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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_4500] 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_4501] 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_4502] 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_4503] 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_4504] Restricted usage of [AgeConstraint](#) [An [AgeConstraint](#) shall only be defined for events of type [TimingDescriptionEvent](#) associated with the receipt and reading of data.

]()

[constr_4505] Specifying minimum and maximum number of occurrences [The minimum and maximum number of occurrences shall be specified such that the following holds: $0 \leq \text{minNumberOfOccurrences} \leq \text{maxNumberOfOccurrences}$.

]()

[constr_4506] 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_4507] 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_4508] [TDEventVfb](#) shall reference [PortPrototypeBlueprint](#) only in Blueprints [An event type [TDEventVfb](#) only shall reference [PortPrototypeBlueprint](#) in blueprints.

]()

[constr_4509] Only [VfbTiming](#) shall be a Blueprint [Only the [VfbTiming](#) is blueprintable.

]()

[constr_4513] [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_4514] [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_4515] 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_4516] 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_4517] 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 segment shall reference itself.

]()

[constr_4518] 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_4519] Specifying `patternLength` [The `patternLength` shall be specified such that the following holds: $0 \leq \max(\text{offset}) \leq \text{patternLength}$.

]()

[constr_4520] Specifying attribute `synchronizationConstraintType` [The attribute `synchronizationConstraintType` shall be specified if the `SynchronizationTimingConstraint` is imposed on events.

]()

[constr_4521] Specifying attribute `synchronizationConstraintType` [The attribute `synchronizationConstraintType` shall be specified if the `SynchronizationTimingConstraint` is imposed on event chains.

]()

[constr_4522] `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_4543] 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_4544] 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_4551] Use only Numericals in `TDEventOccurrenceExpression` [The target data prototype of the instance references of `variable` and `argument` shall be `Numerical`.

]()

[constr_4552] Restricted usage of `AutosarVariableInstance` for Content Filter [If a content filter is defined for an atomic event then references to `AutosarVariableInstances` are only allowed if the atomic event is of type `TDEventVariableDataPrototype`. Only if such an atomic event occurs, the value of the variables can be evaluated. Thus, also the scope of the atomic event shall be the same as the `AutosarVariableInstance`, meaning that they shall point to the same `VariableDataPrototype`.

]()

2.2 TPS_ManifestSpecification

[constr_10002] Only one mapping per `PortPrototype` [If one instance of the following sub-classes of `DiagnosticSwMapping` refers to a `PortPrototype` then no other instance of `DiagnosticSwMapping` 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`.
- `DiagnosticServiceDataIdentifierPortMapping` that is associated with a `PPortPrototype` typed by a `DiagnosticDataIdentifierInterface`, or `DiagnosticDataElementInterface`.

}]()

[constr_10003] Restriction for the existence of `DiagnosticServiceDataIdentifierPortMapping.diagnosticDataIdentifier` vs. `DiagnosticServiceDataIdentifierPortMapping.diagnosticDataElement` [For each `DiagnosticServiceDataIdentifierPortMapping`, **either** the reference in the role `diagnosticDataIdentifier` **or** `diagnosticDataElement` shall exist.

}]()

[constr_10004] Consistency of `DiagnosticServiceGenericMapping` for `PortPrototype` typed by `DiagnosticDataIdentifierGenericInterface` [If a `DiagnosticWriteDataByIdentifier` and a `DiagnosticReadDataByIdentifier` exist that refer to the same `DiagnosticDataIdentifier` and no `DiagnosticServiceDataIdentifierPortMapping` is used, then two `DiagnosticServiceGenericMappings` shall exist refer to the same `PortPrototype` typed by `DiagnosticDataIdentifierGenericInterface`.

}]()

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

}]()

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

}]()

[constr_10010] Usage of attribute `category` in a `SoftwareClusterDependencyFormula` [Within an aggregation of (a chain of) `SoftwareClusterDependencyFormula` the values `STRUCTURAL_DEPENDENCY` and `FUNCTIONAL_DEPENDENCY` shall only be used once (preferably on the top-most or second nesting level).

}]()

[constr_10011] Definition of sub-software-cluster [A `SoftwareCluster` that is referenced in the role `SoftwareClusterDependencyCompareCondition.softwareCluster` by a `SoftwareClusterDependencyCompareCondition` that is

eventually aggregated by a `SoftwareClusterDependencyFormula` of category `STRUCTURAL_DEPENDENCY` shall not itself aggregate (on any level) a `SoftwareClusterDependencyFormula` of category `STRUCTURAL_DEPENDENCY`.

]()

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

]()

[constr_10022] 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] 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_1473] No support for `PRPortPrototype` [A `ServiceInterface` shall not be referenced by a `PRPortPrototype` in the role `providedRequiredInterface`.

]()

[constr_1478] `SwDataDefProps` applicable to `ApplicationDataTypes` exclusive to the *AUTOSAR adaptive platform* [A complete list of the `SwDataDefProps` and other attributes and their multiplicities which are allowed for a given `category` is shown in table 2.1.

]()

Attributes of SwDataDefProps	Root Elem.		Attribute Existence per Category
	ApplicationAssocMapDataType	ApplicationAssocMapElement	ASSOCIATIVE_MAP
additionalNativeTypeQualifier			
annotation	x	x	*
baseType			
compuMethod			
dataConstr			
displayFormat	x	x	0..1
implementationDataType			
invalidValue			
stepSize			
swAddrMethod			
swAlignment			
swBitRepresentation			
swCalibrationAccess			
swCalprmAxisSet			
swComparisonVariable			
swDataDependency			
swHostVariable			
swImplPolicy			
swIntendedResolution			
swInterpolationMethod			
swIsVirtual			
swPointerTargetProps			
swRecordLayout			
swRefreshTiming			
swTextProps			
swValueBlockSize			
unit			
valueAxisDataType			
Other Attributes below the Root Element			
key: ApplicationAssocMapElement	x		1
value: ApplicationAssocMapElement	x		1

Table 2.1: Allowed Attributes vs. **category** for **ApplicationDataTypes**

[constr_1482] 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 `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] 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] Initialization of a `DataPrototype` typed by an `ApplicationAssocMapDataType` [A `DataPrototype` typed by an `ApplicationAssocMapDataType` shall only be initialized by an `ApplicationAssocMapValueSpecification`.

]()

[constr_1489] Uniqueness of `ApplicationAssocMapValueSpecification.mapElementTuple.key` [The value of all `mapElementTuple.key` elements in the context of a given `ApplicationAssocMapValueSpecification` shall be unique.

]()

[constr_1490] 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] `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] Initial value for `event` [An `ServiceInterface.event` shall **not** have an `initValue`.

]()

[constr_1496] `DiagnosticServiceDataMapping.mappedApDataElement` shall only refer to specific sub-classes of `DataPrototype` [A `DiagnosticServiceDataMapping.mappedApDataElement` shall only refer to an `event` or a `field` or a `DataPrototype` owned by an `event` or a `field`.

]()

[constr_1500] Target `SwcServiceDependency` of `DiagnosticEventPortMapping.swcServiceDependencyInExecutable` [Any particular `SwcServiceDependency` that is referenced in the role `DiagnosticEventPortMapping.swcServiceDependencyInExecutable` shall

- **only** be aggregated in the role `serviceDependency` by an `AdaptiveSwcInternalBehavior`
- aggregate either a `DiagnosticEventNeeds` or a `DiagnosticEventInfoNeeds`.

]()

[constr_1501] Target `SwcServiceDependency` of `DiagnosticOperationCyclePortMapping.swcServiceDependencyInExecutable` [Any particular `SwcServiceDependency` that is referenced in the role `DiagnosticOperationCyclePortMapping.swcServiceDependencyInExecutable` shall

- **only** be aggregated in the role `serviceDependency` by an `AdaptiveSwcInternalBehavior` and
- aggregate a `DiagnosticOperationCycleNeeds`.

]()

[constr_1502] Target `SwcServiceDependency` of `DiagnosticEnableConditionPortMapping.swcServiceDependencyInExecutable` [Any particular `SwcServiceDependency` that is referenced in the role `DiagnosticEnableConditionPortMapping.swcServiceDependencyInExecutable` shall

- **only** be aggregated in the role `serviceDependency` by an `AdaptiveSwcInternalBehavior`
- aggregate a `DiagnosticEnableConditionNeeds`.

]()

[constr_1507] `PortInterfaceToDataTypeMapping` is only applicable to `ServiceInterface` or `PersistencyKeyValueStorageInterface` [`PortInterfaceToDataTypeMapping.portInterface` shall only refer to **either** a `ServiceInterface` or a `PersistencyKeyValueStorageInterface`.

]()

[constr_1535] Existence of `DiagnosticSoftwareClusterProps` in the context of a `DiagnosticContributionSet` [Each `DiagnosticContributionSet` shall only reference a single `DiagnosticSoftwareClusterProps` in the role `element`.

]()

[constr_1536] 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] Only one physical address per `SoftwareCluster` [Each `SoftwareCluster` shall only aggregate one `SoftwareClusterDiagnosticAddress` where the value of attribute `addressSemantics` is set to `SoftwareClusterDiagnosticAddressSemanticsEnum.physicalAddress`.

]()

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

]()

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

]()

[constr_1551] Existence of `DataPrototypeInServiceInterfaceRef.dataPrototype` vs. `DataPrototypeInServiceInterfaceRef.elementInImplDatatype` [For every given `DataPrototypeInServiceInterfaceRef`, either the

aggregation `DataPrototypeInServiceInterfaceRef.dataPrototype` or `DataPrototypeInServiceInterfaceRef.elementInImplDatatype` shall exist.

]()

[constr_1553] 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] Restriction regarding `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 one of the following:

- `ApplicationValueSpecification`
- `ApplicationRuleBasedValueSpecification`
- `ReferenceValueSpecification`

]()

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

]()

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

]()

[constr_1557] Standardized values of `SoftwareClusterDesign.category` and `SoftwareCluster.category` [The AUTOSAR standard reserves the following values of attribute `SoftwareClusterDesign.category` and `SoftwareCluster.category`:

- `ROOT_SOFTWARE_CLUSTER`
- `SUB_SOFTWARE_CLUSTER`

]()

[constr_1558] Existence of `SoftwareClusterDesign.diagnosticAddress`
[The aggregation of `SoftwareClusterDiagnosticAddress` at `SoftwareClusterDesign` in the role `diagnosticAddress` shall only exist if the value of `SoftwareClusterDesign.category` is set to `ROOT_SOFTWARE_CLUSTER`.

]()

[constr_1559] Existence of `SoftwareClusterDesign.subSoftwareCluster`
[The Reference from `SoftwareClusterDesign` to itself in the role `subSoftwareCluster` shall only exist if the value of `SoftwareClusterDesign.category` is set to `ROOT_SOFTWARE_CLUSTER`.

]()

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

]()

[constr_1562] Existence of `SoftwareClusterDesign.diagnosticContribution`
[The existence of the reference `SoftwareClusterDesign.diagnosticContribution` is limited to `SoftwareClusterDesigns` where attribute `category` is set to the value `ROOT_SOFTWARE_CLUSTER`.

]()

[constr_1564] Existence of `SoftwareCluster.diagnosticAddress` [The aggregation of `SoftwareClusterDiagnosticAddress` at `SoftwareCluster` in the role `diagnosticAddress` shall only exist if the `SoftwareCluster` is not referenced by in the role `SoftwareClusterDependencyCompareCondition.softwareCluster` by a `SoftwareClusterDependencyCompareCondition` that is eventually aggregated by a `SoftwareClusterDependencyFormula` of category `STRUCTURAL_DEPENDENCY`.

]()

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

]()

[constr_1568] Existence of `SoftwareCluster.diagnosticExtract` [The reference `SoftwareCluster.diagnosticExtract` shall only exist if the `SoftwareCluster` is not referenced by in the role `SoftwareClusterDependencyCompareCondition.softwareCluster` by a `SoftwareClusterDependencyCompareCondition` that is eventually aggregated by a `SoftwareClusterDependencyFormula` of category `STRUCTURAL_DEPENDENCY`.

]()

[constr_1569] Restriction for the scope of `RestHttpPortPrototypeMapping.acceptsEncoding` [The attribute `RestHttpPortPrototypeMapping.acceptsEncoding` shall only be defined on the client side of a communication.

]()

[constr_1570] 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] `CppImplementationDataType` is limited [The usage of a `CppImplementationDataType` is limited to the context of `AdaptiveApplicationSwComponentTypes` and `CompositionSwComponentTypes` defined in the context of an `Executable`.

]()

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

]()

[constr_1576] 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] applicable data categories [Table 2.2 defines the applicable `category`s vs. meta-class.

]()

Category	Applicable to ...								Description
	ApplicationArrayDataType	ApplicationRecordDataType	ApplicationPrimitiveDataType	ApplicationRecordElement	ApplicationArrayElement	ApplicationValueSpecification	StdCppImplementationDataType	CustomCppImplementationDataType	
VALUE			x	x	x	x	x		Contains a single value. See also [TPS_MANI_03192].
TYPE_REFERENCE							x		The element is defined via reference to another data type (via CppImplementationDataType.typeReference).
STRUCTURE		x		x	x		x		Holds one or several further elements which can have different AutosarDataType s. See also [TPS_MANI_03180].
VARIANT							x	x	Can hold values of different data types. It is similar to STRUCTURE except that all of its members start at the same location in memory. A VARIANT data prototype can contain only one of its elements at a time and represents a type-safe union. The size of the VARIANT is at least the size of the largest member. See also [TPS_MANI_03189].
ARRAY	x			x	x		x	x	A fixed-sized array of sub-elements of the same data type. See also [TPS_MANI_03169].
VECTOR							x	x	An array of elements of the same data type that is able to grow at run-time. See also [TPS_MANI_03174].
ASSOCIATIVE_MAP							x	x	An associative array of key-value pairs. See also [TPS_MANI_03183].
STRING			x	x	x	x	x		Contains a text string. See also [TPS_MANI_03178].
BOOLEAN			x	x	x	x			Contains one boolean state. Depending on the CPU direct addressing of single bits may not be available. So a byte or a word can be used to store only one logical state.

Table 2.2: Usage of [category](#) for Data Types

[constr_1579] [SwDataDefProps](#) applicable to [CppImplementationDataTypes](#) exclusive to the **AUTOSAR adaptive platform** [A complete list of the [SwDataDefProps](#) and other attributes and their multiplicities which are allowed for a given [category](#) is shown in table 2.3.

]()

Attributes of SwDataDefProps	Root Element	Attribute Existence per Category							
	CppImplementationDataType	VALUE	TYPE_REFERENCE	STRUCTURE	VARIANT	ARRAY	VECTOR	ASSOCIATIVE_MAP	STRING
additionalNativeTypeQualifier									
annotation	x	*	*	*	*	*	*	*	*
baseType									
compuMethod	x		0..1						
dataConstr.dataConstrRule.physConstrs	x		d/c			d/c	d/c		
dataConstr.dataConstrRule.internalConstrs	x		0..1			0..1	0..1		
displayFormat	x	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1
implementationDataType									
invalidValue	x		0..1						0..1
stepSize									
swAddrMethod									
swAlignment									
swBitRepresentation									
swCalibrationAccess									
swCalprmAxisSet									
swComparisonVariable									
swDataDependency									
swHostVariable									
swImplPolicy									
swIntendedResolution									
swInterpolationMethod									
swIsVirtual									
swPointerTargetProps									
swPointerTargetProps.swDataDefProps									
swRecordLayout									
swRefreshTiming	x	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1
swTextProps									
swValueBlockSize									
unit									
valueAxisDataType									
Other Attributes									
subElement: CppImplementationDataTypeElement	x			1..*					
templateArgument	x				1..*	1	1..*	2..*	0..1
typeReference	x		1						

Table 2.3: Allowed Attributes vs. category for CppImplementationDataType

[constr_1580] Restriction for the usage of RestHttpPortPrototypeMapping.
acceptsEncoding [Each member of HttpAcceptEncodingEnum shall only appear

at most once in a particular `RestHttpPortPrototypeMapping.acceptsEncoding`.

]()

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

]()

[constr_1582] `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] 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] 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] 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] 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`.

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

]()

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

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

of the respective enclosing [ClientServerOperation](#).

]()

[constr_1597] 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] 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 [tlvSubElement](#) the attribute [TlvDataIdDefinition.id](#) **shall exist and have a unique value** in the context of respective enclosing [CppImplementationDataType](#) or [CppImplementationDataTypeElement](#).

]()

[constr_1599] [TlvDataIdDefinition](#) referencing [ArgumentDataPrototype](#) [Each [ArgumentDataPrototype](#) shall be referenced **at most once** in the role [tlvArgument](#) in the context of the same [TransformationPropsToServiceInterfaceElementMapping](#).

]()

[constr_1600] [TlvDataIdDefinition](#) referencing [ApplicationRecordElement](#) [Each [ApplicationRecordElement](#) shall be referenced **at most once** in the role [tlvRecordElement](#) in the context of the same [TransformationPropsToServiceInterfaceElementMapping](#).

]()

[constr_1601] TlvDataIdDefinition referencing CppImplementationDataTypeElement [Each `CppImplementationDataTypeElement` shall be referenced **at most once** in the role `tlvSubElement` in the context of the same `TransformationPropsToServiceInterfaceElementMapping`.

]()

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

]()

[constr_1604] Completeness of the existence of a set of TlvDataIdDefinition.tlvSubElements [If the reference `TlvDataIdDefinition.tlvSubElement` exists for one `subElement` of a given `CppImplementationDataType` or `CppImplementationDataTypeElement` then further `TlvDataIdDefinition.tlvSubElement` shall exist **for all** `subElements` of the given `CppImplementationDataType` or `CppImplementationDataTypeElement` and all affected `TlvDataIdDefinition` shall be aggregated by the same `TransformationPropsToServiceInterfaceElementMapping`.

]()

[constr_1605] 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] Processes with mutual ExecutionDependency [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] 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] Existence of attribute `TransformationPropsToServiceInterfaceElementMapping.transformationProps.sessionHandling` [The attribute `ApSomeipTransformationProps.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] 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] 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] 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_1627] Supported value range for attribute `ApApplicationErrorDomain.value` [The supported value range of attribute `ApApplicationErrorDomain.value` is limited to the interval [0..18446744073709551616].

]()

[constr_1628] 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] 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] 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] 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] 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] 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] Multiplicity of `OsModuleInstantiation.resourceGroup` [Any given `OsModuleInstantiation` shall always define at least one `resourceGroup`.

]()

[constr_1664] 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] 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] References from `PersistencyPortPrototypeToKeyValueStorageMapping` to `PersistencyKeyValueStorage` [Each `Persisten-`

`cyKeyValueStorage` shall only be referenced by at most one `PersistencyPort-PrototypeToKeyValueStorageMapping`.

}]()

[constr_1667] References from `PersistencyPortPrototypeToFileStorageMapping` to `PersistencyFileStorage` [Each `PersistencyFileStorage` shall only be referenced by at most one `PersistencyPortPrototypeToFileStorageMapping`.

}]()

[constr_1668] Allowed combinations of `PersistencyRedundancyChecksum.length` and `algorithmFamily` [The allowed combinations of `PersistencyRedundancyChecksum.length` and `algorithmFamily` are documented in Table 2.4.

}]()

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

Table 2.4: Allowed combinations of `PersistencyRedundancyChecksum.length` and `algorithmFamily`

[constr_1673] 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_1674] Supported encoding of `StdCppImplementationDataType` of `category STRING` [On the level of the meta-model (and, by extension, the language binding), the only supported encoding of `StdCppImplementationDataType` of `category STRING` is UTF-8.

}]()

[constr_1675] 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] 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] 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] 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] `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] 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] SoftwareCluster shall only be referenced by a single SoftwarePackage. [Each SoftwareCluster shall only be referenced by a single SoftwarePackage.

]()

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

]()

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

]()

[constr_1693] 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] 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] ClientServerOperation aggregated by DiagnosticRoutineInterface [Any ClientServerOperation aggregated by a DiagnosticRoutineInterface shall not define the following attributes:

- fireAndForget
- possibleApError
- possibleApErrorSet

]()

[constr_1697] 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 either the role `DiagnosticDataIdentifierInterface.write` or `DiagnosticDataElementInterface.write` shall set attribute `direction` to `in`.

]()

[constr_1698] Target `SwcServiceDependency` of `DiagnosticClearConditionPortMapping.swcServiceDependencyInExecutable` [Any particular `SwcServiceDependency` that is referenced in the role `DiagnosticClearConditionPortMapping.swcServiceDependencyInExecutable` shall

- **only** be aggregated in the role `serviceDependency` by an `AdaptiveSwcInternalBehavior` and
- aggregate a `DiagnosticClearConditionNeeds`.

]()

[constr_1699] Target `SwcServiceDependency` of `DiagnosticIndicatorPortMapping.swcServiceDependencyInExecutable` [Any particular `SwcServiceDependency` that is referenced in the role `DiagnosticIndicatorPortMapping.swcServiceDependencyInExecutable` shall

- **only** be aggregated in the role `serviceDependency` by an `AdaptiveSwcInternalBehavior` and
- aggregate a `DiagnosticIndicatorNeeds`.

]()

[constr_1700] Target `SwcServiceDependency` of `DiagnosticMemoryDestinationPortMapping.swcServiceDependencyInExecutable` [Any particular `SwcServiceDependency` that is referenced in the role `DiagnosticMemoryDestinationPortMapping.swcServiceDependencyInExecutable` shall

- **only** be aggregated in the role `serviceDependency` by an `AdaptiveSwcInternalBehavior` and
- aggregate a `DiagnosticEventInfoNeeds`.

]()

[constr_1701] Target `SwcServiceDependency` of `DiagnosticSecurityLevel-PortMapping.swcServiceDependencyInExecutable` [Any particular `SwcServiceDependency` that is referenced in the role `DiagnosticSecurityLevel-PortMapping.swcServiceDependencyInExecutable` shall

- **only** be aggregated in the role `serviceDependency` by an `AdaptiveSwcInternalBehavior` and
- aggregate a `DiagnosticsCommunicationSecurityNeeds`.

]()

[constr_1702] Target `SwcServiceDependency` of `DiagnosticServiceDataIdentifierPortMapping.swcServiceDependencyInExecutable` [Any particular `SwcServiceDependency` that is referenced in the role `DiagnosticServiceDataIdentifierPortMapping.swcServiceDependencyInExecutable` shall

- **only** be aggregated in the role `serviceDependency` by an `AdaptiveSwcInternalBehavior` and
- aggregate a `DiagnosticValueNeeds`.

]()

[constr_1707] Eligible subclasses of `HeapUsage` in the context of `StateDependentStartupConfig.resourceConsumption` [The definition of `StateDependentStartupConfig.resourceConsumption.heapUsage` shall only be done by means of the concrete sub-class `WorstCaseHeapUsage`.

]()

[constr_1708] 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] 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] `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] 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] 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] 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] 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_1732] Existence of attribute `activationSwitch` set to `True` in the context of the enclosing `UcmStep` [Within the context of any given `UcmStep`, only a single `SoftwarePackageStep` shall exist that sets the value of attribute `activationSwitch` to the value `True`.

]()

[constr_1733] Simultaneous existence of `SoftwarePackageStep.preActivate` and `SoftwarePackageStep.verify` [The references `SoftwarePackageStep.preActivate` and `SoftwarePackageStep.verify` shall not be defined in the context of the same enclosing `SoftwarePackageStep`

]()

[constr_1734] Restriction for attribute `SoftwarePackageStep.activationSwitch` [If attribute `SoftwarePackageStep.activationSwitch` is set to `True` then the enclosing `SoftwarePackageStep` shall not refer to a `SoftwarePackage` in any of the possible roles.

]()

[constr_1736] 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] 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_1738] Multiplicity of reference `GlobalSupervision.localSupervision` [At the time of deployment of a `GlobalSupervision`, at least one reference to meta-class `LocalSupervision` in the role `localSupervision` shall exist.

]()

[constr_1739] Multiplicity of aggregation `LocalSupervision.transition` [At the time of deployment of a `LocalSupervision`, at least one aggregation of meta-class `CheckpointTransition` in the role `LocalSupervision.transition` shall exist **if at least one the following conditions** is fulfilled:

- At least one aggregation of `LogicalSupervision` in the role `LocalSupervision.logicalSupervision` exists.
- At least one aggregation of `DeadlineSupervision` in the role `LocalSupervision.deadlineSupervision` exists.

]()

[constr_1740] 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] 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] 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_1744] Definition of process state In the context of the ExecutionDependency [The target `ModeDeclaration` referenced in the role `ExecutionDependency.processState` shall fulfill the following conditions:

- It shall be owned by a `ModeDeclarationGroup` that is referenced by a `ModeDeclarationGroupPrototype` (in the role `type`) that in turn shall be aggregated by a `Process`.
- The `shortName` of the `ModeDeclaration` has either of the following values:
 - Running
 - Terminated

]()

[constr_1746] 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] 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] Existence of references TlvDataIdDefinition.tlvArgument, TlvDataIdDefinition.tlvRecordElement, and TlvDataIdDefinition.tlvSubElement [For each `TlvDataIdDefinition`, only one out of the following references shall exist:

- reference to `ArgumentDataPrototype` in the role `tlvArgument`
- reference to `ApplicationRecordElement` in the role `tlvRecordElement`

- reference to `CppImplementationDataTypeElement` in the role `tlvSubElement`.

]()

[constr_1751] Value of `PersistencyRedundancyMOutOfN.n` and `PersistencyRedundancyMOutOfN.m` [The value of attribute `PersistencyRedundancyMOutOfN.m` shall be set at least to 2 and at most to the value of attribute `PersistencyRedundancyMOutOfN.n`, i.e. the allowed interval is `[2..PersistencyRedundancyMOutOfN.n]`.

]()

[constr_1764] Counterpart of `PhmCheckpoint` [Each `PhmCheckpoint` shall be referenced once and only once in the role `targetPhmCheckpoint` by a `PhmCheckpointInExecutableInstanceRef` that is aggregated by a `SupervisionCheckpoint`. This reference shall exist **at the time when manifest creation is finished**.

]()

[constr_1765] Diagnostic Services eligible for `DiagnosticServiceGenericMapping` [The allowed combinations of `DiagnosticPortInterface` and `ServiceNeeds` that are eligible for the utilization of `DiagnosticServiceGenericMapping` are listed in 2.5.

]()

<code>DiagnosticPortInterface</code>	<code>ServiceNeeds</code>
<code>DiagnosticRoutineInterface</code>	<code>DiagnosticRoutineNeeds</code>
<code>DiagnosticGenericUdsInterface</code>	<code>DiagnosticGenericUdsNeeds</code>
<code>DiagnosticRoutineGenericInterface</code>	<code>DiagnosticRoutineNeeds</code>
<code>DiagnosticDataIdentifierGenericInterface</code>	<code>DiagnosticValueNeeds</code>
<code>DiagnosticUploadInterface</code>	<code>DiagnosticUploadDownloadNeeds</code>
<code>DiagnosticDownloadInterface</code>	<code>DiagnosticUploadDownloadNeeds</code>
<code>DiagnosticEcuResetInterface</code>	<code>DiagnosticControlNeeds</code>

Table 2.5: Relation between `PortInterface` and `ServiceNeeds` for the `DiagnosticServiceGenericMapping`

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

]()

[constr_1770] Value of `ProvidedSomeipServiceInstance.serviceInstanceId` [For each `ProvidedSomeipServiceInstance.serviceInstanceId`, the value 4294967295 shall not be used.

]()

[constr_1784] 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] 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 referencing element aggregates a `SoftwareClusterDependencyFormula` of category `FUNCTIONAL_DEPENDENCY` in the role `dependsOn` and the `SoftwareCluster` that owns the referenced element is referenced by a `SoftwareClusterDependencyCompareCondition` in the context of the mentioned `SoftwareClusterDependencyFormula` in the role `part.softwareCluster` or
- one (either referencing or referenced) of the `SoftwareClusters` owns a `SoftwareClusterDependencyFormula` of category `STRUCTURAL_DEPENDENCY` and the other (either referenced or referencing) `SoftwareCluster` is referenced in the role `softwareCluster` by a `SoftwareClusterDependencyCompareCondition` in the context of the enclosing `SoftwareClusterDependencyFormula`.

For these cases, [constr_1784] applies.

]()

[constr_1786] 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] 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] Restriction to `SoftwareCluster` of category `PLATFORM_CORE` [On each `Machine`, only a single `SoftwareCluster` of category `PLATFORM_CORE` shall be deployed.

]()

[constr_1789] Scope of machine function group [The `functionGroup` that represents the machine function group (see [TPS_MANI_01330]) shall only be referenced

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

]()

[constr_1809] Global supervision restricted to one function group [Within the context of one `GlobalSupervision`, all `LocalSupervisions` referenced in the role `localSupervision` shall only aggregate `aliveSupervision`, `logicalSupervision`, and `deadlineSupervision` where all targets of the references

- `aliveSupervision.checkpoint.process`
- `logicalSupervision.initialCheckpoint.process`
- `logicalSupervision.finalCheckpoint.process`
- `logicalSupervision.transition.source.process`
- `logicalSupervision.transition.target.process`
- `deadlineSupervision.checkpointTransition.source.process`
- `deadlineSupervision.checkpointTransition.target.process`

aggregates a `stateDependentStartupConfig` where the reference in the role `functionGroupState.contextModeDeclarationGroupPrototype` refers to the exact same `ModeDeclarationGroupPrototype` (that implements the function group, as far as state management is concerned)

]()

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

]()

[constr_3288] IP configuration restriction for `unicastNetworkEndpoints` [A `NetworkEndpoint` that is referenced by a `EthernetCommunicationConnector` in the role `unicastNetworkEndpoint` shall have either

- `Ipv4Configuration` or
- `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] 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] 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] 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] 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] 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] Value of attribute `SomeipEventDeployment.eventId` shall be unique [The value of `eventId` shall be unique in the context of the enclosing `SomeipServiceInterfaceDeployment`.

