

Date: November 2022



OMG Systems Modeling Language TM (SysML®) Annex C: SysML v1 to SysML v2 Transformation

Version 2.0

Release 2022-10

**Submitted in response to Systems Modeling Language (SysML®) v2 RFP (ad/
2017-11-04) by:**

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C Annex: SysML v1 to SysML v2 Transformation

(Informative)

C.1 General

C.1.1 Overview

This annex describes a transformation that specifies a semantic translation from SysML v1 [SysMLv1] to SysML v2 in a precise way. (In this annex, "SysML v1" refers to SysML v1.7, the last version of SysML prior to v2.0, and "SysML v2" refers to SysML as defined in this specification.)

The main intent is to provide the rules on which automated conversions of SysML v1 models to the SysML v2 standard can be developed. In addition, this annex can be considered an educational document that provides useful information for people who would like to compare using SysML v2 and using SysML v1.

More sophisticated applications of this transformation can also be envisaged. For instance, a SysML v1 conformant tool could use this transformation to implement a limited subset of the SysML v2 API that will provide "SysMLv2-like" read-only access to its SysMLv1 models for external applications.

Release Note. The transformation specification currently only covers a restricted scope, which will be extended in the final submission.

C.1.2 Mapping Approach

The SysML v1 to v2 transformation is specified by directional mappings between UML metaclasses and stereotypes that are part of the SysML v1 specification and the set of the metaclasses included in KerML and the SysMLv2 libraries.

Each mapping is a directed relationship that reifies a semantic link between a concept belonging to the SysMLv1 scope on the source side and one concept belonging to the SysMLv2 scope on the target side. As a set, the mappings specify a formal transformation that describes how the information encoded by the SysMLv1 concepts can be reliably represented using constructs of SysMLv2 metaclasses instances.

In this approach, a mapping is represented by a UML class that has a pair of associations. One provides the "from" end that designates the source SysML v1 concept while the other provides the "to" end that designates the target SysML v2 metaclass.

In addition to those associations, a mapping class provides a set of operations defining how the attribute values of the target metaclass instance have to be computed based on attribute values reachable from the source object. The computation algorithm is provided by the body condition of those operations and expressed using OCL code.

Note that the values assigned to attributes of the target object shall be instances of the target (i.e., SysMLv2) metamodel, coming themselves from transformations of SysMLv1 objects to SysMLv2 objects. The `getMapped` static operation is provided for this purpose. It returns a (possibly null) value, based on the type of the target metaclass.

Each mapping specification enables the transformation of any object that has the type specified by the "from" role to an object of the type specified by the "to" role, as long as it is not overloaded by a more specific mapping definition. In other words, assume a mapping is specified as the class "A" (i.e., that has A typing its "from" property), then it applies to any instance of a class B if B is a subclass of A and if there is no specialization of that mapping class specified for B (i.e., that has B typing its "from" property).

It is possible to restrict the applicability of a mapping specification to a specific subset of objects. This is achieved by the "filter" static operation that is evaluated against each candidate object. Only objects for which this "filter" operation returns "true" shall be translated according to the specifications of that mapping class. By default, the filter operation always returns "true".

Some mapping classes have one or more qualifiers for their "to" attribute. In such a case, each of those qualifiers reflect the specific attribute of the source type (i.e. the type of the "from" attribute) that has the same name and the same type. For those specific mappings, it is expected to get one instance of the target class (as specified by the type of the "to" attribute") for each combination of value of those attributes per instance of object of the source type, assuming they pass the applicability filter as described above.

C.2 Mappings

C.2.1 Overview

C.2.2 Mapping Helper and Library

C.2.2.1 Helper

Description

The Helper class contains operations that are used by multiple mapping classes. The specification is in the bodyCondition.

