



MAENAD



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Model-based Analysis & Engineering of Novel Architectures for Dependable Electric Vehicles

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Revision chart and history log

| Version | Date | Reason |
|----------------|-------------|---|
| 1.0 | 2011-06-30 | First release Reflecting Maenad Month 9 |
| 1.0.1 | 2011-08-30 | Intermediate Version Reflecting Maenad Month 12 |
| 2.0 | 2012-06-30 | Second release Reflecting Maenad Month 21 |
| 2.1 | 2012-08-31 | Change list added. |
| 3.0 | 2013-05-31 | Third release Reflecting Maenad Month 33 |

1 Summary

D4.1.1 is the EAST-ADL language specification which covers the elements of the language. The released version is annotated EAST-ADL M2.1.11, i.e. the MAENAD proposal for version 2.1.11. The actual specification of the language is delivered in a separate document, EAST-ADL-Specification_M2.1.11.pdf. This document describes the structural changes in the different project internal releases of the language.

2 Versions

The EAST-ADL specification from the previous ATESS2 project had the version number 2.1.8 and was released 2010-06-30, the specification has evolved during the MAENAD project as follows:

| Date | Domain Model version | Note |
|-------------|-----------------------------|--|
| 2011-01-30 | (M2.1.1) M2.1.9 | |
| 2011-06-30 | M2.1.9.1 | M9, should really be called 2.1.9.20110630 |
| 2011-08-30 | M2.1.9.20110830 | |
| 2012-03-30 | M2.1.10 | Consolidation of descriptions |
| 2012-06-15 | M2.1.10.20120629 | M21, no structural changes. |
| 2013-05-31 | M2.1.11 | M33 |

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4 Changes in M2.1.9.1 as compared to ATESS2_2.1.RC5

| M2.1.9.1 | ATESS2_2.1.RC5 | Change | Metaclass |
|---|--|-----------------------------------|---|
| TraceableSpecification (from Elements) | EAPackageableElement (from Elements) | Changed generalization | FunctionClientServerInterface (from FunctionModeling) «atpType» |
| wire : HardwareConnector [*] | No additional associations | Changed dependency to association | LogicalBus (from HardwareModeling) «atpStructuredElement» |
| | Dependencies | ditto | |
| | wire : HardwareConnector [*] | ditto | |
| | «instanceRef» | ditto | |
| decisionModel : VehicleLevelBinding [*] | decisionModel : VehicleLevelConfigurationDecisionModel [*] | Changed name of associated class | Variability (from Variability) |
| VehicleLevelBinding (from Variability) | VehicleLevelConfigurationDecisionModel (from Variability) | Changed class name | VehicleLevelBinding (from Variability) |
| | relationship : RequirementsRelationship [*] {composite} | Removed association | RequirementsModel (from Requirements) |
| TraceableSpecification (from Elements) | EAPackageableElement (from Elements) | Changed generalization | Item (from Dependability) |
| max : Float [0..1] | max : Float [1] | Changed attribute multiplicity | EFloat (from Datatypes) |
| min : Float [0..1] | min : Float [1] | Changed attribute multiplicity | EFloat (from Datatypes) |
| max : int [0..1] | max : int [1] | Changed attribute multiplicity | EInteger (from Datatypes) |
| min : int [0..1] | min : int [1] | Changed attribute multiplicity | EInteger (from Datatypes) |
| | UserAttributeableElement (from UserAttributes) | Removed generalization | EElement (from Elements) {abstract} |

| M2.1.9.1 | ATESST2_2.1.RC5 | Change | Metaclass |
|---|--|---------------------|--|
| The realizedBy elements shall be on a lower abstraction level than the realized elements. | No additional constraints | Added constraint | Realization (from Elements) |
| The realizedBy or realized elements shall be structural or behavioural | | Added constraint | Realization (from Elements) |
| UserAttributeableElement (from UserAttributes) | UserAttributeableElement (from UserAttributes) {abstract} | Class made concrete | UserAttributeableElement (from UserAttributes) |
| attributedElement : Identifiable [1] | | Removed association | UserAttributeableElement (from UserAttributes) |

5 Changes in M2.1.9.20110830 as compared to M2.1.9.1

| M2.1.9.20110830 | M2.1.9.1 | Change | Metaclass |
|--|---|------------------------|--|
| EAElement (from Elements) | None | Added generalization | AllocateableElement (from FunctionModeling) {abstract} |
| EAElement (from Elements) | None | Added generalization | AllocationTarget (from HardwareModeling) {abstract} |
| | HardwarePinDirectionKind (from HardwareModeling) «enumeration» | Removed class | HardwarePinDirectionKind (from HardwareModeling) «enumeration» |
| | Generalizations | ditto | |
| | None | ditto | |
| | Enumeration Literals | ditto | |
| | in | ditto | |
| | inout | ditto | |
| | out | ditto | |
| | Associations | ditto | |
| | No additional associations | ditto | |
| | Constraints | ditto | |
| | No additional constraints | ditto | |
| nonVolatileMemory : Integer [1] | nonVolatileMemory : int [1] | Changed integer type | Node (from HardwareModeling) |
| volatileMemory : Integer [0..1] | volatileMemory : int [0..1] | Changed integer type | Node (from HardwareModeling) |
| FormulaExpression (from FormulaLanguage) | FormulaExpression (from Elements) | Changed generalization | SelectionCriterion (from Variability) |

| M2.1.9.20110830 | M2.1.9.1 | Change | Metaclass |
|---|--|----------------------|--|
| EAElement (from Elements) | None | Added generalization | RedefinableElement (from UseCases) {abstract} |
| cseCodeFactor : Integer = 1 [1] | cseCodeFactor : int = 1 [1] | Changed integer type | TimeDuration (from Timing) |
| max : Integer [0..1] | max : int [0..1] | Changed integer type | EInteger (from Datatypes) |
| min : Integer [0..1] | min : int [0..1] | Changed integer type | EInteger (from Datatypes) |
| significantDigits : Integer [0..1] | significantDigits : int [0..1] | Changed integer type | RangeableValueType (from Datatypes) |
| | FormulaExpression (from Elements) {abstract} «atpMixedString» | Removed class | FormulaExpression (from Elements) {abstract} «atpMixedString» |
| | Generalizations | ditto | |
| | Identifiable (from Identifiable) | ditto | |
| | Attributes | ditto | |
| | No additional attributes | ditto | |
| | Associations | ditto | |
| | No additional associations | ditto | |
| | Constraints | ditto | |
| | No additional constraints | ditto | |
| The realizedBy or realized elements shall be structural or behavioral | The realizedBy or realized elements shall be structural or behavioural | Textual change | Realization (from Elements) |
| ArchitecturalDescription (from Needs) | ArchitecturalDescription (from Needs) {abstract} | Class made concrete | ArchitecturalDescription (from Needs) |

| M2.1.9.20110830 | M2.1.9.1 | Change | Metaclass |
|--|---|----------------------|---------------------------------|
| ArchitecturalModel (from Needs) | ArchitecturalModel (from Needs) {abstract} | Class made concrete | ArchitecturalModel (from Needs) |
| Architecture (from Needs) | Architecture (from Needs) {abstract} | Class made concrete | Architecture (from Needs) |
| EAElement (from Elements) | None | Added generalization | Concept (from Needs) {abstract} |
| Mission (from Needs) | Mission (from Needs) {abstract} | Class made concrete | Mission (from Needs) |
| priority : Integer [1] | priority : int [1] | Changed integer type | StakeholderNeed (from Needs) |
| VehicleSystem (from Needs) | VehicleSystem (from Needs) {abstract} | Class made concrete | VehicleSystem (from Needs) |

6 Changes in M2.1.10 as compared to M2.1.9.20110830

This release also included consolidated and updated documentation all over the language specification.

| M2.1.10 | M2.1.9.20110830 | Change | Metaclass |
|--|--|----------------------------------|--|
| technicalFeatureModel : FeatureModel [*] {composite} | technicalFeatureModel : FeatureModel [0..*] {composite} | Editorial change of multiplicity | VehicleLevel (from SystemModeling) «atpStructureElement» |
| | EAElement (from Elements) | Removed generalization | Feature (from FeatureModeling) «atpStructureElement» |
| childNode : FeatureTreeNode [*] {composite} | childNode : FeatureTreeNode [0..*] {composite} | Editorial change of multiplicity | Feature (from FeatureModeling) «atpStructureElement» |
| No additional attributes | complianceLevel : String [1] | Removed attribute | FeatureModel (from FeatureModeling) «atpStructureElement» |
| rootFeature : Feature [*] {composite} | rootFeature : Feature [0..*] {composite} | Editorial change of multiplicity | FeatureModel (from FeatureModeling) «atpStructureElement» |
| featureLink : FeatureLink [*] {composite} | featureLink : FeatureLink [0..*] {composite} | Editorial change of multiplicity | FeatureModel (from FeatureModeling) «atpStructureElement» |
| featureConstraint : FeatureConstraint [*] {composite} | featureConstraint : FeatureConstraint [0..*] {composite} | Editorial change of multiplicity | FeatureModel (from FeatureModeling) «atpStructureElement» |
| | [2] A LocalDeviceManager may only interface either Sensors or Actuators. | Removed constraint | LocalDeviceManager (from FunctionModeling) |
| [2] A LocalDeviceManager shall interface BSWFunctions and DesignFunctions. | [3] A LocalDeviceManager shall interface BSWFunctions and DesignFunctions. | Changed index of constraint | LocalDeviceManager (from FunctionModeling) |

| M2.1.10 | M2.1.9.20110830 | Change | Metaclass |
|--|---|-----------------------------------|---|
| | EAElement (from Elements) | Removed generalization | HardwareComponentPrototype (from HardwareModeling) «atpPrototype» |
| No additional attributes | resistance : Float [0..1] | Removed attribute | HardwareConnector (from HardwareModeling) «atpStructureElement» |
| | EAElement (from Elements) | Removed generalization | LogicalBus (from HardwareModeling) «atpStructuredElement» |
| SCILAB | | Added enumeration literal | FunctionBehaviorKind (from Behavior) «enumeration» |
| variationGroup : VariationGroup [*] {composite} | variationGroup : VariationGroup [0..*] {composite} | Editorial change of multiplicity | ConfigurableContainer (from Variability) |
| criterion : String [0..1] | criterion : String [1] | Changed multiplicity of attribute | ConfigurationDecision (from Variability) |
| [1] Attribute "criterion" or association "selectionCriterion" (or both) must be defined. | No additional constraints | Added constraint | ConfigurationDecision (from Variability) |
| childEntry : ConfigurationDecisionModelEntry [*] {composite} | childEntry : ConfigurationDecisionModelEntry [0..*] {composite} | Editorial change of multiplicity | ConfigurationDecisionFolder (from Variability) |
| rootEntry : ConfigurationDecisionModelEntry [*] {composite} | rootEntry : ConfigurationDecisionModelEntry [0..*] {composite} | Editorial change of multiplicity | ConfigurationDecisionModel (from Variability) {abstract} |
| sourceVehicleFeatureModel : FeatureModel [*] {ordered} | sourceVehicleFeatureModel : FeatureModel [0..*] {ordered} | Editorial change of multiplicity | VehicleLevelBinding (from Variability) |
| targetFeatureModel : FeatureModel [*] {ordered} | targetFeatureModel : FeatureModel [0..*] {ordered} | Editorial change of multiplicity | VehicleLevelBinding (from Variability) |

| M2.1.10 | M2.1.9.20110830 | Change | Metaclass |
|--|---|----------------------------------|---|
| concreteVVCASE : VVCASE [*] | concreteVVCASE : VVCASE [0..*] | Editorial change of multiplicity | VVCASE (from VerificationValidation) |
| concreteVVProcedure : VVProcedure [*] | concreteVVProcedure : VVProcedure [0..*] | Editorial change of multiplicity | VVProcedure (from VerificationValidation) |
| element : Identifiable [*] | element : Identifiable [0..*] | Editorial change of multiplicity | VVTarget (from VerificationValidation) |
| rootRequirementContainer : RequirementsContainer [*] {ordered} {composite} | rootRequirementContainer : RequirementsContainer [0..*] {ordered} {composite} | Editorial change of multiplicity | RIFArea (from Interchange) {abstract} |
| [1] The direction of the nominal port must be 'out'. | [1] The direction of the nominal port must be out. | Editorial change | FailureOutPort (from ErrorModel) |
| [1] The direction of the nominal port must be 'in'. | [1] The direction of the nominal port must be in. | Editorial change | FaultInPort (from ErrorModel) |
| goalDecompositionStrategy : Warrant [*] | goalDecompositionStrategy : Warrant [0..*] | Editorial change of multiplicity | Claim (from SafetyCase) |
| supportedArgument : Warrant [*] | supportedArgument : Warrant [0..*] | Editorial change of multiplicity | Claim (from SafetyCase) |
| safetyRequirement : TraceableSpecification [*] | safetyRequirement : TraceableSpecification [0..*] | Editorial change of multiplicity | Claim (from SafetyCase) |
| safetyEvidence : Identifiable [*] | safetyEvidence : Identifiable [0..*] | Editorial change of multiplicity | Ground (from SafetyCase) |
| safetyCase : SafetyCase [*] {composite} | safetyCase : SafetyCase [0..*] {composite} | Editorial change of multiplicity | SafetyCase (from SafetyCase) |
| evidence : Ground [*] | evidence : Ground [0..*] | Editorial change of multiplicity | Warrant (from SafetyCase) |
| decomposedGoal : Claim [*] | decomposedGoal : Claim [0..*] | Editorial change of multiplicity | Warrant (from SafetyCase) |
| | description : String [0..1] | Removed attribute | ValueType (from Datatypes) {abstract} |

| M2.1.10 | M2.1.9.20110830 | Change | Metaclass |
|--|---|----------------------------------|--|
| semantics : String [1] | | Added attribute | ValueType (from Datatypes) {abstract} |
| EElement (from Elements) | Identifiable (from Identifiable) | Changed generalization | EAPackage (from Elements) |
| subPackage : EAPackage [*] {composite} | subPackage : EAPackage [0..*] {composite} | Editorial change of multiplicity | EAPackage (from Elements) |
| topLevelPackage : EAPackage [*] {composite} | topLevelPackage : EAPackage [0..*] {composite} | Editorial change of multiplicity | EAXML (from Elements) |
| uaType : UserAttributeElementType [*] | uaType : UserAttributeElementType [0..*] | Editorial change of multiplicity | UserAttributeableElement (from UserAttributes) |
| | description : String [0..1] | Removed attribute | UserAttributeDefinition (from UserAttributes) |
| | key : String [1] | Removed attribute | UserAttributeDefinition (from UserAttributes) |
| | key : String [1] | Removed attribute | UserAttributeValue (from UserAttributes) |
| semantics : String [0..1] | | Added attribute | UserAttributeValue (from UserAttributes) |
| definition : UserAttributeDefinition [0..1] | No additional associations | Added association | UserAttributeValue (from UserAttributes) |
| isConceptFor : SystemModel [*] | isConceptFor : SystemModel [0..*] | Editorial change of multiplicity | ArchitecturalModel (from Needs) |
| problemStatement : ProblemStatement [*] | problemStatement : ProblemStatement [0..*] | Editorial change of multiplicity | BusinessOpportunity (from Needs) |
| productPositioning : ProductPositioning [*] | productPositioning : ProductPositioning [0..*] | Editorial change of multiplicity | BusinessOpportunity (from Needs) |
| constrainedMode : Mode [*] | constrainedMode : Mode [0..*] | Editorial change of multiplicity | BehaviorConstraint (from BehaviorConstraints) {abstract} |
| constrainedFunctionBehavior : FunctionBehavior [*] | constrainedFunctionBehavior : FunctionBehavior [0..*] | Editorial change of multiplicity | BehaviorConstraint (from BehaviorConstraints) {abstract} |

| M2.1.10 | M2.1.9.20110830 | Change | Metaclass |
|---|--|-------------------------------------|---|
| constrainedFunctionTrigger : FunctionTrigger [*] | constrainedFunctionTrigger : FunctionTrigger [0..*] | Editorial change of multiplicity | BehaviorConstraint (from BehaviorConstraints) {abstract} |

7 Changes in M2.1.10.20120629 as compared to M2.1.10

Layout adapted and introductory texts explaining the document clarified. No structural changes in the metamodel.