]()

[constr_3306] 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] `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] `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] `SomeipMethodDeployment.transportProtocol` setting to `tcp` and the impact on `ProvidedSomeipServiceInstances` [If `SomeipMethodDeployment.transportProtocol` is set to `tcp` then each `ProvidedSomeipServiceInstance` that refers the `SomeipServiceInterfaceDeployment` in the role `serviceInterfaceDeployment` shall only be mapped to a `MachineDesign` with a `SomeipServiceInstanceToMachineMapping` with a configured `tcpPort`.

]()

[constr_3320] 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] 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] 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] 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] Restriction in usage of `ApSomeipTransformationProps.sizeOfArrayLengthField` [The value of the attribute `sizeOfArrayLengthField` shall be either 0, 1, 2 or 4.

]()

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

]()

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

]()

[constr_3356] Restriction in usage of `ApSomeipTransformationProps.alignment` [The value of the attribute `alignment` shall be either 8, 16, 32, 64, 128, or 256.

]()

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

]()

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

]()

[constr_3361] 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] `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] 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_3366] System category for a system design description with Adaptive Platform and Classic Platform content [The `System` element that contains design artifacts that are relevant for the Adaptive Platform and Classic Platform shall have the `category` `SYSTEM_DESIGN_DESCRIPTION`.

]()

[constr_3367] 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] 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] 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] 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] Mutually exclusive existence of FireAndForgetMapping.dataElement reference and FireAndForgetMapping.trigger reference [A `FireAndForgetMapping` shall never reference a `dataElement` and a `trigger` at the same time.

]()

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

]()

[constr_3374] 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] 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] `FireAndForgetMapping` shall reference only fire and forget methods [A `FireAndForgetMapping` is only allowed to reference a `ClientServerOperation` in role `method` for which the value of attribute `method.fireAndForget` is set to `true`.

]()

[constr_3391] `ServiceInterfaceElementSecureComConfig` references to `ServiceInterfaceDeployment` elements [`ServiceInterfaceElementSecureComConfig` element shall be defined for exactly one `ServiceInterface` element and shall therefore contain only one single reference to an element defined in the scope of a `ServiceInterfaceDeployment`.

]()

[constr_3392] `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] 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] 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] TransformationPropsToServiceInterfaceElementMapping is restricted to one single ServiceInterface [All `ServiceInterface` elements that are referenced by the `TransformationPropsToServiceInterfaceElementMapping` in the role `event`, `method` or `field` shall be aggregated by the same `ServiceInterface` in the role `event`, `method` or `field`.

|()

[constr_3396] 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] Value range of SomeipEventDeployment.eventId [The value of `eventId` shall be in the range of 0..32767.

|()

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

|()

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

|()

[constr_3413] 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] Allowed usage of PlatformModuleEthernetEndpointConfiguration attributes [2.6 shows `PlatformModuleEthernetEndpointConfiguration` attributes that are allowed to be used to configure the network communication in the different platform modules.

|()

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

Table 2.6: Allowed usage of PlatformModuleEthernetEndpointConfiguration attributes

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

]()

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

]()

[constr_3417] 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] UserDefinedMethodDeployments aggregated by a UserDefinedFieldDeployment [A UserDefinedMethodDeployment that is aggregated by a UserDefinedFieldDeployment in the role get or set shall not reference a ClientServerOperation in the role method.

]()

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

- ipv4MulticastIpAddress or
- ipv6MulticastIpAddress.

]()

[constr_3421] 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`
- `DltMessageCollectionSet`
- `SystemMapping` that is allowed to contain only a `PncMapping`

]()

[constr_3423] `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] `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] Restriction of `DoIpInstantiations` on a `Machine` [Each `Machine` shall aggregate at most one `DoIpInstantiation` in the role `moduleInstantiation`.

]()

[constr_3426] The `logTraceFilePath` is mandatory in case that `logTraceLogMode` is set to `file` [If one in the collection of `logTraceLogMode` is set to `file` the `logTraceFilePath` shall be set to a value.

]()

[constr_3427] The `logTraceFilePath` is only relevant if `logTraceLogMode` is set to `file` [The `logTraceFilePath` shall only be used if one of the collection of `logTraceLogMode` is set to `file`.

]()

[constr_3429] 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] 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] 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] 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] `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] `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] `CppTemplateArgument.templateType` reference to `StdCppImplementationDataType` of category STRUCTURE and the `inplace` flag [`CppTemplateArgument.templateType` that points to a `StdCppImplementationDataType` of category STRUCTURE shall have the `inplace` attribute set to `false`.

]()

[constr_3485] UDP endpoint using DTLS can only serve provided or required service instances exclusively [A `ServiceInstanceToMachineMapping` that refers to `TlsSecureComProps` in the role `secureComPropsForUdp` is not allowed to refer to `ProvidedApServiceInstances` and at the same time to `RequiredApServiceInstances` in the role `serviceInstance`. In other words a UDP endpoint using DTLS can only serve provided or required service instances exclusively.

]()

[constr_3486] TCP endpoint using TLS can only serve provided or required service instances exclusively. [A [ServiceInstanceToMachineMapping](#) that refers to [TlsSecureComProps](#) in the role [secureComPropsForTcp](#) is not allowed to refer to [ProvidedApServiceInstances](#) and at the same time to [RequiredApServiceInstances](#) in the role [serviceInstance](#). In other words a TCP endpoint using TLS can only serve provided or required service instances exclusively.

]()

[constr_3487] 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] [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] Applicable attributes for standardized E2E Profiles [2.7 defines the applicable attributes for the standardized E2E Profiles of AUTOSAR.

]()

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
dataId	x	x		1	1	1	1	1	1	n	1	1	1
dataLength	x	x			x				x	x			
minDataLength	x	x		x		x	x	x			x	x	x
maxDataLength	x	x		x		x	x	x			x	x	x
dataUpdatePeriod	x	x		x	x	x	x	x	x	x	x	x	x
sourceId		x									x	x	
dataIdMode			x						x				
maxDeltaCounter			x	x	x	x	x	x	x	x	x	x	x
maxErrorStateInit			x	x	x	x	x	x	x	x	x	x	x
maxErrorStateInvalid			x	x	x	x	x	x	x	x	x	x	x
maxErrorStateValid			x	x	x	x	x	x	x	x	x	x	x
minOkStateInit			x	x	x	x	x	x	x	x	x	x	x
minOkStateInvalid			x	x	x	x	x	x	x	x	x	x	x
minOkStateValid			x	x	x	x	x	x	x	x	x	x	x
windowSizeValid			x	x	x	x	x	x	x	x	x	x	x
windowSizeInvalid			x	x	x	x	x	x	x	x	x	x	x
windowSizeInit			x	x	x	x	x	x	x	x	x	x	x
clearFromValidToInvalid			x	x	x	x	x	x	x	x	x	x	x

Table 2.7: Allowed Attributes for standardized E2E Profiles

[constr_3495] Supported value range for attribute `DoIpInstantiation.eid`

[The supported value range of attribute `DoIpInstantiation.eid` is limited to the interval [0..281474976710655].

]()

[constr_3496] Supported value range for attribute `DoIpInstantiation.gid`

[The supported value range of attribute `DoIpInstantiation.gid` is limited to the interval [0..281474976710655].

]()

[constr_3497] Supported value range for attribute `DoIpInstantiation.maxRequestBytes`

[The supported value range of attribute `DoIpInstantiation.maxRequestBytes` is limited to the interval [0..4294967295].

]()

[constr_3498] Supported value range for attribute `DoIpInstantiation.logicalAddress` [The supported value range of attribute `DoIpInstantiation.logicalAddress` is limited to the interval [0..65535].

]()

[constr_3499] Supported value range for attribute `DoIpRequestConfiguration.startAddress` [The supported value range of attribute `DoIpRequestConfiguration.startAddress` is limited to the interval [0..65535].

]()

[constr_3528] 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] Value range of `serviceInstanceId` [The value of `serviceInstanceId` shall be in the range of 0..65535.

]()

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

]()

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

]()

[constr_3537] `LocalSupervision` referenced once in the context of a `GlobalSupervision` [Any `LocalSupervision` shall be referenced at most once by a `GlobalSupervision` in the role `GlobalSupervision.localSupervision`.

]()

[constr_3538] 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] Only one `AliveSupervision` per `SupervisionCheckpoint` [A `SupervisionCheckpoint` shall only be referenced up to once by an `AliveSupervision` in the role `checkpoint`.

]()

[constr_3540] `SupervisionCheckpoint` in supervision graph [Each `SupervisionCheckpoint` shall only be part of one supervision graph.

]()

[constr_3541] `qosProfile` mandatory for `DdsProvidedServiceInstance` [The attribute `qosProfile` shall be defined for every `DdsProvidedServiceInstance`.

]()

[constr_3542] `qosProfile` mandatory for `DdsRequiredServiceInstance` [The attribute `qosProfile` shall be defined for every `DdsRequiredServiceInstance`.

]()

[constr_3550] 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] 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] 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] Existence of `ServiceInstanceToSignalMapping` for a field with `signalBased` serialization [If a field is referenced by a `SomeipFieldDeployment` in the role `field` and that `SomeipFieldDeployment` aggregates a `SomeipEventDeployment` in the role `notifier` and the `SomeipEventDeployment` has an attribute `SomeipEventDeployment.serializer` set to `signalBased` then there shall exist a `ServiceInstanceToSignalMapping` with a `fieldMapping` referring to the field in the role `dataPrototypeInServiceInterfaceRef` and the `SignalBasedFieldToISignalTriggeringMapping` shall refer to a `ISignalTriggering` in the role `notifierSignalTriggering`.

]()

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

]()

[constr_3555] 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] 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] `RequiredSomeipServiceInstance.blacklistedVersion` 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 `blacklistedVersion`.

]()

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

]()

[constr_3562] Existence of `NonqueuedReceiverComSpec.filter` [The attribute `NonqueuedReceiverComSpec.filter` shall only exist if the referenced `dataElement` refers to an `AutosarDataPrototype` which is referenced by either a `SignalBasedEventElementToISignalTriggeringMapping` or a `SignalBasedFieldToISignalTriggeringMapping`.

]()

[constr_3563] 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] Consistency between DDS Service Interface Deployment and Provided DDS Service Instance [Transport attributes `DdsServiceInterfaceDeployment.transportProtocol` and `DdsEventDeployment.trans-`

`portProtocol` shall be consistent with DDS profiles generated and selected by the `DdsQosProps` component of `DdsProvidedServiceInstance`, `DdsFieldQosProps`, and `DdsEventQosProps`.

}]()

[constr_3565] 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] 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] 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] 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] 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] 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 `PPortPro-`

totype in the role `recoveryAction` typed by `PhmHealthChannelRecoveryNotificationInterface`.

]()

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

]()

[constr_5000] Supported value range for attribute `DoIpRequestConfiguration.endAddress` [The supported value range of attribute `DoIpRequestConfiguration.endAddress` is limited to the interval [0..65535].

]()

[constr_5004] 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] 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] Compatibility of data types with `category BOOLEAN` [An `ApplicationDataType` of `category BOOLEAN` can only be mapped to a `CppImplementationDataType` of `category VALUE`.

]()

[constr_5035] Compatibility of data types with `category STRING` [An `ApplicationDataType` of `category STRING` can only be mapped to a `CppImplementationDataType` of `category STRING`.

]()

[constr_5036] 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] Compatibility of data types with category ARRAY with variable-Size [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] 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] Compatibility of data types with category STRUCTURE [An `ApplicationDataType` of category STRUCTURE can only be mapped to a `CppImplementationDataType` of category STRUCTURE.

]()

[constr_5040] 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] 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] No data type mapping for CppImplementationDataType of category VARIANT [An `ApplicationDataType` shall never be mapped to a `CppImplementationDataType` of category VARIANT.

]()

[constr_5043] 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] 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] 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_5046] Usage of DoIpNetworkConfiguration.eidUseMac [If `DoIpInstantiation.eid` is not configured, the value of `DoIpNetworkConfiguration.eidUseMac` shall be set to true.

]()

[constr_5047] Supported values of ServiceInstanceToMachineMapping.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] 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] ProvidedSomeipServiceInstances of the same serviceInterface on one Machine [Different `ProvidedSomeipServiceInstances` referring to the same `SomeipServiceInterfaceDeployment` shall not be mapped by a `SomeipServiceInstanceToMachineMapping` to the same `IpAddress` defined in the `NetworkEndpoint` that is referenced by the `EthernetCommunicationCon-`

`connector.unicastNetworkEndpoint` and to the same port number represented by either `SomeipServiceInstanceToMachineMapping.udpPort` or `SomeipServiceInstanceToMachineMapping.tcpPort`.

]()

[constr_5056] Restriction of `CompositionSwComponentType.connector` usage in AP [The usage of `CompositionSwComponentType.connector` on the AUTOSAR adaptive platform is restricted to `PassThroughSwConnectors`.

]()

[constr_5057] `PassThroughSwConnector` and `ServiceInterfaceMapping` [If a `PassThroughSwConnector` is defined between two Ports in a `CompositionSwComponentType` then a `ServiceInterfaceMapping` or a `ServiceInterfaceElementMapping` between the `ServiceInterfaces` of these two Ports shall be defined as well.

]()

[constr_5102] 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] 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] 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] `SomeipServiceInstanceToMachineMapping` only supports a single Address Family [A `SomeipServiceInstanceToMachineMapping` shall only support a single Address Family, i.e. either IPv4 or IPv6. The address family shall be consistent with the `Ipv4Configuration/Ipv6Configuration` of the `NetworkEndpoint` referenced by the `EthernetCommunicationConnector` that is

referenced by the `SomeipServiceInstanceToMachineMapping` in the role `communicationConnector`.

]()

[constr_5156] `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] `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] Mandatory elements of `UdpNmCluster` [The following attributes shall always be defined for the `UdpNmCluster`:

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

]()

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

]()

[constr_5230] Existence of attribute `E2EProfileCompatibilityProps.transitToInvalidExtended` is mandatory 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] `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] 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] Restriction applicable for [CryptoProviderToPortPrototypeMapping.portPrototype](#) [The reference [CryptoProviderToPortPrototypeMapping.portPrototype](#) shall only be used for an [RPortPrototype](#) typed by a [CryptoProviderInterface](#).

]()

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

]()

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

]()

[constr_5243] Restriction of [LogAndTraceInstantiation.dltEcuId](#) attribute value [The [LogAndTraceInstantiation.dltEcuId](#) attribute value shall be composed of four ASCII characters.

]()

A Mentioned Class Tables

Class	<i>AbstractImplementationDataType</i> (abstract)			
Package	M2::AUTOSARTemplates::CommonStructure::ImplementationDataTypes			
Note	This meta-class represents an abstract base class for different flavors of <i>ImplementationDataType</i> .			
Base	<i>ARElement</i> , <i>ARObject</i> , <i>AtpBlueprint</i> , <i>AtpBlueprintable</i> , <i>AtpClassifier</i> , <i>AtpType</i> , AutosarDataType , <i>CollectableElement</i> , Identifiable , <i>MultilanguageReferrable</i> , <i>PackageableElement</i> , Referrable			
Subclasses	CppImplementationDataType , <i>ImplementationDataType</i>			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.1: AbstractImplementationDataType

Class	<i>AdaptiveApplicationSwComponentType</i>
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationStructure
Note	<p>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.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=AdaptiveApplicationSwComponentTypes</p>





Class	AdaptiveApplicationSwComponentType			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable, SwComponentType			
Attribute	Type	Mult.	Kind	Note
internalBehavior	AdaptiveSwcInternalBehavior	0..1	aggr	<p>This aggregation represents the internal behavior of the AdaptiveApplicationSwComponentType for the AUTOSAR adaptive platform.</p> <p>Stereotypes: atpSplitable; atpVariation</p> <p>Tags: atp.Splitkey=internalBehavior.shortName, internalBehavior.variationPoint.shortLabel atp.Status=draft vh.latestBindingTime=preCompileTime</p>

Table A.2: AdaptiveApplicationSwComponentType

Class	AdaptivePlatformServiceInstance (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	<p>This meta-class represents the ability to describe the existence and configuration of a service instance in an abstract way.</p> <p>Tags:atp.Status=draft</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable, UploadablePackageElement			
Subclasses	ProvidedApServiceInstance, RequiredApServiceInstance			
Attribute	Type	Mult.	Kind	Note
e2eEventProtectionProps	End2EndEventProtectionProps	*	aggr	<p>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.</p> <p>Tags:atp.Status=draft</p>
e2eMethodProtectionProps	End2EndMethodProtectionProps	*	aggr	<p>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</p> <p>Tags:atp.Status=draft</p>
secureComConfig	ServiceInterfaceElementSecureComConfig	*	aggr	<p>Configuration settings to secure the communication of ServiceInterface elements.</p> <p>Tags:atp.Status=draft</p>
serviceInterfaceDeployment	ServiceInterfaceDeployment	0..1	ref	<p>Reference to a ServiceInterfaceDeployment that identifies the ServiceInterface that is represented by the ServiceInstance.</p> <p>Tags:atp.Status=draft</p>

Table A.3: AdaptivePlatformServiceInstance

Class	AdaptiveSwcInternalBehavior			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::AdaptiveInternalBehavior			
Note	<p>This meta-class represents the ability to define an internal behavior of an AtomicSwComponentType used on the AUTOSAR adaptive platform.</p> <p>Please note that the model of internal behavior in this case, in stark contrast to the situation of the AUTOSAR classic platform, is very minimal.</p> <p>Tags:atp.Status=draft</p>			





Class	AdaptiveSwcInternalBehavior			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
service Dependency	SwcService Dependency	*	aggr	This represents the collection of SwcService Dependency owned by AdaptiveInternalBehavior. Tags: atp.Status=draft

Table A.4: AdaptiveSwcInternalBehavior

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			
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.5: AgeConstraint

Class	AliveSupervision			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	Defines an AliveSupervision for one checkpoint. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , PhmSupervision , Referrable			
Attribute	Type	Mult.	Kind	Note
aliveReference Cycle	TimeValue	1	attr	Time period at which the Alive Supervision mechanism compares the amount of received Alive Indications for the SupervisionCheckpoint against the expectedAlive Indications. Tags: atp.Status=draft
checkpoint	SupervisionCheckpoint	1	ref	Reference to a checkpoint in the context of Alive Supervision. Tags: atp.Status=draft
expectedAlive Indications	PositiveInteger	1	attr	Defines the amount of expected Alive Indications of the SupervisionCheckpoint within the aliveReferenceCycle. Tags: atp.Status=draft
maxMargin	PositiveInteger	1	attr	Defines the amount of Alive Indications of the Supervision Checkpoint that are acceptable to be additional to the expectedAliveIndications within the aliveReferenceCycle. Tags: atp.Status=draft
minMargin	PositiveInteger	1	attr	Defines the amount of Alive Indications of the Supervision Checkpoint that are acceptable to be missing to the expectedAliveIndications within the aliveReferenceCycle. Tags: atp.Status=draft

Table A.6: AliveSupervision

Class	Allocator			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CplusplusImplementationDataType			
Note	<p>This meta-class represents the ability to take influence on the way objects are allocated in memory, for example it can be controlled whether an objects is allocated on the heap or on the stack.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=Allocators</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
headerFile	String	0..1	attr	Configuration of the Header File with the custom class declaration
namespace (ordered)	SymbolProps	*	aggr	<p>This aggregation allows for the definition of a namespace of an Allocator.</p> <p>Tags:atp.Status=draft</p>

Table A.7: Allocator

Class	ApApplicationError			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	<p>This meta-class represents the ability to formally specify the semantics of an application error on the AUTOSAR adaptive platform</p> <p>Tags: atp.Status=draft atp.recommendedPackage=ApplicationErrors</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
errorCode	Integer	1	attr	This attribute has the ability to specify the error code value within the enclosing AdaptivePlatformApplication Error.
errorDomain	ApApplicationError Domain	1	ref	<p>This reference represents the error domain of the Ap ApplicationError.</p> <p>Tags:atp.Status=draft</p>

Table A.8: ApApplicationError

Class	ApApplicationErrorDomain			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	<p>This meta-class represents the ability to define a global error domain for an ApApplicationError.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=ApplicationErrorDomains</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
namespace (ordered)	SymbolProps	*	aggr	<p>This aggregation defines the namespace of the Ap ApplicationErrorDomain</p> <p>Tags:atp.Status=draft</p>
value	PositiveUnlimitedInteger	1	attr	This attribute identifies the error category.

Table A.9: ApApplicationErrorDomain

Class	ApApplicationErrorSet			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	<p>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 ApApplicationErrors.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=ApplicationErrorSets</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
apApplicationError	ApApplicationError	*	ref	<p>This reference represents the collection of ApApplicationError represented by the enclosing ApApplicationErrorSet</p> <p>Tags:atp.Status=draft</p>

Table A.10: ApApplicationErrorSet

Class	ApSomeipTransformationProps			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::SerializationProperties			
Note	<p>SOME/IP serialization properties.</p> <p>Tags:atp.Status=draft</p>			
Base	ARObject, Identifiable , MultilanguageReferrable, Referrable , TransformationProps			
Attribute	Type	Mult.	Kind	Note
alignment	PositiveInteger	0..1	attr	<p>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.</p>
byteOrder	ByteOrderEnum	0..1	attr	<p>Specifies the byte order of data in the serialized data stream.</p>
implementsLegacyStringSerialization	Boolean	0..1	attr	<p>This attribute indicates that Strings in the SOME/IP message shall NOT be serialized according to the SOME/IP specification for Strings.</p> <p>If this attribute is set to true, BOM and null-termination shall NOT be added in the serialization for Strings in the payload.</p> <p>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.</p> <p>NOTE! This attribute is not future safe, and will be removed in an upcoming AUTOSAR release!</p>
isDynamicLengthFieldSize	Boolean	0..1	attr	<p>This attribute represents the ability to control the setting of the wire type for TLV encoding.</p> <p>If the attribute is set to True then wire type 5-7 shall be used.</p> <p>If the attribute does not exist or is set to False then wire type 4 shall be used.</p>
sessionHandling	SOMEIPTransformerSessionHandlingEnum	0..1	attr	<p>Defines whether the SOME/IP transformer shall use session handling for Sender/Receiver communication.</p>





Class	ApSomeipTransformationProps			
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 a 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 a String.

Table A.11: ApSomeipTransformationProps

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			
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.12: ApplicationArrayElement

Class	ApplicationAssocMapDataType
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationDataType





Class	ApplicationAssocMapDataType			
Note	An application data type which is a map and consists of a key and a value Tags: atp.Status=draft atp.recommendedPackage=ApplicationDataTypes			
Base	ARElement, ARObject, ApplicationCompositeDataType , ApplicationDataType , AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, AutosarDataType , CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
key	ApplicationAssocMapElement	1	aggr	Key element of the map that is used to uniquely identify the value of the map. Tags: atp.Status=draft
value	ApplicationAssocMapElement	1	aggr	Value element of the map that stores the content associated to a key. Tags: atp.Status=draft

Table A.13: ApplicationAssocMapDataType

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. Tags: atp.Status=draft			
Base	ARObject			
Attribute	Type	Mult.	Kind	Note
key	ValueSpecification	1	aggr	This aggregation represents the initialization of the key part of an AssociativeElementValueSpecification. Tags: atp.Status=draft
value	ValueSpecification	1	aggr	This aggregation represents the initialization of the value part of an AssociativeElementValueSpecification. Tags: atp.Status=draft

Table A.14: ApplicationAssocMapElementValueSpecification

Class	ApplicationAssocMapValueSpecification			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationDataType			
Note	This meta-class represents the ability to define the initialization of an ApplicationAssocMapDataType. Tags: atp.Status=draft			
Base	ARObject, CompositeValueSpecification, ValueSpecification			
Attribute	Type	Mult.	Kind	Note
mapElement Tuple (ordered)	ApplicationAssocMapElementValueSpecification	*	aggr	This aggregation represents the initial values for the elements of the ApplicationAssocMapValueSpecification. Tags: atp.Status=draft

Table A.15: 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			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.16: 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 ApplicationData Types only.</p>			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, AutosarDataType , CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Subclasses	ApplicationCompositeDataType , ApplicationPrimitiveDataType			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.17: ApplicationDataType

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			
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 ApplicationrecordData Type.</p> <p>Stereotypes: atpVariation</p> <p>Tags:vh.latestBindingTime=preCompileTime</p>

Table A.18: 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			





Class	ApplicationRecordElement			
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.19: ApplicationRecordElement

Class	ApplicationRuleBasedValueSpecification			
Package	M2::AUTOSARTemplates::CommonStructure::Constants			
Note	This meta-class represents rule based values for DataPrototypes typed by ApplicationDataTypes (ApplicationArrayDataType or a compound ApplicationPrimitiveDataType which also boils down to an array-nature).			
Base	ARObject, AbstractRuleBasedValueSpecification, ValueSpecification			
Attribute	Type	Mult.	Kind	Note
category	Identifier	0..1	attr	<p>This represents the category of the RuleBasedValue Specification</p> <p>Tags:xml.sequenceOffset=-20</p>
swAxisCont (ordered)	RuleBasedAxisCont	*	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	RuleBasedValueCont	0..1	aggr	<p>This represents the values of an array or Compound Primitive Data Type.</p>

Table A.20: ApplicationRuleBasedValueSpecification

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, ValueSpecification			
Attribute	Type	Mult.	Kind	Note
category	Identifier	0..1	attr	<p>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].</p>
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>





Class	ApplicationValueSpecification			
swValueCont	SwValueCont	0..1	aggr	This represents the values of a Compound Primitive Data Type.

Table A.21: 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			
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.22: 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.
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.23: 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.
Literal	Description
fixedSize	This means that the ApplicationArrayDataType will always have a fixed number of elements. Tags: atp.EnumerationLiteralIndex=0





Enumeration	ArraySizeSemanticsEnum
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.24: ArraySizeSemanticsEnum

Class	AutosarDataPrototype (abstract)			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::DataPrototypes			
Note	Base class for prototypical roles of an AutosarDataType.			
Base	ARObject, AtpFeature, AtpPrototype, DataPrototype , Identifiable , MultilanguageReferrable , Referrable			
Subclasses	ArgumentDataPrototype , Field , ParameterDataPrototype , PersistencyDataElement , VariableDataPrototype			
Attribute	Type	Mult.	Kind	Note
type	AutosarDataType	0..1	tref	This represents the corresponding data type. Stereotypes: isOfType

Table A.25: AutosarDataPrototype

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			
Attribute	Type	Mult.	Kind	Note
swDataDef Props	SwDataDefProps	0..1	aggr	The properties of this AutosarDataType.

Table A.26: 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			
Attribute	Type	Mult.	Kind	Note
operation Argument Instance	DataPrototype	1	iref	This is the reference to the instanceRef definition. InstanceRef implemented by: OperationArgumentInComponentInstanceRef

Table A.27: 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			
Attribute	Type	Mult.	Kind	Note
variableInstance	DataPrototype	1	iref	<p>This is the reference to the instanceRef definition.</p> <p>InstanceRef implemented by: VariableInComponentInstanceRef</p>

Table A.28: AutosarVariableInstance

Class	CheckpointTransition			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	<p>Defines one transition between two checkpoints.</p> <p>Tags:atp.Status=draft</p>			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
source	SupervisionCheckpoint	1	ref	<p>Reference to the source checkpoint for this transition.</p> <p>Tags:atp.Status=draft</p>
target	SupervisionCheckpoint	1	ref	<p>Reference to the target checkpoint for this transition.</p> <p>Tags:atp.Status=draft</p>

Table A.29: 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			
Attribute	Type	Mult.	Kind	Note
argument (ordered)	ArgumentDataPrototype	*	aggr	<p>An argument of this ClientServerOperation</p> <p>Stereotypes: atpVariation</p> <p>Tags:vh.latestBindingTime=blueprintDerivationTime</p>
fireAndForget	Boolean	0..1	attr	<p>This attribute defines whether this method is a fire&forget method (true) or not (false).</p> <p>Tags:atp.Status=draft</p>
possibleApError	ApApplicationError	*	ref	<p>This reference identifies AdaptivePlatformApplicationErrors as a possible error raised by the enclosing ClientServerOperation.</p> <p>Tags:atp.Status=draft</p>





Class	ClientServerOperation			
possibleApErrorSet	ApApplicationErrorSet	*	ref	This reference represents the ability to refer to an entire group of ApApplicationErrors as one model element instead of having to refer to all the represented Ap ApplicationErrors separately. Tags: atp.Status=draft

Table A.30: ClientServerOperation

Class	CommConnectorPort (abstract)			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreTopology			
Note	<p>The Ecu communication relationship defines which signals, Pdus and frames are actually received and transmitted by this ECU.</p> <p>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.</p>			
Base	ARObject, Identifiable , MultilanguageReferrable, Referrable			
Subclasses	FramePort, IPduPort, ISignalPort			
Attribute	Type	Mult.	Kind	Note
communication Direction	CommunicationDirectionType	1	attr	Communication Direction of the Connector Port (input or output Port).

Table A.31: 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			
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 atpSplitable property has no atp.Splitkey due to atpVariation (PropertySetPattern).</p> <p>Stereotypes: atpSplitable; atpVariation 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.32: 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. 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, LinCommunicationConnector, UserDefinedCommunicationConnector			
Attribute	Type	Mult.	Kind	Note
createEcuWakeupSource	Boolean	0..1	attr	If this parameter is available and set to true then a channel wakeup source shall be created for the PhysicalChannel referencing this CommunicationConnector.