Operations

- **actionOwnedRelationship (in src : Element) : Relationship [0..*]**
Reusable mapping rule for owned relationships of a SysMLv1::Action mapping.
bodyCondition:

```
result =
let actionInputPin: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::ActionInputPin))
let triggers: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::Trigger))
let toElementFMS: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::Pin))
let toElementOMS: Set(UML::Element) = ((src.ownedElement - toElementFMS) - actionInputPin) -
toElementOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(toElementFMS->collect(e | ElementFeatureMembership_Mapping.getMapped(e)))
```

- **activityOwnedRelationship (in src : Element) : Relationship [0..*]**
Reusable mapping rule for owned relationships of a SysMLv1::Activity mapping.
bodyCondition:

```
result =
let initialNodes : Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::InitialNode))
let finalNodes : Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::FinalNode))
let objectFlowsWithGuard : Set(UML::ObjectFlow) = src.ownedElement->select(e | e.ocIsKindOf(UML::ObjectFlowWithGuard))
let objectFlows : Set(UML::ObjectFlow) = src.ownedElement->select(e | e.ocIsKindOf(UML::ObjectFlow))
let elementsFMS : Set(UML::Element) = ((src.ownedElement->select(e | e.ocIsKindOf(UML::Classifier)) -
let parameters: Set(UML::Parameter) = src.ownedElement->select(e | e.ocIsKindOf(UML::Parameter))
let ignoreParameterNodes: Set(UML::ActivityParameterNode) = src.ownedElement->select(e | e.ocIsKindOf(UML::ActivityParameterNode))
let ignoreActivityPartition: Set(UML::ActivityPartition) = src.ownedElement->select(e | e.ocIsKindOf(UML::ActivityPartition))
let ignoreInterruptibleActivityRegion: Set(UML::InterruptibleActivityRegion) = src.ownedElement->select(e | e.ocIsKindOf(UML::InterruptibleActivityRegion))
let ownedClassifier: Sequence(UML::Classifier) = src.ownedElement->select(e | e.ocIsKindOf(UML::Classifier))
let variables: Sequence(UML::Variable) = src.ownedElement->select(e | e.ocIsKindOf(UML::Variable))
let parameterSets: Set(UML::ParameterSet) = src.ownedElement->select(e | e.ocIsKindOf(UML::ParameterSet))
let elementsOMS: Set(UML::Element) = (((((((((((src.ownedElement-initialNodes)-finalNodes)-objectFlowsWithGuard)-objectFlows)-elementsFMS)-parameters)-ignoreParameterNodes)-ignoreActivityPartition)-ignoreInterruptibleActivityRegion)-ownedClassifier)-variables)-parameterSets)-elementsOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
let memberships : Sequence(UML::Element) =
```

```

elementsOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(initialNodes->collect(e | InitialNodeMembership_Mapping.getMapped(e)))
->union(finalNodes->collect(e | ActivityFinalNodeMembership_Mapping.getMapped(e)))
->union(elementsFMS->collect(e | ElementFeatureMembership_Mapping.getMapped(e)))
->union(objectFlowsWithGuard->collect(e | ObjectFlowGuardFeatureMembership_Mapping.getMapped(e)))
->union(objectFlows->collect(e | ObjectFlowFeatureMembership_Mapping.getMapped(e)))
->union(variables->collect(e | VariableMembership_Mapping.getMapped(e)))
->union(parameterSets->collect(e | ParameterSetMembership_Mapping.getMapped(e)))
->union(ownedClassifier->collect(e | ElementOwningMembership_Mapping.getMapped(e))) in
if src.classifierBehavior.oclIsUndefined() then memberships else memberships->append(Classifi

```

- **createUUID () : String [1]**
Creates a UUID. The specification is implementation-specific and therefore cannot provided here.
- **getAppliedStereotypes (in element : Element) : Stereotype [0..*]**
Returns the list of applied stereotypes. The specification is implementation-specific and therefore cannot provided here.
- **getEnumerationType (in t : Enumeration) : EnumerationDefinition [1]**
Maps a given SysMLv1::Enumeration to the appropriate SysMLv2::EnumerationDefinition.
bodyCondition:

```

result =
if t.name = 'VerdictKind' then SYSML2::EnumerationDefinition.allInstances()->any(e | e.qualifiedName = 'SysMLv1Library::Enum
SYSML2::EnumerationDefinition.allInstances()->any(e | e.qualifiedName = 'SysMLv1Library::Enum