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| 8 | Changes in M2.1.11 as compared to M2.1.10 |
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M2.1.11 as of 2013-04-02

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|---|--|---|
| featureParameter : EADatatype [0..1] | featureParameter : EADatatypePrototype [0..1] {composite} | Changed association type and containment | Feature (from FeatureModeling) «atpStructureElement» |
| No additional associations | feature : VehicleFeature [1] | Removed association role name | DeviationAttributeSet (from VehicleFeatureModeling) |
| None | EAElement (from Elements) | Removed inheritance | AllocateableElement (from FunctionModeling) {abstract} |
| kind : ClientServerKind [1] | clientServerType : ClientServerKind [1] | Changed attribute name | FunctionClientServerPort (from FunctionModeling) |
| EAConnector (from Elements) | | Added inheritance | FunctionConnector (from FunctionModeling) «atpStructureElement» |
| defaultValue : EAValue [0..1] {composite} | | Added association | FunctionFlowPort (from FunctionModeling) |
| EAPort (from Elements) | | Added inheritance | FunctionPort (from FunctionModeling) {abstract} «atpPrototype» |
| EAPrototype (from Elements) | | Added inheritance | FunctionPrototype (from FunctionModeling) {abstract} «atpPrototype» |
| EAType (from Elements) | | Added inheritance | FunctionType (from FunctionModeling) {abstract} «atpType» |
| [2] A DesignFunctionPrototype typed by a HardwareFunctionType may only contain prototypes typed by HardwareFunctionType. | | Added constraint | HardwareFunctionType (from FunctionModeling) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|-------------------------------------|------------------------|---|
| ElectricalComponent (from HardwareModeling) «atpType» | PowerSupply (from HardwareModeling) | Changed metaclass name | PowerSupply (from HardwareModeling) |
| HardwareBusKind (from HardwareModeling) «enumeration» | | Added metaclass | HardwareBusKind (from HardwareModeling) «enumeration» |
| Generalizations | | ditto | HardwareBusKind (from HardwareModeling) «enumeration» |
| None | | ditto | HardwareBusKind (from HardwareModeling) «enumeration» |
| Enumeration Literals | | ditto | HardwareBusKind (from HardwareModeling) «enumeration» |
| EventTriggered | | ditto | HardwareBusKind (from HardwareModeling) «enumeration» |
| other | | ditto | HardwareBusKind (from HardwareModeling) «enumeration» |
| TimeAndEventTriggered | | ditto | HardwareBusKind (from HardwareModeling) «enumeration» |
| TimeTriggered | | ditto | HardwareBusKind (from HardwareModeling) «enumeration» |
| Associations | | ditto | HardwareBusKind (from HardwareModeling) «enumeration» |
| No additional associations | | ditto | HardwareBusKind (from HardwareModeling) «enumeration» |
| Constraints | | ditto | HardwareBusKind (from HardwareModeling) «enumeration» |
| No additional constraints | | ditto | HardwareBusKind (from HardwareModeling) «enumeration» |
| EAPrototype (from Elements) | | Added inheritance | HardwareComponentPrototype (from HardwareModeling) «atpPrototype» |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|---|-------------------------------|---|
| EAType (from Elements) | | Added inheritance | HardwareComponentType (from HardwareModeling) «atpType» |
| portConnector : HardwarePortConnector [*] {composite} | | Added association | HardwareComponentType (from HardwareModeling) «atpType» |
| | portGroup : HardwarePinGroup [*] {composite} | Removed association | HardwareComponentType (from HardwareModeling) «atpType» |
| pin : HardwarePin [*] {composite} | port : HardwarePin [*] {composite} | Changed association role name | HardwareComponentType (from HardwareModeling) «atpType» |
| port : HardwarePort [*] {composite} | | Added association | HardwareComponentType (from HardwareModeling) «atpType» |
| | bus : LogicalBus [*] {composite} | Removed association | HardwareComponentType (from HardwareModeling) «atpType» |
| EAConnector (from Elements) | | Added inheritance | HardwareConnector (from HardwareModeling) «atpStructureElement» |
| pin : HardwarePin [2] | port : HardwarePin [2] | Changed association role name | HardwareConnector (from HardwareModeling) «atpStructureElement» |
| EAPort (from Elements) | | Added inheritance | HardwarePin (from HardwareModeling) {abstract} «atpStructureElement» |
| | impedance : Float [0..1] | Removed attribute | HardwarePin (from HardwareModeling) {abstract} «atpStructureElement» |
| | power : Float [0..1] | Removed attribute | HardwarePin (from HardwareModeling) {abstract} «atpStructureElement» |
| | voltage : Float [0..1] | Removed attribute | HardwarePin (from HardwareModeling) {abstract} «atpStructureElement» |
| | HardwarePinGroup (from HardwareModeling) | Removed metaclass | HardwarePinGroup (from HardwareModeling) |
| | Generalizations | ditto | HardwarePinGroup (from HardwareModeling) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|---|-----------------|---|
| | EElement (from Elements) | ditto | HardwarePinGroup (from HardwareModeling) |
| | Attributes | ditto | HardwarePinGroup (from HardwareModeling) |
| | No additional attributes | ditto | HardwarePinGroup (from HardwareModeling) |
| | Associations | ditto | HardwarePinGroup (from HardwareModeling) |
| | portGroup : HardwarePinGroup [*] {composite} | ditto | HardwarePinGroup (from HardwareModeling) |
| | port : HardwarePin [*] | ditto | HardwarePinGroup (from HardwareModeling) |
| | Constraints | ditto | HardwarePinGroup (from HardwareModeling) |
| | No additional constraints | ditto | HardwarePinGroup (from HardwareModeling) |
| HardwarePort (from HardwareModeling) «atpStructureElement» | | Added metaclass | HardwarePort (from HardwareModeling) «atpStructureElement» |
| Generalizations | | ditto | HardwarePort (from HardwareModeling) «atpStructureElement» |
| AllocationTarget (from HardwareModeling) | | ditto | HardwarePort (from HardwareModeling) «atpStructureElement» |
| EAPort (from Elements) | | ditto | HardwarePort (from HardwareModeling) «atpStructureElement» |
| Attributes | | ditto | HardwarePort (from HardwareModeling) «atpStructureElement» |
| isShield : Boolean [1] | | ditto | HardwarePort (from HardwareModeling) «atpStructureElement» |
| Associations | | ditto | HardwarePort (from HardwareModeling) «atpStructureElement» |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|----------------|-----------------|--|
| containedPin : HardwarePin [*] {composite} | | ditto | HardwarePort (from HardwareModeling) «atpStructureElement» |
| referencedPin : HardwarePin [*] | | ditto | HardwarePort (from HardwareModeling) «atpStructureElement» |
| containedPort : HardwarePort [*] {composite} | | ditto | HardwarePort (from HardwareModeling) «atpStructureElement» |
| Constraints | | ditto | HardwarePort (from HardwareModeling) «atpStructureElement» |
| No additional constraints | | ditto | HardwarePort (from HardwareModeling) «atpStructureElement» |
| HardwarePortConnector (from HardwareModeling) «atpStructureElement» | | Added metaclass | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |
| Generalizations | | ditto | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |
| AllocationTarget (from HardwareModeling) | | ditto | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |
| EAConector (from Elements) | | ditto | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |
| Attributes | | ditto | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |
| busSpeed : Float [1] | | ditto | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |
| busType : HardwareBusKind [1] | | ditto | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|---|-------------------|--|
| Associations | | ditto | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |
| connector : HardwareConnector [*] {composite} | | ditto | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |
| Dependencies | | ditto | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |
| port : HardwarePort [2] | | ditto | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |
| «instanceRef» | | ditto | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |
| Constraints | | ditto | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |
| No additional constraints | | ditto | HardwarePortConnector (from HardwareModeling) «atpStructureElement» |
| | LogicalBus (from HardwareModeling) «atpStructuredElement» | Removed metaclass | LogicalBus (from HardwareModeling) «atpStructuredElement» |
| | Generalizations | ditto | LogicalBus (from HardwareModeling) «atpStructuredElement» |
| | AllocationTarget (from HardwareModeling) | ditto | LogicalBus (from HardwareModeling) «atpStructuredElement» |
| | Attributes | ditto | LogicalBus (from HardwareModeling) «atpStructuredElement» |
| | busSpeed : Float [1] | ditto | LogicalBus (from HardwareModeling) «atpStructuredElement» |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---------|---|-------------------|--|
| | busType : LogicalBusKind [1] | ditto | LogicalBus (from HardwareModeling) «atpStructuredElement» |
| | Associations | ditto | LogicalBus (from HardwareModeling) «atpStructuredElement» |
| | wire : HardwareConnector [*] | ditto | LogicalBus (from HardwareModeling) «atpStructuredElement» |
| | Constraints | ditto | LogicalBus (from HardwareModeling) «atpStructuredElement» |
| | No additional constraints | ditto | LogicalBus (from HardwareModeling) «atpStructuredElement» |
| | LogicalBusKind (from HardwareModeling) «enumeration» | Removed metaclass | LogicalBusKind (from HardwareModeling) «enumeration» |
| | Generalizations | ditto | LogicalBusKind (from HardwareModeling) «enumeration» |
| | None | ditto | LogicalBusKind (from HardwareModeling) «enumeration» |
| | Enumeration Literals | ditto | LogicalBusKind (from HardwareModeling) «enumeration» |
| | EventTriggered | ditto | LogicalBusKind (from HardwareModeling) «enumeration» |
| | other | ditto | LogicalBusKind (from HardwareModeling) «enumeration» |
| | TimeandEventTriggered | ditto | LogicalBusKind (from HardwareModeling) «enumeration» |
| | TimeTriggered | ditto | LogicalBusKind (from HardwareModeling) «enumeration» |
| | Associations | ditto | LogicalBusKind (from HardwareModeling) «enumeration» |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|--|------------------------|--|
| | No additional associations | ditto | LogicalBusKind (from HardwareModeling) «enumeration» |
| | Constraints | ditto | LogicalBusKind (from HardwareModeling) «enumeration» |
| | No additional constraints | ditto | LogicalBusKind (from HardwareModeling) «enumeration» |
| | nonVolatileMemory : Integer [1] | Removed attribute | Node (from HardwareModeling) |
| | volatileMemory : Integer [0..1] | Removed attribute | Node (from HardwareModeling) |
| [2] Can connect two FunctionClientServerPorts of different clientServerType. | [2] Can connect two ClientServerPorts of different kind. | Changed constraint | ClampConnector (from Environment) «atpStructureElement» |
| EExpression (from Values) | | Added inheritance | FunctionTrigger (from Behavior) |
| | triggerCondition : String [1] | Removed attribute | FunctionTrigger (from Behavior) |
| [4] Only FunctionFlowPort of FlowDirection=in shall be referred to in the association port. | [4] Only FunctionFlowPort of FlowDirection=in shall be referred to in the association port and at least one of them shall trigger the function | Changed constraint | FunctionTrigger (from Behavior) |
| privateContent : PrivateContent [*] {composite} | | Added association | ConfigurableContainer (from Variability) |
| EExpression (from Values) | FormulaExpression (from FormulaLanguage) | Changed inheritance | SelectionCriterion (from Variability) |
| decisionModel : VehicleLevelBinding [*] {composite} | decisionModel : VehicleLevelBinding [*] | Doc generation changed | Variability (from Variability) |
| [1] Identifies either one FunctionPrototype or one FunctionPort or one | [1] Identifies either one FunctionPrototype or one FunctionPort or one | Changed constraint | VariableElement (from Variability) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|---|---|---|
| FunctionConnector or one HardwareComponentPrototype or one HardwarePin or one ClampConnector. | FunctionConnector or one HardwareComponentPrototype or one HardwarePort or one ClampConnector. | | |
| [2] The sourceVehicleFeatureModels shall be different from the targetFeatureModels. | [2] The sourceVehicleFeatureModels shall be different from the targetFeatureModels | Minor editorial change | VehicleLevelBinding (from Variability) |
| kind : QualityRequirementKind [1] | qualityRequirementType : QualityRequirementKind [1] | Changed attribute name | QualityRequirement (from Requirements) |
| TraceableSpecification (from Elements) | RequirementSpecificationObject (from Requirements) | Changed inheritance | Requirement (from Requirements) |
| RequirementsHierarchy (from Requirements) | RequirementsContainer (from Requirements) | Changed metaclass name | RequirementsContainer (from Requirements) |
| containedRequirement : Requirement [0..1] | containedReqSpecObject : RequirementSpecificationObject [0..1] | Changed association role name and type | RequirementsContainer (from Requirements) |
| childHierarchy : RequirementsHierarchy [*] {ordered} {composite} | childContainer : RequirementsContainer [*] {ordered} {composite} | Changed association role name and type name | RequirementsContainer (from Requirements) |
| | parentContainer : RequirementsContainer [0..1] | Removed association | RequirementsContainer (from Requirements) |
| [1] Only non-root RequirementsHierarchy which is contained in another RequirementHierarchy are allowed to reference a | [1] Only non-root RequirementContainers (parentContainer must be set) which have a parentContainer are allowed to reference a | Changed constraint | RequirementsContainer (from Requirements) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|--|--|--|
| Requirement. | RequirementSpecificationObject. | | |
| requirementsRelationshipGroup : RequirementsRelationshipGroup [*] {composite} | | Added association | RequirementsModel (from Requirements) |
| requirement : Requirement [*] {composite} | requirement : RequirementSpecificationObject [*] {composite} | Changed association type | RequirementsModel (from Requirements) |
| requirementsHierarchy : RequirementsHierarchy [*] {ordered} {composite} | requirementContainer : RequirementsContainer [*] {composite} | Changed association role name and type name | RequirementsModel (from Requirements) |
| requirementType : UserElementType [*] {composite} | | Added association | RequirementsModel (from Requirements) |
| [1] The validFor attribute of the UserElementType shall be "Requirement". | No additional constraints | Added constraint | RequirementsModel (from Requirements) |
| | RequirementSpecificationObject (from Requirements) {abstract} | Removed metaclass | RequirementSpecificationObject (from Requirements) {abstract} |
| | Generalizations | ditto | RequirementSpecificationObject (from Requirements) {abstract} |
| | TraceableSpecification (from Elements) | ditto | RequirementSpecificationObject (from Requirements) {abstract} |
| | Attributes | ditto | RequirementSpecificationObject (from Requirements) {abstract} |
| | No additional attributes | ditto | RequirementSpecificationObject (from Requirements) {abstract} |
| | Associations | ditto | RequirementSpecificationObject (from Requirements) {abstract} |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|---|---|---|
| | referencingContainer : RequirementsContainer [1..*] | ditto | RequirementSpecificationObject (from Requirements) {abstract} |
| | Constraints | ditto | RequirementSpecificationObject (from Requirements) {abstract} |
| | No additional constraints | ditto | RequirementSpecificationObject (from Requirements) {abstract} |
| | RequirementsRelatedInformation (from Requirements) | Removed metaclass | RequirementsRelatedInformation (from Requirements) |
| | Generalizations | ditto | RequirementsRelatedInformation (from Requirements) |
| | RequirementSpecificationObject (from Requirements) | ditto | RequirementsRelatedInformation (from Requirements) |
| | Attributes | ditto | RequirementsRelatedInformation (from Requirements) |
| | No additional attributes | ditto | RequirementsRelatedInformation (from Requirements) |
| | Associations | ditto | RequirementsRelatedInformation (from Requirements) |
| | No additional associations | ditto | RequirementsRelatedInformation (from Requirements) |
| | Constraints | ditto | RequirementsRelatedInformation (from Requirements) |
| | No additional constraints | ditto | RequirementsRelatedInformation (from Requirements) |
| RequirementsRelationshipGroup (from Requirements) | RequirementsRelationGroup (from Requirements) | Changed metaclass name | RequirementsRelationGroup (from Requirements) |