Table A.33: CommunicationConnector

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

Table A.34: CommunicationDirectionType

Class	CompositionSwComponentType			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Composition			
Note	<p>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.</p> <p>Tags:atp.recommendedPackage=SwComponentTypes</p>			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, Identifiable , MultilanguageReferrable , PackageableElement , Referrable , SwComponentType			
Attribute	Type	Mult.	Kind	Note
component	SwComponentPrototype	*	aggr	<p>The instantiated components that are part of this composition.</p> <p>Stereotypes: atp.Splittable; atp.Variation</p> <p>Tags: atp.Splitkey=component.shortName, component.variationPoint.shortLabel vh.latestBindingTime=postBuild</p>
connector	SwConnector	*	aggr	<p>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.</p> <p>The aggregation of SwConnectors is subject to variability with the purpose to support variant data flow.</p>





Class	CompositionSwComponentType			
				<p>The aggregation is marked as atpSplitable in order to allow the extension of the ECU extract with AssemblySw Connectors between ApplicationSwComponentTypes and ServiceSwComponentTypes during the ECU integration.</p> <p>Stereotypes: atpSplitable; atpVariation</p> <p>Tags: atp.Splitkey=connector.shortName, connector.variation Point.shortLabel vh.latestBindingTime=postBuild</p>
constantValue Mapping	ConstantSpecification MappingSet	*	ref	<p>Reference to the ConstantSpecificationMapping to be applied for initValues of PPortComSpecs and RPortCom Spec.</p> <p>Stereotypes: atpSplitable</p> <p>Tags:atp.Splitkey=constantValueMapping</p>
dataType Mapping	DataTypeMappingSet	*	ref	<p>Reference to the DataTypeMapping to be applied for the used ApplicationDataTypes in ServiceInterfaces.</p> <p>Stereotypes: atpSplitable</p> <p>Tags:atp.Splitkey=dataTypeMapping</p>

Table A.35: 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, ARObject, AtpBlueprint, AtpBlueprintable, CollectableElement, Identifiable , Multilanguage Referrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
compuInternal ToPhys	Compu	0..1	aggr	<p>This specifies the computation from internal values to physical values.</p> <p>Tags:xml.sequenceOffset=80</p>
compuPhysTo Internal	Compu	0..1	aggr	<p>This represents the computation from physical values to the internal values.</p> <p>Tags:xml.sequenceOffset=90</p>
displayFormat	DisplayFormatString	0..1	attr	<p>This property specifies, how the physical value shall be displayed e.g. in documents or measurement and calibration tools.</p> <p>Tags:xml.sequenceOffset=20</p>
unit	Unit	0..1	ref	<p>This is the physical unit of the Physical values for which the CompuMethod applies.</p> <p>Tags:xml.sequenceOffset=30</p>

Table A.36: 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			
Attribute	Type	Mult.	Kind	Note
offset	MultidimensionalTime	1..*	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
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	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.37: ConcretePatternEventTriggering

Class	ConstantReference			
Package	M2::AUTOSARTemplates::CommonStructure::Constants			
Note	Instead of defining this value inline, a constant is referenced.			
Base	ARObject, ValueSpecification			
Attribute	Type	Mult.	Kind	Note
constant	ConstantSpecification	0..1	ref	The referenced constant.

Table A.38: ConstantReference

Class	CplusplusImplementationDataType (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CplusplusImplementationDataType			
Note	This meta-class represents the way to specify a reusable data type definition taken as a the basis for a C++ language binding Tags: atp.Status=draft			
Base	ARElement, ARObject, AbstractImplementationDataType , AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, AutosarDataType , CollectableElement, CplusplusImplementationDataTypeContextTarget, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Subclasses	CustomCplusplusImplementationDataType, StdCplusplusImplementationDataType			
Attribute	Type	Mult.	Kind	Note
arraySize	PositiveInteger	0..1	attr	This attribute can be used to specify the array size if the enclosing CplusplusImplementationDataType has array semantics. Stereotypes: atpVariation Tags: vh.latestBindingTime=preCompileTime





Class	CpplImplementationDataType (abstract)			
headerFile	String	0..1	attr	Configuration of the Header File with the custom class declaration.
namespace (ordered)	SymbolProps	*	aggr	This aggregation allows for the definition an own namespace for the enclosing CpplImplementationDataType. Tags: atp.Status=draft
subElement (ordered)	CpplImplementationDataTypeElement	*	aggr	This represents the collection of sub-elements of the enclosing CpplImplementationDataType Tags: atp.Status=draft
template Argument (ordered)	CppTypeArgument	*	aggr	This aggregation allows for the specification of properties of template arguments Tags: atp.Status=draft
typeEmitter	NameToken	0..1	attr	This attribute can be taken to control how the respective CpplImplementationDataType is contributed to the language binding.
typeReference	CpplImplementationDataType	0..1	ref	This reference shall be defined to define a type reference (a.k.a. typedef). Tags: atp.Status=draft

Table A.39: CpplImplementationDataType

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

Table A.40: CpplImplementationDataTypeElement

Class	CppImplementationDataTypeElementQualifier			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CppImplementationDataType			
Note	This element qualifies the typeReference of the CppImplementationDataTypeElement to the CppImplementationDataType. Tags: atp.Status=draft			
Base	ARObject			
Attribute	Type	Mult.	Kind	Note
inplace	Boolean	0..1	attr	This attribute defines whether the member type of the CppImplementationDataTypeElement in C++ is an embedded type element inside of the enclosing struct (true) or whether the type declaration is defined outside of the struct.
typeReference	CppImplementationDataType	1	ref	This reference defines a type reference. Tags: atp.Status=draft

Table A.41: CppImplementationDataTypeElementQualifier

Class	CppTemplateArgument			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CppImplementationDataType			
Note	This meta-class has the ability to define properties for template arguments. Tags: atp.Status=draft			
Base	ARObject			
Attribute	Type	Mult.	Kind	Note
allocator	Allocator	0..1	ref	This reference identifies the applicable allocator. Tags: atp.Status=draft
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. Tags: atp.Status=draft

Table A.42: 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=draft atp.recommendedPackage=CryptoInterfaces			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, CryptoInterface, Identifiable , MultilanguageReferrable, PackageableElement, PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note





Class	CryptoCertificateInterface			
isPrivate	Boolean	0..1	attr	This attribute controls the possibility to access the content of the CryptoCertificateSlot by Find() interfaces of the X509 Provider.
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.43: CryptoCertificateInterface

Class	CryptoCertificateToPortPrototypeMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::CryptoDeployment			
Note	<p>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.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=CryptoCertificateToPortPrototypeMappings</p>			
Base	<i>ARElement, ARObjct, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable, UploadablePackageElement</i>			
Attribute	Type	Mult.	Kind	Note
cryptoCertificate	CryptoCertificate	1	ref	<p>This reference represents the mapped cryptoCertificate.</p> <p>Tags:atp.Status=draft</p>
portPrototype	PortPrototype	0..1	iref	<p>This reference represents the mapped PortPrototype.</p> <p>Tags:atp.Status=draft InstanceRef implemented by:PortPrototypeInExecutableInstanceRef</p>
process	Process	1	ref	<p>This reference represents the process required as context for the mapping.</p> <p>Tags:atp.Status=draft</p>
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.44: CryptoCertificateToPortPrototypeMapping

Class	CryptoKeySlotAllowedModification			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CryptoDesign			
Note	<p>This meta-class restricts the allowed modification of a key stored in the key slot.</p> <p>Tags:atp.Status=draft</p>			
Base	<i>ARObject</i>			
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.
exportability	Boolean	0..1	attr	This attribute describes whether the key slot content is allowed to be exported or not.
maxNumberOf AllowedUpdates	PositiveInteger	0..1	attr	This attribute describes the maximum updates that are allowed to the slot.





Class	CryptoKeySlotAllowedModification			
restrictUpdate	Boolean	0..1	attr	<p>This attribute defines whether restrictions on the number of updates are defined or not.</p> <p>False: no restriction is placed on the number of updates. True: restrictions are placed on the number of updates with the attribute maxNumberOfAllowedUpdates.</p>

Table A.45: CryptoKeySlotAllowedModification

Class	CryptoKeySlotContentAllowedUsage			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CryptoDesign			
Note	<p>This meta-class restricts the allowed usage of a key stored in the key slot.</p> <p>Tags:atp.Status=draft</p>			
Base	ARObject			
Attribute	Type	Mult.	Kind	Note
allowedKeyslot Usage	String	0..1	attr	This attribute defines for which operations the KeySlot may be used.

Table A.46: CryptoKeySlotContentAllowedUsage

Class	CryptoKeySlotInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CryptoDesign			
Note	<p>This meta-class provides the ability to define a PortInterface for Crypto Key Slots.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=CryptoInterfaces</p>			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, CryptoInterface, Identifiable , MultilanguageReferrable, PackageableElement, PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note
allocateShadow Copy	Boolean	0..1	attr	This attribute defines whether a shadow copy of this Key Slot shall be allocated to enable rollback of a failed Key Slot update campaign (see interface BeginTransaction).
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>
cryptoObject Type	CryptoObjectTypeEnum	0..1	attr	Object type that can be stored in the slot. If this field contains "Undefined" then mSlotCapacity must be provided and larger then 0
keySlotAllowed Modification	CryptoKeySlotAllowed Modification	0..1	aggr	<p>Restricts how this keySlot may be used</p> <p>Tags:atp.Status=draft</p>
keySlotContent AllowedUsage	CryptoKeySlotContent AllowedUsage	*	aggr	<p>Restriction of allowed usage of a key stored to the slot.</p> <p>Tags:atp.Status=draft</p>





Class	CryptoKeySlotInterface			
slotCapacity	PositiveInteger	0..1	attr	Capacity of the slot in bytes to be reserved by the stack vendor. One use case is to define this value in case that the cryptoObjectType is undefined and the slot size can not be deduced from cryptoObjectType and cryptoAlgId. "0" means slot size can be deduced from cryptoObjectType and cryptoAlgId.
slotType	CryptoKeySlotType Enum	0..1	attr	This attribute defines whether the keySlot is exclusively used by the Application; or whether it is used by Stack Services and managed by a Key Manager Application.

Table A.47: CryptoKeySlotInterface

Class	CryptoKeySlotToPortPrototypeMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::CryptoDeployment			
Note	This meta-class represents the ability to define a mapping between a CryptoKeySlot on deployment level to a given PortPrototype that is typed by a CryptoKeySlotInterface. Tags: atp.Status=draft atp.recommendedPackage=CryptoKeySlotToPortPrototypeMappings			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note
keySlot	CryptoKeySlot	1	ref	This reference represents the mapped CryptoKeySlot. Tags: atp.Status=draft
portPrototype	PortPrototype	0..1	iref	This reference represents the mapped PortPrototype. Tags: atp.Status=draft InstanceRef implemented by: PortPrototypeInExecutableInstanceRef
process	Process	1	ref	This reference represents the process required as context for the mapping. Tags: atp.Status=draft

Table A.48: 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=draft atp.recommendedPackage=CryptoInterfaces			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, CryptoInterface, Identifiable , MultilanguageReferrable, PackageableElement, PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note
—	—	—	—	—

Table A.49: CryptoProviderInterface

Class	CryptoProviderToPortPrototypeMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::CryptoDeployment			
Note	<p>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.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=CryptoProviderToPortPrototypeMappings</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note
cryptoProvider	CryptoProvider	1	ref	<p>This reference represents the mapped cryptoProvider.</p> <p>Tags:atp.Status=draft</p>
portPrototype	PortPrototype	0..1	iref	<p>This reference represents the mapped PortPrototype.</p> <p>Tags:atp.Status=draft InstanceRef implemented by:PortPrototypeInExecutableInstanceRef</p>
process	Process	1	ref	<p>This reference represents the process required as context for the mapping.</p> <p>Tags:atp.Status=draft</p>

Table A.50: CryptoProviderToPortPrototypeMapping

Class	CryptoServiceCertificate			
Package	M2::AUTOSARTemplates::SystemTemplate::SecureCommunication			
Note	<p>This meta-class represents the ability to model a cryptographic certificate.</p> <p>Tags:atp.recommendedPackage=CryptoServiceCertificates</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
algorithmFamily	CryptoCertificateAlgorithmFamilyEnum	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	CryptoCertificateFormatEnum	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.
nextHigherCertificate	CryptoServiceCertificate	0..1	ref	The reference identifies the next higher certificate in the certificate chain.

Table A.51: CryptoServiceCertificate

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			
Attribute	Type	Mult.	Kind	Note
swDataDefProps	SwDataDefProps	0..1	aggr	This property allows to specify data definition properties which apply on data prototype level.

Table A.52: DataPrototype

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. Tags: atp.Status=draft			
Base	ARObject			
Attribute	Type	Mult.	Kind	Note
dataPrototype	DataPrototype	0..1	iref	This element represents the ability to: <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. Tags: atp.Status=draft InstanceRef implemented by: DataPrototypeInServiceInterfaceInstanceRef
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. Tags: atp.Status=draft

Table A.53: DataPrototypeInServiceInterfaceRef

Class	DataTypeMap			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes			
Note	This class represents the relationship between ApplicationDataType and its implementing AbstractImplementationDataType.			
Base	ARObject			
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.54: DataTypeMap

Class	DataTypeMappingSet			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::Datatypes			
Note	This class represents a list of mappings between ApplicationDataTypes and ImplementationDataTypes. In addition, it can contain mappings between ImplementationDataTypes and ModeDeclarationGroups. Tags: atp.recommendedPackage=DataTypeMappingSets			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
dataTypeMap	DataTypeMap	*	aggr	This is one particular association between an ApplicationDataType and its AbstractImplementationDataType.
modeRequestTypeMap	ModeRequestTypeMap	*	aggr	This is one particular association between an ModeDeclarationGroup and its AbstractImplementationDataType.

Table A.55: DataTypeMappingSet

Class	DdsEventDeployment			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	DDS configuration settings for an Event. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , ServiceEventDeployment			
Attribute	Type	Mult.	Kind	Note
topicName	String	0..1	attr	Name of the DDS Topic associated with the Event. Tags: atp.Status=draft
transport Protocol	String	*	attr	This attribute defines over which Transport Layer Protocol(s) this event is intended to be sent. Tags: atp.Status=draft

Table A.56: DdsEventDeployment

Class	DdsEventQosProps			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	Configuration properties of the Event using DDS as the underlying network binding. Tags: atp.Status=draft			
Base	ARObject, DdsQosProps			
Attribute	Type	Mult.	Kind	Note
event	ServiceEventDeployment	1	ref	Reference to an event that is provided. Tags: atp.Status=draft

Table A.57: DdsEventQosProps

Class	DdsFieldQosProps			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	Configuration properties of the Field interaction when using DDS as the underlying network binding. Tags: atp.Status=draft			
Base	ARObject, DdsQosProps			
Attribute	Type	Mult.	Kind	Note
field	ServiceFieldDeployment	1	ref	Reference to the field. Tags: atp.Status=draft

Table A.58: DdsFieldQosProps

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.Status=draft atp.recommendedPackage=ServiceInstances			
Base	ARElement, ARObject, AdaptivePlatformServiceInstance , CollectableElement , DdsQosProps , DdsServiceInstanceProps , Identifiable , MultilanguageReferrable , PackageableElement , ProvidedApServiceInstance , Referrable , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note





Class	DdsProvidedServiceInstance			
eventQosProps	DdsEventQosProps	*	aggr	List of configuration properties for the Events that are provided by the Service Instance. Tags: atp.Status=draft
fieldNotifierQos Props	DdsFieldQosProps	*	aggr	List of configuration properties for Field notifiers that are provided by the Service Instance. Tags: atp.Status=draft
serviceInstance Id	PositiveInteger	1	attr	Identification number that is used by DDS to identify DomainParticipants associated with an instance of the service. Tags: atp.Status=draft

Table A.59: 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. Tags: atp.Status=draft			
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. Tags: atp.Status=draft

Table A.60: 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.Status=draft atp.recommendedPackage=ServiceInstances			
Base	ARElement , ARObject , AdaptivePlatformServiceInstance , CollectableElement , DdsQosProps , DdsServiceInstanceProps , Identifiable , MultilanguageReferrable , PackageableElement , Referrable , RequiredApServiceInstance , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note
blacklisted Version	DdsServiceVersion	*	aggr	Collection of blacklisted versions. Tags: atp.Status=draft
eventQosProps	DdsEventQosProps	*	aggr	List of configuration properties for the Events that are required by the Service Instance. Tags: atp.Status=draft
fieldNotifierQos Props	DdsFieldQosProps	*	aggr	List of configuration properties for Field notifiers that are required by the Service Instance. Tags: atp.Status=draft





Class	DdsRequiredServiceInstance			
requiredServiceInstancelId	AnyServiceInstancelId	1	attr	This attribute represents the ability to describe the required service instance ID. Tags: atp.Status=draft

Table A.61: DdsRequiredServiceInstance

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. Tags: atp.Status=draft			
Base	ARObject, DdsQosProps			
Subclasses	DdsProvidedServiceInstance , DdsRequiredServiceInstance			
Attribute	Type	Mult.	Kind	Note
domainId	Integer	1	attr	This attribute identifies the DDS Domain the Service Instance shall join. Tags: atp.Status=draft

Table A.62: DdsServiceInstanceProps

Class	DdsServiceInterfaceDeployment			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	DDS configuration settings for a ServiceInterface. Tags: atp.Status=draft atp.recommendedPackage=ServiceInterfaceDeployments			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable , PackageableElement , Referrable , ServiceInterfaceDeployment , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note
fieldReplyTopicName	String	0..1	attr	Name of the DDS Reply Topic associated with the Field.
fieldRequestTopicName	String	0..1	attr	Name of the DDS Request Topic associated with the Field.
methodReplyTopicName	String	0..1	attr	Name of the DDS Reply Topic associated with the Method.
methodRequestTopicName	String	0..1	attr	Name of the DDS Request Topic associated with the Method.
serviceInterfaceId	String	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. Tags: atp.Status=draft
transportProtocol	String	*	attr	This attribute defines over which Transport Layer Protocol(s) this Method is intended to be sent.

Table A.63: DdsServiceInterfaceDeployment

Class	DeadlineSupervision			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	Defines an DeadlineSupervision for one transition. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , PhmSupervision , Referrable			
Attribute	Type	Mult.	Kind	Note
checkpoint Transition	CheckpointTransition	1	ref	Reference to the transition in the context of a Deadline Supervision. Tags: atp.Status=draft
maxDeadline	TimeValue	1	attr	Defines the longest time span before which the deadline is considered to be met for transition. Tags: atp.Status=draft
minDeadline	TimeValue	1	attr	Defines the shortest time span after which the deadline is considered to be met for transition. Tags: atp.Status=draft

Table A.64: DeadlineSupervision

Class	DiagnosticClearConditionNeeds			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::DiagnosticServiceNeeds			
Note	This meta-class represents the needs of a software-component to provide the capability to set a clear condition. Tags: atp.Status=draft			
Base	ARObject, DiagnosticCapabilityElement , Identifiable , MultilanguageReferrable , Referrable , Service Needs			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.65: DiagnosticClearConditionNeeds

Class	DiagnosticClearConditionPortMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	Defines to which SWC service ports with DiagnosticsClearConditionNeeds the DiagnosticClearCondition is mapped. Tags: atp.Status=draft atp.recommendedPackage=DiagnosticMappings			
Base	ARElement, ARObject, CollectableElement , DiagnosticCommonElement , DiagnosticMapping , DiagnosticSwMapping , Identifiable , MultilanguageReferrable , PackageableElement , Referrable			
Attribute	Type	Mult.	Kind	Note
clearCondition	DiagnosticClear Condition	1	ref	Reference to the ClearCondition which is mapped to a SWC service port with DiagnosticClearConditionNeeds. Tags: atp.Status=draft
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





Class	DiagnosticClearConditionPortMapping			
swcService DependencyIn Executable	SwcService Dependency	0..1	iref	<p>This aggregation allows for the usage of the DiagnosticClearConditionPortMapping on the AUTOSAR adaptive platform.</p> <p>Tags:atp.Status=draft InstanceRef implemented by:SwcServiceDependency InExecutableInstanceRef</p>

Table A.66: DiagnosticClearConditionPortMapping

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.Status=draft atp.recommendedPackage=DiagnosticPortInterfaces</p>			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, DiagnosticPortInterface , Identifiable , MultilanguageReferrable, PackageableElement, PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.67: 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			
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: atpSplittable Tags:atp.Splitkey=commonProperties</p>
element	DiagnosticCommon Element	*	ref	<p>This represents a DiagnosticCommonElement considered in the context of the DiagnosticContributionSet</p> <p>Stereotypes: atpSplittable; atpVariation Tags: atp.Splitkey=element.diagnosticCommonElement, element.variationPoint.shortLabel vh.latestBindingTime=postBuild</p>





Class	DiagnosticContributionSet			
serviceTable	DiagnosticServiceTable	*	ref	<p>This represents the collection of DiagnosticServiceTables to be considered in the scope of this DiagnosticContributionSet.</p> <p>Stereotypes: atpSplittable; atpVariation</p> <p>Tags: atp.Splitkey=serviceTable.diagnosticServiceTable, serviceTable.variationPoint.shortLabel vh.latestBindingTime=postBuild</p>

Table A.68: DiagnosticContributionSet

Class	DiagnosticDTCInformationInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	<p>This meta-class represents the ability to implement a PortInterface to access the properties of DTCs on the adaptive platform.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=DiagnosticPortInterfaces</p>			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, DiagnosticPortInterface, Identifiable, MultilanguageReferrable, PackageableElement, PortInterface, Referrable			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.69: DiagnosticDTCInformationInterface

Class	DiagnosticDataElementInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	<p>This meta-class represents the ability to implement a element-of-DID-focused PortInterface for diagnostics on the adaptive platform.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=DiagnosticPortInterfaces</p>			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, DiagnosticAbstractDataIdentifierInterface, DiagnosticPortInterface, Identifiable, MultilanguageReferrable, PackageableElement, PortInterface, Referrable			
Attribute	Type	Mult.	Kind	Note
read	ClientServerOperation	0..1	aggr	<p>This represents the method to read the content of an element of a diagnostic data identifier.</p> <p>Tags:atp.Status=draft</p>
write	ClientServerOperation	0..1	aggr	<p>This represents the method to write the content of an element of a diagnostic data identifier.</p> <p>Tags:atp.Status=draft</p>

Table A.70: DiagnosticDataElementInterface

Class	DiagnosticDataIdentifier			
Package	M2::AUTOSARTemplates::DiagnosticExtract::CommonDiagnostics			
Note	<p>This meta-class represents the ability to model a diagnostic data identifier (DID) that is fully specified regarding the payload at configuration-time.</p> <p>Tags:atp.recommendedPackage=DiagnosticDataIdentifiers</p>			





Class	DiagnosticDataIdentifier			
Base	ARElement, ARObject, CollectableElement, DiagnosticAbstractDataIdentifier, DiagnosticCommonElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
dataElement	DiagnosticParameter	*	aggr	This is the dataElement associated with the Diagnostic DataIdentifier. Stereotypes: atpSplittable; atpVariation Tags: atp.Splitkey=dataElement.bitOffset, dataElement.variationPoint.shortLabel vh.latestBindingTime=postBuild
didSize	PositiveInteger	0..1	attr	This attribute indicates the size in bytes of the Diagnostic DataIdentifier.
representsVin	Boolean	0..1	attr	This attributes indicates whether the specific Diagnostic DataIdentifier represents the vehicle identification.
supportInfoByte	DiagnosticSupportInfoByte	0..1	aggr	This attribute represents the supported information associated with the DiagnosticDataIdentifier.

Table A.71: DiagnosticDataIdentifier

Class	DiagnosticDataIdentifierGenericInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a generic DID-focused PortInterface for diagnostics on the adaptive platform. Tags: atp.Status=draft atp.recommendedPackage=DiagnosticPortInterfaces			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, DiagnosticAbstractDataIdentifierInterface, DiagnosticPortInterface , Identifiable , MultilanguageReferrable, PackageableElement, PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.72: 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.Status=draft atp.recommendedPackage=DiagnosticPortInterfaces			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, DiagnosticAbstractDataIdentifierInterface, DiagnosticPortInterface , Identifiable , MultilanguageReferrable, PackageableElement, PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note
read	ClientServerOperation	0..1	aggr	This represents the method to read the content of a diagnostic data identifier. Tags: atp.Status=draft
write	ClientServerOperation	0..1	aggr	This represents the method to write the contents of a diagnostic data identifier. Tags: atp.Status=draft

Table A.73: DiagnosticDataIdentifierInterface

Class	DiagnosticEnableConditionNeeds			
Package	M2::AUTOSARTemplates::CommonStructure::ServiceNeeds			
Note	This meta-class represents the needs of a software-component to provide the capability to set an enable condition.			
Base	ARObject, DiagnosticCapabilityElement, Identifiable , MultilanguageReferrable, Referrable , Service Needs			
Attribute	Type	Mult.	Kind	Note
initialStatus	EventAcceptanceStatus Enum	0..1	attr	Defines the initial status for enable or disable of acceptance of event reports of a diagnostic event.

Table A.74: DiagnosticEnableConditionNeeds

Class	DiagnosticEnableConditionPortMapping			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dem::DiagnosticMapping			
Note	Defines to which SWC service ports with DiagnosticEnableConditionNeeds the DiagnosticEnable Condition is mapped. Tags: atp.recommendedPackage=DiagnosticMappings			
Base	ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, DiagnosticSwMapping , Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
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: atp.Splitable Tags: atp.Splitkey=process atp.Status=draft
swcFlatService Dependency	SwcService Dependency	0..1	ref	Reference to a SwcServiceDependencyType that links ServiceNeeds to SWC service ports. This reference can be used in early stages of the development in order to identify the SwcServiceDependency without a full System Context.
swcService DependencyIn Executable	SwcService Dependency	0..1	iref	This aggregation allows for the usage of the Diagnostic EnableConditionPortMapping on the AUTOSAR adaptive platform. Tags: atp.Status=draft InstanceRef implemented by: SwcServiceDependency InExecutableInstanceRef
swcService DependencyIn System	SwcService Dependency	0..1	iref	Instance reference to a SwcServiceDependency that links ServiceNeeds to SWC service ports. InstanceRef implemented by: SwcServiceDependency InSystemInstanceRef

Table A.75: DiagnosticEnableConditionPortMapping

Class	DiagnosticEventInfoNeeds			
Package	M2::AUTOSARTemplates::CommonStructure::ServiceNeeds			
Note	This meta-class represents the needs of a software-component interested to get information regarding specific DTCs.			
Base	ARObject, DiagnosticCapabilityElement, Identifiable , MultilanguageReferrable, Referrable , Service Needs			





Class	DiagnosticEventInfoNeeds			
Attribute	Type	Mult.	Kind	Note
dtcKind	DtcKindEnum	0..1	attr	This attribute indicates the kind of the diagnostic event according to the SWS Diagnostic Event Manager for which the DiagnosticInfo is requested. This attribute applies for the UDS diagnostics use case.
obdDtcNumber	PositiveInteger	0..1	attr	This represents a reasonable Diagnostic Trouble Code. This allows to predefine the Diagnostic Trouble Code, e.g. if the function developer has received a particular requirement from the OEM or from a standardization body. This attribute applies for the OBD diagnostics use case.
udsDtcNumber	PositiveInteger	0..1	attr	This represents a reasonable Diagnostic Trouble Code. This allows to predefine the Diagnostic Trouble Code, e.g. if the function developer has received a particular requirement from the OEM or from a standardization body. This attribute applies for the UDS diagnostics use case.

Table A.76: DiagnosticEventInfoNeeds

Class	DiagnosticEventInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a PortInterface to access the properties of diagnostic events on the adaptive platform. Tags: atp.Status=draft atp.recommendedPackage=DiagnosticPortInterfaces			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, DiagnosticPortInterface, Identifiable, MultilanguageReferrable, PackageableElement, PortInterface, Referrable			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.77: DiagnosticEventInterface

Class	DiagnosticEventNeeds			
Package	M2::AUTOSARTemplates::CommonStructure::ServiceNeeds			
Note	Specifies the abstract needs on the configuration of the Diagnostic Event Manager for one diagnostic event. Its shortName can be regarded as a symbol identifying the diagnostic event from the viewpoint of the component or module which owns this element. In case the diagnostic event specifies a production error, the shortName shall be the name of the production error.			
Base	ARObject, DiagnosticCapabilityElement, Identifiable, MultilanguageReferrable, Referrable, ServiceNeeds			
Attribute	Type	Mult.	Kind	Note
considerPtoStatus	Boolean	0..1	attr	PTO (Power Take Off) has an impact on the respective emission-related event (OBD). This information shall be provided by SW-C description in order to consider the PTO relevance e.g. for readiness (PID \$01) computation. For events with dtcKind set to 'nonEmissionRelatedDtc' this attribute is typically false.





Class	DiagnosticEventNeeds			
deferringFid	FunctionInhibitionNeeds	*	ref	This reference contains the link to a function identifier within the FiM which is used by the monitor before delivering a result.
diagEventDebounceAlgorithm	DiagEventDebounceAlgorithm	0..1	aggr	Specifies the abstract need on the Debounce Algorithm applied by the Diagnostic Event Manager.
dtcKind	DtcKindEnum	0..1	attr	This attribute indicates the kind of the diagnostic monitor according to the SWS Diagnostic Event Manager. This attribute applies for the UDS diagnostics use case.
obdDtcNumber	PositiveInteger	0..1	attr	This represents a reasonable Diagnostic Trouble Code. This allows to predefine the Diagnostic Trouble Code, e.g. if the a function developer has received a particular requirement from the OEM or from a standardization body. This attribute applies for the OBD diagnostics use case.
prestoredFreezeFrameStoredInNvm	Boolean	0..1	attr	If the Event uses a prestored freeze-frame (using the operations PrestoreFreezeFrame and ClearPrestoredFreezeFrame 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).
reportBehavior	ReportBehaviorEnum	0..1	attr	This switch indicates whether or not the BSW module is allowed to report the related Events before Dem_Init().
udsDtcNumber	PositiveInteger	0..1	attr	This represents a reasonable Diagnostic Trouble Code. This allows to predefine the Diagnostic Trouble Code, e.g. if the a function developer has received a particular requirement from the OEM or from a standardization body. This attribute applies for the UDS diagnostics use case.
usesMonitorData	Boolean	0..1	attr	This attribute defines whether additional monitor data shall be added to the reporting of events.