```

- **getID (in src : Element) : String [1]**
Returns the identifier of a SysMLv1::Element. The specification is implementation-specific and therefore cannot provided here.
- **getKerMLFeatureDirectionKind (in v : EnumerationLiteral) : FeatureDirectionKind [1]**
Maps a given SysMLv1 feature direction enumeration literal to a SysMLv2::FeatureDirectionKind enumeration literal.
bodyCondition:

```

result = if v.enumeration.qualifiedName = 'SysML::Ports&Flows::FeatureDirectionKind' or
          v.enumeration.qualifiedName = 'SysML::Ports&Flows::FeatureDirection' then
  if v = SysML::FeatureDirectionKind::provided then
    KerML::FeatureDirectionKind::_'out'
  else if (v = SysML::FeatureDirectionKind::required) then
    KerML::FeatureDirectionKind::_'in'
  else if (v = SysML::FeatureDirectionKind::providedRequired) then
    KerML::FeatureDirectionKind::inout
  else
    invalid
  endif endif endif
else
  invalid
endif

```

- **getKerMLParameterDirectionKind (in v : ParameterDirectionKind) : FeatureDirectionKind [1]**
Maps a given SysMLv1 parameter direction enumeration literal to a SysMLv2::FeatureDirectionKind enumeration literal.
bodyCondition:

```

result = if v = UML::ParameterDirectionKind::_'in' then
  KerML::FeatureDirectionKind::_'in'
else if (v = UML::ParameterDirectionKind::return) then
  KerML::FeatureDirectionKind::out
else if (v = UML::ParameterDirectionKind::out) then

```

```

    KerML::FeatureDirectionKind::out
else if (v = UML::ParameterDirectionKind::inout) then
    KerML::FeatureDirectionKind::inout
else
    invalid
endif endif endif endif

```

- **getKerMLVisibilityKind (in v : VisibilityKind) : VisibilityKind [1]**
Maps a given SysMLv1::VisibilityKind enumeration literal to a SysMLv2::VisibilityKind enumeration literal.
bodyCondition:

```

result = if (v = UML::VisibilityKind::public) then
    KerML::VisibilityKind::public
else if (v = UML::VisibilityKind::protected) then
    KerML::VisibilityKind::protected
else if (v = UML::VisibilityKind::private) then
    KerML::VisibilityKind::private
else if (v = UML::VisibilityKind::package) then
    KerML::VisibilityKind::public
else
    invalid
endif endif endif endif

```

- **getMetadataByName (in mdName : String) : AttributeDefinition [1]**
Returns the metadata attribute definition element for a given metadata name.
bodyCondition:

```

result = SYSML2::AttributeDefiniton.allInstances()->any(e | e.name = mdName)

```

- **getRequirementStereotype (in element : NamedElement) : Stereotype [0..1]**
Returns the requirement stereotype for a given element.
bodyCondition:

```

result = let stereotypes: Set(UML::Stereotype) = Helper.getAppliedStereotypes(element) in
stereotypes->any(s | s.general->collect(g | g.qualifiedName)->includes('SysML::Requirements::

```

- **getScalarValueType (in t : DataType) : DataType [1]**
Maps a given SysMLv1 primitive type to a SysMLv2 scalar value type.
bodyCondition:

```

result =
if t.name = 'UnlimitedNatural' then
SYSML2::DataType.allInstances()->any(e | e.qualifiedName = 'ScalarValues::Natural')
else
SYSML2::DataType.allInstances()->any(e | e.qualifiedName = 'ScalarValues::' + t.name)
endif

```

- **getScalarValueTypeByName (in ptName : String) : DataType [1]**
Maps a given SysMLv1 primitive type name string to a SysMLv2 scalar value type.
bodyCondition:

```

result = SYSML2::DataType.allInstances()->any(e | e.qualifiedName = 'ScalarValues::' + ptName)