| requirementsRelationship : RequirementsRelationship [1..*] | relation : RequirementsLink [1..*] | Changed association role name and type name | RequirementsRelationGroup (from Requirements) |
| | extension : UseCase [1] | Removed association role | Extend (from UseCases) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|---------------------------------------|-----------------------------------|---|
| | | name | |
| No additional associations | useCase : UseCase [1] | Removed association role name | ExtensionPoint (from UseCases) |
| | includingCase : UseCase [1] | Removed association role name | Include (from UseCases) |
| vvTarget : VVTarget [*] | vvTarget : VVTarget [1..*] | Changed association multiplicity | VVCase (from VerificationValidation) |
| | vvSubject : Identifiable [1..*] | Changed association to dependency | VVCase (from VerificationValidation) |
| | concreteVVCase : VVCase [*] | Removed association | VVCase (from VerificationValidation) |
| Dependencies | | Added dependency | VVCase (from VerificationValidation) |
| vvSubject : Identifiable [*] | | Added dependency | VVCase (from VerificationValidation) |
| «instanceRef» | | Added dependency | VVCase (from VerificationValidation) |
| [1] Only a concrete VVCase can have vvLog. | No additional constraints | Added constraint | VVCase (from VerificationValidation) |
| [2] Only a concrete VVCase can have vvTarget. | | Added constraint | VVCase (from VerificationValidation) |
| [3] Only a concrete VVCase can have an abstractVVCase. | | Added constraint | VVCase (from VerificationValidation) |
| | concreteVVProcedure : VVProcedure [*] | Removed association | VVProcedure (from VerificationValidation) |
| [1] Only a concrete VVProcedure can have vvStimuli. | No additional constraints | Added constraint | VVProcedure (from VerificationValidation) |
| [2] Only a concrete VVProcedure can have vvIntendedOutcome. | | Added constraint | VVProcedure (from VerificationValidation) |
| [3] Only a concrete VVProcedure can have an | | Added constraint | VVProcedure (from VerificationValidation) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|----------------------------|--|-----------------------------------|--|
| abstractVVProcedure . | | | |
| No additional associations | element : Identifiable [*] | Changed association to dependency | VVTarget (from VerificationValidation) |
| Dependencies | | Added dependency | VVTarget (from VerificationValidation) |
| element : Identifiable [*] | | Added dependency | VVTarget (from VerificationValidation) |
| «instanceRef» | | Added dependency | VVTarget (from VerificationValidation) |
| | Interchange | Removed package | Interchange |
| | RIFArea (from Interchange) {abstract} | Removed metaclass | RIFArea (from Interchange) {abstract} |
| | Generalizations | ditto | RIFArea (from Interchange) {abstract} |
| | Context (from Elements) | ditto | RIFArea (from Interchange) {abstract} |
| | Attributes | ditto | RIFArea (from Interchange) {abstract} |
| | No additional attributes | ditto | RIFArea (from Interchange) {abstract} |
| | Associations | ditto | RIFArea (from Interchange) {abstract} |
| | rootRequirementContainer : RequirementsContainer [*] {ordered} {composite} | ditto | RIFArea (from Interchange) {abstract} |
| | interchangeReqSpecObject : RequirementSpecificationObject [*] {composite} | ditto | RIFArea (from Interchange) {abstract} |
| | userDefinedType : UserAttributeElementType [*] {composite} | ditto | RIFArea (from Interchange) {abstract} |
| | Constraints | ditto | RIFArea (from Interchange) {abstract} |
| | No additional constraints | ditto | RIFArea (from Interchange) {abstract} |
| | RIFExportArea (from Interchange) | Removed metaclass | RIFExportArea (from Interchange) |
| | Generalizations | ditto | RIFExportArea (from Interchange) |
| | RIFArea (from Interchange) | ditto | RIFExportArea (from Interchange) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---------------------------|--|----------------------------------|----------------------------------|
| | Attributes | ditto | RIFExportArea (from Interchange) |
| | No additional attributes | ditto | RIFExportArea (from Interchange) |
| | Associations | ditto | RIFExportArea (from Interchange) |
| | No additional associations | ditto | RIFExportArea (from Interchange) |
| | Constraints | ditto | RIFExportArea (from Interchange) |
| | No additional constraints | ditto | RIFExportArea (from Interchange) |
| | RIFImportArea (from Interchange) | Removed metaclass | RIFImportArea (from Interchange) |
| | Generalizations | ditto | RIFImportArea (from Interchange) |
| | RIFArea (from Interchange) | ditto | RIFImportArea (from Interchange) |
| | Attributes | ditto | RIFImportArea (from Interchange) |
| | No additional attributes | ditto | RIFImportArea (from Interchange) |
| | Associations | ditto | RIFImportArea (from Interchange) |
| | No additional associations | ditto | RIFImportArea (from Interchange) |
| | Constraints | ditto | RIFImportArea (from Interchange) |
| | No additional constraints | ditto | RIFImportArea (from Interchange) |
| No additional attributes | isStateChange : Boolean = true [1] | Removed attribute | Event (from Timing) {abstract} |
| No additional constraints | [1] In the case that the event reports a [current] state (isStateChange is FALSE), the event must have a periodic event model [or a pattern model]. Rationale: The [current] state shall be reported consistently and periodically. | Removed constraint | Event (from Timing) {abstract} |
| stimulus : Event [1] | stimulus : Event [1..*] | Changed association multiplicity | EventChain (from Timing) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---------------------------|--|----------------------------------|---------------------------------------|
| response : Event [1] | response : Event [1..*] | Changed association multiplicity | EventChain (from Timing) |
| | strand : EventChain [*] | Removed association | EventChain (from Timing) |
| No additional constraints | [1] The cardinality of strand shall be either 0 or greater than 1. Rationale: Only values > 1 express true parallelism. | Removed constraint | EventChain (from Timing) |
| | ExecutionTimeConstraint (from Timing) | Removed metaclass | ExecutionTimeConstraint (from Timing) |
| | Generalizations | ditto | ExecutionTimeConstraint (from Timing) |
| | TimingConstraint (from Timing) | ditto | ExecutionTimeConstraint (from Timing) |
| | Attributes | ditto | ExecutionTimeConstraint (from Timing) |
| | No additional attributes | ditto | ExecutionTimeConstraint (from Timing) |
| | Associations | ditto | ExecutionTimeConstraint (from Timing) |
| | targetDesignFunction : DesignFunctionType [0..1] | ditto | ExecutionTimeConstraint (from Timing) |
| | targetDesignFunctionPrototype : DesignFunctionPrototype [0..1] | ditto | ExecutionTimeConstraint (from Timing) |
| | variation : TimeDuration [1] {composite} | ditto | ExecutionTimeConstraint (from Timing) |
| | Constraints | ditto | ExecutionTimeConstraint (from Timing) |
| | [1] An ExecutionTimeConstraint either identifies a FunctionType or a FunctionPrototype as its target function. | ditto | ExecutionTimeConstraint (from Timing) |
| | [2] variation shall be a value between 0 and upper-lower. | ditto | ExecutionTimeConstraint (from Timing) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|--|-------------------------------------|---|
| | TimeDuration (from Timing) | Removed metaclass | TimeDuration (from Timing) |
| | Generalizations | ditto | TimeDuration (from Timing) |
| | EAElement (from Elements) | ditto | TimeDuration (from Timing) |
| | Attributes | ditto | TimeDuration (from Timing) |
| | cseCode : CseCodeType = Time [1] | ditto | TimeDuration (from Timing) |
| | cseCodeFactor : Integer = 1 [1] | ditto | TimeDuration (from Timing) |
| | value : Float = 0.0 [1] | ditto | TimeDuration (from Timing) |
| | Associations | ditto | TimeDuration (from Timing) |
| | No additional associations | ditto | TimeDuration (from Timing) |
| | Constraints | ditto | TimeDuration (from Timing) |
| | No additional constraints | ditto | TimeDuration (from Timing) |
| constraint : TimingConstraint [*] {composite} | timingConstraint : TimingConstraint [*] {composite} | Changed association role name | Timing (from Timing) |
| description : TimingDescription [*] {composite} | timingDescription : TimingDescription [*] {composite} | Changed association role name | Timing (from Timing) |
| mode : Mode [0..1] | mode : Mode [*] | Changed association multiplicity | TimingConstraint (from Timing) {abstract} |
| | upper : TimeDuration [0..1] {composite} | Removed association | TimingConstraint (from Timing) {abstract} |
| | lower : TimeDuration [0..1] {composite} | Removed association | TimingConstraint (from Timing) {abstract} |
| No additional constraints | [1] upper shall be greater or equal to lower. | Removed constraint | TimingConstraint (from Timing) {abstract} |
| TimingExpression (from Timing) | | Added metaclass | TimingExpression (from Timing) {abstract} |
| Generalizations | | ditto | TimingExpression (from Timing) {abstract} |
| EAEExpression (from Values) | | ditto | TimingExpression (from Timing) {abstract} |
| Attributes | | ditto | TimingExpression (from Timing) {abstract} |
| No additional attributes | | ditto | TimingExpression (from Timing) {abstract} |
| Associations | | ditto | TimingExpression (from Timing) {abstract} |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|--|--|---|
| No additional associations | | ditto | TimingExpression (from Timing) {abstract} |
| Constraints | | ditto | TimingExpression (from Timing) {abstract} |
| No additional constraints | | ditto | TimingExpression (from Timing) {abstract} |
| AgeConstraint (from TimingConstraints) | AgeTimingConstraint (from TimingConstraints) | Renamed metaclass | AgeTimingConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | DelayConstraint (from TimingConstraints) | Changed inheritance | AgeTimingConstraint (from TimingConstraints) |
| scope : EventChain [1] | No additional associations | Added association | AgeTimingConstraint (from TimingConstraints) |
| maximum : TimingExpression [0..1] {composite} | | Added association | AgeTimingConstraint (from TimingConstraints) |
| minimum : TimingExpression [0..1] {composite} | | Added association | AgeTimingConstraint (from TimingConstraints) |
| ArbitraryConstraint (from TimingConstraints) | ArbitraryEventConstraint (from TimingConstraints) | Renamed metaclass | ArbitraryEventConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | EventConstraint (from TimingConstraints) | Changed inheritance | ArbitraryEventConstraint (from TimingConstraints) |
| event : Event [1] | | Added association | ArbitraryEventConstraint (from TimingConstraints) |
| maximum : TimingExpression [1..*] {composite} | maximumInterArrivalTime : TimeDuration [1..*] {composite} | Changed association role name and type | ArbitraryEventConstraint (from TimingConstraints) |
| minimum : TimingExpression [1..*] {composite} | minimumInterArrivalTime : TimeDuration [1..*] {composite} | Changed association role name and type | ArbitraryEventConstraint (from TimingConstraints) |
| [1] The number of elements in minimum and maximum must be equal. | [1] The number of elements in the sets minimum inter-arrival time and maximum inter-arrival time must be the same. Rationale: Consistent specification of arrival times. | Changed constraint | ArbitraryEventConstraint (from TimingConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|---------|-----------------|---|
| BurstConstraint (from TimingConstraints) | | Added metaclass | BurstConstraint (from TimingConstraints) |
| Generalizations | | ditto | BurstConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | | ditto | BurstConstraint (from TimingConstraints) |
| Attributes | | ditto | BurstConstraint (from TimingConstraints) |
| maxOccurences : Integer [1] | | ditto | BurstConstraint (from TimingConstraints) |
| Associations | | ditto | BurstConstraint (from TimingConstraints) |
| event : Event [1] | | ditto | BurstConstraint (from TimingConstraints) |
| length : TimingExpression [1] {composite} | | ditto | BurstConstraint (from TimingConstraints) |
| minimum : TimingExpression [0..1] {composite} | | ditto | BurstConstraint (from TimingConstraints) |
| Constraints | | ditto | BurstConstraint (from TimingConstraints) |
| No additional constraints | | ditto | BurstConstraint (from TimingConstraints) |
| ComparisonConstraint (from TimingConstraints) | | Added metaclass | ComparisonConstraint (from TimingConstraints) |
| Generalizations | | ditto | ComparisonConstraint (from TimingConstraints) |
| None | | ditto | ComparisonConstraint (from TimingConstraints) |
| Attributes | | ditto | ComparisonConstraint (from TimingConstraints) |
| operator : ComparisonKind [1] | | ditto | ComparisonConstraint (from TimingConstraints) |
| Associations | | ditto | ComparisonConstraint (from TimingConstraints) |
| rightOperand : TimingExpression [1] {composite} | | ditto | ComparisonConstraint (from TimingConstraints) |
| leftOperand : TimingExpression [1] {composite} | | ditto | ComparisonConstraint (from TimingConstraints) |
| Constraints | | ditto | ComparisonConstraint (from |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|----------------|-----------------|---|
| | | | TimingConstraints) |
| No additional constraints | | ditto | ComparisonConstraint (from TimingConstraints) |
| ComparisonKind (from TimingConstraints) «enumeration» | | Added metaclass | ComparisonKind (from TimingConstraints) «enumeration» |
| Generalizations | | ditto | ComparisonKind (from TimingConstraints) «enumeration» |
| None | | ditto | ComparisonKind (from TimingConstraints) «enumeration» |
| Enumeration Literals | | ditto | ComparisonKind (from TimingConstraints) «enumeration» |
| equal | | ditto | ComparisonKind (from TimingConstraints) «enumeration» |
| greaterThan | | ditto | ComparisonKind (from TimingConstraints) «enumeration» |
| greaterThanOrEqual | | ditto | ComparisonKind (from TimingConstraints) «enumeration» |
| lessThan | | ditto | ComparisonKind (from TimingConstraints) «enumeration» |
| lessThanOrEqual | | ditto | ComparisonKind (from TimingConstraints) «enumeration» |
| Associations | | ditto | ComparisonKind (from TimingConstraints) «enumeration» |
| No additional associations | | ditto | ComparisonKind (from TimingConstraints) «enumeration» |
| Constraints | | ditto | ComparisonKind (from TimingConstraints) «enumeration» |
| No additional constraints | | ditto | ComparisonKind (from TimingConstraints) «enumeration» |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|---|-------------------------------|---|
| DelayConstraint (from TimingConstraints) | DelayConstraint (from TimingConstraints) {abstract} | Changed metaclass to concrete | DelayConstraint (from TimingConstraints) {abstract} |
| target : Event [1] | | Added association | DelayConstraint (from TimingConstraints) {abstract} |
| source : Event [1] | | Added association | DelayConstraint (from TimingConstraints) {abstract} |
| lower : TimingExpression [0..1] {composite} | | Added association | DelayConstraint (from TimingConstraints) {abstract} |
| upper : TimingExpression [0..1] {composite} | | Added association | DelayConstraint (from TimingConstraints) {abstract} |
| | jitter : TimeDuration [0..1] {composite} | Removed association | DelayConstraint (from TimingConstraints) {abstract} |
| | nominal : TimeDuration [0..1] {composite} | Removed association | DelayConstraint (from TimingConstraints) {abstract} |
| | scope : EventChain [0..1] | Removed association | DelayConstraint (from TimingConstraints) {abstract} |
| No additional constraints | [1] Exactly one of the following combinations of upper, lower, jitter, and nominal shall be specified: {upper, lower}, {upper, lower, jitter}, {upper}, {lower}, {nominal, jitter}. | Removed constraint | DelayConstraint (from TimingConstraints) {abstract} |
| | Any combination may in addition have a nominal parameter. If nominal is defined, it shall be in the range [lower ... upper]. | ditto | DelayConstraint (from TimingConstraints) {abstract} |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|---|-----------------|---|
| | Rationale: At least one value is necessary to describe a reasonable DelayConstraint, and the given combinations are sufficient to describe all possible variations. | ditto | DelayConstraint (from TimingConstraints) {abstract} |
| ExecutionTimeConstraint (from TimingConstraints) | | Added metaclass | ExecutionTimeConstraint (from TimingConstraints) |
| Generalizations | | ditto | ExecutionTimeConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | | ditto | ExecutionTimeConstraint (from TimingConstraints) |
| Attributes | | ditto | ExecutionTimeConstraint (from TimingConstraints) |
| No additional attributes | | ditto | ExecutionTimeConstraint (from TimingConstraints) |
| Associations | | ditto | ExecutionTimeConstraint (from TimingConstraints) |