Table A.78: DiagnosticEventNeeds

Class	DiagnosticEventPortMapping			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dem::DiagnosticMapping			
Note	Defines to which SWC service ports with DiagnosticEventNeeds the DiagnosticEvent is mapped. Tags: atp.recommendedPackage=DiagnosticMappings			
Base	ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, DiagnosticSwMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
bswServiceDependency	BswServiceDependencyIdent	0..1	ref	Reference to a BswServiceDependency that links Service Needs to BswModuleEntries.
diagnosticEvent	DiagnosticEvent	0..1	ref	Reference to the DiagnosticEvent that is assigned to SWC service ports with DiagnosticEventNeeds.
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





Class	DiagnosticEventPortMapping			
swcFlatServiceDependency	SwcServiceDependency	0..1	ref	Reference to a SwcServiceDependencyType that links ServiceNeeds to SWC service ports.
swcServiceDependencyInExecutable	SwcServiceDependency	0..1	iref	This aggregation allows for the usage of the DiagnosticEventPortMapping on the AUTOSAR adaptive platform. Tags: atp.Status=draft InstanceRef implemented by: SwcServiceDependencyInExecutableInstanceRef
swcServiceDependencyInSystem	SwcServiceDependency	0..1	iref	Instance reference to a SwcServiceDependency that links ServiceNeeds to SWC service ports. InstanceRef implemented by: SwcServiceDependencyInSystemInstanceRef

Table A.79: DiagnosticEventPortMapping

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.Status=draft atp.recommendedPackage=DiagnosticPortInterfaces			
Base	ARElement , ARObject , AtpBlueprint , AtpBlueprintable , AtpClassifier , AtpType , CollectableElement , DiagnosticPortInterface , Identifiable , MultilanguageReferrable , PackageableElement , PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.80: DiagnosticIndicatorInterface

Class	DiagnosticIndicatorNeeds			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::DiagnosticServiceNeeds			
Note	This meta-class represents the needs of a software-component to provide the capability to implement an indicator. Tags: atp.Status=draft			
Base	ARObject , DiagnosticCapabilityElement , Identifiable , MultilanguageReferrable , Referrable , ServiceNeeds			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.81: DiagnosticIndicatorNeeds

Class	DiagnosticIndicatorPortMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	Defines to which SWC service ports with DiagnosticsIndicatorNeeds the DiagnosticIndicator is mapped. Tags: atp.Status=draft atp.recommendedPackage=DiagnosticMappings			
Base	ARElement , ARObject , CollectableElement , DiagnosticCommonElement , DiagnosticMapping , DiagnosticSwMapping , Identifiable , MultilanguageReferrable , PackageableElement , Referrable			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–





Class	DiagnosticIndicatorPortMapping			
indicator	DiagnosticIndicator	1	ref	Reference to the DiagnosticIndicator which is mapped to a SWC service port with DiagnosticIndicatorNeeds. Tags: atp.Status=draft
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
swcService DependencyIn Executable	SwcService Dependency	0..1	iref	This aggregation allows for the usage of the Diagnostic IndicatorPortMapping on the AUTOSAR adaptive platform. Tags: atp.Status=draft InstanceRef implemented by: SwcServiceDependency InExecutableInstanceRef

Table A.82: DiagnosticIndicatorPortMapping

Class	DiagnosticMemoryDestinationPortMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	Defines to which SWC service ports with DiagnosticsEventInfoNeeds the DiagnosticMemoryDestination is mapped. Tags: atp.Status=draft atp.recommendedPackage=DiagnosticMappings			
Base	ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, DiagnosticSwMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
memory Destination	DiagnosticMemory Destination	1	ref	Reference to the MemoryDestination which is mapped to a SWC service port with DiagnosticEventInfoNeeds. Tags: atp.Status=draft
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
swcService DependencyIn Executable	SwcService Dependency	0..1	iref	This aggregation allows for the usage of the Diagnostic MemoryDestinationMapping on the AUTOSAR adaptive platform. Tags: atp.Status=draft InstanceRef implemented by: SwcServiceDependency InExecutableInstanceRef

Table A.83: DiagnosticMemoryDestinationPortMapping

Class	DiagnosticMonitorInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a monitor-focused PortInterface for diagnostics on the adaptive platform. Tags: atp.Status=draft atp.recommendedPackage=DiagnosticPortInterfaces			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, DiagnosticPortInterface, Identifiable, MultilanguageReferrable, PackageableElement, PortInterface, Referrable			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.84: DiagnosticMonitorInterface

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.Status=draft atp.recommendedPackage=DiagnosticPortInterfaces			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, DiagnosticPortInterface, Identifiable, MultilanguageReferrable, PackageableElement, PortInterface, Referrable			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.85: DiagnosticOperationCycleInterface

Class	DiagnosticOperationCycleNeeds			
Package	M2::AUTOSARTemplates::CommonStructure::ServiceNeeds			
Note	This meta-class represents the needs of a software-component to provide information regarding the operation cycle management to the Dem module.			
Base	ARObject, DiagnosticCapabilityElement, Identifiable, MultilanguageReferrable, Referrable, ServiceNeeds			
Attribute	Type	Mult.	Kind	Note
operationCycle	OperationCycleType Enum	0..1	attr	Operation cycles types for the Dem to be supported by cycle-state APIs.
operationCycle AutomaticEnd	Boolean	0..1	attr	If this attribute is set to true the Dem shall automatically end the driving cycle at either Dem_Shutdown() or Dem_Init().
operationCycle Autostart	Boolean	0..1	attr	If this attribute is set to true the operation cycles is automatically (re-)started during Dem_Preinit().

Table A.86: DiagnosticOperationCycleNeeds

Class	DiagnosticOperationCyclePortMapping			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dem::DiagnosticMapping			
Note	Defines to which SWC service ports with DiagnosticOperationCycleNeeds the DiagnosticOperationCycle is mapped. Tags: atp.recommendedPackage=DiagnosticMappings			





Class	DiagnosticOperationCyclePortMapping			
Base	ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, DiagnosticSwMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
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
swcFlatService Dependency	SwcService Dependency	0..1	ref	Reference to a SwcServiceDependencyType that links ServiceNeeds to SWC service ports.
swcService DependencyIn Executable	SwcService Dependency	0..1	iref	This aggregation allows for the usage of the Diagnostic OperationCyclePortMapping on the AUTOSAR adaptive platform. Tags: atp.Status=draft InstanceRef implemented by: SwcServiceDependency InExecutableInstanceRef
swcService DependencyIn System	SwcService Dependency	0..1	iref	Instance reference to a SwcServiceDependency that links ServiceNeeds to SWC service ports. InstanceRef implemented by: SwcServiceDependency InSystemInstanceRef

Table A.87: DiagnosticOperationCyclePortMapping

Class	DiagnosticPortInterface (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class serves as an abstract base-class for all diagnostics-related PortInterfaces. Tags: atp.Status=draft			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, PortInterface, Referrable			
Subclasses	DiagnosticAbstractDataIdentifierInterface, DiagnosticAbstractRoutineInterface, DiagnosticCondition Interface, DiagnosticDTCInformationInterface, DiagnosticDoIPActivationLineInterface, DiagnosticDoIP GroupIdentificationInterface, DiagnosticDoIPPowerModelInterface, DiagnosticDoIPTriggerVehicle AnnouncementInterface, DiagnosticDownloadInterface, DiagnosticEcuResetInterface, DiagnosticEvent Interface, DiagnosticGenericUdsInterface, DiagnosticIndicatorInterface, DiagnosticMonitorInterface, DiagnosticOperationCycleInterface, DiagnosticSecurityLevelInterface, DiagnosticServiceValidation Interface, DiagnosticUploadInterface			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.88: DiagnosticPortInterface

Class	DiagnosticReadDataByIdentifier			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::DiagnosticService::DataByIdentifier			
Note	This represents an instance of the "Read Data by Identifier" diagnostic service. Tags: atp.recommendedPackage=DiagnosticDataByIdentifiers			
Base	ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticDataByIdentifier, DiagnosticServiceInstance, Identifiable, MultilanguageReferrable, PackageableElement, Referrable			





Class	DiagnosticReadDataByIdentifier			
Attribute	Type	Mult.	Kind	Note
readClass	DiagnosticReadDataByIdentifierClass	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 DiagnosticReadDataByIdentifier in the given context.

Table A.89: DiagnosticReadDataByIdentifier

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.Status=draft atp.recommendedPackage=DiagnosticPortInterfaces			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, DiagnosticAbstractRoutineInterface, DiagnosticPortInterface , Identifiable , MultilanguageReferrable, PackageableElement, PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note
requestResult	ClientServerOperation	0..1	aggr	This represents the request result method of the diagnostic routine. Tags: atp.Status=draft
start	ClientServerOperation	0..1	aggr	This represents the start method of the diagnostic routine. Tags: atp.Status=draft
stop	ClientServerOperation	0..1	aggr	This represents the stop method of the diagnostic routine. Tags: atp.Status=draft

Table A.90: DiagnosticRoutineInterface

Class	DiagnosticSecurityLevelInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface::DiagnosticPortInterface			
Note	This meta-class represents the ability to implement a security-level-focused PortInterface for diagnostics on the adaptive platform. Tags: atp.Status=draft atp.recommendedPackage=DiagnosticPortInterfaces			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, DiagnosticPortInterface , Identifiable , MultilanguageReferrable, PackageableElement, PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.91: DiagnosticSecurityLevelInterface

Class	DiagnosticSecurityLevelPortMapping
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping





Class	DiagnosticSecurityLevelPortMapping			
Note	<p>Defines to which SWC service ports with DiagnosticsCommunicationSecurityNeeds the Diagnostic SecurityLevel is mapped.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=DiagnosticMappings</p>			
Base	<i>ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, DiagnosticSwMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable</i>			
Attribute	Type	Mult.	Kind	Note
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: atpSplitable Tags: atp.Splitkey=process atp.Status=draft</p>
securityLevel	DiagnosticSecurityLevel	0..1	ref	<p>Reference to the SecurityLevel which is mapped to a SWC service port with DiagnosticCommunicationSecurity Needs.</p> <p>Tags: atp.Status=draft</p>
swcServiceDependencyInExecutable	SwcServiceDependency	0..1	iref	<p>This aggregation allows for the usage of the Diagnostic SecurityLevelMapping on the AUTOSAR adaptive platform.</p> <p>Tags: atp.Status=draft InstanceRef implemented by: SwcServiceDependencyInExecutableInstanceRef</p>

Table A.92: DiagnosticSecurityLevelPortMapping

Class	DiagnosticServiceDataIdentifierPortMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::DiagnosticDesign::DiagnosticMapping			
Note	<p>This meta-class provides the ability to define a diagnostic access to an entire DID.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=DiagnosticServiceMappings</p>			
Base	<i>ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, DiagnosticSwMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable</i>			
Attribute	Type	Mult.	Kind	Note
diagnosticDataElement	DiagnosticDataElement	0..1	ref	<p>This reference represents the applicable DiagnosticData Element.</p> <p>Tags: atp.Status=draft</p>
diagnosticDataIdentifier	DiagnosticDataIdentifier	0..1	ref	<p>This reference represents the applicable DiagnosticData Identifier.</p> <p>Tags: atp.Status=draft</p>
process	ProcessDesign	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: atpSplitable Tags: atp.Splitkey=process atp.Status=draft</p>





Class	DiagnosticServiceDataIdentifierPortMapping			
swcService DependencyIn Executable	SwcService Dependency	0..1	iref	<p>This reference identifies the applicable SwcService Dependency. The reference has the ability to point into the component hierarchy (under possible consideration of the rootSoftwareComposition).</p> <p>Tags:atp.Status=draft InstanceRef implemented by:SwcServiceDependency InExecutableInstanceRef</p>

Table A.93: DiagnosticServiceDataIdentifierPortMapping

Class	DiagnosticServiceDataMapping			
Package	M2::AUTOSARTemplates::DiagnosticExtract::ServiceMapping			
Note	<p>This represents the ability to define a mapping of a diagnostic service to a software-component.</p> <p>This kind of service mapping is applicable for the usage of SenderReceiverInterfaces or event/notifier semantics in ServiceInterfaces on the adaptive platform.</p> <p>Tags:atp.recommendedPackage=DiagnosticServiceMappings</p>			
Base	<i>ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable</i>			
Attribute	Type	Mult.	Kind	Note
diagnosticData Element	DiagnosticDataElement	0..1	ref	<p>This represents the applicable payload that corresponds to the referenced DataPrototype in the role mappedData Element or (in case of a usage on the adaptive platform) mappedApDataElement.</p>
mappedApData Element	DataPrototype	0..1	iref	<p>This represents the dataElement in the application software of an adaptive AUTOSAR application that is accessed for diagnostic purpose.</p> <p>Tags:atp.Status=draft InstanceRef implemented by:DataPrototypeIn ExecutableInstanceRef</p>
mappedData Element	DataPrototype	0..1	iref	<p>This represents the dataElement in the application software that is accessed for diagnostic purpose. This role is applicable on the classic platform.</p> <p>InstanceRef implemented by:DataPrototypeInSystem InstanceRef</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: atpSplitable Tags: atp.Splitkey=process atp.Status=draft</p>

Table A.94: DiagnosticServiceDataMapping

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.Status=draft atp.recommendedPackage=DiagnosticServiceMappings</p>			
Base	<i>ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, DiagnosticSwMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable</i>			





DiagnosticServiceGenericMapping				
Class				
Attribute	Type	Mult.	Kind	Note
diagnosticServiceInstance	DiagnosticServiceInstance	0..1	ref	Reference to the ServiceInstance mapped to a SWC service port. Tags: atp.Status=draft
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
swcServiceDependencyInExecutable	SwcServiceDependency	0..1	iref	This aggregation allows for the usage of the DiagnosticServiceGenericMapping on the AUTOSAR adaptive platform. Tags: atp.Status=draft InstanceRef implemented by: SwcServiceDependencyInExecutableInstanceRef

Table A.95: DiagnosticServiceGenericMapping

DiagnosticSoftwareClusterProps				
Class				
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to specify properties for the relation between a DiagnosticContributionSet and a SoftwareCluster. Tags: atp.Status=draft atp.recommendedPackage=DiagnosticSoftwareClusterPropss			
Base	ARElement, ARObject, CollectableElement, DiagnosticCommonElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
dtcStatusAvailabilityMask	PositiveInteger	1	attr	This attribute contains the value of the DTC status availability mask. Tags: atp.Status=draft

Table A.96: DiagnosticSoftwareClusterProps

DiagnosticSwMapping (abstract)				
Class				
Package	M2::AUTOSARTemplates::DiagnosticExtract::ServiceMapping			
Note	This represents the ability to define a mapping between a diagnostic information (at this point there is no way to become more specific about the semantics) to a software-component.			
Base	ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable			
Subclasses	DiagnosticClearConditionPortMapping, DiagnosticEnableConditionPortMapping, DiagnosticEventPortMapping, DiagnosticFimFunctionMapping, DiagnosticIndicatorPortMapping, DiagnosticMemoryDestinationPortMapping, DiagnosticOperationCyclePortMapping, DiagnosticSecurityLevelPortMapping, DiagnosticServiceDataIdentifierPortMapping, DiagnosticServiceGenericMapping, DiagnosticServiceSwMapping			
Attribute	Type	Mult.	Kind	Note
—	—	—	—	—

Table A.97: 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, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticTroubleCode, Identifiable, MultilanguageReferrable, PackageableElement, Referrable</i>			
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.98: 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.Status=draft atp.recommendedPackage=DiagnosticMappings			
Base	<i>ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticMapping, Identifiable, MultilanguageReferrable, PackageableElement, Referrable</i>			
Attribute	Type	Mult.	Kind	Note
clearConditionGroup	DiagnosticClearConditionGroup	0..1	ref	This reference identifies the applicable DiagnosticClearConditionGroup. Tags: atp.Status=draft
troubleCodeUds	DiagnosticTroubleCodeUds	0..1	ref	This reference identifies the DiagnosticTroubleCodeUds that are relevant for the mapping. Tags: atp.Status=draft

Table A.99: DiagnosticTroubleCodeUdsToClearConditionGroupMapping

Class	DiagnosticValueNeeds			
Package	M2::AUTOSARTemplates::CommonStructure::ServiceNeeds			
Note	<p>Specifies the general needs on the configuration of the Diagnostic Communication Manager (DCM) which are not related to a particular item (e.g. a PID). The main use case is the mapping of service ports to the DCM which are not related to a particular item.</p> <p>In the case of using a sender receiver communicated value, the related value shall be taken via assigned Data in the role "signalBasedDiagnostics".</p> <p>In case of using a client/server communicated value, the related value shall be communicated via the port referenced by assignedPort. The details of this communication (e.g. appropriate naming conventions) are specified in the related software specifications (SWS).</p>			
Base	ARObject, DiagnosticCapabilityElement, Identifiable , MultilanguageReferrable , Referrable , ServiceNeeds			
Attribute	Type	Mult.	Kind	Note
dataLength	PositiveInteger	0..1	attr	<p>This attribute is applicable only if the ServiceNeed is aggregated within BswModuleDependency.</p> <p>This attribute represents the length of data (in bytes) provided for this particular PID signal.</p>
diagnosticValueAccess	DiagnosticValueAccessEnum	0..1	attr	This attribute controls whether the data can be read and written or whether it is to be handled read-only.
didNumber	PositiveInteger	0..1	attr	This represents a Data identifier for the diagnostic value. This allows to predefine the DID number if the responsible function developer has received a particular requirement from the OEM or from a standardization body.
fixedLength	Boolean	0..1	attr	This attribute controls whether the data length of the data is fixed.
processingStyle	DiagnosticProcessingStyleEnum	0..1	attr	This attribute controls whether interaction requires the software-component to react synchronously on a request or whether it processes the request in background but still the DCM has to issue the call again to eventually obtain the result of the request.

Table A.100: DiagnosticValueNeeds

Class	DiagnosticWriteDataByIdentifier			
Package	M2::AUTOSARTemplates::DiagnosticExtract::Dcm::DiagnosticService::DataByIdentifier			
Note	<p>This represents an instance of the "Write Data by Identifier" diagnostic service.</p> <p>Tags:atp.recommendedPackage=DiagnosticDataByIdentifiers</p>			
Base	ARElement, ARObject, CollectableElement, DiagnosticCommonElement, DiagnosticDataByIdentifier, DiagnosticServiceInstance, Identifiable , MultilanguageReferrable , PackageableElement , Referrable			
Attribute	Type	Mult.	Kind	Note
writeClass	DiagnosticWriteDataByIdentifierClass	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 DiagnosticWriteDataByIdentifier in the given context.</p>

Table A.101: DiagnosticWriteDataByIdentifier

Class	DiagnosticsCommunicationSecurityNeeds			
Package	M2::AUTOSARTemplates::CommonStructure::ServiceNeeds			
Note	This meta-class represents the needs of a software-component to verify the access to security level via diagnostic services.			





Class	DiagnosticsCommunicationSecurityNeeds			
Base	ARObject, DiagnosticCapabilityElement, Identifiable , MultilanguageReferrable, Referrable , Service Needs			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.102: DiagnosticsCommunicationSecurityNeeds

Class	DltLogChannel			
Package	M2::AUTOSARTemplates::SystemTemplate::Dlt			
Note	This element contains the settings for the log/trace message output for a tuple of ApplicationId and ContextId (verbose mode) or a SessionId (non-verbose mode).			
Base	ARObject, Identifiable , MultilanguageReferrable, Referrable			
Attribute	Type	Mult.	Kind	Note
application Description	String	0..1	attr	This attribute can be used to describe the applicationId that is used in the log and trace message in more detail.
applicationId	String	1	attr	This attribute identifies the SW-C/BSW module in the log and trace message.
context Description	String	0..1	attr	This attribute can be used to describe the contextId that is used in the log and trace message in more detail.
contextId	String	1	attr	This attribute is used to group log and trace messages produced by a SW-C/BSW modules to distinguish functionality (representing e.g. a library of the adaptive foundation linked into the application).
dltLogChannel Design	DltLogChannelDesign	0..1	ref	This reference represents the identification of the design-time representation for the DltLogChannel that owns the reference. Tags: atp.Status=draft
dltMessage	DltMessage	*	ref	Reference to DltMessages that can be transported over the DltLogChannel in the DltPdu.
endpoint Configuration	PlatformModule EthernetEndpoint Configuration	0..1	ref	Network configuration (Protocol, Port, IP Address) for transmission of dlt messages on a specific VLAN. Tags: atp.Status=draft
logTraceDefault LogLevel	LogTraceDefaultLogLevelEnum	0..1	attr	This attribute allows to set the initial log reporting level for a logTraceProcessId (ApplicationId). Tags: atp.Status=draft
logTraceFile Path	UriString	0..1	attr	This attribute defines the destination file to which the logging information is passed. Tags: atp.Status=draft
logTraceLog Mode	LogTraceLogMode Enum	*	attr	This attribute defines the destination of log messages provided by the process. Tags: atp.Status=draft
nonVerbose Mode	Boolean	0..1	attr	This attribute defines whether this channel supports non-Verbose Dlt messages. If disabled only verbose mode messages shall be used. Tags: atp.Status=draft
serviceInstance ToPortPrototype Mapping	ServiceInstanceToPort PrototypeMapping	0..1	ref	Optional reference to a PortPrototype of the monitored Application in case that the communication over this port is monitored and defines the ContextId. Tags: atp.Status=draft





Class	DltLogChannel			
sessionId	PositiveInteger	0..1	attr	This attribute allows distinguishing log/trace messages from different instances of the same SW-C. It is required if sessionIdSupport of the aggregating DltConfig is True.

Table A.103: DltLogChannel

Class	DltMessageCollectionSet			
Package	M2::AUTOSARTemplates::SystemTemplate::Dlt			
Note	Collection of DltMessages Tags: atp.recommendedPackage=DltMessageCollectionSets			
Base	ARObject, CollectableElement, FibexElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
dltMessage	DltMessage	*	aggr	Collection of DltMessages in the DltMessageCollection Set.

Table A.104: DltMessageCollectionSet

Class	DoIPInstantiation			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModuleImplementation			
Note	This meta-class defines the attributes for the DoIP configuration on a specific machine. Tags: atp.Status=draft			
Base	ARObject, AdaptiveModuleInstantiation, Identifiable , MultilanguageReferrable, NonOsModuleInstantiation , Referrable			
Attribute	Type	Mult.	Kind	Note
eid	PositiveUnlimitedInteger	0..1	attr	Configured EID (Entity ID) used for VehicleIdentification Request. If configured, take this value, if not configured use MAC address.
entityStatusMaxByteFieldUse	Boolean	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 DoIPGroupIdentification to retrieve GID and 'further action required' values.
gidInvalidityPattern	PositiveInteger	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	1	attr	Describes the logical address of the DoIP entity, which is used for VehicleAnnouncement and RoutingActivation responses.
maxRequestBytes	PositiveInteger	1	attr	Specifies the maximum allowed bytes of a DoIP message request without the DoIP header.
networkInterface	DoIPNetworkConfiguration	*	aggr	Network interface specific DoIP properties. Tags: atp.Status=draft





Class	DoIpInstantiation			
request Configuration	DoIpRequest Configuration	*	aggr	Request configuration that is used to determine whether an incoming DiagnosticMessage request needs to be interpreted as PHYSICAL or FUNCTIONAL. Any request with target address not within the configured target address range will be rejected. Tags: atp.Status=draft
vinInvalidity Pattern	PositiveInteger	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.105: DoIpInstantiation

Class	DoIpNetworkConfiguration			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModule Implementation			
Note	This element collects DoIP properties that are network interface specific. Tags: atp.Status=draft			
Base	ARObject			
Attribute	Type	Mult.	Kind	Note
eidUseMac	Boolean	0..1	attr	This attribute defines whether the MAC of the network interface is used as eid. True: MAC is used False: eid needs to be configured manually by DoIpInstantiation.eid.
isActivationLine Dependent	Boolean	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	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	1	attr	Maximum amount of tester connections that shall be maintained at one time before alive check is performed.
network Configuration	PlatformModule EthernetEndpoint Configuration	0..1	ref	Network configuration (Protocol, Port, IP Address) for transmission of DoIP messages on a specific VLAN. Tags: atp.Status=draft
network InterfaceId	PositiveInteger	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.





Class	DolpNetworkConfiguration			
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	1	attr	Defines if the optional VIN/GID synchronization status is used additionally in the vehicle identification/announcement.

Table A.106: 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. Tags: atp.Status=draft			
Base	ARObject			
Attribute	Type	Mult.	Kind	Note
endAddress	PositiveInteger	1	attr	End address for range of target-addresses (including this address).
requestType	RequestTypeEnum	1	attr	Determines the type of request.
startAddress	PositiveInteger	1	attr	Start address for range of target-addresses (including this address).

Table A.107: 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			
Attribute	Type	Mult.	Kind	Note
transitToInvalid Extended	Boolean	0..1	attr	E2E State machine behavior concerning transition from NODATA/INIT to INVALID value=0 (false): no direct transition from NODATA to INVALID, no transition from INIT to INVALID due to counter-related faults (Autosar R19-11 or former behavior) value=1 (true): direct transition from NODATA to INVALID covered, transition from INIT to INVALID due to counter-related faults covered (state machine extended)

Table A.108: E2EProfileCompatibilityProps

Class	E2EProfileConfiguration			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::E2E			
Note	This element holds E2E profile specific configuration settings. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
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. Tags: atp.Status=draft
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 MaxDeltaCounter is 3, then at the next reception the receiver can accept Counters with values 2, 3 or 4.
maxErrorStateInit	PositiveInteger	0..1	attr	Maximal number of checks in which ProfileStatus equal to E2E_P_ERROR was determined, within the last WindowSize checks, for the state E2E_SM_INIT.
maxErrorStateInvalid	PositiveInteger	0..1	attr	Maximal number of checks in which ProfileStatus equal to E2E_P_ERROR was determined, within the last WindowSize checks, for the state E2E_SM_INVALID.
maxErrorStateValid	PositiveInteger	0..1	attr	Maximal number of checks in which ProfileStatus equal to E2E_P_ERROR was determined, within the last WindowSize 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.
minOkStateInvalid	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.
minOkStateValid	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	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.
windowSizeInvalid	PositiveInteger	0..1	attr	Size of the monitoring window of state Invalid for the E2E state machine.
windowSizeValid	PositiveInteger	0..1	attr	Size of the monitoring window of state Valid for the E2E state machine.

Table A.109: E2EProfileConfiguration

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. Tags: atp.Status=draft			
Base	ARObject			
Attribute	Type	Mult.	Kind	Note





Class	EnterExitTimeout			
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.110: EnterExitTimeout

Class	EthernetCommunicationConnector			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::EthernetTopology			
Note	Ethernet specific attributes to the CommunicationConnector.			
Base	ARObject, CommunicationConnector , Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
maximum Transmission Unit	PositiveInteger	0..1	attr	This attribute specifies the maximum transmission unit in bytes.
neighborCache Size	PositiveInteger	0..1	attr	This attribute specifies the size of neighbor cache or ARP table in units of entries.
pathMtu Enabled	Boolean	0..1	attr	If enabled the IPv4/IPv6 processes incoming ICMP "Packet Too Big" messages and stores a MTU value for each destination address.
pathMtuTimeout	TimeValue	0..1	attr	If this value is >0 the IPv4/IPv6 will reset the MTU value stored for each destination after n seconds.
pncFilterData Mask	PositiveUnlimitedInteger	0..1	attr	Bit mask for Ethernet Payload used to configure the NM filter mask for the Network Management.
unicastNetwork Endpoint	NetworkEndpoint	0..1	ref	Network Endpoint that defines the IPAddress of the machine. Tags: atp.Status=draft

Table A.111: EthernetCommunicationConnector

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			
Attribute	Type	Mult.	Kind	Note
network Endpoint	NetworkEndpoint	*	aggr	Collection of NetworkEndpoints that are used in the Vlan. Stereotypes: atp.Splitable Tags: atp.Splitkey=networkEndpoint.shortName
vlan	VlanConfig	0..1	aggr	VLAN Configuration.

Table A.112: EthernetPhysicalChannel

Class	Executable			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationStructure			
Note	This meta-class represents an executable program. Tags: atp.Status=draft atp.recommendedPackage=Executables			
Base	ARElement, ARObject, AtpClassifier , CollectableElement , Identifiable , MultilanguageReferrable , PackageableElement , Referrable			





Class	Executable			
Attribute	Type	Mult.	Kind	Note
buildType	BuildTypeEnum	0..1	attr	This attribute describes the buildType of a module and/or platform implementation.
loggingBehavior	LoggingBehaviorEnum	0..1	attr	This attribute indicates the intended logging behavior of the enclosing Executable.
minimumTimerGranularity	TimeValue	0..1	attr	This attribute describes the minimum timer resolution (TimeValue of one tick) that is required by the Executable. Tags: atp.Status=draft
reportingBehavior	ExecutionStateReportingBehaviorEnum	0..1	attr	this attribute controls the execution state reporting behavior of the enclosing Executable.
rootSwComponentPrototype	RootSwComponentPrototype	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. Tags: atp.Status=draft
version	StrongRevisionLabelString	0..1	attr	Version of the executable. Tags: atp.Status=draft

Table A.113: Executable

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. Tags: atp.Status=draft			
Base	ARObject			
Attribute	Type	Mult.	Kind	Note
processState	ModeDeclaration	0..1	iref	This represent the applicable modeDeclaration that represents an ProcessState. Tags: atp.Status=draft InstanceRef implemented by: ModelInProcessInstanceRef

Table A.114: 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. Tags: atp.Status=draft			
Base	ARObject, AtpFeature, AtpPrototype, AutosarDataPrototype , DataPrototype , Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
hasGetter	Boolean	1	attr	This attribute controls whether read access is foreseen to this field.
hasNotifier	Boolean	1	attr	This attribute controls whether a notification semantics is foreseen to this field.
hasSetter	Boolean	1	attr	This attribute controls whether write access is foreseen to this field.