```

- **getSysMLv2EnumerationDefinition (in v1Enumeration : Enumeration) : EnumerationDefinition [1]**
Maps a given SysMLv1::Enumeration to the appropriate SysMLv2::EnumerationDefinition.
bodyCondition:

```

result = if v1Enumeration = UML::ParameterDirectionKind then
    KerML::FeatureDirectionKind
else
    invalid
endif

```

- **getTagValue** (in element : Element, in stereotypeName : String, in tagValueName : String) [1]
Returns the value of a stereotype property. The specification is implementation-specific and therefore cannot be provided here.
- **getTagValue2** (in element : Element, in stereotype : Stereotype, in tagValueName : String) [1]
- **getTagValueAsElement** (in element : Element, in stereotypeName : String, in tagValueName : String) : Element [1]
Returns the value of a stereotype property. The specification is implementation-specific and therefore cannot be provided here.
- **getTagValueAsElementColl** (in element : Element, in stereotypeName : String, in tagValueName : String) : Element [0..*]
Returns the value of a stereotype property as a collection. The specification is implementation-specific and therefore cannot be provided here.
- **getTagValueAsString** (in element : Element, in stereotypeName : String, in tagValueName : String) : String [1]
Returns the value of a stereotype property as a string. The specification is implementation-specific and therefore cannot be provided here.
- **getTagValueAsStringColl** (in element : Element, in stereotypeName : String, in tagValueName : String) : String [0..*]
Returns the value of a stereotype property as a string collection. The specification is implementation-specific and therefore cannot be provided here.
- **getV1V2Lib_PartUsage** (in name : String) [0..1]
- **globalNamespace** () : Namespace [1]

bodyCondition:

```

result = KerML::Package.allInstances()->any(p | p.owningNamespace->isEmpty())

```

- **hasStereotypeApplied** (in element : Element, in stereotypeName : String) : Boolean [1]
Returns true if the given stereotype is applied to the element. The specification is implementation-specific and therefore cannot be provided here.
- **isConnectionDef** (in association : Association) : Boolean [1]
Checks if a SysMLv1::Association is mapped to a SysMLv2::ConnectionDefinition.
bodyCondition:

```

result =
-- Case 1: composite association with multiplicity 1..1 on owner side
let case1: Boolean = association.memberEnd->exists(e | not e.isComposite and e.lower=1) and
association.memberEnd->exists(e | e.isComposite) in

-- Case 2: association is not composite and there is no owned end with multiplicity 0..*
let case2: Boolean = not association.memberEnd->exists(e | e.isComposite) and
not association.ownedEnd->exists(e | e.lower = 0 and e.upper = -1) in

association.oclIsTypeOf(UML::AssociationClass) or
case1 or
case2

```

- **isRequirement** (in element : Element) : Boolean [1]
Checks whether the stereotype AbstractRequirement is applied to the given element.
bodyCondition:

```

result = let stereotypes: Set(UML::Stereotype) = Helper.getAppliedStereotypes(element) in
stereotypes->exists(s | s.general->collect(g | g.qualifiedName)->includes('SysML::Requirement

```

- **packageOwnedRelationship (in src : Element) : Relationship [0..*]**
Reusable mapping rule for owned relationships of a SysMLv1::Package mapping.
bodyCondition:

```

result =
let elementGroups: Set(UML::Comment) = src.ownedElement->select(e | Helper.hasStereotypeAppli
let copyRelationship: Set(UML::Abstraction) = src.ownedElement->select(e | Helper.hasStereoty
let verifyRelationship: Set(UML::Abstraction) = src.ownedElement->select(e | Helper.hasStereoc
let useCaseAssociations : Set(UML::Association) = src.ownedElement->select(e | e.ocIsKindOf(
let relationships: Set(SysMLv2::Relationship) = (((src.ownedElement - elementGroups) - copyR
->reject(e | e.ocIsKindOf(UML::ProfileApplication)
or e.ocIsKindOf(UML::GeneralizationSet)
or e.ocIsKindOf(UML::SignalEvent)
or e.ocIsKindOf(UML::CallEvent)
or e.ocIsKindOf(UML::ChangeEvent)
or e.ocIsKindOf(UML::Extension)
or e.ocIsKindOf(UML::PackageMerge)
or (e.ocIsKindOf(UML::InstanceSpecification) and e.ocAsType(UML::InstanceSpecification).cla
->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(elementGroups->collect(e | ElementGroupMembership_Mapping.getMapped(e))) in
if src.URI.ocIsUndefined() or src.URI = '' then
    relationships
else
    relationships->including(PackageURIMetadataMembership_Mapping.getMapped(src))
endif