| preemption : Event [0..*] {ordered} | | ditto | ExecutionTimeConstraint (from TimingConstraints) |
| stop : Event [1] | | ditto | ExecutionTimeConstraint (from TimingConstraints) |
| start : Event [1] | | ditto | ExecutionTimeConstraint (from TimingConstraints) |
| resume : Event [0..*] {ordered} | | ditto | ExecutionTimeConstraint (from TimingConstraints) |
| upper : TimingExpression [0..1] {composite} | | ditto | ExecutionTimeConstraint (from TimingConstraints) |
| lower : TimingExpression [0..1] {composite} | | ditto | ExecutionTimeConstraint (from TimingConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|--|--|---|
| Constraints | | ditto | ExecutionTimeConstraint (from TimingConstraints) |
| No additional constraints | | ditto | ExecutionTimeConstraint (from TimingConstraints) |
| | EventConstraint (from TimingConstraints) {abstract} | Removed metaclass | EventConstraint (from TimingConstraints) {abstract} |
| | Generalizations | ditto | EventConstraint (from TimingConstraints) {abstract} |
| | TimingConstraint (from Timing) | ditto | EventConstraint (from TimingConstraints) {abstract} |
| | Attributes | ditto | EventConstraint (from TimingConstraints) {abstract} |
| | No additional attributes | ditto | EventConstraint (from TimingConstraints) {abstract} |
| | Associations | ditto | EventConstraint (from TimingConstraints) {abstract} |
| | offset : TimeDuration [0..1] {composite} | ditto | EventConstraint (from TimingConstraints) {abstract} |
| | event : Event [0..1] | ditto | EventConstraint (from TimingConstraints) {abstract} |
| | Constraints | ditto | EventConstraint (from TimingConstraints) {abstract} |
| | No additional constraints | ditto | EventConstraint (from TimingConstraints) {abstract} |
| TimingConstraint (from Timing) | AgeTimingConstraint (from TimingConstraints) | Changed inheritance | InputSynchronizationConstraint (from TimingConstraints) |
| scope : EventChain [2..*] | | Added association | InputSynchronizationConstraint (from TimingConstraints) |
| tolerance : TimingExpression [0..1] {composite} | width : TimeDuration [1] {composite} | Changed association role name, type and multiplicity | InputSynchronizationConstraint (from TimingConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|---|--------------------|---|
| [1] All scopes must reference one common response event. | [1] The set of FunctionFlowPorts referenced by the events should contain only FlowPorts with direction = in. The rationale for this is that the events shall relate to data on FunctionFlowPorts which is considered (or shall be) temporally consistent. | Changed constraint | InputSynchronizationConstraint (from TimingConstraints) |
| | [2] The semantics of this constraint requires that there is more than one stimulus Event in the scope EventChain (each referring to a different FlowPort with direction = in). | Removed constraint | InputSynchronizationConstraint (from TimingConstraints) |
| | [3] The parameters 'nominal' and 'jitter' (from DelayConstraint) are not relevant for InputSynchronizationConstraint. | Removed constraint | InputSynchronizationConstraint (from TimingConstraints) |
| OrderConstraint (from TimingConstraints) | | Added metaclass | OrderConstraint (from TimingConstraints) |
| Generalizations | | ditto | OrderConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | | ditto | OrderConstraint (from TimingConstraints) |
| Attributes | | ditto | OrderConstraint (from TimingConstraints) |
| No additional attributes | | ditto | OrderConstraint (from TimingConstraints) |
| Associations | | ditto | OrderConstraint (from TimingConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|--|--|--|
| source : Event [1] | | ditto | OrderConstraint (from TimingConstraints) |
| target : Event [1] | | ditto | OrderConstraint (from TimingConstraints) |
| Constraints | | ditto | OrderConstraint (from TimingConstraints) |
| No additional constraints | | ditto | OrderConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | ReactionConstraint (from TimingConstraints) | Changed inheritance | OutputSynchronizationConstraint (from TimingConstraints) |
| scope : EventChain [2..*] | | Added association | OutputSynchronizationConstraint (from TimingConstraints) |
| tolerance : TimingExpression [0..1] {composite} | width : TimeDuration [1] {composite} | Changed association role name, type and multiplicity | OutputSynchronizationConstraint (from TimingConstraints) |
| [1] All scopes must reference one common stimulus event. | [1] The set of FunctionFlowPorts referenced by the events should contain only OutFlowPorts. The rationale for this is that the events shall relate to data on FunctionFlowPorts which is considered (or shall be) temporally consistent. | Changed constraint | OutputSynchronizationConstraint (from TimingConstraints) |
| | [2] The semantics of this constraint require that there is more than one response Events in the scope EventChain. | Removed constraint | OutputSynchronizationConstraint (from TimingConstraints) |
| | [3] The parameters 'nominal' and 'jitter' (from DelayConstraint) are not relevant for | Removed constraint | OutputSynchronizationConstraint (from TimingConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|---|--|--|
| | OutputSynchronizationConstraint. | | |
| PatternConstraint (from TimingConstraints) | PatternEventConstraint (from TimingConstraints) | Renamed metaclass | PatternEventConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | EventConstraint (from TimingConstraints) | Changed inheritance | PatternEventConstraint (from TimingConstraints) |
| event : Event [1] | | Added association | PatternEventConstraint (from TimingConstraints) |
| period : TimingExpression [1] {composite} | period : TimeDuration [1] {composite} | Changed association type | PatternEventConstraint (from TimingConstraints) |
| jitter : TimingExpression [0..1] {composite} | jitter : TimeDuration [1] {composite} | Changed association type and multiplicity | PatternEventConstraint (from TimingConstraints) |
| minimum : TimingExpression [0..1] {composite} | minimumInterArrivalTime : TimeDuration [1] {composite} | Changed association role name, type and multiplicity | PatternEventConstraint (from TimingConstraints) |
| offset : TimingExpression [1..*] {composite} | occurrence : TimeDuration [1..*] {ordered} {composite} | Changed association role name, type and multiplicity | PatternEventConstraint (from TimingConstraints) |
| PeriodicConstraint (from TimingConstraints) | PeriodicEventConstraint (from TimingConstraints) | Renamed metaclass | PeriodicEventConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | EventConstraint (from TimingConstraints) | Changed inheritance | PeriodicEventConstraint (from TimingConstraints) |
| event : Event [1] | | Added association | PeriodicEventConstraint (from TimingConstraints) |
| minimum : TimingExpression [0..1] {composite} | minimumInterArrivalTime : TimeDuration [1] {composite} | Changed association role name, type and multiplicity | PeriodicEventConstraint (from TimingConstraints) |
| period : TimingExpression [1] {composite} | period : TimeDuration [1] {composite} | Changed association type | PeriodicEventConstraint (from TimingConstraints) |
| jitter : TimingExpression [0..1] {composite} | jitter : TimeDuration [1] {composite} | Changed association type and multiplicity | PeriodicEventConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | DelayConstraint (from TimingConstraints) | Changed inheritance | ReactionConstraint (from TimingConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|---|---------------------|--|
| scope : EventChain [1] | No additional associations | Added association | ReactionConstraint (from TimingConstraints) |
| maximum : TimingExpression [0..1] {composite} | | Added association | ReactionConstraint (from TimingConstraints) |
| minimum : TimingExpression [0..1] {composite} | | Added association | ReactionConstraint (from TimingConstraints) |
| RepetitionConstraint (from TimingConstraints) | | Added metaclass | RepetitionConstraint (from TimingConstraints) |
| Generalizations | | ditto | RepetitionConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | | ditto | RepetitionConstraint (from TimingConstraints) |
| Attributes | | ditto | RepetitionConstraint (from TimingConstraints) |
| span : Integer = 1 [1] | | ditto | RepetitionConstraint (from TimingConstraints) |
| Associations | | ditto | RepetitionConstraint (from TimingConstraints) |
| event : Event [1] | | ditto | RepetitionConstraint (from TimingConstraints) |
| jitter : TimingExpression [0..1] {composite} | | ditto | RepetitionConstraint (from TimingConstraints) |
| lower : TimingExpression [0..1] {composite} | | ditto | RepetitionConstraint (from TimingConstraints) |
| upper : TimingExpression [0..1] {composite} | | ditto | RepetitionConstraint (from TimingConstraints) |
| Constraints | | ditto | RepetitionConstraint (from TimingConstraints) |
| No additional constraints | | ditto | RepetitionConstraint (from TimingConstraints) |
| SporadicConstraint (from TimingConstraints) | SporadicEventConstraint (from TimingConstraints) | Renamed metaclass | SporadicEventConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | EventConstraint (from | Changed inheritance | SporadicEventConstraint (from |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|---|--------------------------|--|
| | TimingConstraints) | | TimingConstraints) |
| event : Event [1] | | Added association | SporadicEventConstraint (from TimingConstraints) |
| lower : TimingExpression [0..1] {composite} | | Added association | SporadicEventConstraint (from TimingConstraints) |
| minimum : TimingExpression [0..1] {composite} | | Added association | SporadicEventConstraint (from TimingConstraints) |
| upper : TimingExpression [0..1] {composite} | | Added association | SporadicEventConstraint (from TimingConstraints) |
| jitter : TimingExpression [0..1] {composite} | jitter : TimeDuration [0..1] {composite} | Changed association type | SporadicEventConstraint (from TimingConstraints) |
| | period : TimeDuration [1] {composite} | Removed association | SporadicEventConstraint (from TimingConstraints) |
| | maximumInterArrivalTime : TimeDuration [0..1] {composite} | Removed association | SporadicEventConstraint (from TimingConstraints) |
| | minimumInterArrivalTime : TimeDuration [1] {composite} | Removed association | SporadicEventConstraint (from TimingConstraints) |
| StrongDelayConstraint (from TimingConstraints) | | Added metaclass | StrongDelayConstraint (from TimingConstraints) |
| Generalizations | | ditto | StrongDelayConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | | ditto | StrongDelayConstraint (from TimingConstraints) |
| Attributes | | ditto | StrongDelayConstraint (from TimingConstraints) |
| No additional attributes | | ditto | StrongDelayConstraint (from TimingConstraints) |
| Associations | | ditto | StrongDelayConstraint (from TimingConstraints) |
| source : Event [1] | | ditto | StrongDelayConstraint (from TimingConstraints) |
| target : Event [1] | | ditto | StrongDelayConstraint (from |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|----------------|-----------------|---|
| | | | TimingConstraints) |
| lower : TimingExpression [0..1] {composite} | | ditto | StrongDelayConstraint (from TimingConstraints) |
| upper : TimingExpression [0..1] {composite} | | ditto | StrongDelayConstraint (from TimingConstraints) |
| Constraints | | ditto | StrongDelayConstraint (from TimingConstraints) |
| No additional constraints | | ditto | StrongDelayConstraint (from TimingConstraints) |
| StrongSynchronizationConstraint (from TimingConstraints) | | Added metaclass | StrongSynchronizationConstraint (from TimingConstraints) |
| Generalizations | | ditto | StrongSynchronizationConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | | ditto | StrongSynchronizationConstraint (from TimingConstraints) |
| Attributes | | ditto | StrongSynchronizationConstraint (from TimingConstraints) |
| No additional attributes | | ditto | StrongSynchronizationConstraint (from TimingConstraints) |
| Associations | | ditto | StrongSynchronizationConstraint (from TimingConstraints) |
| event : Event [2..*] | | ditto | StrongSynchronizationConstraint (from TimingConstraints) |
| tolerance : TimingExpression [0..1] {composite} | | ditto | StrongSynchronizationConstraint (from TimingConstraints) |
| Constraints | | ditto | StrongSynchronizationConstraint (from TimingConstraints) |
| No additional constraints | | ditto | StrongSynchronizationConstraint (from TimingConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|----------------|-----------------|--|
| SynchronizationConstraint (from TimingConstraints) | | Added metaclass | SynchronizationConstraint (from TimingConstraints) |
| Generalizations | | ditto | SynchronizationConstraint (from TimingConstraints) |
| TimingConstraint (from Timing) | | ditto | SynchronizationConstraint (from TimingConstraints) |
| Attributes | | ditto | SynchronizationConstraint (from TimingConstraints) |
| No additional attributes | | ditto | SynchronizationConstraint (from TimingConstraints) |
| Associations | | ditto | SynchronizationConstraint (from TimingConstraints) |
| event : Event [2..*] | | ditto | SynchronizationConstraint (from TimingConstraints) |
| tolerance : TimingExpression [0..1] {composite} | | ditto | SynchronizationConstraint (from TimingConstraints) |
| Constraints | | ditto | SynchronizationConstraint (from TimingConstraints) |
| No additional constraints | | ditto | SynchronizationConstraint (from TimingConstraints) |
| AUTOSAREvent (from Events) | | Added metaclass | AUTOSAREvent (from Events) |
| Generalizations | | ditto | AUTOSAREvent (from Events) |
| Event (from Timing) | | ditto | AUTOSAREvent (from Events) |
| Attributes | | ditto | AUTOSAREvent (from Events) |
| No additional attributes | | ditto | AUTOSAREvent (from Events) |
| Associations | | ditto | AUTOSAREvent (from Events) |
| ref : TimingDescriptionEvent [1] | | ditto | AUTOSAREvent (from Events) |
| Constraints | | ditto | AUTOSAREvent (from Events) |
| No additional constraints | | ditto | AUTOSAREvent (from Events) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|----------------|-------------------|---|
| EventFaultFailure (from Events) | | Added metaclass | EventFaultFailure (from Events) |
| Generalizations | | ditto | EventFaultFailure (from Events) |
| Event (from Timing) | | ditto | EventFaultFailure (from Events) |
| Attributes | | ditto | EventFaultFailure (from Events) |
| No additional attributes | | ditto | EventFaultFailure (from Events) |
| Associations | | ditto | EventFaultFailure (from Events) |
| faultFailure : FaultFailure [1] | | ditto | EventFaultFailure (from Events) |
| Constraints | | ditto | EventFaultFailure (from Events) |
| No additional constraints | | ditto | EventFaultFailure (from Events) |
| EventFeatureFlaw (from Events) | | Added metaclass | EventFeatureFlaw (from Events) |
| Generalizations | | ditto | EventFeatureFlaw (from Events) |
| Event (from Timing) | | ditto | EventFeatureFlaw (from Events) |
| Attributes | | ditto | EventFeatureFlaw (from Events) |
| No additional attributes | | ditto | EventFeatureFlaw (from Events) |
| Associations | | ditto | EventFeatureFlaw (from Events) |
| featureFlaw : FeatureFlaw [1] | | ditto | EventFeatureFlaw (from Events) |
| Constraints | | ditto | EventFeatureFlaw (from Events) |
| No additional constraints | | ditto | EventFeatureFlaw (from Events) |
| EAExpression (from Values) | | Added inheritance | EventFunctionClientServerPort (from Events) |
| EAExpression (from Values) | | Added inheritance | EventFunctionFlowPort (from Events) |
| ExternalEvent (from Events) | | Added metaclass | ExternalEvent (from Events) |
| Generalizations | | ditto | ExternalEvent (from Events) |
| Event (from Timing) | | ditto | ExternalEvent (from Events) |
| Attributes | | ditto | ExternalEvent (from Events) |
| No additional attributes | | Removed attribute | ExternalEvent (from Events) |
| Associations | | ditto | ExternalEvent (from Events) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---------------------------------|---------------------------------|--------------------------------------|--|
| No additional associations | | ditto | ExternalEvent (from Events) |
| Constraints | | ditto | ExternalEvent (from Events) |
| No additional constraints | | ditto | ExternalEvent (from Events) |
| ModeEvent (from Events) | | Added metaclass | ModeEvent (from Events) |
| Generalizations | | ditto | ModeEvent (from Events) |
| Event (from Timing) | | ditto | ModeEvent (from Events) |
| Attributes | | ditto | ModeEvent (from Events) |
| No additional attributes | | ditto | ModeEvent (from Events) |
| Associations | | ditto | ModeEvent (from Events) |
| start : Mode [*] | | ditto | ModeEvent (from Events) |
| end : Mode [*] | | ditto | ModeEvent (from Events) |
| Constraints | | ditto | ModeEvent (from Events) |