Table A.115: 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. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
field	Field	0..1	ref	Reference to a field that is located in a ServiceInterface. Tags: atp.Status=draft
getterOperation	ClientServerOperation	0..1	ref	Reference to a ClientServerOperation that represents the getter Method in the Field. Tags: atp.Status=draft
notifierDataElement	VariableDataPrototype	0..1	ref	Reference to a VariableDataPrototype that represents the notifier in the Field. Tags: atp.Status=draft
setterOperation	ClientServerOperation	0..1	ref	Reference to a ClientServerOperation that represents the setter Method in the Field. Tags: atp.Status=draft

Table A.116: FieldMapping

Class	FireAndForgetMapping			
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. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
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. Tags: atp.Status=draft
method	ClientServerOperation	0..1	ref	Reference to a Fire&Forget Method that is located in a ServiceInterface. Tags: atp.Status=draft
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. Tags: atp.Status=draft

Table A.117: FireAndForgetMapping

Class	FunctionGroupSet			
Package	M2::AUTOSARTemplates::AdaptivePlatform::General			
Note	This meta-class provides the ability to create arbitrary collections of function groups. Tags: atp.Status=draft atp.recommendedPackage=FunctionGroupSets			
Base	ARElement, ARObject, AtpClassifier, CollectableElement, Identifiable , MultilanguageReferrable , PackageableElement , Referrable			





Class	FunctionGroupSet			
Attribute	Type	Mult.	Kind	Note
functionGroup	ModeDeclarationGroup Prototype	*	aggr	This aggregation represents the collection of function groups. Tags: atp.Status=draft

Table A.118: FunctionGroupSet

Class	FunctionGroupStateInFunctionGroupSetInstanceRef			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest::InstanceRefs			
Note	Tags: atp.Status=draft			
Base	ARObject, AtpInstanceRef			
Attribute	Type	Mult.	Kind	Note
base	FunctionGroupSet	0..1	ref	Stereotypes: atpDerived Tags: atp.Status=draft
contextMode Declaration GroupPrototype	ModeDeclarationGroup Prototype	0..1	ref	Tags: atp.Status=draft xml.sequenceOffset=10
targetMode Declaration	ModeDeclaration	0..1	ref	Tags: atp.Status=draft xml.sequenceOffset=20

Table A.119: FunctionGroupStateInFunctionGroupSetInstanceRef

Class	GlobalSupervision			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This element defines a collection of LocalSupervisions in order to provide a aggregated supervision state. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
expired Supervision Cycles Tolerance	PositiveInteger	0..1	attr	Defines the acceptable amount of cycles with EXPIRED supervision status of this GlobalSupervision before it is considered STOPPED. Tags: atp.Status=draft
local Supervision	LocalSupervision	*	ref	Reference to the LocalSupervisions which are used to derive the status of this GlobalSupervision. Tags: atp.Status=draft
supervision Cycle	TimeValue	1	attr	Defines at which cycle the GlobalSupervision shall be executed.

Table A.120: 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 , Packageable Element , Referrable			
Attribute	Type	Mult.	Kind	Note





Class	GlobalTimeDomain			
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: atpVariation Tags: vh.latestBindingTime=postBuild
globalTimeCorrectionProps	GlobalTimeCorrectionProps	0..1	aggr	Defintion of attributes for rate and offset correction.
globalTimeDomainProperty	AbstractGlobalTimeDomainProps	0..1	aggr	Additional properties of the GlobalTimeDomain. Stereotypes: atpVariation Tags: vh.latestBindingTime=postBuild
globalTimeMaster	GlobalTimeMaster	0..1	aggr	This represents the single master of a GlobalTimeDomain. A GlobalTimeDomain may have no GlobalTimeDomain.master, e.g. when it gets its time from a GPS receiver. Stereotypes: atpVariation Tags: vh.latestBindingTime=postBuild
globalTimeSubDomain	GlobalTimeDomain	*	ref	By this means it is possible to create a hierarchy of sub Domains where one global time domain can declare one or more other global time domains as its subDomains. Stereotypes: atpVariation Tags: vh.latestBindingTime=postBuild
networkSegmentId	NetworkSegmentIdentification	0..1	aggr	Defines the numerical identification of a GlobalTime sub domain.
offsetTimeDomain	GlobalTimeDomain	0..1	ref	Reference to a synchronized time domain this offset time domain is based on. The reference source is the offset time domain. The reference target is the synchronized time domain.
pduTriggering	PduTriggering	0..1	ref	This PduTriggering will be taken to transmit the global time information from a GlobalTimeMaster to a the associated GlobalTimeSlaves. Stereotypes: atpVariation Tags: vh.latestBindingTime=postBuild
slave	GlobalTimeSlave	*	aggr	This represents the collections of slaves of the GlobalTimeDomain. A GlobalTimeDomain may have no GlobalTimeDomain.slaves, e.g. when it propagates its time directly to sub domains. Stereotypes: atpVariation Tags: vh.latestBindingTime=postBuild
syncLossTimeout	TimeValue	0..1	attr	This attribute describes the timeout for the situation that the time synchronization gets lost in the scope of the time domain.

Table A.121: GlobalTimeDomain

Class	Grant (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IdentityAccessManagement			
Note	This meta-class serves as the abstract base class for defining specific Grants Tags: atp.Status=draft			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Subclasses	ComFindServiceGrant, ComGrant, ComOfferServiceGrant, RawDataStreamGrant			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.122: Grant

Class	HealthChannelExternalStatus			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This element defines a health channel representing the status of an external health channel. Tags: atp.Status=draft			
Base	ARObject, HealthChannel, Identifiable , MultilanguageReferrable, Referrable			
Attribute	Type	Mult.	Kind	Note
healthChannel	PhmHealthChannelInterface	0..1	iref	Refers to the HealthChannel. Tags: atp.Status=draft InstanceRef implemented by: PhmHealthChannelInExecutableInstanceRef
notifiedStatus	HealthChannelExternalReportedStatus	*	aggr	This is a list of statuses which shall trigger the Recovery Notification of this HealthChannelExternalStatus. Tags: atp.Status=draft
process	Process	0..1	ref	Defines the Process this Health Channel shall be monitored. Tags: atp.Status=draft

Table A.123: HealthChannelExternalStatus

Class	HealthChannelSupervision			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This element defines a health channel representing the status of a PhmSupervision. Tags: atp.Status=draft			
Base	ARObject, HealthChannel, Identifiable , MultilanguageReferrable, Referrable			
Attribute	Type	Mult.	Kind	Note
supervision	GlobalSupervision	0..1	ref	Reference to the GlobalSupervision as source for the health channel. Tags: atp.Status=draft

Table A.124: HealthChannelSupervision

Class	HeapUsage (abstract)			
Package	M2::AUTOSARTemplates::CommonStructure::ResourceConsumption::HeapUsage			
Note	Describes the heap memory usage of a SW-Component.			
Base	ARObject, Identifiable , MultilanguageReferrable, Referrable			
Subclasses	WorstCaseHeapUsage			





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

Table A.125: HeapUsage

Enumeration	HttpAcceptEncodingEnum
Package	M2::AUTOSARTemplates::AdaptivePlatform::REST::RESTDeployment
Note	This enumeration defines the value for the accept-encoding field of the HTTP header. Tags: atp.Status=draft
Literal	Description
deflate	Use deflate compression. Tags: atp.EnumerationLiteralIndex=1
gzip	Use gzip pcompression. Tags: atp.EnumerationLiteralIndex=0

Table A.126: HttpAcceptEncodingEnum

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			
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.
ike Authentication Method	IkeAuthenticationMethodEnum	0..1	attr	This attribute defines the IKE authentication method that is used locally and is expected on the remote side. Tags: atp.Status=obsolete
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. Tags: atp.Status=draft
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.





Class	IPSecRule			
localPortRangeStart	PositiveInteger	0..1	attr	<p>This attribute restricts the traffic monitoring and defines a start value for the local 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>
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".
remoteCertificate	CryptoServiceCertificate	*	ref	<p>This reference identifies the applicable certificate used for a remote authentication.</p> <p>Tags:atp.Status=draft</p>
remoteId	String	0..1	attr	This attribute defines how the remote participant should be identified for authentication.
remoteIpAddress	NetworkEndpoint	*	ref	Definition of the remote NetworkEndpoint. With this reference the connection between the local NetworkEndpoint and the remote NetworkEndpoint is described on which the traffic is monitored.
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.127: 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>





Class				
ISignal				
<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>				
<p>Base <i>ARObject, CollectableElement, FibexElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable</i></p>				
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: atpSplittable; atpVariation</p> <p>Tags: atp.Splitkey=dataTransformation.dataTransformation, dataTransformation.variationPoint.shortLabel vh.latestBindingTime=codeGenerationTime</p>
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</p> <p>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>





Class	ISignal			
length	Integer	1	attr	Size of the signal in bits. The size needs to be derived from the mapped VariableDataPrototype according to the mapping of primitive DataTypes to BaseTypes as used in the RTE. Indicates maximum size for dynamic length signals. The ISignal length of zero bits is allowed.
network Representation Props	SwDataDefProps	0..1	aggr	Specification of the actual network representation. The usage of SwDataDefProps for this purpose is restricted to the attributes compuMethod and baseType. The optional baseType attributes "memAlignment" and "byteOrder" shall not be used. The attribute "dataTypePolicy" in the SystemTemplate element defines whether this network representation shall be ignored and the information shall be taken over from the network representation of the ComSpec. If "override" is chosen by the system integrator the network representation can violate against the requirements defined in the PortInterface and in the network representation of the ComSpec. In case that the System Description doesn't use a complete Software Component Description (VFB View) this element is used to configure "ComSignalDataInvalid Value" and the Data Semantics.
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	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.

Table A.128: 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, Packageable Element, Referrable			
Attribute	Type	Mult.	Kind	Note





Class	ISignalGroup			
comBasedSignalGroupTransformation	DataTransformation	0..1	ref	Optional reference to a DataTransformation which represents the transformer chain that is used to transform the data that shall be placed inside this ISignalGroup based on the COMBasedTransformer approach. Stereotypes: atpSplitable; atpVariation Tags: atp.Splitkey=comBasedSignalGroupTransformation.dataTransformation, comBasedSignalGroupTransformation.variationPoint.shortLabel vh.latestBindingTime=codeGenerationTime
iSignal	ISignal	*	ref	Reference to a set of ISignals that shall always be kept together.
systemSignalGroup	SystemSignalGroup	1	ref	Reference to the SystemSignalGroup that is defined on VFB level and that is supposed to be transmitted in the ISignalGroup.
transformationISignalProps	TransformationISignalProps	*	aggr	A transformer chain consists of an ordered list of transformers. The ISignalGroup specific configuration properties for each transformer are defined in the TransformationISignalProps class. The transformer configuration properties that are common for all ISignalGroups are described in the TransformationTechnology class.

Table A.129: 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			
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 in case 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





Class	ISignalPort			
				<p>information may be available from a configured Receiver ComSpec, in this case the timeout value in ReceiverComSpec overrides this optional timeout specification.</p> <ul style="list-style-type: none"> ISignalPort with communicationDirection = out: <p>Optional timeout value in seconds for transmission deadline monitoring in case 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 SenderComSpec, in this case the timeout value in SenderComSpec overrides this optional timeout specification.</p>

Table A.130: 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			
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.131: 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=draft			
Base	ARObject, AdaptiveModuleInstantiation , Identifiable , MultilanguageReferrable , NonOsModuleInstantiation , Referrable			
Attribute	Type	Mult.	Kind	Note
grant	Grant	*	ref	This reference identifies the applicable Grants for this IamModuleInstantiation. Stereotypes: atpSplitable Tags: atp.Splitkey=grant atp.Status=draft
localComAccessControlEnabled	Boolean	0..1	attr	This switch activates the policy enforcement in Communication Management on local applications.





Class	IamModuleInstantiation			
remoteAccess ControlEnabled	Boolean	0..1	attr	This switch activates the check of the remote subject.

Table A.132: 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	ARPpackage, AbstractDolpLogicAddressProps , AbstractEvent , AbstractImplementationDataTypeElement , AbstractSecurityEventFilter , AbstractSecurityIdsmInstanceFilter , AbstractServiceInstance , AbstractSignalBasedToSignalTriggeringMapping , AdaptiveModuleInstantiation , AdaptiveSwcInternalBehavior , ApplicationError , 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 , DependencyOnArtifact , DeterministicClientResourceNeeds , DiagEventDebounceAlgorithm , DiagnosticConnectedIndicator , DiagnosticDataElement , DiagnosticFunctionInhibitSource , DiagnosticRoutineSubfunction , DltArgument , DltLogChannel , DltMessage , DolpInterface , DolpLogicAddress , DolpRoutingActivation , E2EProfileConfiguration , End2EndEventProtectionProps , EndToEndProtection , EthernetWakeUpSleepOnDataLineConfig , EventMapping , ExclusiveArea , ExecutableEntity , ExecutionTime , FMAttributeDef , FMFeatureMapAssertion , FMFeatureMapCondition , FMFeatureMapElement , FMFeatureRelation , FMFeatureRestriction , FMFeatureSelection , FieldMapping , FireAndForgetMapping , FrameTriggering , GeneralParameter , GlobalSupervision , GlobalTimeGateway , GlobalTimeMaster , GlobalTimeSlave , HealthChannel , HeapUsage , HwAttributeDef , HwAttributeLiteralDef , HwPin , HwPinGroup , IPSecRule , IPv6ExtHeaderFilterList , ISignalToIPduMapping , ISignalTriggering , IdentCaption , InterfaceMapping , InternalTriggeringPoint , Keyword , LifeCycleState , Linker , MacMulticastGroup , McDataInstance , MemorySection , MethodMapping , ModeDeclaration , ModeDeclarationMapping , ModeSwitchPoint , NetworkEndpoint , NmCluster , NmNode , PackageableElement , ParameterAccess , PduToFrameMapping , PduTriggering , PersistenceDeploymentElement , PersistenceInterfaceElement , PhmSupervision , PhysicalChannel , PortGroup , PortInterfaceMapping , PossibleErrorReaction , ProcessDesignToMachineDesignMapping , ProcessToMachineMapping , Processor , ProcessorCore , PskIdentityToKeySlotMapping , RecoveryNotification , ResourceConsumption , ResourceGroup , RestAbstractEndpoint , RestElementDef , RestResourceDef , RootSwClusterDesignComponentPrototype , RootSwComponentPrototype , RootSwCompositionPrototype , RptComponent , RptContainer , RptExecutableEntity , RptExecutableEntityEvent , RptExecutionContext , RptProfile , RptServicePoint , SdgAttribute , SdgClass , SecOcJobMapping , SecOcJobRequirement , SecureComProps , SecureCommunicationAuthenticationProps , SecureCommunicationDeployment , SecureCommunicationFreshnessProps , SecurityEventContextProps , ServiceEventDeployment , ServiceFieldDeployment , ServiceInstanceToSignalMapping , ServiceInterfaceElementMapping , ServiceInterfaceElementSecureComConfig , ServiceInterfaceMapping , ServiceMethodDeployment , ServiceNeeds , SignalServiceTranslationEventProps , SignalServiceTranslationProps , SocketAddress , SoftwarePackageStep , SomeipEventGroup , SomeipProvidedEventGroup , SomeipTpChannel , SpecElementReference , StackUsage , StartupConfig , StaticSocketConnection , StructuredReq , SupervisionCheckpoint , SwGenericAxisParamType , SwServiceArg , SwcServiceDependency , SystemMapping , SystemMemoryUsage , TimeBaseResource , TimingCondition , TimingConstraint , TimingDescription , TimingExtensionResource , TimingModeInstance , TlsCryptoCipherSuite , TlsJobMapping , Topic1 , TpAddress , TraceableTable , TraceableText , TracedFailure , TransformationProps , TransformationPropsToServiceInterfaceElementMapping , TransformationTechnology , Trigger , UcmDescription , UcmStep , VariableAccess , VariationPointProxy , VehicleRolloutStep , ViewMap , VlanConfig			
Attribute	Type	Mult.	Kind	Note
adminData	AdminData	0..1	aggr	This represents the administrative data for the identifiable object. Tags: xml.sequenceOffset=-40





Class	Identifiable (abstract)			
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.133: Identifiable

Class	IdsmModuleInstantiation			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IntrusionDetectionSystem			
Note	<p>This meta-class defines the attributes for the IdsM configuration on a specific machine.</p> <p>Tags:atp.Status=draft</p>			
Base	ARObject, AdaptiveModuleInstantiation, Identifiable , IdsPlatformInstantiation, MultilanguageReferrable, NonOsModuleInstantiation, Referrable			
Attribute	Type	Mult.	Kind	Note





Class	IdsmModuleInstantiation			
reportable SecurityEvent	SecurityEventMapping	*	ref	Collection of reportable instances of security events. Stereotypes: atpSplittable Tags: atp.Splitkey=reportableSecurityEvent atp.Status=draft

Table A.134: 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.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
eventMapping	EventMapping	*	aggr	Mapping of a VariableDataPrototype in a SenderReceiver Interface to an Event in a ServiceInterface. Tags: atp.Status=draft
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. Tags: atp.Status=draft
fireAndForget Mapping	FireAndForgetMapping	*	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. Tags: atp.Status=draft
methodMapping	MethodMapping	*	aggr	Mapping of a ClientServerOperation in a ClientServer Interface to a Method in a ServiceInterface. Tags: atp.Status=draft

Table A.135: InterfaceMapping

Class	Ipv4Configuration			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::EthernetTopology			
Note	Internet Protocol version 4 (IPv4) configuration.			
Base	ARObject, 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.





Class	Ipv4Configuration			
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.
ipv4AddressSource	Ipv4AddressSourceEnum	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.136: Ipv4Configuration

Class	Ipv6Configuration			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::EthernetTopology			
Note	Internet Protocol version 6 (IPv6) configuration.			
Base	ARObject, NetworkEndpointAddress			
Attribute	Type	Mult.	Kind	Note
assignmentPriority	PositiveInteger	0..1	attr	Priority of assignment (1 is highest). If a new address from an assignment method with a higher priority is available, it overwrites the IP address previously assigned by an assignment method with a lower priority.
defaultRouter	Ip6AddressString	0..1	attr	IP address of the default router.
dnsServerAddress	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)
ipAddressKeepBehavior	IpAddressKeepEnum	0..1	attr	Defines the lifetime of a dynamically fetched IP address.
ipAddressPrefixLength	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.
ipv6AddressSource	Ipv6AddressSourceEnum	0..1	attr	Defines how the node obtains its IP address.

Table A.137: Ipv6Configuration

Class	LocalSupervision			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This element defines a LocalSupervision in the context of platform health management contribution. Tags: atp.Status=draft			
Base	ARObject, Identifiable, MultilanguageReferrable, PhmSupervision, Referrable			
Attribute	Type	Mult.	Kind	Note





Class	LocalSupervision			
alive Supervision	AliveSupervision	*	aggr	Collection of AliveSupervisions in the context of this Local Supervision. Tags: atp.Status=draft
deadline Supervision	DeadlineSupervision	*	aggr	Collection of DeadlineSupervisions in the context of this LocalSupervision. Tags: atp.Status=draft
failed Supervision Cycles Tolerance	PositiveInteger	0..1	attr	Defines the acceptable amount of cycles with FAILED supervision status of this LocalSupervision before it is considered EXPIRED. Tags: atp.Status=draft
logical Supervision	LogicalSupervision	*	aggr	Collection of LogicalSupervisions in the context of this LocalSupervision. Tags: atp.Status=draft
transition	CheckpointTransition	*	aggr	Collection of CheckpointTransitions in the context of this LocalSupervision. Tags: atp.Status=draft

Table A.138: LocalSupervision

Class	LogAndTraceInstantiation			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::LogAndTrace			
Note	This meta-class defines the attributes for the Log&Trace configuration on a specific machine. Tags: atp.Status=draft			
Base	ARObject, AdaptiveModuleInstantiation, Identifiable , MultilanguageReferrable, NonOsModuleInstantiation , Referrable			
Attribute	Type	Mult.	Kind	Note
dltEcuid	String	0..1	attr	This attribute defines the name of the ECU for use within the Dlt protocol.
dltLogChannel	DltLogChannel	*	aggr	DltLogChannels that are configured for the log/trace message output Tags: atp.Status=draft
queueSize	PositiveInteger	0..1	attr	Length of the queue (in which messages can be stored before processing) in the unit "Log message".
sessionId Support	Boolean	0..1	attr	This attribute defines whether the sessionId is used or not.
timeBase Resource	TimeBaseResource	0..1	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. Tags: atp.Status=draft

Table A.139: LogAndTraceInstantiation

Enumeration	LogTraceLogModeEnum
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::LogAndTrace
Note	This enum defines the possible destinations of a log&trace message. Tags: atp.Status=draft
Literal	Description





Enumeration	LogTraceLogModeEnum
console	Destination of log message will be the console output. Tags: atp.EnumerationLiteralIndex=0
file	Destination of log message will be a file on the file system. Tags: atp.EnumerationLiteralIndex=1
network	Log message will be transmitted over the communication bus. Tags: atp.EnumerationLiteralIndex=2

Table A.140: LogTraceLogModeEnum

Class	LogicalSupervision			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	Defines a LogicalSupervision graph consisting of transitions, initial- and final checkpoints. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , PhmSupervision , Referrable			
Attribute	Type	Mult.	Kind	Note
finalCheckpoint	SupervisionCheckpoint	*	ref	Reference to the final Checkpoint(s) for this Logical Supervision. Tags: atp.Status=draft xml.sequenceOffset=20
initialCheckpoint	SupervisionCheckpoint	*	ref	Reference to the initial Checkpoint(s) for this Logical Supervision. Tags: atp.Status=draft xml.sequenceOffset=10
transition	CheckpointTransition	*	ref	Reference to the transitions for this LogicalSupervision. Tags: atp.Status=draft xml.sequenceOffset=30

Table A.141: LogicalSupervision

Class	Machine			
Package	M2::AUTOSARTemplates::AdaptivePlatform::MachineManifest			
Note	Machine that represents an Adaptive Autosar Software Stack. Tags: atp.Status=draft atp.recommendedPackage=Machines			
Base	ARElement, ARObject, AtpClassifier , AtpFeature , AtpStructureElement , CollectableElement , Identifiable , MultilanguageReferrable , PackageableElement , Referrable			
Attribute	Type	Mult.	Kind	Note
default Application Timeout	EnterExitTimeout	0..1	aggr	This aggration defines a default timeout in the context of a given Machine with respect to the launching and termination of applications. Tags: atp.Status=draft





Class	Machine			
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, environment Variable.variationPoint.shortLabel atp.Status=draft
machineDesign	MachineDesign	1	ref	Reference to the MachineDesign this Machine is implementing. Tags: atp.Status=draft
module Instantiation	AdaptiveModule Instantiation	*	aggr	Configuration of Adaptive Autosar module instances that are running on the machine. Stereotypes: atpSplitable Tags: atp.Splitkey=moduleInstantiation.shortName atp.Status=draft
processor	Processor	1..*	aggr	This represents the collection of processors owned by the enclosing machine. Tags: atp.Status=draft
secure Communication Deployment	SecureCommunication Deployment	*	aggr	Deployment of secure communication protocol configuration settings to crypto module entities. Stereotypes: atpSplitable Tags: atp.Splitkey=secureCommunicationDeployment.short Name atp.Status=draft
trustedPlatform Executable LaunchBehavior	TrustedPlatform ExecutableLaunch BehaviorEnum	1	attr	This attribute controls the behavior of how authentication affects the ability to launch for each Executable.

Table A.142: 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.Status=draft atp.recommendedPackage=MachineDesigns			
Base	<i>ARObject</i> , <i>AtpClassifier</i> , <i>AtpFeature</i> , <i>AtpStructureElement</i> , <i>CollectableElement</i> , <i>FibexElement</i> , <i>Identifiable</i> , <i>MultilanguageReferrable</i> , <i>PackageableElement</i> , <i>Referrable</i>			
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. Tags: atp.Status=draft
ethIpProps	EthIpProps	0..1	ref	Maschine specific IP attributes. Tags: atp.Status=draft
pncPrepare SleepTimer	TimeValue	0..1	attr	Time in seconds the PNC state machine shall wait in PNC_PREPARE_SLEEP.





Class	MachineDesign			
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.
serviceDiscover Config	ServiceDiscovery Configuration	*	aggr	Set of service discovery configuration settings that are defined on the machine for individual Communication Connectors. Tags: atp.Status=draft
tcpIpIcmpProps	EthTcpIpIcmpProps	0..1	ref	Machine specific ICMP (Internet Control Message Protocol) attributes Tags: atp.Status=draft
tcpIpProps	EthTcpIpProps	0..1	ref	Machine specific TcpIp Stack attributes. Tags: atp.Status=draft

Table A.143: 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			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.144: 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			
Attribute	Type	Mult.	Kind	Note
initialMode	ModeDeclaration	0..1	ref	The initial mode of the ModeDeclarationGroup. This mode is active before any mode switches occurred.
mode Declaration	ModeDeclaration	*	aggr	The ModeDeclarations collected in this ModeDeclaration Group. Stereotypes: atpVariation Tags: vh.latestBindingTime=blueprintDerivationTime
modeTransition	ModeTransition	*	aggr	This represents the available ModeTransitions of the ModeDeclarationGroup

Table A.145: 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			
Attribute	Type	Mult.	Kind	Note





Class	ModeDeclarationGroupPrototype			
type	ModeDeclarationGroup	0..1	tref	The "collection of ModeDeclarations" (= ModeDeclaration Group) supported by a component Stereotypes: isOfType

Table A.146: ModeDeclarationGroupPrototype

Class	ModelnProcessInstanceRef			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest::InstanceRefs			
Note	Tags: atp.Status=draft			
Base	ARObject, AtpInstanceRef			
Attribute	Type	Mult.	Kind	Note
base	Process	0..1	ref	Stereotypes: atpDerived Tags: atp.Status=draft xml.sequenceOffset=10
contextMode Declaration GroupPrototype	ModeDeclarationGroup Prototype	1	ref	Tags: atp.Status=draft xml.sequenceOffset=20
targetMode Declaration	ModeDeclaration	0..1	ref	Tags: atp.Status=draft xml.sequenceOffset=30

Table A.147: 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			
Attribute	Type	Mult.	Kind	Note
fullyQualified DomainName	String	0..1	attr	Defines the fully qualified domain name (FQDN) e.g. some.example.host.
ipSecConfig	IPSecConfig	0..1	aggr	Optional IPSec configuration that provides security services for IP packets.
network Endpoint Address	NetworkEndpoint Address	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.148: 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, J1939NmCluster, UdpNmCluster			
Attribute	Type	Mult.	Kind	Note
communication Cluster	CommunicationCluster	0..1	ref	Association to a CommunicationCluster in the topology description.





Class	NmCluster (abstract)			
nmNode	NmNode	*	aggr	Collection of NmNodes of the NmCluster. atpVariation: Derived, because NmNode can be variable. Stereotypes: atpVariation Tags: vh.latestBindingTime=postBuild
nmPnc Participation	Boolean	0..1	attr	Defines whether this NmCluster contributes to the partial network mechanism.

Table A.149: 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			
Attribute	Type	Mult.	Kind	Note
nmCluster	NmCluster	*	aggr	Collection of NM Clusters atpVariation: Derived, because cluster can be variable. Stereotypes: atpSplittable; atpVariation Tags: atp.Splitkey=nmCluster.shortName, nmCluster.variation Point.shortLabel vh.latestBindingTime=postBuild

Table A.150: NmConfig

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. Tags: atp.Status=draft			
Base	ARObject, AdaptiveModuleInstantiation, Identifiable , MultilanguageReferrable, Referrable			
Subclasses	CryptoModuleInstantiation, DolpInstantiation , GenericModuleInstantiation, IamModuleInstantiation , IdsPlatformInstantiation , LogAndTraceInstantiation , NmInstantiation, TimeSyncModuleInstantiation, UcmModuleInstantiation			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.151: NonOsModuleInstantiation

Class	NonqueuedReceiverComSpec			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Communication			
Note	Communication attributes specific to non-queued receiving.			
Base	ARObject, RPortComSpec, ReceiverComSpec			
Attribute	Type	Mult.	Kind	Note
filter	DataFilter	0..1	aggr	The applicable filter algorithm for filtering the value of the corresponding dataElement.

Table A.152: NonqueuedReceiverComSpec

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.153: Numerical

Class	OsModuleInstantiation			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModuleImplementation			
Note	<p>This meta-class defines the attributes for the OS configuration on a specific machine.</p> <p>Tags:atp.Status=draft</p>			
Base	ARObject, AdaptiveModuleInstantiation, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
resourceGroup	ResourceGroup	*	aggr	<p>This represents the collection of ResourceGroups owned by the enclosing OsModuleImplementation.</p> <p>Tags:atp.Status=draft</p>
supportedTimerGranularity	TimeValue	0..1	attr	<p>This attribute describes the supported timer granularity (TimeValue of one tick).</p> <p>Tags:atp.Status=draft</p>

Table A.154: 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			
Attribute	Type	Mult.	Kind	Note
providedInterface	PortInterface	0..1	tref	<p>The interface that this port provides.</p> <p>Stereotypes: isOfType</p>

Table A.155: 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			
Attribute	Type	Mult.	Kind	Note
providedRequiredInterface	PortInterface	0..1	tref	<p>This represents the PortInterface used to type the PRPortPrototype</p> <p>Stereotypes: isOfType</p>

Table A.156: 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			
Attribute	Type	Mult.	Kind	Note
providedOuter Port	AbstractProvidedPort Prototype	0..1	ref	This represents the provided outer delegation Port Prototype of the PassThroughSwConnector.
requiredOuter Port	AbstractRequiredPort Prototype	0..1	ref	This represents the required outer delegation Port Prototype of the PassThroughSwConnector.

