLiteralIndex=1
udp	User datagram protocol Tags: atp.EnumerationLiteralIndex=0

Table A.401: 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.402: 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.
ucmModuleInstantiation	UcmModuleInstantiation	0..1	ref	This reference identifies the applicable UcmModule Instantiation. Stereotypes: atpUriDef

Table A.403: 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
blockInconsistent	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.
updateSessionRejected	UcmRetryStrategy	0..1	aggr	This attribute defines the retry strategy of the UcmMaster for the case that the update session is rejected.

Table A.404: 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			
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	StrongRevisionLabel String	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.405: 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.406: 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
prepareRollback	UcmRetryStrategy	0..1	aggr	This attribute identifies the configuration of prepare rollback retries initiated by the Ucm Subordinate.
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.407: 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. Tags: atp.Status=draft
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. Tags: atp.Status=draft
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.408: 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





Class	UdpNmNetworkConfiguration			
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.409: 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 , UploadablePackageElement			
Subclasses	PersistencyDeployment , PersistencyPortPrototypeToDeploymentMapping			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.410: 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.411: 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.412: 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	UserDefinedMethodDeployment	0..1	aggr	This aggregation represents the settings of the get method
notifier	UserDefinedEventDeployment	0..1	aggr	This aggregation represents the settings of the notifier.
set	UserDefinedMethodDeployment	0..1	aggr	This aggregation represents the settings of the set method

Table A.413: 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 , UserDefinedFieldDeployment.set			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.414: 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 , PackageableElement , Referrable , ServiceInstanceToMachineMapping , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.415: 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 , UploadablePackageElement			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.416: 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, 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.417: 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.418: 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.419: 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, PackageableElement, Referrable			
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.
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.420: VehiclePackage

Class	VfbTiming			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingExtensions			
Note	A model element used to define timing descriptions and constraints at VFB level. TimingDescriptions aggregated by VfbTiming are restricted to event chains referring to events which are derived from the class TDEventVfb. Tags: atp.recommendedPackage=TimingExtensions			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , TimingExtension			
Aggregated by	ARPackage.element			
Attribute	Type	Mult.	Kind	Note
component	SwComponentType	0..1	ref	This defines the scope of a VfbTiming. All corresponding timing descriptions and constraints shall be defined within this scope.

Table A.421: VfbTiming