| No additional constraints | | ditto | ModeEvent (from Events) |
| StateEvent (from Events) | | NOTE refer to annex, Added metaclass | StateEvent (from Events) |
| Generalizations | | ditto | StateEvent (from Events) |
| Event (from Timing) | | ditto | StateEvent (from Events) |
| Attributes | | ditto | StateEvent (from Events) |
| No additional attributes | | ditto | StateEvent (from Events) |
| Associations | | ditto | StateEvent (from Events) |
| end : State [0..1] | | ditto | StateEvent (from Events) |
| start : State [0..1] | | ditto | StateEvent (from Events) |
| Constraints | | ditto | StateEvent (from Events) |
| No additional constraints | | ditto | StateEvent (from Events) |
| No additional attributes | genericDescription : String [1] | Removed attribute | Anomaly (from ErrorModel) {abstract} «atpPrototype» |
| | owner : ErrorModelType [1] | Removed association role name | ErrorBehavior (from ErrorModel) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|--|----------------------------------|---|
| EAPrototype (from Elements) | | Added inheritance | ErrorModelPrototype (from ErrorModel) «atpPrototype» |
| EAType (from Elements) | | Added inheritance | ErrorModelType (from ErrorModel) «atpType» |
| No additional attributes | genericDescription : String = NA [1] | Removed attribute | ErrorModelType (from ErrorModel) «atpType» |
| externalFault : FaultInPort [*] {composite} | externalFault : FaultInPort [*] | Doc generation changed | ErrorModelType (from ErrorModel) «atpType» |
| [1] An ErrorModelType without part shall have one errorBehaviorDescription. | An ErrorModelType without part shall have one errorBehaviorDescription | Minor editorial change | ErrorModelType (from ErrorModel) «atpType» |
| EAPort (from Elements) | | Added inheritance | FaultFailurePort (from ErrorModel) {abstract} «atpPrototype» |
| EAConnector (from Elements) | | Added inheritance | FaultFailurePropagationLink (from ErrorModel) |
| faultFailureValue : EAValue [1] {composite} | faultFailureValue : EADatatypePrototype [1] {composite} | Changed association type | FaultFailure (from SafetyConstraints) |
| anomaly : Anomaly [*] | anomaly : Anomaly [0..1] | Changed association multiplicity | FaultFailure (from SafetyConstraints) |
| [1] faultFailureValue shall have the same datatype as the referenced Anomal(ies) or be of type EABoolean. | No additional constraints | Added constraint | FaultFailure (from SafetyConstraints) |
| RequirementsHierarchy (from Requirements) | RequirementsContainer (from Requirements) | Changed inheritance | FunctionalSafetyConcept (from SafetyRequirement) |
| RequirementsHierarchy (from Requirements) | RequirementsContainer (from Requirements) | Changed inheritance | TechnicalSafetyConcept (from SafetyRequirement) |
| kind : GenericConstraintKind [1] | genericConstraintType : GenericConstraintKind [1] | Changed attribute name | GenericConstraint (from GenericConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---------------------------------------|-------------------------------------|----------------------------------|---|
| | genericConstraintValue : String [1] | Removed attribute | GenericConstraint (from GenericConstraints) |
| value : EAValue [0..1] {composite} | | Added association | GenericConstraint (from GenericConstraints) |
| current | | Added enumeration literal | GenericConstraintKind (from GenericConstraints) «enumeration» |
| functionAllocationDifferentHW | functionAllocationDifferentNodes | Changed enumeration literal name | GenericConstraintKind (from GenericConstraints) «enumeration» |
| functionAllocationSameHW | functionAllocationSameNode | Changed enumeration literal name | GenericConstraintKind (from GenericConstraints) «enumeration» |
| impedance | | Added enumeration literal | GenericConstraintKind (from GenericConstraints) «enumeration» |
| insulation | | Added enumeration literal | GenericConstraintKind (from GenericConstraints) «enumeration» |
| memory | | Added enumeration literal | GenericConstraintKind (from GenericConstraints) «enumeration» |
| nonVolatileMemory | | Added enumeration literal | GenericConstraintKind (from GenericConstraints) «enumeration» |
| realizationDifferent | | Added enumeration literal | GenericConstraintKind (from GenericConstraints) «enumeration» |
| realizationSame | | Added enumeration literal | GenericConstraintKind (from GenericConstraints) «enumeration» |
| utilization | | Added enumeration literal | GenericConstraintKind (from GenericConstraints) «enumeration» |
| volatileMemory | | Added enumeration literal | GenericConstraintKind (from GenericConstraints) «enumeration» |
| voltage | | Added enumeration literal | GenericConstraintKind (from GenericConstraints) «enumeration» |
| ArrayDatatype (from Datatypes) | | Added metaclass | ArrayDatatype (from Datatypes) |
| Generalizations | | ditto | ArrayDatatype (from Datatypes) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|-------------------------------------|------------------------------------|-------------------|--------------------------------|
| EADatatype (from Datatypes) | | ditto | ArrayDatatype (from Datatypes) |
| Attributes | | ditto | ArrayDatatype (from Datatypes) |
| maxLength : Integer [0..1] | | ditto | ArrayDatatype (from Datatypes) |
| minLength : Integer [0..1] | | ditto | ArrayDatatype (from Datatypes) |
| Associations | | ditto | ArrayDatatype (from Datatypes) |
| elementType : EADatatype [1] | | ditto | ArrayDatatype (from Datatypes) |
| | | ditto | ArrayDatatype (from Datatypes) |
| Constraints | | ditto | ArrayDatatype (from Datatypes) |
| No additional constraints | | ditto | ArrayDatatype (from Datatypes) |
| EANumerical (from Datatypes) | | Added metaclass | EANumerical (from Datatypes) |
| Generalizations | | ditto | EANumerical (from Datatypes) |
| EADatatype (from Datatypes) | | ditto | EANumerical (from Datatypes) |
| Attributes | | ditto | EANumerical (from Datatypes) |
| max : Numerical [0..1] | | ditto | EANumerical (from Datatypes) |
| min : Numerical [0..1] | | ditto | EANumerical (from Datatypes) |
| Associations | | ditto | EANumerical (from Datatypes) |
| unit : Unit [0..1] | | ditto | EANumerical (from Datatypes) |
| Constraints | | ditto | EANumerical (from Datatypes) |
| No additional constraints | | ditto | EANumerical (from Datatypes) |
| | EAFloat (from Datatypes) | Removed metaclass | EAFloat (from Datatypes) |
| | Generalizations | ditto | EAFloat (from Datatypes) |
| | RangeableDatatype (from Datatypes) | ditto | EAFloat (from Datatypes) |
| | Attributes | ditto | EAFloat (from Datatypes) |
| | max : Float [0..1] | ditto | EAFloat (from Datatypes) |
| | min : Float [0..1] | ditto | EAFloat (from Datatypes) |
| | Associations | ditto | EAFloat (from Datatypes) |
| | No additional associations | ditto | EAFloat (from Datatypes) |
| | Constraints | ditto | EAFloat (from Datatypes) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|------------------------------------|-------------------|------------------------------|
| | No additional constraints | ditto | EAFloat (from Datatypes) |
| | EInteger (from Datatypes) | Removed metaclass | EInteger (from Datatypes) |
| | Generalizations | ditto | EInteger (from Datatypes) |
| | RangeableDatatype (from Datatypes) | ditto | EInteger (from Datatypes) |
| | Attributes | ditto | EInteger (from Datatypes) |
| | max : Integer [0..1] | ditto | EInteger (from Datatypes) |
| | min : Integer [0..1] | ditto | EInteger (from Datatypes) |
| | Associations | ditto | EInteger (from Datatypes) |
| | No additional associations | ditto | EInteger (from Datatypes) |
| | Constraints | ditto | EInteger (from Datatypes) |
| | No additional constraints | ditto | EInteger (from Datatypes) |
| isMultiValued : Boolean [1] | No additional attributes | Added attribute | Enumeration (from Datatypes) |
| Quantity (from Datatypes) | | Added metaclass | Quantity (from Datatypes) |
| Generalizations | | ditto | Quantity (from Datatypes) |
| EAPackageableElement (from Elements) | | ditto | Quantity (from Datatypes) |
| Attributes | | ditto | Quantity (from Datatypes) |
| amountOfSubstanceExp : Integer = 0 [1] | | ditto | Quantity (from Datatypes) |
| electricCurrentExp : Integer = 0 [1] | | ditto | Quantity (from Datatypes) |
| lengthExp : Integer = 0 [1] | | ditto | Quantity (from Datatypes) |
| luminousIntensityExp : Integer = 0 [1] | | ditto | Quantity (from Datatypes) |
| massExp : Integer = 0 [1] | | ditto | Quantity (from Datatypes) |
| thermodynamicTemperatureExp : Integer = 0 [1] | | ditto | Quantity (from Datatypes) |
| timeExp : Integer = 0 [1] | | ditto | Quantity (from Datatypes) |
| Associations | | ditto | Quantity (from Datatypes) |
| No additional associations | | ditto | Quantity (from Datatypes) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---------------------------|--|-------------------|---|
| Constraints | | ditto | Quantity (from Datatypes) |
| No additional constraints | | ditto | Quantity (from Datatypes) |
| | EnumerationValueType (from Datatypes) | Removed metaclass | EnumerationValueType (from Datatypes) |
| | Generalizations | ditto | EnumerationValueType (from Datatypes) |
| | ValueType (from Datatypes) | ditto | EnumerationValueType (from Datatypes) |
| | Attributes | ditto | EnumerationValueType (from Datatypes) |
| | isMultiValued : Boolean [1] | ditto | EnumerationValueType (from Datatypes) |
| | literalSemantics : String [2..*] | ditto | EnumerationValueType (from Datatypes) |
| | Associations | ditto | EnumerationValueType (from Datatypes) |
| | baseEnumeration : Enumeration [1] | ditto | EnumerationValueType (from Datatypes) |
| | Constraints | ditto | EnumerationValueType (from Datatypes) |
| | No additional constraints | ditto | EnumerationValueType (from Datatypes) |
| | RangeableDatatype (from Datatypes) {abstract} | Removed metaclass | RangeableDatatype (from Datatypes) {abstract} |
| | Generalizations | ditto | RangeableDatatype (from Datatypes) {abstract} |
| | EADatatype (from Datatypes) | ditto | RangeableDatatype (from Datatypes) {abstract} |
| | Attributes | ditto | RangeableDatatype (from Datatypes) {abstract} |
| | No additional attributes | ditto | RangeableDatatype (from Datatypes) {abstract} |
| | Associations | ditto | RangeableDatatype (from Datatypes) {abstract} |
| | No additional associations | ditto | RangeableDatatype (from Datatypes) {abstract} |
| | Constraints | ditto | RangeableDatatype (from Datatypes) {abstract} |
| | No additional constraints | ditto | RangeableDatatype (from Datatypes) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--------------------------------------|--|--------------------------|---------------------------------------|
| | | | {abstract} |
| EADatatype (from Datatypes) | ValueType (from Datatypes) | Changed inheritance | RangeableValueType (from Datatypes) |
| baseRangeable : EANumerical [1] | baseRangeable : RangeableDatatype [1] | Changed association type | RangeableValueType (from Datatypes) |
| | ValueType (from Datatypes) {abstract} | Removed metaclass | ValueType (from Datatypes) {abstract} |
| | Generalizations | ditto | ValueType (from Datatypes) {abstract} |
| | EADatatype (from Datatypes) | ditto | ValueType (from Datatypes) {abstract} |
| | Attributes | ditto | ValueType (from Datatypes) {abstract} |
| | dimension : String [0..1] | ditto | ValueType (from Datatypes) {abstract} |
| | semantics : String [1] | ditto | ValueType (from Datatypes) {abstract} |
| | unit : String [0..1] | ditto | ValueType (from Datatypes) {abstract} |
| | Associations | ditto | ValueType (from Datatypes) {abstract} |
| | No additional associations | ditto | ValueType (from Datatypes) {abstract} |
| | Constraints | ditto | ValueType (from Datatypes) {abstract} |
| | No additional constraints | ditto | ValueType (from Datatypes) {abstract} |
| Unit (from Datatypes) | | Added metaclass | Unit (from Datatypes) |
| Generalizations | | ditto | Unit (from Datatypes) |
| EAPackageableElement (from Elements) | | ditto | Unit (from Datatypes) |
| Attributes | | ditto | Unit (from Datatypes) |
| factor : Float [1] | | ditto | Unit (from Datatypes) |
| offset : Float [1] | | ditto | Unit (from Datatypes) |
| symbol : String [1] | | ditto | Unit (from Datatypes) |
| Associations | | ditto | Unit (from Datatypes) |
| quantity : Quantity [0..1] | | ditto | Unit (from Datatypes) |
| reference : Unit [0..1] | | ditto | Unit (from Datatypes) |
| Constraints | | ditto | Unit (from Datatypes) |
| No additional constraints | | ditto | Unit (from Datatypes) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|----------------|-----------------|-------------------------------|
| Values | | Added package | Values |
| EArrayValue (from Values) | | Added metaclass | EArrayValue (from Values) |
| Generalizations | | ditto | EArrayValue (from Values) |
| EValue (from Values) | | ditto | EArrayValue (from Values) |
| Attributes | | ditto | EArrayValue (from Values) |
| No additional attributes | | ditto | EArrayValue (from Values) |
| Associations | | ditto | EArrayValue (from Values) |
| value : EValue [*] {ordered} {composite} | | ditto | EArrayValue (from Values) |
| Constraints | | ditto | EArrayValue (from Values) |
| [1] Shall be typed by an ArrayDatatype. | | ditto | EArrayValue (from Values) |
| EBooleanValue (from Values) | | Added metaclass | EBooleanValue (from Values) |
| Generalizations | | ditto | EBooleanValue (from Values) |
| EValue (from Values) | | ditto | EBooleanValue (from Values) |
| Attributes | | ditto | EBooleanValue (from Values) |
| value : Boolean [1] | | ditto | EBooleanValue (from Values) |
| Associations | | ditto | EBooleanValue (from Values) |
| No additional associations | | ditto | EBooleanValue (from Values) |
| Constraints | | ditto | EBooleanValue (from Values) |
| [1] Shall be typed by an EBoolean. | | ditto | EBooleanValue (from Values) |
| ECompositeValue (from Values) | | Added metaclass | ECompositeValue (from Values) |
| Generalizations | | ditto | ECompositeValue (from Values) |
| EValue (from Values) | | ditto | ECompositeValue (from Values) |
| Attributes | | ditto | ECompositeValue (from Values) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|----------------|-----------------|--|
| No additional attributes | | ditto | EACompositeValue (from Values) |
| Associations | | ditto | EACompositeValue (from Values) |
| value : EAValue [1..*] {ordered} {composite} | | ditto | EACompositeValue (from Values) |
| Constraints | | ditto | EACompositeValue (from Values) |
| [1] Shall be typed by an CompositeDatatype. | | ditto | EACompositeValue (from Values) |
| [2] The values in this EACompositeValue shall be typed and ordered in the same way as the EADatatypePrototypes in the typing CompositeDatatype. | | ditto | EACompositeValue (from Values) |
| EAEnumerationValue (from Values) | | Added metaclass | EAEnumerationValue (from Values) |
| Generalizations | | ditto | EAEnumerationValue (from Values) |
| EAValue (from Values) | | ditto | EAEnumerationValue (from Values) |
| Attributes | | ditto | EAEnumerationValue (from Values) |
| No additional attributes | | ditto | EAEnumerationValue (from Values) |
| Associations | | ditto | EAEnumerationValue (from Values) |
| value : EnumerationLiteral [1..*] | | ditto | EAEnumerationValue (from Values) |
| Constraints | | ditto | EAEnumerationValue (from Values) |
| [1] Shall be typed by an Enumeration or an EnumerationValueType. | | ditto | EAEnumerationValue (from Values) |
| EAExpression (from Values) «atpMixedString» | | Added metaclass | EAExpression (from Values) «atpMixedString» |
| Generalizations | | ditto | EAExpression (from Values) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|----------------|-----------------|---|
| | | | «atpMixedString» |
| EAValue (from Values) | | ditto | EAEExpression (from Values) «atpMixedString» |
| Attributes | | ditto | EAEExpression (from Values) «atpMixedString» |
| No additional attributes | | ditto | EAEExpression (from Values) «atpMixedString» |
| Associations | | ditto | EAEExpression (from Values) «atpMixedString» |
| No additional associations | | ditto | EAEExpression (from Values) «atpMixedString» |
| Constraints | | ditto | EAEExpression (from Values) «atpMixedString» |
| No additional constraints | | ditto | EAEExpression (from Values) «atpMixedString» |
| EANumericalValue (from Values) | | Added metaclass | EANumericalValue (from Values) |
| Generalizations | | ditto | EANumericalValue (from Values) |
| EAValue (from Values) | | ditto | EANumericalValue (from Values) |
| Attributes | | ditto | EANumericalValue (from Values) |
| value : Numerical [1] | | ditto | EANumericalValue (from Values) |
| Associations | | ditto | EANumericalValue (from Values) |
| No additional associations | | ditto | EANumericalValue (from Values) |
| Constraints | | ditto | EANumericalValue (from Values) |
| [1] Shall be typed by an EANumerical or a RangeableValueType. | | ditto | EANumericalValue (from Values) |