Table A.157: 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			
Attribute	Type	Mult.	Kind	Note
iPdu	Pdu	1	ref	<p>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.</p> <p>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.</p>
iPduPort	IPduPort	*	ref	<p>References to the IPduPort on every ECU of the system which sends and/or receives the I-PDU.</p> <p>References for both the sender and the receiver side shall be included when the system is completely defined.</p>
iSignal Triggering	ISignalTriggering	*	ref	<p>This reference provides the relationship to the ISignal Triggerings that are implemented by the PduTriggering. The reference is optional since no ISignalTriggering can be defined for DCM and Multiplexed Pdus.</p> <p>Stereotypes: atpVariation Tags: vh.latestBindingTime=postBuild</p>
secOcCrypto Mapping	SecOcCryptoService Mapping	0..1	ref	<p>This reference identifies the crypto profile applicable to the usage (send, receive) of the also referenced Secured IPdu.</p> <p>Obviously, this reference is only applicable if the PduTriggering also references a SecuredIPdu in the role i Pdu.</p>
triggerIPduSend Condition	TriggerIPduSend Condition	*	aggr	<p>Defines the trigger for the Com_TriggerIPDUSend API call. Only if all defined TriggerIPduSendConditions evaluate to true (AND associated) the Com_Trigger IPDUSend API shall be called.</p>

Table A.158: 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			
Attribute	Type	Mult.	Kind	Note
jitter	MultidimensionalTime	1	aggr	<p>The maximum jitter of the periodic event occurrence.</p> <p>Tags:xml.sequenceOffset=20</p>
minimumInterArrivalTime	MultidimensionalTime	1	aggr	<p>The minimum time distance between two consecutive occurrences of the associated event.</p> <p>Tags:xml.sequenceOffset=10</p>
period	MultidimensionalTime	1	aggr	<p>The period of the event occurrence.</p> <p>Tags:xml.sequenceOffset=30</p>

Table A.159: PeriodicEventTriggering

Class	PersistencyDataElement			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
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> <p>Tags:atp.Status=draft</p>			
Base	ARObject, AtpFeature, AtpPrototype, AutosarDataPrototype , DataPrototype , Identifiable , MultilanguageReferrable , PersistencyInterfaceElement , Referrable			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.160: PersistencyDataElement

Class	PersistencyDeployment (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	<p>This abstract meta-class serves as a base class for concrete classes representing different aspects of persistency.</p> <p>Tags:atp.Status=draft</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable , PackageableElement , Referrable , UploadableExclusivePackageElement , UploadablePackageElement			
Subclasses	PersistencyFileStorage , PersistencyKeyValueStorage			
Attribute	Type	Mult.	Kind	Note
maximumAllowedSize	PositiveUnlimitedInteger	0..1	attr	The value of this attribute represents the maximum size allowed at deployment time for the enclosing PersistencyDeployment.
minimumSustainedSize	PositiveInteger	0..1	attr	The value of this attribute represents the minimum size guaranteed at deployment time for the enclosing PersistencyDeployment.





Class	PersistencyDeployment (abstract)			
redundancyHandling	PersistencyRedundancyHandling	*	aggr	This aggregation represents the chosen approaches to handle redundancy. Tags: atp.Status=draft
updateStrategy	PersistencyCollectionLevelUpdateStrategyEnum	1	attr	This attribute shall be used to specify the update strategy of the respective PersistencyDeployment as a whole.

Table A.161: PersistencyDeployment

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.Status=draft atp.recommendedPackage=PersistencyFiles			
Base	ARObject, Identifiable , MultilanguageReferrable, PersistencyDeploymentElement, Referrable			
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	1	attr	This attribute holds filename part of the storage location for the PersistencyFile, e.g. file on the file system. Tags: atp.Status=draft

Table A.162: PersistencyFile

Class	PersistencyFileElement			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
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. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable, PersistencyInterfaceElement, Referrable			
Attribute	Type	Mult.	Kind	Note
contentUri	UriString	1	attr	This attribute represents the URI that identifies the initial content of the PersistencyFile.
fileName	String	1	attr	This attribute holds filename part of the storage location for the PersistencyFileProxy, e.g. file on the file system.

Table A.163: 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.Status=draft atp.recommendedPackage=PersistencyFileStorages			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, PersistencyDeployment , Referrable , UploadableExclusivePackageElement , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note





Class	PersistencyFileStorage			
file	PersistencyFile	*	aggr	This aggregation represents the collection of files aggregated by the PersistencyFileStorage. Tags: atp.Status=draft
uri	UriString	1	attr	This attribute holds the storage location for the PersistencyFileStorage, e.g. a directory on the file system.

Table A.164: PersistencyFileStorage

Class	PersistencyFileStorageInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class provides the ability to implement a PortInterface for supporting persistency use cases for files. Tags: atp.Status=draft atp.recommendedPackage=PersistencyFileStorageInterfaces			
Base	ARElement , ARObject , AtpBlueprint , AtpBlueprintable , AtpClassifier , AtpType , CollectableElement , Identifiable , MultilanguageReferrable , PackageableElement , PersistencyInterface , PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note
fileElement	PersistencyFileElement	*	aggr	This aggregation represents the collection of Persistency FileStorages in the context of the enclosing Persistency FileStorageInterface. Tags: atp.Status=draft
maxNumberOfFiles	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.165: PersistencyFileStorageInterface

Class	PersistencyInterface (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class provides the abstract ability to define a PortInterface for the support of persistency use cases. Tags: atp.Status=draft			
Base	ARElement , ARObject , AtpBlueprint , AtpBlueprintable , AtpClassifier , AtpType , CollectableElement , Identifiable , MultilanguageReferrable , PackageableElement , PortInterface , Referrable			
Subclasses	PersistencyFileStorageInterface , PersistencyKeyValueStorageInterface			
Attribute	Type	Mult.	Kind	Note
minimumSustainedSize	PositiveInteger	0..1	attr	The value of this attribute represents the minimum size required at design time for the enclosing Persistency Interface.
redundancy	PersistencyRedundancyEnum	0..1	attr	This attribute represents a requirement towards the redundancy of storage.
redundancyHandling	PersistencyRedundancyHandling	*	aggr	This aggregation represents the chosen approaches to handle redundancy for the various use cases implemented by subclasses Tags: atp.Status=draft
updateStrategy	PersistencyCollectionLevelUpdateStrategyEnum	0..1	attr	This attribute can be used to specify the update strategy of the respective PersistencyInterface as a whole.

Table A.166: PersistencyInterface

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. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , PersistencyDeploymentElement , Referrable			
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. Tags: atp.Status=draft
valueDataType	AbstractImplementationDataType	1	ref	This reference represents the data type applicable for the value of the key-value pair. Tags: atp.Status=draft

Table A.167: 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.Status=draft atp.recommendedPackage=PersistencyKeyValueStorages			
Base	ARElement, ARObject, CollectableElement , Identifiable , MultilanguageReferrable , PackageableElement , PersistencyDeployment , Referrable , UploadableExclusivePackageElement , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note
keyValuePair	PersistencyKeyValuePair	*	aggr	This aggregation represents the key-value-pairs owned by the enclosing PersistencyKeyValueStorage. Tags: atp.Status=draft
uri	UriString	0..1	attr	This attribute holds the storage location for the PersistencyKeyValueStorage, e.g. file on the file system.

Table A.168: PersistencyKeyValueStorage

Class	PersistencyKeyValueStorageInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class provides the ability to implement a PortInterface for supporting persistency use cases for data. Tags: atp.Status=draft atp.recommendedPackage=PersistencyKeyValueStorageInterfaces			
Base	ARElement, ARObject, AtpBlueprint , AtpBlueprintable , AtpClassifier , AtpType , CollectableElement , Identifiable , MultilanguageReferrable , PackageableElement , PersistencyInterface , PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note
dataElement	PersistencyDataElement	*	aggr	This aggregation represents the collection of Persistency DataElements in the context of the enclosing Persistency KeyValueStorageInterface. Tags: atp.Status=draft





Class	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. Tags: atp.Status=draft

Table A.169: 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. Tags: atp.Status=draft			
Base	<i>ARElement, ARObject, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable, UploadableExclusivePackageElement, UploadablePackageElement</i>			
Subclasses	PersistencyPortPrototypeToFileStorageMapping , PersistencyPortPrototypeToKeyValueStorageMapping			
Attribute	Type	Mult.	Kind	Note
portPrototype	PortPrototype	0..1	iref	This reference represents the mapped PortPrototype. Tags: atp.Status=draft InstanceRef implemented by: PortPrototypeInExecutableInstanceRef
process	Process	1	ref	This reference represents the process required as context for the mapping. Tags: atp.Status=draft

Table A.170: 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.Status=draft atp.recommendedPackage=PersistencyPortPrototypeToFileStorageMappings			
Base	<i>ARElement, ARObject, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, PersistencyPortPrototypeToDeploymentMapping, Referrable, UploadableExclusivePackageElement, UploadablePackageElement</i>			
Attribute	Type	Mult.	Kind	Note
fileStorage	PersistencyFileStorage	1	ref	This reference represents the mapped file storage. Tags: atp.Status=draft

Table A.171: 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.Status=draft atp.recommendedPackage=PersistencyPortPrototypeToKeyValueStorageMappings			





Class	PersistencePortPrototypeToKeyValueStorageMapping			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, PersistencePortPrototypeToDeploymentMapping , Referrable , UploadableExclusivePackageElement , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note
keyValueStorage	PersistenceKeyValueStorage	1	ref	This reference represents the mapped key-value storage. Tags: atp.Status=draft

Table A.172: PersistencePortPrototypeToKeyValueStorageMapping

Class	PersistenceRedundancyChecksum (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistence			
Note	Abstract class that defines the common attributes for implementations of redundancy. Tags: atp.Status=draft			
Base	ARObject, PersistenceRedundancyHandling			
Subclasses	PersistenceRedundancyCrc, PersistenceRedundancyHash			
Attribute	Type	Mult.	Kind	Note
algorithmFamily	String	1	attr	This attribute identifies the algorithm family that is used to execute the CRC/Hash.
length	PositiveInteger	1	attr	This attribute describes the length of the CRC/Hash in the unit bits.

Table A.173: PersistenceRedundancyChecksum

Enumeration	PersistenceRedundancyEnum			
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. Tags: atp.Status=draft			
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			
redundantPerElement	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.174: PersistenceRedundancyEnum

Class	PersistencyRedundancyHandling (abstract)			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Persistency			
Note	This abstract base class represents a formal description of redundancy. Tags: atp.Status=draft			
Base	ARObject			
Subclasses	PersistencyRedundancyChecksum , PersistencyRedundancyMOutOfN			
Attribute	Type	Mult.	Kind	Note
scope	PersistencyRedundancyHandlingScopeEnum	0..1	attr	This attribute controls the scope in which the redundancy handling is applied.

Table A.175: 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 Tags: atp.Status=draft			
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.176: 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. Tags: atp.Status=draft			
Base	ARObject, PersistencyRedundancyHandling			
Attribute	Type	Mult.	Kind	Note
m	PositiveInteger	1	attr	This attribute represents the "M" coordinate in the "M out of N" scheme.
n	PositiveInteger	1	attr	This attribute represents the "N" coordinate in the "M out of N" scheme.

Table A.177: 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. Tags: atp.Status=draft			
Base	ARObject, AtpFeature, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note





Class	PhmCheckpoint			
checkpointId	PositiveInteger	1	attr	Defines the numeric value which is used to indicate the reporting of this Checkpoint to the Phm. Tags: atp.Status=draft

Table A.178: PhmCheckpoint

Class	PhmCheckpointInExecutableInstanceRef			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement::InstanceRefs			
Note	Tags: atp.Status=draft			
Base	ARObject, AtpInstanceRef			
Attribute	Type	Mult.	Kind	Note
base	Executable	0..1	ref	Stereotypes: atpDerived Tags: atp.Status=draft xml.sequenceOffset=10
context Component Prototype (ordered)	SwComponent Prototype	*	ref	Tags: atp.Status=draft xml.sequenceOffset=30
contextRootSw Component Prototype	RootSwComponent Prototype	1	ref	Tags: atp.Status=draft xml.sequenceOffset=20
contextRPort Prototype	RPortPrototype	1	ref	Tags: atp.Status=draft xml.sequenceOffset=40
targetPhm Checkpoint	PhmCheckpoint	1	ref	Tags: atp.Status=draft xml.sequenceOffset=50

Table A.179: 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.Status=draft atp.recommendedPackage=PlatformHealthManagementInterfaces			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, PlatformHealthManagementInterface, PortInterface, Referrable			
Attribute	Type	Mult.	Kind	Note
status	PhmHealthChannel Status	*	aggr	Defines the possible set of status information available to the health channel. Tags: atp.Status=draft

Table A.180: PhmHealthChannelInterface

Class	PhmHealthChannelRecoveryNotificationInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	<p>This meta-class represents a PortInterface that can be taken for implementing a PHM HealthChannel notification.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=PlatformHealthManagementInterfaces</p>			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, PhmAbstractRecoveryNotificationInterface, PlatformHealthManagementInterface, PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.181: PhmHealthChannelRecoveryNotificationInterface

Class	PhmHealthChannelStatus			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	<p>The PhmHealthChannelStatus specifies one possible status of the health channel.</p> <p>Tags:atp.Status=draft</p>			
Base	ARObject, AtpFeature, Identifiable , MultilanguageReferrable, Referrable			
Attribute	Type	Mult.	Kind	Note
statusId	PositiveInteger	0..1	attr	<p>Defines the numeric value which is used to indicate the indication of this status the Phm.</p> <p>Tags:atp.Status=draft</p>
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> <p>Tags:atp.Status=draft</p>

Table A.182: PhmHealthChannelStatus

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.Status=draft atp.recommendedPackage=PlatformHealthManagementInterfaces</p>			
Base	ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, PlatformHealthManagementInterface, PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note
checkpoint	PhmCheckpoint	*	aggr	<p>Defines the set of checkpoints which can be reported on this supervised entity.</p> <p>Tags:atp.Status=draft</p>

Table A.183: PhmSupervisedEntityInterface

Class	PhmSupervisionRecoveryNotificationInterface			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	<p>This meta-class represents a PortInterface that can be taken for implementing a PHM Supervision notification.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=PlatformHealthManagementInterfaces</p>			
Base	<i>ARElement, ARObject, AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, PhmAbstractRecoveryNotificationInterface, PlatformHealthManagementInterface, PortInterface, Referrable</i>			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.184: PhmSupervisionRecoveryNotificationInterface

Class	PlatformHealthManagementContribution			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	<p>This element defines a contribution to the Platform Health Management.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=PlatformHealthManagementContributions</p>			
Base	<i>ARElement, ARObject, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable, UploadablePackageElement</i>			
Attribute	Type	Mult.	Kind	Note
checkpoint	SupervisionCheckpoint	*	aggr	<p>Collection of checkpoints in the context of a Platform HealthManagementContribution.</p> <p>Stereotypes: atpSplitable Tags: atp.Splitkey=checkpoint.shortName atp.Status=draft xml.sequenceOffset=10</p>
global Supervision	GlobalSupervision	*	aggr	<p>Collection of GlobalSupervisions in the context of a PlatformHealthManagementContribution.</p> <p>Stereotypes: atpSplitable Tags: atp.Splitkey=globalSupervision.shortName atp.Status=draft xml.sequenceOffset=30</p>
healthChannel	HealthChannel	*	aggr	<p>Collection of HealthChannels in the context of a Platform HealthManagementContribution.</p> <p>Stereotypes: atpSplitable Tags: atp.Splitkey=healthChannel.shortName atp.Status=draft xml.sequenceOffset=40</p>
local Supervision	LocalSupervision	*	aggr	<p>Collection of LocalSupervisions in the context of a PlatformHealthManagementContribution.</p> <p>Stereotypes: atpSplitable Tags: atp.Splitkey=localSupervision.shortName atp.Status=draft xml.sequenceOffset=20</p>

Table A.185: PlatformHealthManagementContribution

Class	PlatformModuleEthernetEndpointConfiguration			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModuleImplementation			
Note	<p>This meta-class defines the attributes for the configuration of a port, protocol type and IP address of the communication on a VLAN.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=PlatformModuleEndpointConfigurations</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, PlatformModuleEndpointConfiguration, Referrable			
Attribute	Type	Mult.	Kind	Note
communicationConnector	EthernetCommunicationConnector	0..1	ref	<p>Reference to the CommunicationConnector (VLAN) for which the network configuration is defined.</p> <p>Tags:atp.Status=draft</p>
ipv4MulticastIpAddress	Ip4AddressString	0..1	attr	Multicast IPv4 Address to which the message will be transmitted.
ipv6MulticastIpAddress	Ip6AddressString	0..1	attr	Multicast IPv6 Address to which the message will be transmitted.
tcpPort	PositiveInteger	0..1	attr	This attribute allows to configure a tcp port number.
udpPort	PositiveInteger	0..1	attr	This attribute allows to configure a udp port number.

Table A.186: PlatformModuleEthernetEndpointConfiguration

Class	PncMapping			
Package	M2::AUTOSARTemplates::SystemTemplate::PncMapping			
Note	Describes a mapping between one or several Virtual Function Clusters onto Partial Network Clusters. A Virtual Function Cluster is realized by a PortGroup. A Partial Network Cluster is realized by one or more ServiceInstances.			
Base	ARObject, Describable			
Attribute	Type	Mult.	Kind	Note
ident	PncMappingIdent	0..1	aggr	This adds the ability to become referrable to PncMapping.
physicalChannel	PhysicalChannel	*	ref	This reference maps the partial network to a communication channel.
pncConsumedProvidedServiceInstanceGroup	ConsumedProvidedServiceInstanceGroup	*	ref	<p>ConsumedProvidedServiceInstanceGroup used in a Partial Network Cluster. This reference is optional, since this could be used for starting and stopping ConsumedProvidedServiceInstanceGroup according the requested partial network, but is not necessarily needed.</p> <p>Stereotypes: atpVariation Tags:vh.latestBindingTime=postBuild</p>
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.
pncWakeupEnable	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.
relevantForDynamicPncMapping	EcuInstance	*	ref	<p>Reference to a PNC Gateway ECU for PNCs which do not have a static channel mapping. This is needed to describe dynamic PNCs that can be learned only at run-time and which have no relation to an ISignalIPdu Group.</p> <p>Tags:atp.Status=draft</p>





Class	PncMapping			
serviceInstance	AdaptivePlatformServiceInstance	*	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: PortGroupInSystemInstanceRef

Table A.187: 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 , ModeSwitchInterface, PersistenceInterface , PlatformHealthManagementInterface, RestServiceInterface, SecurityEventReportInterface, ServiceInterface , TriggerInterface			
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: atp.Splittable Tags: atp.Splitkey=namespace.shortName atp.Status=draft

Table A.188: PortInterface

Class	PortInterfaceToDataTypeMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::PortInterface			
Note	This meta-class represents the ability to associate a PortInterface with a DataTypeMappingSet. This association is needed for the generation of header files in the scope of a single PortInterface. The association is intentionally made outside the scope of the PortInterface itself because the designers of a PortInterface most likely will not want to add details about the level of ImplementationDataType. Tags: atp.Status=draft atp.recommendedPackage=ServiceInterfaceToDataTypeMappings			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
dataTypeMappingSet	DataTypeMappingSet	1..*	ref	This represents the reference to the applicable data TypemappingSet Tags: atp.Status=draft atp.StatusComment=Reserved for adaptive platform





Class	PortInterfaceToDataTypeMapping			
portInterface	PortInterface	1	ref	This represents the reference to the applicable Port Interface Tags: atp.Status=draft atp.StatusComment=Reserved for adaptive platform

Table A.189: PortInterfaceToDataTypeMapping

Class	PortPrototype (abstract)			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Components			
Note	Base class for the ports of an AUTOSAR software component. The aggregation of PortPrototypes is subject to variability with the purpose to support the conditional existence of ports.			
Base	ARObject, AtpBlueprintable, AtpFeature, AtpPrototype, Identifiable , MultilanguageReferrable, Referrable			
Subclasses	AbstractProvidedPortPrototype, AbstractRequiredPortPrototype			
Attribute	Type	Mult.	Kind	Note
clientServer Annotation	ClientServerAnnotation	*	aggr	Annotation of this PortPrototype with respect to client/server communication.
delegatedPort Annotation	DelegatedPort Annotation	0..1	aggr	Annotations on this delegated port.
ioHwAbstraction Server Annotation	IoHwAbstractionServer Annotation	*	aggr	Annotations on this IO Hardware Abstraction port.
modePort Annotation	ModePortAnnotation	*	aggr	Annotations on this mode port.
nvDataPort Annotation	NvDataPortAnnotation	*	aggr	Annotations on this non volatile data port.
parameterPort Annotation	ParameterPort Annotation	*	aggr	Annotations on this parameter port.
portPrototype Props	PortPrototypeProps	0..1	aggr	This attribute allows for the definition of further qualification of the semantics of a PortPrototype. Tags: atp.Status=draft
senderReceiver Annotation	SenderReceiver Annotation	*	aggr	Collection of annotations of this ports sender/receiver communication.
triggerPort Annotation	TriggerPortAnnotation	*	aggr	Annotations on this trigger port.

Table A.190: PortPrototype

Class	PortPrototypeBlueprint			
Package	M2::AUTOSARTemplates::CommonStructure::StandardizationTemplate::BlueprintDedicated::Port PrototypeBlueprint			
Note	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. Tags: atp.recommendedPackage=PortPrototypeBlueprints			
Base	ARElement, ARObject, AtpBlueprint, AtpClassifier, AtpFeature, AtpStructureElement, Collectable Element, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note





Class	PortPrototypeBlueprint			
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
providedCom Spec	PPortComSpec	*	aggr	Provided communication attributes per interface element (data element or operation).
requiredCom Spec	RPortComSpec	*	aggr	Required communication attributes, one for each interface element.

Table A.191: PortPrototypeBlueprint

Class	Process			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest			
Note	This meta-class provides information required to execute the referenced executable. Tags: atp.Status=draft atp.recommendedPackage=Processes			
Base	<i>ARElement, ARObject, AbstractExecutionContext, AtpClassifier, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable, UploadablePackageElement</i>			
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. Tags: atp.Status=draft
deterministic Client	DeterministicClient	0..1	ref	This reference adds further execution characteristics for deterministic clients. Tags: atp.Status=draft
executable	Executable	0..1	ref	Reference to executable that is executed in the process. Stereotypes: atpUriDef Tags: atp.Status=draft
functionCluster Affiliation	String	0..1	attr	This attribute specifies which functional cluster the process is affiliated with.
numberOf RestartAttempts	PositiveInteger	0..1	attr	This attribute defines how often a process shall be restarted if the start fails. numberOfRestartAttempts = "0" OR Attribute not existing, start once numberOfRestartAttempts = "1", start a second time
preMapping	Boolean	0..1	attr	This attribute describes whether the executable is preloaded into the memory.
processState Machine	ModeDeclarationGroup Prototype	0..1	aggr	Set of Process States that are defined for the process. Tags: atp.Status=draft
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=draft
stateDependent StartupConfig	StateDependentStartup Config	*	aggr	Applicable startup configurations. Tags: atp.Status=draft

Table A.192: 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. Tags: atp.Status=draft			
Base	ARObject			
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.193: 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.Status=draft atp.recommendedPackage=ProcessDesigns			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
deterministic ClientResource Needs	DeterministicClientResourceNeeds	*	aggr	This aggregation represents the collection of applicable resource needs for the design of deterministic clients. Tags: atp.Status=draft
executable	Executable	0..1	ref	Reference to executable that is executed in the process. Tags: atp.Status=draft

Table A.194: ProcessDesign

Class	ProcessExecutionError			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest			
Note	This meta-class has the ability to describe the value of a execution error along with a documentation of its semantics. Tags: atp.Status=draft atp.recommendedPackage=ProcessExecutionErrors			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , UploadablePackageElement			
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.195: 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. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
design	ProcessDesignToMachineDesignMapping	0..1	ref	This reference represents the identification of the design-time representation for the ProcessToMachine Mapping that owns the reference. Tags: atp.Status=draft
machine	Machine	0..1	ref	This reference identifies the Machine in the context of the ProcessToMachineMapping. Tags: atp.Status=draft
nonOsModuleInstantiation	NonOsModuleInstantiation	0..1	ref	This supports the optional case that the process represents a platform module. Tags: atp.Status=draft
process	Process	1	ref	This reference identifies the Process in the context of the ProcessToMachineMapping. Tags: atp.Status=draft
shallNotRunOn	ProcessorCore	*	ref	This reference indicates a collection of cores onto which the mapped process shall not be executing. Tags: atp.Status=draft
shallRunOn	ProcessorCore	*	ref	This reference indicates a collection of cores onto which the mapped process shall be executing. Tags: atp.Status=draft

Table A.196: ProcessToMachineMapping

Class	Processor			
Package	M2::AUTOSARTemplates::AdaptivePlatform::MachineManifest			
Note	This represents a processor for the execution of an AUTOSAR adaptive platform Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
core	ProcessorCore	1..*	aggr	This represents the collection of cores owned by the enclosing processor. Tags: atp.Status=draft

Table A.197: 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. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note





Class	ProcessorCore			
coreId	PositiveInteger	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.198: 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. Tags: atp.Status=draft			
Base	<i>ARElement</i> , <i>ARObject</i> , <i>AdaptivePlatformServiceInstance</i> , <i>CollectableElement</i> , <i>Identifiable</i> , <i>MultilanguageReferrable</i> , <i>PackageableElement</i> , <i>Referrable</i> , <i>UploadablePackageElement</i>			
Subclasses	<i>DdsProvidedServiceInstance</i> , <i>ProvidedSomeipServiceInstance</i> , <i>ProvidedUserDefinedServiceInstance</i>			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.199: ProvidedApServiceInstance

Class	ProvidedSomeipServiceInstance			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment			
Note	This meta-class represents the ability to describe the existence and configuration of a provided service instance in a concrete implementation on top of SOME/IP. Tags: atp.Status=draft atp.recommendedPackage=ServiceInstances			
Base	<i>ARElement</i> , <i>ARObject</i> , <i>AdaptivePlatformServiceInstance</i> , <i>CollectableElement</i> , <i>Identifiable</i> , <i>MultilanguageReferrable</i> , <i>PackageableElement</i> , <i>ProvidedApServiceInstance</i> , <i>Referrable</i> , <i>UploadablePackageElement</i>			
Attribute	Type	Mult.	Kind	Note
capabilityRecord (ordered)	TagWithOptionalValue	*	aggr	A sequence of records to store arbitrary name/value pairs conveying additional information about the named service. Tags: atp.Status=draft
eventProps	SomeipEventProps	*	aggr	Configuration settings for individual events that are provided by the ServiceInstance. Tags: atp.Status=draft
loadBalancingPriority	PositiveInteger	0..1	attr	This attribute is used to specify the priority in the load balancing option of SOME/IP that is added to the Offer Service. When a client searches for all service instances of a service, the client shall choose the service instance with highest priority if one is defined.
loadBalancingWeight	PositiveInteger	0..1	attr	This attribute is used to specify the weight in the load balancing option of SOME/IP that is added to the Offer Service. When a client searches for all service instances of a service, the client shall choose the service instance with highest priority if one is defined. If several service instances exist with the highest priority the service instance shall be chosen based on the weights of the service instances.





Class	ProvidedSomeipServiceInstance			
method ResponseProps	SomeipMethodProps	*	aggr	Configuration settings for individual methods that are provided by the ServiceInstance. Tags: atp.Status=draft
providedEvent Group	SomeipProvidedEvent Group	*	aggr	List of EventGroups that are provided by the Service Instance. Tags: atp.Status=draft
sdServerConfig	SomeipSdServer ServiceInstanceConfig	1	ref	Server specific configuration settings relevant for the SOME/IP service discovery. Tags: atp.Status=draft
serviceInstance Id	PositiveInteger	1	attr	Identification number that is used by SOME/IP service discovery to identify the instance of the service. The value 4294967295 for service instance id is reserved and should not be used.

Table A.200: ProvidedSomeipServiceInstance

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			
Attribute	Type	Mult.	Kind	Note
required Interface	PortInterface	0..1	tref	The interface that this port requires. Stereotypes: isOfType

Table A.201: RPortPrototype

Class	RPortPrototypeProps			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::ApplicationStructure			
Note	PortPrototypeProps for a RPort. Tags: atp.Status=draft			
Base	ARObject, 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.202: RPortPrototypeProps

Class	ReceiverComSpec (abstract)			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Communication			
Note	Receiver-specific communication attributes (RPortPrototype typed by ServiceInterface) that are relevant for events and field notifiers.			
Base	ARObject, RPortComSpec			





Class	ReceiverComSpec (abstract)			
Subclasses	NonqueuedReceiverComSpec , QueuedReceiverComSpec			
Attribute	Type	Mult.	Kind	Note
dataElement	AutosarDataPrototype	0..1	ref	Data element these attributes belong to.
receiverIntent	ReceiverIntentEnum	0..1	attr	This attribute represents the expressed intent of the receiver. The receiver may decide to claim that existing resources of a ServiceInterface are expressly not used by this specific receiver. The conceptual background of this claim may be driven by security, safety, etc. Tags: atp.Status=draft
receptionProps	ReceptionComSpec Props	0..1	aggr	"This aggregation represents the definition transmission props in the context of the enclosing ReceiverComSpec.
transformationComSpecProps	TransformationComSpecProps	*	aggr	This references the TransformationComSpecProps which define port-specific configuration for data transformation.