| EAStrngValue (from Values) | | Added metaclass | EAStrngValue (from Values) |
| Generalizations | | ditto | EAStrngValue (from Values) |
| EAValue (from Values) | | ditto | EAStrngValue (from Values) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|----------------|-----------------|--|
| Attributes | | ditto | EAStrngValue (from Values) |
| value : String [1] | | ditto | EAStrngValue (from Values) |
| Associations | | ditto | EAStrngValue (from Values) |
| No additional associations | | ditto | EAStrngValue (from Values) |
| Constraints | | ditto | EAStrngValue (from Values) |
| [1] Shall be typed by an EAString. | | ditto | EAStrngValue (from Values) |
| EAValue (from Values) {abstract} «atpPrototype» | | Added metaclass | EAValue (from Values) {abstract} |
| Generalizations | | ditto | EAValue (from Values) {abstract} |
| None | | ditto | EAValue (from Values) {abstract} |
| Attributes | | ditto | EAValue (from Values) {abstract} |
| No additional attributes | | ditto | EAValue (from Values) {abstract} |
| Associations | | ditto | EAValue (from Values) {abstract} |
| type : EADatatype [1] | | ditto | EAValue (from Values) {abstract} |
| «isOfType» | | ditto | EAValue (from Values) {abstract} |
| Constraints | | ditto | EAValue (from Values) {abstract} |
| No additional constraints | | ditto | EAValue (from Values) {abstract} |
| EAConnector (from Elements) {abstract} | | Added metaclass | EAConnector (from Elements) {abstract} |
| Generalizations | | ditto | EAConnector (from Elements) {abstract} |
| None | | ditto | EAConnector (from Elements) {abstract} |
| Attributes | | ditto | EAConnector (from Elements) {abstract} |
| No additional attributes | | ditto | EAConnector (from Elements) {abstract} |
| Associations | | ditto | EAConnector (from Elements) {abstract} |
| No additional associations | | ditto | EAConnector (from Elements) {abstract} |
| Constraints | | ditto | EAConnector (from Elements) {abstract} |
| No additional constraints | | ditto | EAConnector (from Elements) {abstract} |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|----------------|-----------------|--|
| EAPort (from Elements) {abstract} | | Added metaclass | EAPort (from Elements) {abstract} |
| Generalizations | | ditto | EAPort (from Elements) {abstract} |
| None | | ditto | EAPort (from Elements) {abstract} |
| Attributes | | ditto | EAPort (from Elements) {abstract} |
| No additional attributes | | ditto | EAPort (from Elements) {abstract} |
| Associations | | ditto | EAPort (from Elements) {abstract} |
| No additional associations | | ditto | EAPort (from Elements) {abstract} |
| Constraints | | ditto | EAPort (from Elements) {abstract} |
| No additional constraints | | ditto | EAPort (from Elements) {abstract} |
| EAPrototype (from Elements) {abstract} | | Added metaclass | EAPrototype (from Elements) {abstract} |
| Generalizations | | ditto | EAPrototype (from Elements) {abstract} |
| None | | ditto | EAPrototype (from Elements) {abstract} |
| Attributes | | ditto | EAPrototype (from Elements) {abstract} |
| No additional attributes | | ditto | EAPrototype (from Elements) {abstract} |
| Associations | | ditto | EAPrototype (from Elements) {abstract} |
| No additional associations | | ditto | EAPrototype (from Elements) {abstract} |
| Constraints | | ditto | EAPrototype (from Elements) {abstract} |
| No additional constraints | | ditto | EAPrototype (from Elements) {abstract} |
| EAType (from Elements) {abstract} | | Added metaclass | EAType (from Elements) {abstract} |
| Generalizations | | ditto | EAType (from Elements) {abstract} |
| None | | ditto | EAType (from Elements) {abstract} |
| Attributes | | ditto | EAType (from Elements) {abstract} |
| No additional attributes | | ditto | EAType (from Elements) {abstract} |
| Associations | | ditto | EAType (from Elements) {abstract} |
| No additional associations | | ditto | EAType (from Elements) {abstract} |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|--|------------------------|--|
| Constraints | | ditto | EAType (from Elements) {abstract} |
| No additional constraints | | ditto | EAType (from Elements) {abstract} |
| | MultiLevelReference (from Elements) | Removed metaclass | MultiLevelReference (from Elements) |
| | Generalizations | ditto | MultiLevelReference (from Elements) |
| | Relationship (from Elements) | ditto | MultiLevelReference (from Elements) |
| | Attributes | ditto | MultiLevelReference (from Elements) |
| | No additional attributes | ditto | MultiLevelReference (from Elements) |
| | Associations | ditto | MultiLevelReference (from Elements) |
| | referring : EAElement [1] | ditto | MultiLevelReference (from Elements) |
| | reference : EAElement [1] | ditto | MultiLevelReference (from Elements) |
| | Constraints | ditto | MultiLevelReference (from Elements) |
| | No additional constraints | ditto | MultiLevelReference (from Elements) |
| [1] The realizedBy elements shall be on a lower abstraction level than the realized relements. | The realizedBy elements shall be on a lower abstraction level than the realized relements. | Minor editorial change | Realization (from Elements) |
| [2] The realizedBy or realized elements shall be structural or behavioral. | The realizedBy or realized elements shall be structural or behavioral | Minor editorial change | Realization (from Elements) |
| EAPackageableElement (from Elements) | EAElement (from Elements) | Changed inheritance | UserAttributeDefinition (from UserAttributes) |
| No additional attributes | defaultValue : String [0..1] | Removed attribute | UserAttributeDefinition (from UserAttributes) |
| defaultValue : EAValue [0..1] {composite} | | Added association | UserAttributeDefinition (from UserAttributes) |
| UserAttributedElement (from UserAttributes) | UserAttributeableElement (from UserAttributes) | Changed metaclass name | UserAttributeableElement (from UserAttributes) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|---|-------------------------------|--|
| EAPackageableElement (from Elements) | None | Added inheritance | UserAttributeableElement (from UserAttributes) |
| uaValue : EAValue [*] {ordered} {composite} | uaValue : UserAttributeValue [*] {composite} | Changed association type | UserAttributeableElement (from UserAttributes) |
| uaType : UserElementType [*] {ordered} | uaType : UserAttributeElementType [*] | Changed association type name | UserAttributeableElement (from UserAttributes) |
| [1] The associations "uaValue" and the uaDefinitions of all "uaType"s must refer to the same number of elements. | No additional constraints | Added constraint | UserAttributeableElement (from UserAttributes) |
| [2] The order of associations "uaValue" and "uaType" / "uaDefinition" must be consistent, i.e. the n-th EAValue must correspond to the n-th UserAttributeDefinition when listing all UserElementTypes' definitions in depth-first order. | | Added constraint | UserAttributeableElement (from UserAttributes) |
| UserElementType (from UserAttributes) | UserAttributeElementType (from UserAttributes) | Changed metaclass name | UserAttributeElementType (from UserAttributes) |
| key : String [1] | | Added attribute | UserAttributeElementType (from UserAttributes) |
| uaDefinition : UserAttributeDefinition [*] {ordered} {composite} | | Added association | UserAttributeElementType (from UserAttributes) |
| | extendedElementType : UserAttributeElementType [0..1] | Removed association | UserAttributeElementType (from UserAttributes) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|--|---------------------|--|
| | attribute : UserAttributeDefinition [*] {composite} | Removed association | UserAttributeElementType (from UserAttributes) |
| [1] The short names of all UserAttributeDefinitions (i.e. value of attribute "shortName" in UserAttributeDefinition, which is inherited from meta-class Referrable) referred to by association "uaDefinition" must be unique within this UserElementType. In other words, no two UserAttributeDefinitions referred to by association "uaDefinition" must have the same short name. | No additional constraints | Added constraint | UserAttributeElementType (from UserAttributes) |
| | UserAttributeValue (from UserAttributes) | Removed metaclass | UserAttributeValue (from UserAttributes) |
| | Generalizations | ditto | UserAttributeValue (from UserAttributes) |
| | EAElement (from Elements) | ditto | UserAttributeValue (from UserAttributes) |
| | Attributes | ditto | UserAttributeValue (from UserAttributes) |
| | semantics : String [0..1] | ditto | UserAttributeValue (from UserAttributes) |
| | value : String [1] | ditto | UserAttributeValue (from UserAttributes) |
| | Associations | ditto | UserAttributeValue (from UserAttributes) |
| | definition : UserAttributeDefinition [0..1] | ditto | UserAttributeValue (from UserAttributes) |
| | Constraints | ditto | UserAttributeValue (from UserAttributes) |
| | No additional constraints | ditto | UserAttributeValue (from UserAttributes) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|----------------|---|-------------------|--|
| | BehaviorConstraints | Removed package | BehaviorConstraints |
| | BehaviorAnnex (from BehaviorConstraints) | Removed metaclass | BehaviorAnnex (from BehaviorConstraints) |
| | Generalizations | ditto | BehaviorAnnex (from BehaviorConstraints) |
| | Context (from Elements) | ditto | BehaviorAnnex (from BehaviorConstraints) |
| | Attributes | ditto | BehaviorAnnex (from BehaviorConstraints) |
| | No additional attributes | ditto | BehaviorAnnex (from BehaviorConstraints) |
| | Associations | ditto | BehaviorAnnex (from BehaviorConstraints) |
| | behaviorConstraint : BehaviorConstraint [*] {composite} | ditto | BehaviorAnnex (from BehaviorConstraints) |
| | Constraints | ditto | BehaviorAnnex (from BehaviorConstraints) |
| | No additional constraints | ditto | BehaviorAnnex (from BehaviorConstraints) |
| | BehaviorConstraint (from BehaviorConstraints) {abstract} | Removed metaclass | BehaviorConstraint (from BehaviorConstraints) {abstract} |
| | Generalizations | ditto | BehaviorConstraint (from BehaviorConstraints) {abstract} |
| | EAElement (from Elements) | ditto | BehaviorConstraint (from BehaviorConstraints) {abstract} |
| | Attributes | ditto | BehaviorConstraint (from BehaviorConstraints) {abstract} |
| | No additional attributes | ditto | BehaviorConstraint (from BehaviorConstraints) {abstract} |
| | Associations | ditto | BehaviorConstraint (from BehaviorConstraints) {abstract} |
| | relatedVehicleFeature : VehicleFeature [*] | ditto | BehaviorConstraint (from BehaviorConstraints) {abstract} |
| | constrainedMode : Mode [*] | ditto | BehaviorConstraint (from BehaviorConstraints) {abstract} |
| | constrainedFunctionBehavior : FunctionBehavior [*] | ditto | BehaviorConstraint (from BehaviorConstraints) {abstract} |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---------|--|-------------------|---|
| | constrainedFunctionTrigger : FunctionTrigger [*] | ditto | BehaviorConstraint (from BehaviorConstraints) {abstract} |
| | constrainedErrorBehavior : ErrorBehavior [*] | ditto | BehaviorConstraint (from BehaviorConstraints) {abstract} |
| | Constraints | ditto | BehaviorConstraint (from BehaviorConstraints) {abstract} |
| | A behavior constraint references at least one vehicle feature, mode, function behavior, function trigger, or error behavior definition. | ditto | BehaviorConstraint (from BehaviorConstraints) {abstract} |
| | ComputationConstraint (from BehaviorConstraints) | Removed metaclass | ComputationConstraint (from BehaviorConstraints) |
| | Generalizations | ditto | ComputationConstraint (from BehaviorConstraints) |
| | BehaviorConstraint (from BehaviorConstraints) | ditto | ComputationConstraint (from BehaviorConstraints) |
| | Attributes | ditto | ComputationConstraint (from BehaviorConstraints) |
| | No additional attributes | ditto | ComputationConstraint (from BehaviorConstraints) |
| | Associations | ditto | ComputationConstraint (from BehaviorConstraints) |
| | transformation : Transformation [*] {composite} | ditto | ComputationConstraint (from BehaviorConstraints) |
| | flow : Flow [*] {composite} | ditto | ComputationConstraint (from BehaviorConstraints) |
| | Constraints | ditto | ComputationConstraint (from BehaviorConstraints) |
| | A computation constraint contains at least one transformation or one | ditto | ComputationConstraint (from BehaviorConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---------|---|-------------------|--------------------------------------|
| | flow definition. | | |
| | Flow (from BehaviorConstraints) | Removed metaclass | Flow (from BehaviorConstraints) |
| | Generalizations | ditto | Flow (from BehaviorConstraints) |
| | EAElement (from Elements) | ditto | Flow (from BehaviorConstraints) |
| | Attributes | ditto | Flow (from BehaviorConstraints) |
| | No additional attributes | ditto | Flow (from BehaviorConstraints) |
| | Associations | ditto | Flow (from BehaviorConstraints) |
| | sourceParameter : Parameter [1..*] | ditto | Flow (from BehaviorConstraints) |
| | orderedSegment : Flow [*] | ditto | Flow (from BehaviorConstraints) |
| | sinkParameter : Parameter [1..*] | ditto | Flow (from BehaviorConstraints) |
| | Constraints | ditto | Flow (from BehaviorConstraints) |
| | A flow has at least one source and one sink parameter. | ditto | Flow (from BehaviorConstraints) |
| | Parameter (from BehaviorConstraints) | Removed metaclass | Parameter (from BehaviorConstraints) |
| | Generalizations | ditto | Parameter (from BehaviorConstraints) |
| | EAElement (from Elements) | ditto | Parameter (from BehaviorConstraints) |
| | Attributes | ditto | Parameter (from BehaviorConstraints) |
| | No additional attributes | ditto | Parameter (from BehaviorConstraints) |
| | Associations | ditto | Parameter (from BehaviorConstraints) |
| | targetFunctionPort : FunctionPort [0..1] | ditto | Parameter (from BehaviorConstraints) |
| | targetFunction : FunctionType [0..1] | ditto | Parameter (from BehaviorConstraints) |
| | type : EADatatype [1] | ditto | Parameter (from BehaviorConstraints) |
| | Constraints | ditto | Parameter (from BehaviorConstraints) |
| | Each parameter in the parameter constraints of function behaviors references either one function type | ditto | Parameter (from BehaviorConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---------|--|-------------------|--|
| | owning such function behaviors or one function port of the same function type. | | |
| | ParameterCondition (from BehaviorConstraints) | Removed metaclass | ParameterCondition (from BehaviorConstraints) |
| | Generalizations | ditto | ParameterCondition (from BehaviorConstraints) |
| | EAElement (from Elements) | ditto | ParameterCondition (from BehaviorConstraints) |
| | Attributes | ditto | ParameterCondition (from BehaviorConstraints) |
| | expression : String [1] | ditto | ParameterCondition (from BehaviorConstraints) |
| | Associations | ditto | ParameterCondition (from BehaviorConstraints) |
| | representAnomaly : Anomaly [*] | ditto | ParameterCondition (from BehaviorConstraints) |
| | appliedToParameter : Parameter [*] | ditto | ParameterCondition (from BehaviorConstraints) |
| | appliedToCondition : ParameterCondition [*] | ditto | ParameterCondition (from BehaviorConstraints) |
| | Constraints | ditto | ParameterCondition (from BehaviorConstraints) |
| | A parameter condition is applied to at least one parameter or one parameter condition. | ditto | ParameterCondition (from BehaviorConstraints) |
| | ParameterConstraint (from BehaviorConstraints) | Removed metaclass | ParameterConstraint (from BehaviorConstraints) |
| | Generalizations | ditto | ParameterConstraint (from BehaviorConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---------|--|-------------------|---|
| | BehaviorConstraint (from BehaviorConstraints) | ditto | ParameterConstraint (from BehaviorConstraints) |
| | Attributes | ditto | ParameterConstraint (from BehaviorConstraints) |
| | No additional attributes | ditto | ParameterConstraint (from BehaviorConstraints) |
| | Associations | ditto | ParameterConstraint (from BehaviorConstraints) |
| | parameterCondition : ParameterCondition [*] {composite} | ditto | ParameterConstraint (from BehaviorConstraints) |
| | parameter : Parameter [1..*] {composite} | ditto | ParameterConstraint (from BehaviorConstraints) |
| | Constraints | ditto | ParameterConstraint (from BehaviorConstraints) |
| | No additional constraints | ditto | ParameterConstraint (from BehaviorConstraints) |
| | State (from BehaviorConstraints) | Removed metaclass | State (from BehaviorConstraints) |
| | Generalizations | ditto | State (from BehaviorConstraints) |
| | EElement (from Elements) | ditto | State (from BehaviorConstraints) |
| | Attributes | ditto | State (from BehaviorConstraints) |
| | initState : Boolean = false [1] | ditto | State (from BehaviorConstraints) |
| | Associations | ditto | State (from BehaviorConstraints) |
| | representMode : Mode [*] | ditto | State (from BehaviorConstraints) |
| | subStateMachineConstraint : StateMachineConstraint [*] | ditto | State (from BehaviorConstraints) |
| | denote : ParameterCondition [*] | ditto | State (from BehaviorConstraints) |
| | Constraints | ditto | State (from BehaviorConstraints) |
| | No additional constraints | ditto | State (from BehaviorConstraints) |
| | StateMachineConstraint (from BehaviorConstraints) | Removed metaclass | StateMachineConstraint (from BehaviorConstraints) |
| | Generalizations | ditto | StateMachineConstraint (from BehaviorConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---------|--|-------------------|---|
| | | | BehaviorConstraints) |
| | BehaviorConstraint (from BehaviorConstraints) | ditto | StateMachineConstraint (from BehaviorConstraints) |
| | Attributes | ditto | StateMachineConstraint (from BehaviorConstraints) |
| | No additional attributes | ditto | StateMachineConstraint (from BehaviorConstraints) |
| | Associations | ditto | StateMachineConstraint (from BehaviorConstraints) |
| | transition : Transition [*] {composite} | ditto | StateMachineConstraint (from BehaviorConstraints) |
| | state : State [1..*] {composite} | ditto | StateMachineConstraint (from BehaviorConstraints) |
| | Constraints | ditto | StateMachineConstraint (from BehaviorConstraints) |
| | No additional constraints | ditto | StateMachineConstraint (from BehaviorConstraints) |
| | Transformation (from BehaviorConstraints) | Removed metaclass | Transformation (from BehaviorConstraints) |
| | Generalizations | ditto | Transformation (from BehaviorConstraints) |
| | EAEElement (from Elements) | ditto | Transformation (from BehaviorConstraints) |
| | Attributes | ditto | Transformation (from BehaviorConstraints) |
| | No additional attributes | ditto | Transformation (from BehaviorConstraints) |
| | Associations | ditto | Transformation (from BehaviorConstraints) |
| | invariantCondition : ParameterCondition [*] | ditto | Transformation (from BehaviorConstraints) |
| | subComputationConstraint : ComputationConstraint [*] | ditto | Transformation (from BehaviorConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---------|---|-------------------|---|
| | inOut : Parameter [*] | ditto | Transformation (from BehaviorConstraints) |
| | outgoingFlow : Flow [*] | ditto | Transformation (from BehaviorConstraints) |
| | out : Parameter [*] | ditto | Transformation (from BehaviorConstraints) |
| | in : Parameter [*] | ditto | Transformation (from BehaviorConstraints) |
| | preCondition : ParameterCondition [*] | ditto | Transformation (from BehaviorConstraints) |
| | postCondition : ParameterCondition [*] | ditto | Transformation (from BehaviorConstraints) |
| | incomingFlow : Flow [*] | ditto | Transformation (from BehaviorConstraints) |
| | Constraints | ditto | Transformation (from BehaviorConstraints) |
| | [1] A transformation has at least one out or one inOut parameter. | ditto | Transformation (from BehaviorConstraints) |
| | Transition (from BehaviorConstraints) | Removed metaclass | Transition (from BehaviorConstraints) |
| | Generalizations | ditto | Transition (from BehaviorConstraints) |
| | EAElement (from Elements) | ditto | Transition (from BehaviorConstraints) |
| | Attributes | ditto | Transition (from BehaviorConstraints) |
| | No additional attributes | ditto | Transition (from BehaviorConstraints) |
| | Associations | ditto | Transition (from BehaviorConstraints) |
| | invoke : Transformation [*] | ditto | Transition (from BehaviorConstraints) |
| | to : State [1] | ditto | Transition (from BehaviorConstraints) |
| | conditionSpecification : ParameterCondition [0..1] | ditto | Transition (from BehaviorConstraints) |
| | write : Parameter [*] | ditto | Transition (from BehaviorConstraints) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|---------------------------|-----------------|---|
| | read : Parameter [*] | ditto | Transition (from BehaviorConstraints) |
| | from : State [1] | ditto | Transition (from BehaviorConstraints) |
| | Constraints | ditto | Transition (from BehaviorConstraints) |
| | No additional constraints | ditto | Transition (from BehaviorConstraints) |
| BehaviorDescription | | Added package | BehaviorDescription |
| BehaviorConstraintBindingAttribute (from BehaviorDescription) | | Added metaclass | BehaviorConstraintBindingAttribute (from BehaviorDescription) |
| Generalizations | | ditto | BehaviorConstraintBindingAttribute (from BehaviorDescription) |
| BehaviorConstraintInternalBinding (from BehaviorDescription) | | ditto | BehaviorConstraintBindingAttribute (from BehaviorDescription) |
| Attribute (from AttributeQuantificationConstraint) | | ditto | BehaviorConstraintBindingAttribute (from BehaviorDescription) |
| Attributes | | ditto | BehaviorConstraintBindingAttribute (from BehaviorDescription) |
| No additional attributes | | ditto | BehaviorConstraintBindingAttribute (from BehaviorDescription) |
| Associations | | ditto | BehaviorConstraintBindingAttribute (from BehaviorDescription) |
| No additional associations | | ditto | BehaviorConstraintBindingAttribute (from BehaviorDescription) |
| Constraints | | ditto | BehaviorConstraintBindingAttribute (from BehaviorDescription) |
| No additional constraints | | ditto | BehaviorConstraintBindingAttribute (from BehaviorDescription) |
| BehaviorConstraintBindingEvent (from BehaviorDescription) | | Added metaclass | BehaviorConstraintBindingEvent (from BehaviorDescription) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|----------------|-----------------|---|
| Generalizations | | ditto | BehaviorConstraintBindingEvent (from BehaviorDescription) |
| BehaviorConstraintInternalBinding (from BehaviorDescription) | | ditto | BehaviorConstraintBindingEvent (from BehaviorDescription) |
| TransitionEvent (from TemporalConstraint) | | ditto | BehaviorConstraintBindingEvent (from BehaviorDescription) |
| Attributes | | ditto | BehaviorConstraintBindingEvent (from BehaviorDescription) |
| No additional attributes | | ditto | BehaviorConstraintBindingEvent (from BehaviorDescription) |
| Associations | | ditto | BehaviorConstraintBindingEvent (from BehaviorDescription) |
| No additional associations | | ditto | BehaviorConstraintBindingEvent (from BehaviorDescription) |
| Constraints | | ditto | BehaviorConstraintBindingEvent (from BehaviorDescription) |
| No additional constraints | | ditto | BehaviorConstraintBindingEvent (from BehaviorDescription) |
| BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} | | Added metaclass | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |
| Generalizations | | ditto | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |
| None | | ditto | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |
| Attributes | | ditto | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |
| No additional attributes | | ditto | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|---------|--------|---|
| Associations | | ditto | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |
| bindingThroughClampConnector : ClampConnector [*] | | ditto | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |
| Dependencies | | ditto | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |
| bindingThroughFunctionConnector : FunctionConnector [*] | | ditto | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |
| «instanceRef» | | ditto | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |
| bindingThroughHardwareConnector : HardwareConnector [*] | | ditto | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |
| «instanceRef» | | ditto | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |
| Constraints | | ditto | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |
| When a binding of behavior constraint prototypes go across different system functions or components, there should be at least one corresponding structural communication connector through which such bindings can take place (i.e. bindingThroughFunctionConnector, bindingThroughClampConnector, | | ditto | BehaviorConstraintInternalBinding (from BehaviorDescription) {abstract} |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|---------|-----------------|---|
| bindingThrough-LogicalBus, or bindingThrough-HardwareConnector). | | | |
| BehaviorConstraintParameter (from BehaviorDescription) {abstract} | | Added metaclass | BehaviorConstraintParameter (from BehaviorDescription) {abstract} |
| Generalizations | | ditto | BehaviorConstraintParameter (from BehaviorDescription) {abstract} |
| None | | ditto | BehaviorConstraintParameter (from BehaviorDescription) {abstract} |
| Attributes | | ditto | BehaviorConstraintParameter (from BehaviorDescription) {abstract} |
| No additional attributes | | ditto | BehaviorConstraintParameter (from BehaviorDescription) {abstract} |
| Associations | | ditto | BehaviorConstraintParameter (from BehaviorDescription) {abstract} |
| No additional associations | | ditto | BehaviorConstraintParameter (from BehaviorDescription) {abstract} |
| Constraints | | ditto | BehaviorConstraintParameter (from BehaviorDescription) {abstract} |
| See Attribute and TransitionEvent. | | ditto | BehaviorConstraintParameter (from BehaviorDescription) {abstract} |
| BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» | | Added metaclass | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|---------|--------|---|
| Generalizations | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| TraceableSpecification (from Elements) | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| Attributes | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| No additional attributes | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| Associations | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| targetedVehicleFeatureElement : VehicleFeature [*] | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| instantiationVariable : BehaviorConstraintInternalBinding [*] {ordered} | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| type : BehaviorConstraintType [1] | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| «isOfType» | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| Dependencies | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| functionTarget : FunctionPrototype [*] | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| «instanceRef» | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| hardwareComponentTarget : HardwareComponentPrototype [*] | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| «instanceRef» | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|----------------|-----------------|--|
| errorModelTarget : ErrorModelPrototype [*] | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| «instanceRef» | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| Constraints | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| No additional constraints | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| BehaviorConstraintTargetBinding (from BehaviorDescription) | | Added metaclass | BehaviorConstraintTargetBinding (from BehaviorDescription) |
| Generalizations | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| Relationship (from Elements) | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| Attributes | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| No additional attributes | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| Associations | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| targetedVehicleFeature : VehicleFeature [*] | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| targetedFunctionType : FunctionType [*] | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| targetedHardwareComponentType : HardwareComponentType [*] | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| constrainedModeBehavior : Mode [*] | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|----------------|-----------------|--|
| constrainedFunctionBehavior : FunctionBehavior [*] | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| constrainedFunctionTriggering : FunctionTriggerer [*] | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| constrainedErrorModel : ErrorModelType [*] | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| behaviorConstraintType : BehaviorConstraintType [1] | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| Constraints | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| No additional constraints | | ditto | BehaviorConstraintPrototype (from BehaviorDescription) «atpPrototype» |
| BehaviorConstraintType (from BehaviorDescription) «atpType» | | Added metaclass | BehaviorConstraintType (from BehaviorDescription) «atpType» |
| Generalizations | | ditto | BehaviorConstraintType (from BehaviorDescription) «atpType» |
| Context (from Elements) | | ditto | BehaviorConstraintType (from BehaviorDescription) «atpType» |
| Attributes | | ditto | BehaviorConstraintType (from BehaviorDescription) «atpType» |
| No additional attributes | | ditto | BehaviorConstraintType (from BehaviorDescription) «atpType» |
| Associations | | ditto | BehaviorConstraintType (from BehaviorDescription) «atpType» |
| sharedVariable : BehaviorConstraintInternalBinding [*] | | ditto | BehaviorConstraintType (from BehaviorDescription) «atpType» |
| interfaceVariable : BehaviorConstraintParameter [*] {ordered} | | ditto | BehaviorConstraintType (from BehaviorDescription) «atpType» |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|----------------|-----------------|--|
| part : BehaviorConstraintPrototype [*] {composite} | | ditto | BehaviorConstraintType (from BehaviorDescription) «atpType» |
| attributeQuantificationConstraint : AttributeQuantificationConstraint [*] {composite} | | ditto | BehaviorConstraintType (from BehaviorDescription) «atpType» |
| computationConstraint : ComputationConstraint [*] {composite} | | ditto | BehaviorConstraintType (from BehaviorDescription) «atpType» |
| temporalConstraint : TemporalConstraint [*] {composite} | | ditto | BehaviorConstraintType (from BehaviorDescription) «atpType» |
| Constraints | | ditto | BehaviorConstraintType (from BehaviorDescription) «atpType» |
| [1] A behavior constraint references at least one requirement, vehicle feature, mode, function type, function behavior, function trigger, or error behavior definition. | | ditto | BehaviorConstraintType (from BehaviorDescription) «atpType» |
| AttributeQuantificationConstraint | | Added package | AttributeQuantificationConstraint |
| Attribute (from AttributeQuantificationConstraint) «atpPrototype» | | Added metaclass | Attribute (from AttributeQuantificationConstraint) |
| Generalizations | | ditto | Attribute (from AttributeQuantificationConstraint) |
| EElement (from Elements) | | ditto | Attribute (from AttributeQuantificationConstraint) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|----------------|-----------------|--|
| BehaviorConstraintParameter (from BehaviorDescription) | | ditto | Attribute (from AttributeQuantificationConstraint) |
| Attributes | | ditto | Attribute (from AttributeQuantificationConstraint) |
| isExternVisible : Boolean = false [1] | | ditto | Attribute (from AttributeQuantificationConstraint) |
| Associations | | ditto | Attribute (from AttributeQuantificationConstraint) |
| type : EADatatype [1] | | ditto | Attribute (from AttributeQuantificationConstraint) |
| «isOfType» | | ditto | Attribute (from AttributeQuantificationConstraint) |
| Constraints | | ditto | Attribute (from AttributeQuantificationConstraint) |
| No additional constraints | | ditto | Attribute (from AttributeQuantificationConstraint) |
| AttributeQuantificationConstraint (from AttributeQuantificationConstraint) | | Added metaclass | AttributeQuantificationConstraint (from AttributeQuantificationConstraint) |
| Generalizations | | ditto | AttributeQuantificationConstraint (from AttributeQuantificationConstraint) |
| EAElement (from Elements) | | ditto | AttributeQuantificationConstraint (from AttributeQuantificationConstraint) |
| Attributes | | ditto | AttributeQuantificationConstraint (from AttributeQuantificationConstraint) |
| No additional attributes | | ditto | AttributeQuantificationConstraint (from AttributeQuantificationConstraint) |
| Associations | | ditto | AttributeQuantificationConstraint (from AttributeQuantificationConstraint) |
| quantification : Quantification [*] {composite} | | ditto | AttributeQuantificationConstraint (from AttributeQuantificationConstraint) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|----------------|-----------------|--|
| attribute : Attribute [*] {composite} | | ditto | AttributeQuantificationConstraint (from AttributeQuantificationConstraint) |
| Constraints | | ditto | AttributeQuantificationConstraint (from AttributeQuantificationConstraint) |
| No additional constraints | | ditto | AttributeQuantificationConstraint (from AttributeQuantificationConstraint) |