Table A.203: ReceiverComSpec

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.Status=draft			
Base	ARObject , Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
recovery Notification Retry	PositiveInteger	0..1	attr	Number of times Platform Health management tries sends a notification to State Management again before triggering a watchdog reaction. Tags: atp.Status=draft
recovery Notification Timeout	TimeValue	0..1	attr	The maximum acceptable amount of time (in seconds), Platform Health Management waits for an acknowledgment by State Management after sending the notification. Tags: atp.Status=draft

Table A.204: 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.Status=draft atp.recommendedPackage=RecoveryNotificationMappings			
Base	ARElement , ARObject , CollectableElement , Identifiable , MultilanguageReferrable , PackageableElement , Referrable , UploadablePackageElement			
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. Tags: atp.Status=draft





Class	RecoveryNotificationToPPortPrototypeMapping			
recoveryAction	PPortPrototype	0..1	iref	This reference identifies the PortPrototype to be addressed as part of a PHM recovery. Tags: atp.Status=draft InstanceRef implemented by: PPortPrototypeInExecutableInstanceRef
recoveryNotification	RecoveryNotification	0..1	ref	This reference identifies the applicable Recovery Notification to be mapped. Tags: atp.Status=draft

Table A.205: 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			
Attribute	Type	Mult.	Kind	Note
referenceValue	DataPrototype	0..1	ref	The referenced data prototype.

Table A.206: 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, CppImplementationData TypeContextTarget, DiagnosticDebounceAlgorithmProps, DiagnosticEnvModeElement, EthernetPriorityRegeneration, EventHandler, ExclusiveAreaNestingOrder, HwDescriptionEntity, ImplementationProps, LinSlaveConfigIdent, ModeTransition, MultilanguageReferrable, NmNetworkHandle, PduActivationRoutingGroup, 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
shortNameFragment	ShortNameFragment	*	aggr	This specifies how the Referrable.shortName is composed of several shortNameFragments. Tags: xml.sequenceOffset=-90

Table A.207: 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. Tags: atp.Status=draft			





Class	RequiredApServiceInstance (abstract)			
Base	ARElement, ARObject, AdaptivePlatformServiceInstance , CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , UploadablePackageElement			
Subclasses	DdsRequiredServiceInstance , RequiredSomeipServiceInstance , RequiredUserDefinedServiceInstance			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.208: 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.Status=draft atp.recommendedPackage=ServiceInstances			
Base	ARElement, ARObject, AdaptivePlatformServiceInstance , CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , RequiredApServiceInstance , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note
blacklisted Version	SomeipServiceVersion	*	aggr	Collection of blacklisted versions. Tags: atp.Status=draft
capability Record (ordered)	TagWithOptionalValue	*	aggr	A sequence of records to store arbitrary name/value pairs conveying additional information about the named service. Tags: atp.Status=draft
methodRequest Props	SomeipMethodProps	*	aggr	Configuration settings for individual methods that are requested by the ServiceInstance. Tags: atp.Status=draft
requiredEvent Group	SomeipRequiredEvent Group	*	aggr	List of EventGroups that are used by the RequiredService Instance. Tags: atp.Status=draft
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. Tags: atp.Status=draft
sdClientConfig	SomeipSdClientService InstanceConfig	1	ref	Client specific configuration settings relevant for the SOME/IP service discovery. Tags: atp.Status=draft
versionDriven FindBehavior	ServiceVersion AcceptanceKindEnum	0..1	attr	Defines the service discovery find behavior.

Table A.209: RequiredSomeipServiceInstance

Class	ResourceConsumption			
Package	M2::AUTOSARTemplates::CommonStructure::ResourceConsumption			
Note	Description of consumed resources by one implementation of a software.			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
heapUsage	HeapUsage	*	aggr	Collection of the heap memory allocated by this implementation. Stereotypes: atpSplitable; atpVariation Tags: atp.Splitkey=heapUsage.shortName, heapUsage.variationPoint.shortLabel vh.latestBindingTime=preCompileTime
systemMemoryUsage	SystemMemoryUsage	*	aggr	Collection of the system memory allocated by the owner. Stereotypes: atpSplitable Tags: atp.Splitkey=systemMemoryUsage.shortName atp.Status=draft

Table A.210: ResourceConsumption

Class	ResourceGroup			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::AdaptiveModuleImplementation			
Note	This meta-class represents a resource group that limits the resource usage of a collection of processes. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
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.211: ResourceGroup

Class	RestHttpPortPrototypeMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::REST::RESTDeployment			
Note	This meta-class represents the ability to define pieces of a URI for the REST service that cannot be contributed from the design point of view. Tags: atp.Status=draft atp.recommendedPackage=RestHttpPortPrototypeMappings			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable , PackageableElement , Referrable , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note
acceptsEncoding	HttpAcceptEncoding	*	aggr	This aggregation represents the collection of accepted encodings. Tags: atp.Status=draft
host	NetworkEndpoint	0..1	ref	This reference identifies the host configuration of the remote end. Tags: atp.Status=draft





Class	RestHttpPortPrototypeMapping			
portPrototype	PortPrototype	0..1	iref	This reference identifies the instance of the PortPrototype to which the elements of the URI shall be defined. Tags: atp.Status=draft InstanceRef implemented by: PortPrototypeInExecutableInstanceRef
portPrototype SlugFragment	String	0..1	attr	This attribute contributes a string value to be taken as the slug reference that represents the PortPrototype level of a REST service. Tags: atp.Status=draft
process	Process	0..1	ref	This reference represents the process required for context of the mapping. Tags: atp.Status=draft
tcpPort	PositiveInteger	1	attr	This attribute represents the value of the TCP port applicable for this mapping. Tags: atp.Status=draft
tlsSecureCom Props	TlsSecureComProps	0..1	ref	This represents the configuration of TLS applicable for the mapping. Tags: atp.Status=draft

Table A.212: RestHttpPortPrototypeMapping

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

Table A.213: RootSwComponentPrototype

Class	SecuredIPdu			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::FibexCore::CoreCommunication			
Note	If useAsCryptographicPdu is not set or set to false this IPdu contains the payload of an Authentic IPdu supplemented by additional Authentication Information (Freshness Counter and an Authenticator). If useAsCryptographicPdu is set to true this IPdu contains the Authenticator for a payload that is transported in a separate message. The separate Authentic IPdu is described by the Pdu that is referenced with the payload reference from this SecuredIPdu. Tags: atp.recommendedPackage=Pdus			
Base	ARObject, CollectableElement, FibexElement, IPdu, Identifiable , MultilanguageReferrable, PackageableElement, Pdu, Referrable			
Attribute	Type	Mult.	Kind	Note
authentication Props	SecureCommunication AuthenticationProps	0..1	ref	Reference to authentication properties that are valid for this SecuredIPdu.





Class	SecuredIPdu			
freshnessProps	SecureCommunicationFreshnessProps	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.
secureCommunicationProps	SecureCommunicationProps	1	aggr	Specific configuration properties for this SecuredIPdu.
useAsCryptographicIPdu	Boolean	0..1	attr	If this attribute is set to true the SecuredIPdu contains the Authentication Information for an AuthenticIPdu that is transmitted in a separate message. The AuthenticIPdu contains the original payload, i.e. the secured data. If this attribute is set to false this SecuredIPdu contains the payload of an Authentic IPdu supplemented by additional Authentication Information.
useSecuredPduHeader	SecuredPduHeaderEnum	0..1	attr	This attribute defines the size of the header which is inserted into the SecuredIPdu. If this attribute is set to anything but noHeader, the SecuredIPdu contains the Secured I-PDU Header to indicate the length of the AuthenticIPdu. The AuthenticIPdu contains the original payload, i.e. the secured data.

Table A.214: SecuredIPdu

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

Table A.215: SecurityEventDefinition

Class	SecurityEventMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::IntrusionDetectionSystem			
Note	This meta-class represents a reportable instance of a security event. Tags: atp.Status=draft atp.recommendedPackage=SecurityEventMappings			





Class	SecurityEventMapping			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note
id	PositiveInteger	0..1	attr	This attribute defines the numerical identification of the security event subject to deployment.
process	Process	0..1	ref	This reference identifies the process in which context the security event is reported. Tags: atp.Status=draft
reportingPort Prototype	RPortPrototype	0..1	iref	This instanceRef identifies the portPrototype over which the security event is reported. Tags: atp.Status=draft InstanceRef implemented by: RPortPrototypeInExecutableInstanceRef

Table A.216: SecurityEventMapping

Enumeration	SerializationTechnologyEnum
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment
Note	This enumeration allows to choose a Serialization Technology. Tags: atp.Status=draft
Literal	Description
signalBased	Signal-Based serializer. Tags: atp.EnumerationLiteralIndex=1
someip	SOME/IP Serializer Tags: atp.EnumerationLiteralIndex=0

Table A.217: 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. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable, Referrable			
Subclasses	DdsEventDeployment , SomeipEventDeployment , UserDefinedEventDeployment			
Attribute	Type	Mult.	Kind	Note
event	VariableDataPrototype	0..1	ref	Reference to an Event that is deployed to a middleware transport layer. Stereotypes: atp.UriDef Tags: atp.Status=draft

Table A.218: 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. Tags: atp.Status=draft			





Class	ServiceFieldDeployment (abstract)			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Subclasses	DdsFieldDeployment, SomeipFieldDeployment , UserDefinedFieldDeployment			
Attribute	Type	Mult.	Kind	Note
field	Field	1	ref	Reference to a Field that is deployed to a middleware transport layer. Stereotypes: atpUriDef Tags: atp.Status=draft

Table A.219: 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. Tags: atp.Status=draft			
Base	ARElement, ARObject, CollectableElement , Identifiable , MultilanguageReferrable , PackageableElement , Referrable , UploadablePackageElement			
Subclasses	DdsServiceInstanceToMachineMapping, SomeipServiceInstanceToMachineMapping , UserDefinedServiceInstanceToMachineMapping			
Attribute	Type	Mult.	Kind	Note
communication Connector	CommunicationConnector	0..1	ref	Reference to the Machine to which the ServiceInstance is mapped. Tags: atp.Status=draft
secOcCom PropsFor Multicast	SecOcSecureCom Props	*	ref	Reference to communication security configuration settings that are valid for the udp multicast endpoint (Port + Multicast IP Address) defined by the ServiceInstanceToMachineMapping. Tags: atp.Status=draft
secureCom PropsForTcp	SecureComProps	*	ref	Reference to communication security configuration settings that are valid for the tcp unicast endpoint (Tcp Port + Unicast IP Address) defined by the ServiceInstanceToMachineMapping. Tags: atp.Status=draft
secureCom PropsForUdp	SecureComProps	*	ref	Reference to communication security configuration settings that are valid for the udp unicast endpoint (Udp Port + Unicast IP Address) defined by the ServiceInstanceToMachineMapping. Tags: atp.Status=draft
serviceInstance	AdaptivePlatformServiceInstance	*	ref	Reference to a ServiceInstance that is mapped to the Machine. Tags: atp.Status=draft

Table A.220: ServiceInstanceToMachineMapping

Class	ServiceInstanceToPortPrototypeMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceMapping			





Class	ServiceInstanceToPortPrototypeMapping			
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.Status=draft atp.recommendedPackage=ServiceInstanceToPortPrototypeMappings</p>			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note
enablesLogTrace	Boolean	0..1	attr	<p>This attribute enables/disables Log&Trace for the communication on the referenced Port of the referenced process. True: Log&Trace is enabled. False: Log&Trace is disabled.</p>
portPrototype	PortPrototype	0..1	iref	<p>Reference to a specific PortPrototype that represents the ServiceInstance.</p> <p>Tags:atp.Status=draft InstanceRef implemented by:PortPrototypeInExecutableInstanceRef</p>
process	Process	0..1	ref	<p>Reference to the Process in which the enclosing Service InstanceToPortPrototypeMapping is executed.</p> <p>Stereotypes: atpSplittable Tags: atp.Splitkey=process atp.Status=draft</p>
processDesign	ProcessDesign	0..1	ref	<p>Reference to the ProcessDesign in which the Executable that contains the SoftwareComponent and the referenced PortPrototype is executed.</p> <p>Stereotypes: atpUriDef Tags:atp.Status=draft</p>
serviceInstance	AdaptivePlatformServiceInstance	0..1	ref	<p>Reference to a ServiceInstance that is represented in the Software Component by the mapped group of Port Prototypes.</p> <p>Tags:atp.Status=draft</p>

Table A.221: ServiceInstanceToPortPrototypeMapping

Class	ServiceInstanceToSignalMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SignalBasedCommunication			
Note	<p>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.</p> <p>Tags:atp.Status=draft</p>			
Base	ARObject, Identifiable , MultilanguageReferrable, Referrable			
Attribute	Type	Mult.	Kind	Note
eventElementMapping	SignalBasedEventElementToISignalTriggeringMapping	*	aggr	<p>Mapping of an event or an element inside of the event to an ISignalTriggering.</p> <p>Tags:atp.Status=draft</p>
fieldMapping	SignalBasedFieldToISignalTriggeringMapping	*	aggr	<p>Mapping of a field to ISignalTriggerings.</p> <p>Tags:atp.Status=draft</p>





Class	ServiceInstanceToSignalMapping			
methodMapping	SignalBasedMethodToSignalTriggeringMapping	0..1	aggr	Mapping of a method to ISignalTriggerings. Tags: atp.Status=draft
serviceInstance	AdaptivePlatformServiceInstance	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=draft

Table A.222: 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.Status=draft atp.recommendedPackage=ServiceInterfaces			
Base	ARElement , ARObject , AtpBlueprint , AtpBlueprintable , AtpClassifier , AtpType , CollectableElement , Identifiable , MultilanguageReferrable , PackageableElement , PortInterface , Referrable			
Attribute	Type	Mult.	Kind	Note
event	VariableDataPrototype	*	aggr	This represents the collection of events defined in the context of a ServiceInterface. Stereotypes: atpVariation Tags: atp.Status=draft vh.latestBindingTime=blueprintDerivationTime xml.sequenceOffset=30
field	Field	*	aggr	This represents the collection of fields defined in the context of a ServiceInterface. Stereotypes: atpVariation Tags: atp.Status=draft vh.latestBindingTime=blueprintDerivationTime xml.sequenceOffset=40
majorVersion	PositiveInteger	0..1	attr	Major version of the service contract. Tags: atp.Status=draft xml.sequenceOffset=10
method	ClientServerOperation	*	aggr	This represents the collection of methods defined in the context of a ServiceInterface. Stereotypes: atpVariation Tags: atp.Status=draft vh.latestBindingTime=blueprintDerivationTime xml.sequenceOffset=50
minorVersion	PositiveInteger	0..1	attr	Minor version of the service contract. Tags: atp.Status=draft xml.sequenceOffset=20

Table A.223: 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. Tags: atp.Status=draft			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , UploadablePackageElement			
Subclasses	DdsServiceInterfaceDeployment , SomeipServiceInterfaceDeployment , UserDefinedServiceInterfaceDeployment			
Attribute	Type	Mult.	Kind	Note
event Deployment	ServiceEventDeployment	*	aggr	Middleware transport layer specific configuration settings for an Event that is defined in the ServiceInterface. Tags: atp.Status=draft
fieldDeployment	ServiceFieldDeployment	*	aggr	Middleware transport layer specific configuration settings for a Field that is defined in the ServiceInterface. Tags: atp.Status=draft
method Deployment	ServiceMethodDeployment	*	aggr	Middleware transport layer specific configuration settings for a method that is defined in the ServiceInterface. Tags: atp.Status=draft
serviceInterface	ServiceInterface	0..1	ref	Reference to a ServiceInterface that is deployed to a middleware transport layer. Stereotypes: atpUriDef Tags: atp.Status=draft

Table A.224: 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. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable, Referrable			
Subclasses	ServiceInterfaceEventMapping , ServiceInterfaceFieldMapping , ServiceInterfaceMethodMapping			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.225: ServiceInterfaceElementMapping

Class	ServiceInterfaceElementSecureComConfig			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::SecureCommunication			
Note	This element allows to secure the communication of the referenced ServiceInterface element. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable, Referrable			
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. Tags: atp.Status=draft





Class	ServiceInterfaceElementSecureComConfig			
fieldNotifier	ServiceField Deployment	0..1	ref	Reference to a field notifier that is protected by a security protocol. Tags: atp.Status=draft
freshnessValueId	PositiveInteger	0..1	attr	This attribute defines the Id of the Freshness Value.
getterCall	ServiceField Deployment	0..1	ref	Reference to a field getter call message that is protected by a security protocol. Tags: atp.Status=draft
getterReturn	ServiceField Deployment	0..1	ref	Reference to a field getter return message that is protected by a security protocol. Tags: atp.Status=draft
methodCall	ServiceMethod Deployment	0..1	ref	Reference to a method call message that is protected by a security protocol. Tags: atp.Status=draft
methodReturn	ServiceMethod Deployment	0..1	ref	Reference to a method return message that is protected by a security protocol. Tags: atp.Status=draft
setterCall	ServiceField Deployment	0..1	ref	Reference to a field setter call message that is protected by a security protocol. Tags: atp.Status=draft
setterReturn	ServiceField Deployment	0..1	ref	Reference to a field setter return message that is protected by a security protocol. Tags: atp.Status=draft

Table A.226: 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.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , ServiceInterfaceElementMapping			
Attribute	Type	Mult.	Kind	Note
sourceEvent	VariableDataPrototype	1	ref	Reference to an event that is contained in the source ServiceInterface. Tags: atp.Status=draft
targetEvent	VariableDataPrototype	1	ref	Reference to an event that is contained in the composite ServiceInterface. Tags: atp.Status=draft

Table A.227: 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.Status=draft			





Class	ServiceInterfaceFieldMapping			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , ServiceInterfaceElementMapping			
Attribute	Type	Mult.	Kind	Note
sourceField	Field	1	ref	Reference to a field that is contained in the source ServiceInterface. Tags: atp.Status=draft
targetField	Field	1	ref	Reference to a field that is contained in the composite ServiceInterface. Tags: atp.Status=draft

Table A.228: 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.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
composite ServiceInterface	ServiceInterface	1	ref	This represents the composite ServiceInterface. Tags: atp.Status=draft
sourceService Interface	ServiceInterface	1..*	ref	ServiceInterface that is mapped into the composite ServiceInterface. Tags: atp.Status=draft

Table A.229: 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.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , ServiceInterfaceElementMapping			
Attribute	Type	Mult.	Kind	Note
sourceMethod	ClientServerOperation	1	ref	Reference to a method that is contained in the source ServiceInterface. Tags: atp.Status=draft
targetMethod	ClientServerOperation	1	ref	Reference to a method that is contained in the composite ServiceInterface. Tags: atp.Status=draft

Table A.230: ServiceInterfaceMethodMapping

Class	<i>ServiceMethodDeployment</i> (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. Tags: atp.Status=draft			





Class	ServiceMethodDeployment (abstract)			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Subclasses	SomeipMethodDeployment , UserDefinedMethodDeployment			
Attribute	Type	Mult.	Kind	Note
method	ClientServerOperation	0..1	ref	Reference to a method that is deployed to a middleware transport layer. Stereotypes: atpUriDef Tags: atp.Status=draft

Table A.231: ServiceMethodDeployment

Class	ServiceNeeds (abstract)			
Package	M2::AUTOSARTemplates::CommonStructure::ServiceNeeds			
Note	This expresses the abstract needs that a Software Component or Basic Software Module has on the configuration of an AUTOSAR Service to which it will be connected. "Abstract needs" means that the model abstracts from the Configuration Parameters of the underlying Basic Software.			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Subclasses	BswMgrNeeds, ComMgrUserNeeds, CryptoKeyManagementNeeds, <i>CryptoNeeds</i> , CryptoServiceJobNeeds, CryptoServiceNeeds, <i>DiagnosticCapabilityElement</i> , DltUserNeeds, <i>DolpServiceNeeds</i> , EcuStateMgrUserNeeds, ErrorTracerNeeds, FunctionInhibitionAvailabilityNeeds, FunctionInhibitionNeeds, GlobalSupervisionNeeds, HardwareTestNeeds, IdsMgrCustomTimestampNeeds, IdsMgrNeeds, IndicatorStatusNeeds, J1939DcmDm19Support, J1939RmIncomingRequestServiceNeeds, J1939RmOutgoingRequestServiceNeeds, NvBlockNeeds, SecureOnBoardCommunicationNeeds, SupervisedEntityCheckpointNeeds, SupervisedEntityNeeds, SyncTimeBaseMgrUserNeeds, V2xFacUserNeeds, V2xMUserNeeds, VendorSpecificServiceNeeds			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.232: ServiceNeeds

Enumeration	ServiceVersionAcceptanceKindEnum			
Package	M2::AUTOSARTemplates::SystemTemplate::Fibex::Fibex4Ethernet::ServiceInstances			
Note	Defined the possible acceptance kinds for required service instances. Tags: atp.Status=draft			
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 required MinorVersion. 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.233: 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=draft			





Class	SignalBasedEventElementToSignalTriggeringMapping			
Base	ARObject, AbstractSignalBasedToSignalTriggeringMapping, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
dataPrototypeInServiceInterfaceRef	DataPrototypeInServiceInterfaceRef	1	aggr	Reference to a DataPrototype or to an internal structure of a DataPrototype in the context of a ServiceInterface. Tags: atp.Status=draft
filter	DataFilter	0..1	aggr	Defines an optional filter to be applied during translation. Tags: atp.Status=draft
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=draft
transmissionTrigger	Boolean	0..1	attr	Defines whether the source element triggers the sending of the respective payload.

Table A.234: 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=draft			
Base	ARObject, AbstractSignalBasedToSignalTriggeringMapping, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
dataPrototypeInServiceInterfaceRef	DataPrototypeInServiceInterfaceRef	1	aggr	Reference to a DataPrototype or to an internal structure of a DataPrototype in the context of a ServiceInterface. Tags: atp.Status=draft
filter	DataFilter	0..1	aggr	Defines an optional filter to be applied during translation. Tags: atp.Status=draft
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=draft
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=draft
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=draft
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=draft





Class	SignalBasedFieldToSignalTriggeringMapping			
setterReturn Signal	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=draft
transmission Trigger	Boolean	0..1	attr	Defines whether the source notifier element triggers the sending of the respective payload.

Table A.235: SignalBasedFieldToSignalTriggeringMapping

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			
Attribute	Type	Mult.	Kind	Note
safeTranslation	Boolean	1	attr	Defined whether the translation shall happen in a safe way.
secure Translation	Boolean	1	attr	Defined whether the translation shall happen in a secure way.
serviceElement Mapping	AbstractSignalBasedTo SignalTriggering Mapping	*	ref	Reference to the collection of SignalBased to ISignal Triggering mappings the properties apply to. Tags: atp.Status=draft

Table A.236: SignalServiceTranslationEventProps

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.Status=draft atp.recommendedPackage=SoftwareClusters			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable , PackageableElement , Referrable			
Attribute	Type	Mult.	Kind	Note
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 Tags: atp.Status=draft
conflictsTo	SoftwareCluster DependencyFormula	0..1	aggr	This aggregation handles conflicts. If it yields true then the SoftwareCluster shall not be installed. Stereotypes: atp.Splitable Tags: atp.Splitkey=conflictsTo atp.Status=draft





Class	SoftwareCluster			
contained ARElement	ARElement	*	ref	<p>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.</p> <p>Stereotypes: atpSplitable Tags: atp.Splitkey=containedARElement atp.Status=draft</p>
containedFibex Element	FibexElement	*	ref	<p>This allows for referencing FibexElements that need to be considered in the context of a SoftwareCluster.</p> <p>Tags:atp.Status=draft</p>
contained Package Element	UploadablePackage Element	*	ref	<p>This reference identifies model elements that are required to complete the manifest content.</p> <p>Stereotypes: atpSplitable Tags: atp.Splitkey=containedPackageElement atp.Status=draft</p>
contained Process	Process	*	ref	<p>This reference represent the processes contained in the enclosing SoftwareCluster.</p> <p>Tags:atp.Status=draft</p>
dependsOn	SoftwareCluster DependencyFormula	0..1	aggr	<p>This aggregation can be taken to identify a dependency for the enclosing SoftwareCluster.</p> <p>Stereotypes: atpSplitable Tags: atp.Splitkey=dependsOn atp.Status=draft</p>
design	SoftwareClusterDesign	*	ref	<p>This reference represents the identification of all SoftwareClusterDesigns applicable for the enclosing SoftwareCluster.</p> <p>Stereotypes: atpUriDef Tags:atp.Status=draft</p>
diagnostic Address	SoftwareCluster DiagnosticAddress	*	aggr	<p>This aggregation represents the collection of diagnostic addresses that apply for the SoftwareCluster.</p> <p>Stereotypes: atpSplitable Tags: atp.Splitkey=diagnosticAddress atp.Status=draft</p>
diagnostic Extract	DiagnosticContribution Set	0..1	ref	<p>This reference represents the definition of the diagnostic extract applicable to the referencing SoftwareCluster</p> <p>Tags:atp.Status=draft</p>
license	Documentation	*	ref	<p>This attribute allows for the inclusion of the 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.</p> <p>Tags:atp.Status=draft</p>





Class	SoftwareCluster			
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 atp.Status=draft
releaseNotes	Documentation	0..1	ref	This attribute allows for the explanations of changes since the previous version. The list of changes might require the creation of multiple paragraphs of test. Tags: atp.Status=draft
typeApproval	String	0..1	attr	This attribute carries the homologation information that may be specific for a given country.
vendorId	PositiveInteger	1	attr	Vendor ID of this Implementation according to the AUTOSAR vendor list.
vendor Signature	CryptoService Certificate	1	ref	This reference identifies the certificate that represents the vendor's signature. Tags: atp.Status=draft
version	StrongRevisionLabel String	1	attr	This attribute can be used to describe a version information for the enclosing SoftwareCluster.

Table A.237: 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. Tags: atp.Status=draft			
Base	ARObject, SoftwareClusterDependencyFormulaPart			
Attribute	Type	Mult.	Kind	Note
compareType	SoftwareCluster DependencyOperator Enum	1	attr	This attribute identifies the semantics of the compare operator.
considerBuild Number	Boolean	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. Tags: atp.Status=draft
version	StrongRevisionLabel String	1	attr	This attribute represents the value of a version against which the comparison shall be executed.

Table A.238: SoftwareClusterDependencyCompareCondition

Class	SoftwareClusterDependencyFormula			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to define a dependency among SoftwareClusters. Tags: atp.Status=draft			
Base	ARObject, SoftwareClusterDependencyFormulaPart			
Attribute	Type	Mult.	Kind	Note
category	CategoryString	0..1	attr	This attribute specializes the semantics of the enclosing SoftwareClusterDependencyFormula.
operator	SoftwareCluster DependencyLogical OperatorEnum	0..1	attr	This logical operator can be used to relate the results of different SoftwareClusterDependencyParts.
part (ordered)	SoftwareCluster DependencyFormula Part	*	aggr	This aggregation represents the ordered collection of the parts of the SoftwareClusterDependencyFormula. Tags: atp.Status=draft

Table A.239: 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.Status=draft atp.recommendedPackage=SoftwareClusterDesigns			
Base	ARElement, ARObject, AtpClassifier, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
contained Process	ProcessDesign	*	ref	This reference represent the ProcessDesigns contained in the enclosing SoftwareCluster. Stereotypes: atpSplitable Tags: atp.Splitkey=containedProcess atp.Status=draft
dependsOn	SoftwareClusterDesign	*	ref	The owner SoftwareClusterDesign dependes on the referenced SoftwareClusterDesign Tags: atp.Status=draft
diagnostic Address	SoftwareCluster DiagnosticAddress	*	aggr	This aggregaton is used to specify the diagnsotic address. Stereotypes: atpSplitable Tags: atp.Splitkey=diagnosticAddress atp.Status=draft
diagnostic Contribution	DiagnosticContribution Set	*	ref	This reference identifies the corresponding collection of DiagnosticContributionSet. Stereotypes: atpSplitable Tags: atp.Splitkey=diagnosticContribution atp.Status=draft
intendedTarget Machine	MachineDesign	0..1	ref	This reference can be taken to identify the Machine Design for which the final SoftwareCluster shall be developed. Stereotypes: atpUriDef Tags: atp.Status=draft





Class	SoftwareClusterDesign			
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 atp.Status=draft
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 atp.Status=draft
required Package Element	UploadablePackage Element	*	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 atp.Status=draft
root Composition	RootSwClusterDesign ComponentPrototype	0..1	aggr	This aggregation represents the design of the software inside the SwClusterDesign terms of the communication endpoints. Tags: atp.Status=draft
subSoftware Cluster	SoftwareClusterDesign	*	ref	This reference is used to identify the sub-SoftwareCluster Designs of an "umbrella" SoftwareClusterDesign. Stereotypes: atpSplitable Tags: atp.Splitkey=subSoftwareCluster atp.Status=draft

Table A.240: 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. ...). Tags: atp.Status=draft			
Base	ARObject			
Subclasses	SoftwareClusterDoipDiagnosticAddress			
Attribute	Type	Mult.	Kind	Note
address Semantics	SoftwareCluster DiagnosticAddress SemanticsEnum	1	attr	This attribute clarifies whether the address value shall be interpreted as a physical or a functional address.

Table A.241: 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. Tags: atp.Status=draft
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.242: SoftwareClusterDiagnosticAddressSemanticsEnum

Class	SoftwarePackage			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to formalize the content of a software package. Tags: atp.Status=draft atp.recommendedPackage=SoftwarePackages			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
actionType	SoftwarePackageActionTypeEnum	1	attr	This attribute defines the action to be taken in the step of processing the enclosing SoftwarePackage.
compressedSoftwarePackageSize	PositiveInteger	1	attr	This size represents the size of the compressed Software Package.
deltaPackageApplicableVersion	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
maximumSupportedUcmVersion	RevisionLabelString	1	attr	This attribute identifies the maximum supported version of the UCM for this SoftwarePackage.
minimumSupportedUcmVersion	RevisionLabelString	1	attr	This attribute identifies the minimum supported version of the UCM for this SoftwarePackage.
packagerId	PositiveInteger	1	attr	This attribute identifies Id of the organization that provides the packager generating the SoftwarePackage.
packagerSignature	CryptoServiceCertificate	1	ref	This reference identifies the certificate that represents the packager's signature. Tags: atp.Status=draft
postVerificationReboot	Boolean	1	attr	Reboot the platform after the verification of the activated software.
preActivate (ordered)	ModeDeclaration	*	iref	The referenced function group states shall be established for the switch between the already installed and the activated software. Tags: atp.Status=draft InstanceRef implemented by: FunctionGroupStateInFunctionGroupSetInstanceRef
preActivationReboot	Boolean	1	attr	Reboot the platform before the switch to the activated software.





Class	SoftwarePackage			
softwareCluster	SoftwareCluster	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. Tags: atp.Status=draft
uncompressed SoftwareCluster Size	PositiveInteger	1	attr	This attribute gives an indication about the storage that has to be available on the target.
verify (ordered)	ModeDeclaration	*	iref	The referenced function group states shall be established for the verification of the activated software. Tags: atp.Status=draft InstanceRef implemented by: FunctionGroupStateIn FunctionGroupSetInstanceRef

Table A.243: SoftwarePackage

Class	SoftwarePackageStep			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the configuration of an activation step in the context of software package activation. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
activationSwitch	Boolean	0..1	attr	If set to True, the enclosing SoftwarePackageStep represents the actual activation of all affected Software Packages.
preActivate	SoftwarePackage	*	ref	This reference identifies the SoftwarePackage to be pre-activated in the enclosing SoftwarePackageStep. Tags: atp.Status=draft
process	SoftwarePackage	0..1	ref	This reference identifies the SoftwarePackage to be processed in the enclosing SoftwarePackageStep. Tags: atp.Status=draft
transfer	SoftwarePackage Storing	*	aggr	This aggregation clarifies the storing of the Software Package. Tags: atp.Status=draft
verify	SoftwarePackage	*	ref	This reference identifies the SoftwarePackage to be verified in the enclosing SoftwarePackageStep. Tags: atp.Status=draft

Table A.244: SoftwarePackageStep

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.Status=draft atp.recommendedPackage=SomeipDataPrototypeTransformationPropss			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable , PackageableElement , Referrable			





Class	SomeipDataPrototypeTransformationProps			
Attribute	Type	Mult.	Kind	Note
dataPrototype	DataPrototypeInServiceInterfaceRef	*	aggr	Collection of DataPrototypes for which the settings in SomeipDataPrototypeTransformationProps are valid. For reuse reasons the SomeipDataPrototypeTransformationProps is able to aggregate several DataPrototypes. Tags: atp.Status=draft
networkRepresentation	SwDataDefProps	0..1	aggr	Optional specification of the actual network representation for the referenced primitive DataPrototype. If a network representation is provided then the baseType available in the SwDataDefProps shall be used as input for the serialization/deserialization. If the network Representation is not provided then the baseType of the AbstractImplementationDataType shall be used for the serialization/deserialization. Tags: atp.Status=draft
someipTransformationProps	ApSomeipTransformationProps	0..1	ref	This reference represents the ability to define data transformation props specifically for a SOME/IP serialization. Tags: atp.Status=draft

Table A.245: SomeipDataPrototypeTransformationProps

Class	SomeipEventDeployment			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	SOME/IP configuration settings for an Event. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , ServiceEventDeployment			
Attribute	Type	Mult.	Kind	Note
eventId	PositiveInteger	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	1	attr	This attribute defines over which Transport Layer Protocol this event is intended to be sent.

Table A.246: SomeipEventDeployment

Class	SomeipEventGroup			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	Grouping of events and notification events inside a ServiceInterface in order to allow subscriptions. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
event	SomeipEventDeployment	*	ref	Reference to an event that is part of the EventGroup. Tags: atp.Status=draft
eventGroupId	PositiveInteger	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.247: SomeipEventGroup

Class	SomeipFieldDeployment			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	SOME/IP configuration settings for a Field. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , ServiceFieldDeployment			
Attribute	Type	Mult.	Kind	Note
get	SomeipMethodDeployment	0..1	aggr	This aggregation represents the setting of the get method. Tags: atp.Status=draft
notifier	SomeipEventDeployment	0..1	aggr	This aggregation represents the settings of the notifier. Tags: atp.Status=draft
set	SomeipMethodDeployment	0..1	aggr	This aggregation represents the settings of the set method Tags: atp.Status=draft

Table A.248: SomeipFieldDeployment

Class	SomeipMethodDeployment			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	SOME/IP configuration settings for a Method. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , ServiceMethodDeployment			
Attribute	Type	Mult.	Kind	Note
maximumSegmentLengthRequest	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.





Class	SomeipMethodDeployment			
maximumSegmentLengthResponse	PositiveInteger	0..1	attr	<p>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.</p> <p>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.</p>
methodId	PositiveInteger	1	attr	<p>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.</p>
separationTimeRequest	TimeValue	0..1	attr	<p>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.</p>
separationTimeResponse	TimeValue	0..1	attr	<p>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.</p>
transportProtocol	TransportLayerProtocolEnum	1	attr	<p>This attribute defines over which Transport Layer Protocol this method is intended to be sent.</p>

Table A.249: SomeipMethodDeployment

Class	SomeipServiceDiscovery			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	<p>This meta-class represents a specialization of the generic service discovery for the SOME/IP case.</p> <p>Tags:atp.Status=draft</p>			
Base	AObject, ServiceDiscoveryConfiguration			
Attribute	Type	Mult.	Kind	Note
multicastSdIpAddress	NetworkEndpoint	0..1	ref	<p>This reference identifies the multicast IP address used for service discovery.</p> <p>Tags:atp.Status=draft</p>
multicastSecureComProps	SecureComProps	0..1	ref	<p>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.</p> <p>Tags:atp.Status=draft</p>
someipServiceDiscoveryPort	PositiveInteger	1	attr	<p>This attribute represents the port number reserved for service discovery.</p>
unicastSecureComProps	SecureComProps	*	ref	<p>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.</p> <p>Tags:atp.Status=draft</p>

Table A.250: SomeipServiceDiscovery

Class	SomeipServiceInstanceToMachineMapping			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceMapping			
Note	<p>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.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=ServiceInstanceToMachineMappings</p>			
Base	<i>ARElement, ARObject, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable, ServiceInstanceToMachineMapping, UploadablePackageElement</i>			
Attribute	Type	Mult.	Kind	Note
tcpPort	PositiveInteger	0..1	attr	<p>TcpPort configuration that is used for Method and Event communication in IP-Unicast case.</p> <p>During SOME/IP Service Discovery: PortNumber that is sent in the SD-Offer Message to client (answer on SD-find) or clients (SD-offer).</p> <p>Method: This is the destination-port where the server accepts the method call messages (from the clients). This is the source-port where the server sends the method response messages (to the client).</p> <p>Event: This is the event source-port where the server sends the event messages to the subscribed clients in IP-Unicast case.</p>
udpCollectionBufferSizeThreshold	PositiveInteger	0..1	attr	<p>Specifies the amount of data in bytes that shall be buffered for data transmission over the udp connection specified by this SomeipServiceInstanceToMachineMapping in case data collection is enabled.</p>
udpPort	PositiveInteger	0..1	attr	<p>UdpPort configuration that is used for Method and Event communication in IP-Unicast case.</p> <p>During SOME/IP Service Discovery: PortNumber that is sent in the SD-Offer Message to client (answer on SD-find) or clients (SD-offer).</p> <p>Method: This is the destination-port where the server accepts the method call messages (from the clients). This is the source-port where the server sends the method response messages (to the client).</p> <p>Event: This is the event source-port where the server sends the event messages to the subscribed clients in IP-Unicast case.</p>

Table A.251: SomeipServiceInstanceToMachineMapping

Class	SomeipServiceInterfaceDeployment			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	<p>SOME/IP configuration settings for a ServiceInterface.</p> <p>Tags: atp.Status=draft atp.recommendedPackage=ServiceInterfaceDeployments</p>			
Base	<i>ARElement, ARObject, CollectableElement, Identifiable, MultilanguageReferrable, PackageableElement, Referrable, ServiceInterfaceDeployment, UploadablePackageElement</i>			
Attribute	Type	Mult.	Kind	Note
eventGroup	SomeipEventGroup	*	aggr	<p>SOME/IP EventGroups that are defined within the SOME/IP ServiceClass.</p> <p>Tags:atp.Status=draft</p>





Class	SomeipServiceInterfaceDeployment			
serviceInterfaceId	PositiveInteger	1	attr	Unique Identifier that identifies the ServiceInterface in SOME/IP. This Identifier is sent as Service ID in SOME/IP Service Discovery messages.
serviceInterfaceVersion	SomeipServiceVersion	1	aggr	The SOME/IP major and minor Version of the Service. Tags: atp.Status=draft

Table A.252: 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. Tags: atp.Status=draft			
Base	ARObject			
Attribute	Type	Mult.	Kind	Note
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.253: SomeipServiceVersion

Class	StartupConfig			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ExecutionManifest			
Note	This meta-class represents a reusable startup configuration for processes.. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
environmentVariable	TagWithOptionalValue	*	aggr	This aggregation represents the collection of environment variables that shall be added to the respective Process's environment prior to launch. Tags: atp.Status=draft
executionError	ProcessExecutionError	0..1	ref	this reference is used to identify the applicable execution error Tags: atp.Status=draft
processArgument	ProcessArgument	*	aggr	This aggregation represents the collection of command-line arguments applicable to the enclosing StartupConfig. Tags: atp.Status=draft
schedulingPolicy	String	0..1	attr	This attribute represents the ability to define the scheduling policy for the initial thread of the application.
schedulingPriority	Integer	0..1	attr	This is the scheduling priority requested by the application itself.
terminationBehavior	TerminationBehaviorEnum	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. Tags: atp.Status=draft

Table A.254: StartupConfig

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. Tags: atp.Status=draft			
Base	ARObject			
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. Tags: atp.Status=draft
functionGroup State	ModeDeclaration	*	iref	This represent the applicable functionGroupMode. Tags: atp.Status=draft 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. Tags: atp.Status=draft
resourceGroup	ResourceGroup	1	ref	Reference to an applicable resource group. Tags: atp.Status=draft
startupConfig	StartupConfig	1	ref	Reference to a reusable startup configuration with startup parameters. Tags: atp.Status=draft

Table A.255: StateDependentStartupConfig

Class	StdCppImplementationDataType			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ApplicationDesign::CppImplementationDataType			
Note	This meta-class represents the way to specify a data type definition that is taken as the basis for a C++ language binding to a C++ Standard Library feature. Tags: atp.Status=draft atp.recommendedPackage=CplusplusImplementationDataTypes			
Base	ARElement, ARObject, AbstractImplementationDataType , AtpBlueprint, AtpBlueprintable, AtpClassifier, AtpType, AutosarDataType , CollectableElement, CppImplementationDataType , CplusplusImplementationDataTypeContextTarget, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note
—	—	—	—	—

Table A.256: StdCppImplementationDataType

Class	SupervisionCheckpoint			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::PlatformHealthManagement			
Note	This element contains an instance reference to a RPortPrototype representing a checkpoint for Platform Health Management. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable, Referrable			
Attribute	Type	Mult.	Kind	Note





Class	SupervisionCheckpoint			
checkpointId	PositiveInteger	0..1	attr	Defines the numeric value which is used to identify the reporting of this SupervisionCheckpoint to the Phm.
phmCheckpoint	PhmCheckpoint	0..1	iref	Instance reference to the PhmCheckpoint defined in the context of a PortInterface. Tags: atp.Status=draft InstanceRef implemented by: PhmCheckpointInExecutableInstanceRef
process	Process	0..1	ref	Reference to the Process this checkpoint shall be monitored. Tags: atp.Status=draft

Table A.257: SupervisionCheckpoint

Class	SwComponentPrototype			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Composition			
Note	Role of a software component within a composition.			
Base	ARObject, AtpFeature, AtpPrototype, Identifiable , MultilanguageReferrable, Referrable			
Attribute	Type	Mult.	Kind	Note
type	SwComponentType	0..1	tref	Type of the instance. Stereotypes: isOfType

Table A.258: 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			
Attribute	Type	Mult.	Kind	Note
port	PortPrototype	*	aggr	The PortPrototypes through which this SwComponent Type can communicate. The aggregation of PortPrototype is subject to variability with the purpose to support the conditional existence of PortPrototypes. Stereotypes: atpSplittable; atpVariation Tags: atp.Splitkey=port.shortName, port.variationPoint.shortLabel vh.latestBindingTime=preCompileTime
portGroup	PortGroup	*	aggr	A port group being part of this component. Stereotypes: atpVariation Tags: vh.latestBindingTime=preCompileTime





Class	SwComponentType (abstract)			
swComponentDocumentation	SwComponentDocumentation	0..1	aggr	<p>This adds a documentation to the SwComponentType.</p> <p>Stereotypes: atpSplitable; atpVariation</p> <p>Tags: atp.Splitkey=swComponentDocumentation, swComponentDocumentation.variationPoint.shortLabel vh.latestBindingTime=preCompileTime xml.sequenceOffset=-10</p>

Table A.259: SwComponentType

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			
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>





Class	<<atpVariation>> SwDataDefProps			
compuMethod	CompuMethod	0..1	ref	Computation method associated with the semantics of this data object. Tags: xml.sequenceOffset=180
dataConstr	DataConstr	0..1	ref	Data constraint for this data object. Tags: xml.sequenceOffset=190
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 alignment of the DataPrototype. If the attribute is not defined the alignment is determined by the swBaseType size and the memory AllocationKeywordPolicy of the referenced SwAddr Method. 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





Class	<<atpVariation>> SwDataDefProps			
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
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





Class	<<atpVariation>> SwDataDefProps			
swRefreshTiming	MultidimensionalTime	0..1	aggr	<p>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.</p> <p>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.</p> <p>Tags:xml.sequenceOffset=300</p>
swTextProps	SwTextProps	0..1	aggr	<p>the specific properties if the data object is a text object.</p> <p>Tags:xml.sequenceOffset=120</p>
swValueBlockSize	Numerical	0..1	attr	<p>This represents the size of a Value Block</p> <p>Stereotypes: atpVariation</p> <p>Tags: vh.latestBindingTime=preCompileTime xml.sequenceOffset=80</p>
swValueBlockSizeMult (ordered)	Numerical	*	attr	<p>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.</p> <p>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.</p> <p>For one-dimensional value blocks the attribute swValueBlockSize shall be used and this attribute shall not exist.</p> <p>Stereotypes: atpVariation</p> <p>Tags:vh.latestBindingTime=preCompileTime</p>
unit	Unit	0..1	ref	<p>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.</p> <p>Tags:xml.sequenceOffset=350</p>
valueAxisDataType	ApplicationPrimitiveDataType	0..1	ref	<p>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.</p> <p>Tags:xml.sequenceOffset=355</p>

Table A.260: SwDataDefProps

Class	SwcServiceDependency			
Package	M2::AUTOSARTemplates::SWComponentTemplate::SwcInternalBehavior::ServiceMapping			
Note	Specialization of ServiceDependency in the context of an SwcInternalBehavior. It allows to associate ports, port groups and (in special cases) data defined for an atomic software component to a given ServiceNeeds element.			
Base	ARObject, AtpClassifier, AtpFeature, AtpStructureElement, Identifiable , MultilanguageReferrable , Referrable , ServiceDependency			
Attribute	Type	Mult.	Kind	Note
assignedData	RoleBasedDataAssignment	*	aggr	<p>Defines the role of an associated data object of the same component.</p> <p>Stereotypes: atpVariation</p> <p>Tags:vh.latestBindingTime=preCompileTime</p>





Class	SwcServiceDependency			
assignedPort	RoleBasedPort Assignment	*	aggr	Defines the role of an associated port of the same component. Stereotypes: atpSplittable; atpVariation Tags: atp.Splitkey=assignedPort, assignedPort.variation Point.shortLabel vh.latestBindingTime=preCompileTime
representedPort Group	PortGroup	0..1	ref	This reference specifies an association between the ServiceNeeds and a PortGroup, for example to request a communication mode which applies for communication via these ports. The referred PortGroup shall be local to this atomic SWC, but via the links between the Port Groups, a tool can evaluate this information such that all the ports linked via this port group on the same ECU can be found.
serviceNeeds	ServiceNeeds	0..1	aggr	The associated ServiceNeeds.

Table A.261: SwcServiceDependency

Class	SynchronizationTimingConstraint			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingConstraint::SynchronizationTiming Constraint			
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			
Attribute	Type	Mult.	Kind	Note
event OccurrenceKind	EventOccurrenceKind Enum	0..1	attr	The specific occurrence kind of an event occurring within the given time interval.
scope	TimingDescriptionEvent Chain	*	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.
synchronization ConstraintType	SynchronizationType Enum	1	attr	The specific type of this synchronization constraint.
tolerance	MultidimensionalTime	1	aggr	The maximum time interval, within which the synchronized events shall occur.

Table A.262: SynchronizationTimingConstraint

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			
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: atpVariation Tags: vh.latestBindingTime=postBuild
interpolationRoutineMappingSet	InterpolationRoutineMappingSet	*	ref	This reference identifies the InterpolationRoutineMapping Sets that are relevant in the context of the enclosing 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.263: System

Class	SystemMapping			
Package	M2::AUTOSARTemplates::SystemTemplate			
Note	The system mapping aggregates all mapping aspects that are relevant in the System Description.			
Base	ARObject, Identifiable, MultilanguageReferrable, Referrable			
Attribute	Type	Mult.	Kind	Note





Class	SystemMapping			
pncMapping	PncMapping	*	aggr	Mappings between Virtual Function Clusters and Partial Network Clusters. Stereotypes: atpVariation Tags: vh.latestBindingTime=systemDesignTime

Table A.264: SystemMapping

Class	TDEventComplex			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription::TimingDescriptionEvents::TDEventComplex			
Note	This is used to describe complex timing events. The context of a complex timing event either is described informally, e.g. using the documentation block, or is described formally by the associated TDEventOccurrenceExpression.			
Base	ARObject, Identifiable , MultilanguageReferrable, Referrable , TimingDescription, TimingDescriptionEvent			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.265: 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			
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	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.266: 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.			





Class	TDEventOperation			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , TDEventVfb , TDEventVfbPort , TimingDescription , TimingDescriptionEvent			
Attribute	Type	Mult.	Kind	Note
operation	ClientServerOperation	1	ref	The referenced operation.
tdEventOperationType	TDEventOperationType Enum	1	attr	The specific type of this timing event.

Table A.267: 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			
Attribute	Type	Mult.	Kind	Note
dataElement	VariableDataPrototype	1	ref	The referenced VariableDataPrototype
tdEventVariableDataPrototypeType	TDEventVariableDataPrototypeTypeEnum	1	attr	The specific type of this timing event.

Table A.268: 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			
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.269: TDEventVfb

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.Status=draft atp.recommendedPackage=FCInteractions			
Base	ARElement, ARObject, CollectableElement , FunctionalClusterInteractsWithFunctionalClusterMapping , Identifiable , MultilanguageReferrable , PackageableElement , Referrable , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note
persistencyDeploymentElement	PersistencyDeploymentElement	0..1	ref	This reference represents the PersistencyDeploymentElement where the time value shall be stored in and retrieved from. Tags: atp.Status=draft





Class	TimeBaseProviderToPersistencyMapping			
timeBase Provider	SynchronizedTimeBase Provider	0..1	ref	This reference represents the mapped TimeBase Provider. Tags: atp.Status=draft

Table A.270: TimeBaseProviderToPersistencyMapping

Class	TimingDescriptionEvent (abstract)			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription			
Note	<p>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.</p> <p>In order to avoid confusion with existing event descriptions in the AUTOSAR templates the timing specific event types use the prefix TD.</p>			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , TimingDescription			
Subclasses	TDEventCom, TDEventComplex , TDEventServiceInstance , TDEventVfb			
Attribute	Type	Mult.	Kind	Note
occurrence Expression	TDEventOccurrence Expression	0..1	aggr	The occurrence expression for this event.

Table A.271: TimingDescriptionEvent

Class	TimingDescriptionEventChain			
Package	M2::AUTOSARTemplates::CommonStructure::Timing::TimingDescription			
Note	<p>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>.</p>			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , TimingDescription			
Attribute	Type	Mult.	Kind	Note
response	TimingDescriptionEvent	1	ref	The response event representing the point in time where the event chain is terminated. Tags: xml.sequenceOffset=20
segment	TimingDescriptionEvent Chain	1..*	ref	A composed event chain consists of an arbitrary number of sub-chains. Tags: xml.sequenceOffset=30
stimulus	TimingDescriptionEvent	1	ref	The stimulus event representing the point in time where the event chain is activated. Tags: xml.sequenceOffset=10

Table A.272: 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			
Attribute	Type	Mult.	Kind	Note
authentication	CryptoServicePrimitive	0..1	ref	This reference identifies the crypto service primitive for the generation and verification of MACs.





Class	TlsCryptoCipherSuite			
certificate	CryptoServiceCertificate	0..1	ref	This reference identifies the applicable certificate.
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.
priority	PositiveInteger	0..1	attr	This attribute identifies the priority of the cipher suite. Range: 1..65535. Lower values represent higher priorities.
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.
version	TlsVersionEnum	1	attr	This attribute supports the definition of the applicable version of TLS.

Table A.273: 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			
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.274: TlsPskIdentity

Class	TlsSecureComProps			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::SecureCommunication			
Note	Configuration of the Transport Layer Security protocol (TLS). Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , SecureComProps			
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. Tags: atp.Status=draft
tlsCipherSuite	TlsCryptoCipherSuite	*	aggr	Collection of supported cipher suites that are used to negotiate the security settings for a network connection defined by the ServiceInstanceToMachineMapping. Tags: atp.Status=draft

Table A.275: TlsSecureComProps

Class	TlvDataIdDefinition			
Package	M2::AUTOSARTemplates::SystemTemplate::Transformer			
Note	This meta-class represents the ability to define the tlvDataId.			
Base	ARObject			
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.
tlvRecordElement	ApplicationRecordElement	0..1	ref	This reference associates the definition of a TLV data id with a given ApplicationRecordElement.
tlvSubElement	CpplImplementationDataTypeElement	0..1	ref	This reference associates the definition of a TLV data id with a given CpplImplementationDataTypeElement. Stereotypes: atpSplitable Tags: atp.Splitkey=tlvSubElement atp.Status=draft

Table A.276: 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.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
event	VariableDataPrototype	*	ref	This represents the reference to one or several events of one ServiceInterface. Tags: atp.Status=draft
field	Field	*	ref	This represents the reference to one or several fields of one ServiceInterface. Tags: atp.Status=draft
method	ClientServerOperation	*	ref	This represents the reference to one or several methods of one ServiceInterface. Tags: atp.Status=draft
tlvDataIdDefinition	TlvDataIdDefinitionSet	*	ref	This reference identifies the TlvDataIdDefinitions relevant for the enclosing TransformationPropsToServiceInterfaceMapping. Tags: atp.Status=draft
transformationProps	TransformationProps	0..1	ref	This represents the reference to the applicable Serialization properties. Tags: atp.Status=draft

Table A.277: TransformationPropsToServiceInterfaceElementMapping

Enumeration	TransportLayerProtocolEnum
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInstanceDeployment
Note	This enumeration allows to choose a TCP/IP transport layer protocol. Tags: atp.Status=draft
Literal	Description
tcp	Transmission control protocol Tags: atp.EnumerationLiteralIndex=1
udp	User datagram protocol Tags: atp.EnumerationLiteralIndex=0

Table A.278: TransportLayerProtocolEnum

Class	UcmDescription			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to define an identifier for a given UCM. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note
identifier	String	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 Tags: atp.Status=draft

Table A.279: UcmDescription

Class	UcmModuleInstantiation			
Package	M2::AUTOSARTemplates::AdaptivePlatform::PlatformModuleDeployment::Ucm			
Note	This meta-class represents the ability to define a definition of a UCM instantiation. Tags: atp.Status=draft			
Base	ARObject, AdaptiveModuleInstantiation , Identifiable , MultilanguageReferrable , NonOsModuleInstantiation , Referrable			
Attribute	Type	Mult.	Kind	Note
identifier	String	1	attr	This represents the identification of a UCM.
maxNumberOfParallelTransfers	PositiveInteger	0..1	attr	This attribute supports the configuration of the maximum number of parallel transfers that the Ucm on the enclosing Machine is allowed to create.

Table A.280: UcmModuleInstantiation

Class	UcmStep			
Package	M2::AUTOSARTemplates::AdaptivePlatform::SoftwareDistribution			
Note	This meta-class represents the ability to define a rollout-condition for a vehicle update campaign. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable			
Attribute	Type	Mult.	Kind	Note





Class	UcmStep			
software PackageStep (ordered)	SoftwarePackageStep	*	aggr	This aggregation represents the sequence of activities to be carried out in the context of the respective UCM. Tags: atp.Status=draft
ucm	UcmDescription	0..1	ref	This reference identifies the UCM for which the rollout step applies. Tags: atp.Status=draft

Table A.281: UcmStep

Class	UdpNmCluster			
Package	M2::AUTOSARTemplates::SystemTemplate::NetworkManagement			
Note	Udp specific NmCluster attributes			
Base	ARObject, Identifiable , MultilanguageReferrable , NmCluster , Referrable			
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 PN information.
nmUserData Offset	PositiveInteger	0..1	attr	Specifies the offset (in bytes) of the user data information in the NM message. User data excludes the PN information. 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.





Class	UdpNmCluster			
vlan	EthernetPhysicalChannel	0..1	ref	Reference to the vlan (represented by the Ethernet PhysicalChannel) this UdpNmCluster shall apply to.

Table A.282: 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. Tags: atp.Status=draft			
Base	ARObject			
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
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.283: 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. Tags: atp.Status=draft			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , UploadablePackageElement			
Subclasses	PersistencyDeployment , PersistencyPortPrototypeToDeploymentMapping			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.284: 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			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.285: UserDefinedCommunicationConnector

Class	UserDefinedEventDeployment			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	UserDefined configuration settings for an Event. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable, Referrable , ServiceEventDeployment			





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

Table A.286: UserDefinedEventDeployment

Class	UserDefinedFieldDeployment			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	UserDefined configuration settings for a Field. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , ServiceFieldDeployment			
Attribute	Type	Mult.	Kind	Note
get	UserDefinedMethodDeployment	0..1	aggr	This aggregation represents the settings of the get method Tags: atp.Status=draft
notifier	UserDefinedEventDeployment	0..1	aggr	This aggregation represents the settings of the notifier. Tags: atp.Status=draft
set	UserDefinedMethodDeployment	0..1	aggr	This aggregation represents the settings of the set method Tags: atp.Status=draft

Table A.287: UserDefinedFieldDeployment

Class	UserDefinedMethodDeployment			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	UserDefined configuration settings for a Method. Tags: atp.Status=draft			
Base	ARObject, Identifiable , MultilanguageReferrable , Referrable , ServiceMethodDeployment			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.288: 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.Status=draft atp.recommendedPackage=ServiceInstanceToMachineMappings			
Base	ARElement, ARObject, CollectableElement , Identifiable , MultilanguageReferrable , PackageableElement , Referrable , ServiceInstanceToMachineMapping , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.289: UserDefinedServiceInstanceToMachineMapping

Class	UserDefinedServiceInterfaceDeployment			
Package	M2::AUTOSARTemplates::AdaptivePlatform::ServiceInstanceManifest::ServiceInterfaceDeployment			
Note	UserDefined configuration settings for a ServiceInterface. Tags: atp.Status=draft atp.recommendedPackage=ServiceInterfaceDeployments			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable , ServiceInterfaceDeployment , UploadablePackageElement			
Attribute	Type	Mult.	Kind	Note
–	–	–	–	–

Table A.290: 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			
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.291: ValueSpecification

Class	VariableDataPrototype			
Package	M2::AUTOSARTemplates::SWComponentTemplate::Datatype::DataPrototypes			
Note	A VariableDataPrototype is used to contain values in an ECU application. This means that most likely a VariableDataPrototype allocates "static" memory on the ECU. In some cases optimization strategies might lead to a situation where the memory allocation can be avoided. In particular, the value of a VariableDataPrototype is likely to change as the ECU on which it is used executes.			
Base	ARObject, AtpFeature, AtpPrototype, AutosarDataPrototype , DataPrototype , Identifiable , MultilanguageReferrable, Referrable			
Attribute	Type	Mult.	Kind	Note
initValue	ValueSpecification	0..1	aggr	Specifies initial value(s) of the VariableDataPrototype

Table A.292: VariableDataPrototype

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.Status=draft atp.recommendedPackage=VehiclePackages			
Base	ARElement, ARObject, CollectableElement, Identifiable , MultilanguageReferrable, PackageableElement, Referrable			
Attribute	Type	Mult.	Kind	Note





Class	VehiclePackage			
driver Notification	VehicleDriver Notification	*	aggr	This aggregation provides the ability to configure the necessary driver notifications. Tags: atp.Status=draft
packager Signature	CryptoService Certificate	1	ref	This reference identifies the certificate that represents the packager's signature. Tags: atp.Status=draft
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. Tags: atp.Status=draft
ucm	UcmDescription	*	aggr	This aggregation represents the UcmDescriptions to be considered in the context of the VehiclePackage. Tags: atp.Status=draft
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. Tags: atp.Status=draft
vehicle Description	Documentation	0..1	ref	This reference identifies the vehicle description. Tags: atp.Status=draft

Table A.293: VehiclePackage

Class	VfbTiming			
Package	M2::AUTOSARTemplates::CommonStructure::Timing			
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 , Multilanguage Referrable, PackageableElement, Referrable , TimingExtension			
Attribute	Type	Mult.	Kind	Note
component	SwComponentType	1	ref	This defines the scope of a VfbTiming. All corresponding timing descriptions and constraints shall be defined within this scope.

Table A.294: VfbTiming

Class	WorstCaseHeapUsage			
Package	M2::AUTOSARTemplates::CommonStructure::ResourceConsumption::HeapUsage			
Note	Provides a formal worst case heap usage.			
Base	ARObject, HeapUsage , Identifiable , MultilanguageReferrable, Referrable			
Attribute	Type	Mult.	Kind	Note
memory Consumption	PositiveInteger	1	attr	Worst case heap consumption. Unit: byte.

Table A.295: WorstCaseHeapUsage