| BehaviorAttributeBinding (from AttributeQuantificationConstraint) | | Added metaclass | BehaviorAttributeBinding (from AttributeQuantificationConstraint) |
| Generalizations | | ditto | BehaviorAttributeBinding (from AttributeQuantificationConstraint) |
| Relationship (from Elements) | | ditto | BehaviorAttributeBinding (from AttributeQuantificationConstraint) |
| Attributes | | ditto | BehaviorAttributeBinding (from AttributeQuantificationConstraint) |
| No additional attributes | | ditto | BehaviorAttributeBinding (from AttributeQuantificationConstraint) |
| Associations | | ditto | BehaviorAttributeBinding (from AttributeQuantificationConstraint) |
| visibleThroughFunctionPort : FunctionPort [*] | | ditto | BehaviorAttributeBinding (from AttributeQuantificationConstraint) |
| visibleThroughHardwarePin : HardwarePin [*] | | ditto | BehaviorAttributeBinding (from AttributeQuantificationConstraint) |
| visibleThroughHardwarePort : HardwarePort [*] | | ditto | BehaviorAttributeBinding (from AttributeQuantificationConstraint) |
| visibleThroughAnomaly : Anomaly [*] | | ditto | BehaviorAttributeBinding (from AttributeQuantificationConstraint) |
| attribute : Attribute [1..*] | | ditto | BehaviorAttributeBinding (from AttributeQuantificationConstraint) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|----------------|-----------------|---|
| Constraints | | ditto | BehaviorAttributeBinding (from AttributeQuantificationConstraint) |
| No additional constraints | | ditto | BehaviorAttributeBinding (from AttributeQuantificationConstraint) |
| LogicalEvent (from AttributeQuantificationConstraint) | | Added metaclass | LogicalEvent (from AttributeQuantificationConstraint) |
| Generalizations | | ditto | LogicalEvent (from AttributeQuantificationConstraint) |
| Quantification (from AttributeQuantificationConstraint) | | ditto | LogicalEvent (from AttributeQuantificationConstraint) |
| Attributes | | ditto | LogicalEvent (from AttributeQuantificationConstraint) |
| isExternVisible : Boolean = false [1] | | ditto | LogicalEvent (from AttributeQuantificationConstraint) |
| Associations | | ditto | LogicalEvent (from AttributeQuantificationConstraint) |
| visibleThroughFunctionPort : FunctionPort [*] | | ditto | LogicalEvent (from AttributeQuantificationConstraint) |
| Constraints | | ditto | LogicalEvent (from AttributeQuantificationConstraint) |
| No additional constraints | | ditto | LogicalEvent (from AttributeQuantificationConstraint) |
| Quantification (from AttributeQuantificationConstraint) | | Added metaclass | Quantification (from AttributeQuantificationConstraint) |
| Generalizations | | ditto | Quantification (from AttributeQuantificationConstraint) |
| EAElement (from Elements) | | ditto | Quantification (from AttributeQuantificationConstraint) |
| EAExpression (from Values) | | ditto | Quantification (from AttributeQuantificationConstraint) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|----------------|-----------------|---|
| Attributes | | ditto | Quantification (from AttributeQuantificationConstraint) |
| No additional attributes | | ditto | Quantification (from AttributeQuantificationConstraint) |
| Associations | | ditto | Quantification (from AttributeQuantificationConstraint) |
| operand : Attribute [1..*] {ordered} | | ditto | Quantification (from AttributeQuantificationConstraint) |
| timeCondition : LogicalTimeCondition [0..1] | | ditto | Quantification (from AttributeQuantificationConstraint) |
| Constraints | | ditto | Quantification (from AttributeQuantificationConstraint) |
| [1] A quantification is applied to at least one attribute. | | ditto | Quantification (from AttributeQuantificationConstraint) |
| ComputationConstraint | | Added package | ComputationConstraint |
| ComputationConstraint (from ComputationConstraint) | | Added metaclass | ComputationConstraint (from ComputationConstraint) |
| Generalizations | | ditto | ComputationConstraint (from ComputationConstraint) |
| EAElement (from Elements) | | ditto | ComputationConstraint (from ComputationConstraint) |
| Attributes | | ditto | ComputationConstraint (from ComputationConstraint) |
| No additional attributes | | ditto | ComputationConstraint (from ComputationConstraint) |
| Associations | | ditto | ComputationConstraint (from ComputationConstraint) |
| logicalTransformation : LogicalTransformation [*] | | ditto | ComputationConstraint (from ComputationConstraint) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|---------|-----------------|---|
| {composite} | | | |
| logicalPath : LogicalPath [*] {composite} | | ditto | ComputationConstraint (from ComputationConstraint) |
| Constraints | | ditto | ComputationConstraint (from ComputationConstraint) |
| [1] A computation constraint contains at least one transformation or one flow definition. | | ditto | ComputationConstraint (from ComputationConstraint) |
| LogicalPath (from ComputationConstraint) | | Added metaclass | LogicalPath (from ComputationConstraint) |
| Generalizations | | ditto | LogicalPath (from ComputationConstraint) |
| EElement (from Elements) | | ditto | LogicalPath (from ComputationConstraint) |
| Attributes | | ditto | LogicalPath (from ComputationConstraint) |
| No additional attributes | | ditto | LogicalPath (from ComputationConstraint) |
| Associations | | ditto | LogicalPath (from ComputationConstraint) |
| precedingExecutionEventChain : EventChain [*] | | ditto | LogicalPath (from ComputationConstraint) |
| succeedingExecutionEventChain : EventChain [*] | | ditto | LogicalPath (from ComputationConstraint) |
| correspondingExecutionEventChain : EventChain [*] | | ditto | LogicalPath (from ComputationConstraint) |
| logicalResponse : LogicalEvent [*] | | ditto | LogicalPath (from ComputationConstraint) |
| logicalStimulus : LogicalEvent [*] | | ditto | LogicalPath (from ComputationConstraint) |
| transformationOccurrence : TransformationOccurrence [0..1] {composite} | | ditto | LogicalPath (from ComputationConstraint) |
| strand : LogicalPath [*] | | ditto | LogicalPath (from ComputationConstraint) |
| segment : LogicalPath [*] {ordered} | | ditto | LogicalPath (from ComputationConstraint) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|----------------|-----------------|--|
| Constraints | | ditto | LogicalPath (from ComputationConstraint) |
| No additional constraints | | ditto | LogicalPath (from ComputationConstraint) |
| LogicalTransformation (from ComputationConstraint) | | Added metaclass | LogicalTransformation (from ComputationConstraint) |
| Generalizations | | ditto | LogicalTransformation (from ComputationConstraint) |
| EAElement (from Elements) | | ditto | LogicalTransformation (from ComputationConstraint) |
| Attributes | | ditto | LogicalTransformation (from ComputationConstraint) |
| isClientServerInterface : Boolean = false [1] | | ditto | LogicalTransformation (from ComputationConstraint) |
| Associations | | ditto | LogicalTransformation (from ComputationConstraint) |
| clientServerInterfaceOperation : Operation [*] | | ditto | LogicalTransformation (from ComputationConstraint) |
| expression : EAExpression [0..1] {composite} | | ditto | LogicalTransformation (from ComputationConstraint) |
| contained : Attribute [*] {ordered} | | ditto | LogicalTransformation (from ComputationConstraint) |
| out : Attribute [*] {ordered} | | ditto | LogicalTransformation (from ComputationConstraint) |
| in : Attribute [*] {ordered} | | ditto | LogicalTransformation (from ComputationConstraint) |
| quantificationInvariant : Quantification [*] | | ditto | LogicalTransformation (from ComputationConstraint) |
| preCondition : Quantification [*] | | ditto | LogicalTransformation (from ComputationConstraint) |
| postCondition : Quantification [*] | | ditto | LogicalTransformation (from ComputationConstraint) |
| timeInvariant : LogicalTimeCondition [0..1] | | ditto | LogicalTransformation (from ComputationConstraint) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|---------|-----------------|---|
| Constraints | | ditto | LogicalTransformation (from ComputationConstraint) |
| [1] If a logical transformation description is applied to a client-server interface (isClientServerInterface=true), it has at least one corresponding operation specified in a client-server interface definition (FunctionModelling::Operation). | | ditto | LogicalTransformation (from ComputationConstraint) |
| TransformationOccurrence (from ComputationConstraint) | | Added metaclass | TransformationOccurrence (from ComputationConstraint) |
| Generalizations | | ditto | TransformationOccurrence (from ComputationConstraint) |
| EAElement (from Elements) | | ditto | TransformationOccurrence (from ComputationConstraint) |
| Attributes | | ditto | TransformationOccurrence (from ComputationConstraint) |
| No additional attributes | | ditto | TransformationOccurrence (from ComputationConstraint) |
| Associations | | ditto | TransformationOccurrence (from ComputationConstraint) |
| inQuantification : Quantification [*] {ordered} | | ditto | TransformationOccurrence (from ComputationConstraint) |
| outQuantification : Quantification [*] {ordered} | | ditto | TransformationOccurrence (from ComputationConstraint) |
| invokedLogicalTransformation : LogicalTransformation [1] | | ditto | TransformationOccurrence (from ComputationConstraint) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|---|----------------|-----------------|--|
| timeCondition : LogicalTimeCondition [0..1] | | ditto | TransformationOccurrence (from ComputationConstraint) |
| Constraints | | ditto | TransformationOccurrence (from ComputationConstraint) |
| No additional constraints | | ditto | TransformationOccurrence (from ComputationConstraint) |
| TemporalConstraint | | Added package | TemporalConstraint |
| LogicalTimeCondition (from TemporalConstraint) | | Added metaclass | LogicalTimeCondition (from TemporalConstraint) |
| Generalizations | | ditto | LogicalTimeCondition (from TemporalConstraint) |
| EAElement (from Elements) | | ditto | LogicalTimeCondition (from TemporalConstraint) |
| Attributes | | ditto | LogicalTimeCondition (from TemporalConstraint) |
| isLogicalTimeSuspended : Boolean = false [1] | | ditto | LogicalTimeCondition (from TemporalConstraint) |
| Associations | | ditto | LogicalTimeCondition (from TemporalConstraint) |
| width : EAValue [0..1] {composite} | | ditto | LogicalTimeCondition (from TemporalConstraint) |
| lower : EAValue [0..1] {composite} | | ditto | LogicalTimeCondition (from TemporalConstraint) |
| upper : EAValue [0..1] {composite} | | ditto | LogicalTimeCondition (from TemporalConstraint) |
| endPointReference : TransitionEvent [0..1] | | ditto | LogicalTimeCondition (from TemporalConstraint) |
| startPointReference : TransitionEvent [0..1] | | ditto | LogicalTimeCondition (from TemporalConstraint) |
| Constraints | | ditto | LogicalTimeCondition (from |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|----------------|-----------------|---|
| | | | TemporalConstraint) |
| No additional constraints | | ditto | LogicalTimeCondition (from TemporalConstraint) |
| State (from TemporalConstraint) | | Added metaclass | State (from TemporalConstraint) |
| Generalizations | | ditto | State (from TemporalConstraint) |
| EAElement (from Elements) | | ditto | State (from TemporalConstraint) |
| Attributes | | ditto | State (from TemporalConstraint) |
| isErrorState : Boolean = false [1] | | ditto | State (from TemporalConstraint) |
| isHazard : Boolean = false [1] | | ditto | State (from TemporalConstraint) |
| isInitState : Boolean = false [1] | | ditto | State (from TemporalConstraint) |
| isMode : Boolean = false [1] | | ditto | State (from TemporalConstraint) |
| Associations | | ditto | State (from TemporalConstraint) |
| modeDeclaration : Mode [*] | | ditto | State (from TemporalConstraint) |
| hazardDeclaration : Hazard [*] | | ditto | State (from TemporalConstraint) |
| quantificationInvariant : Quantification [*] | | ditto | State (from TemporalConstraint) |
| timeInvariant : LogicalTimeCondition [*] | | ditto | State (from TemporalConstraint) |
| Constraints | | ditto | State (from TemporalConstraint) |
| No additional constraints | | ditto | State (from TemporalConstraint) |
| SynchronousTransition (from TemporalConstraint) | | Added metaclass | SynchronousTransition (from TemporalConstraint) |
| Generalizations | | ditto | SynchronousTransition (from TemporalConstraint) |
| Transition (from TemporalConstraint) | | ditto | SynchronousTransition (from TemporalConstraint) |
| Attributes | | ditto | SynchronousTransition (from TemporalConstraint) |
| No additional attributes | | ditto | SynchronousTransition (from TemporalConstraint) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|---------|-----------------|---|
| Associations | | ditto | SynchronousTransition (from TemporalConstraint) |
| writeTransitionEvent : TransitionEvent [0..1] | | ditto | SynchronousTransition (from TemporalConstraint) |
| readTransitionEvent : TransitionEvent [0..1] | | ditto | SynchronousTransition (from TemporalConstraint) |
| Constraints | | ditto | SynchronousTransition (from TemporalConstraint) |
| No additional constraints | | ditto | SynchronousTransition (from TemporalConstraint) |
| TemporalConstraint (from TemporalConstraint) | | Added metaclass | TemporalConstraint (from TemporalConstraint) |
| Generalizations | | ditto | TemporalConstraint (from TemporalConstraint) |
| EAElement (from Elements) | | ditto | TemporalConstraint (from TemporalConstraint) |
| Attributes | | ditto | TemporalConstraint (from TemporalConstraint) |
| No additional attributes | | ditto | TemporalConstraint (from TemporalConstraint) |
| Associations | | ditto | TemporalConstraint (from TemporalConstraint) |
| assertion : EAExpression [0..1] {composite} | | ditto | TemporalConstraint (from TemporalConstraint) |
| transitionEvent : TransitionEvent [*] {composite} | | ditto | TemporalConstraint (from TemporalConstraint) |
| timeCondition : LogicalTimeCondition [*] {composite} | | ditto | TemporalConstraint (from TemporalConstraint) |
| transition : Transition [*] {composite} | | ditto | TemporalConstraint (from TemporalConstraint) |
| initState : State [1] | | ditto | TemporalConstraint (from |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|---------|-----------------|--|
| | | | TemporalConstraint |
| state : State [*] {composite} | | ditto | TemporalConstraint (from TemporalConstraint) |
| Constraints | | ditto | TemporalConstraint (from TemporalConstraint) |
| No additional constraints | | ditto | TemporalConstraint (from TemporalConstraint) |
| Transition (from TemporalConstraint) | | Added metaclass | Transition (from TemporalConstraint) |
| Generalizations | | ditto | Transition (from TemporalConstraint) |
| EAElement (from Elements) | | ditto | Transition (from TemporalConstraint) |
| Attributes | | ditto | Transition (from TemporalConstraint) |
| No additional attributes | | ditto | Transition (from TemporalConstraint) |
| Associations | | ditto | Transition (from TemporalConstraint) |
| quantificationGuard : Quantification [*] | | ditto | Transition (from TemporalConstraint) |
| effect : TransformationOccurrence [0..1] | | ditto | Transition (from TemporalConstraint) |
| timeGuard : LogicalTimeCondition [*] | | ditto | Transition (from TemporalConstraint) |
| to : State [1] | | ditto | Transition (from TemporalConstraint) |
| from : State [1] | | ditto | Transition (from TemporalConstraint) |
| Constraints | | ditto | Transition (from TemporalConstraint) |
| No additional constraints | | ditto | Transition (from TemporalConstraint) |
| TransitionEvent (from TemporalConstraint) | | Added metaclass | TransitionEvent (from TemporalConstraint) |
| Generalizations | | ditto | TransitionEvent (from TemporalConstraint) |
| EAElement (from Elements) | | ditto | TransitionEvent (from TemporalConstraint) |

| M2.1.11 | M2.1.10 | Change | Metaclass/Package |
|--|----------------|---------------|---|
| BehaviorConstraintParameter (from BehaviorDescription) | | ditto | TransitionEvent (from TemporalConstraint) |
| Attributes | | ditto | TransitionEvent (from TemporalConstraint) |
| No additional attributes | | ditto | TransitionEvent (from TemporalConstraint) |
| Associations | | ditto | TransitionEvent (from TemporalConstraint) |
| occurredExecutionEvent : Event [*] | | ditto | TransitionEvent (from TemporalConstraint) |
| occurredFeatureFlaw : FeatureFlaw [*] | | ditto | TransitionEvent (from TemporalConstraint) |
| occurredHazardousEvent : HazardousEvent [*] | | ditto | TransitionEvent (from TemporalConstraint) |
| occurredFaultFailure : FaultFailure [*] | | ditto | TransitionEvent (from TemporalConstraint) |
| occurredLogicalEvent : LogicalEvent [*] | | ditto | TransitionEvent (from TemporalConstraint) |
| Constraints | | ditto | TransitionEvent (from TemporalConstraint) |
| No additional constraints | | ditto | TransitionEvent (from TemporalConstraint) |