```

- **stateOwnedRelationship (in src : Element) : Relationship [0..*]**
Reusable mapping rule for owned relationships of a SysMLv1::State mapping.
bodyCondition:

```

result =
let initialState : Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Pseuo
let toElementOMS : Set(UML::Element) = from.ownedElement - initialState in
toElementOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(initialState->collect(e | InitialStateMembership_Mapping.getMapped(e)))

```

C.2.2.2 SysML v1 Library

The SysML v1 library is a SysML v2 model library with metadata definitions for annotating some model elements resulting from a transformation from a SysML v1 model using the SysML v1 to SysML v2 transformation.

```

package SysMLv1Library {

    doc /*
    * The SysMLv1Library defines metadata for SysML elements which cannot mapped to a SysML v2
    */

    metadata def ActivityEdgeData {
        doc /* Metadata definition for UML::ActivityEdge::weight property */
        attribute weight : ScalarValues::Natural;
    }

    metadata def AssociationData {
        doc /* Metadata definition for UML::StructuredClassifiers::Association::isDerived proper
        attribute isDerived : ScalarValues::Boolean;
    }

```

```

}

metadata def BlockData {
    doc /* Metadata definition for SysML::Blocks::Block::isEncapsulated property */
    attribute isEncapsulated : ScalarValues::Boolean;
}

metadata def ElementGroupData {
    doc /* Metadata definition for the criterion of a SysML::ModelElements::ElementGroup */
    attribute criterion : ScalarValues::String;
}

metadata def ModelData :> PackageData {
    doc /* Metadata definition for the UML::Model::viewpoint property */
    attribute 'viewpoint' : ScalarValues::String;
}

metadata def PackageData {
    doc /* Metadata definition for the UML::Package::URI property */
    attribute URI : ScalarValues::String;
}

    metadata def ParameterSetData {
        doc /* Metadata definition to tag parameter that the mapping source of the parameter
        attribute isParameterSet : ScalarValue::Boolean;
    }

metadata def PortData {
    doc /* Metadata definition to tag a SysML v2 port that the mapping source of the port wa
    attribute isFullPort : ScalarValues::Boolean;
}

metadata def ViewpointData {
    doc /* Metadata definition for SysML::ModelElements::Viewpoint properties */
    attribute concerns [0..*] : ScalarValues::String;
    attribute languages [0..*] : ScalarValues::String;
    attribute purpose : ScalarValues::String;
    attribute presentations [0..*] : ScalarValues::String;
}
}

```

C.2.3 Generic Mappings

C.2.3.1 Overview

Generic mappings are partial definitions of transformation rules that are intended to factorize reusable algorithms for making the global specification more compact and easier to read and maintain. Basically, they provide a default value for all the non-derived attributes of their target metaclass wherever possible, or declare an abstract operation for them otherwise. All of them have "UML::Element" defined as their source type. The operations provided by the generic mappings can be redefined by their specialization, as appropriate according to the source type specified by the redefinition of their "from" attribute.

All of those generic mappings are abstract.

C.2.3.2 Generic Mappings To KerML

C.2.3.2.1 GenericToAnnotatingElement_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *AnnotatingElement*.

General Mappings

GenericToElement_Mapping

Mapping Source

Mapping Target

AnnotatingElement

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- AnnotatingElement::annotation () : Annotation [0..*]
Set { }

C.2.3.2.2 GenericToAnnotation_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Annotation*.

General Mappings

GenericToRelationship_Mapping

Mapping Source

Mapping Target

Annotation

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Annotation::owningAnnotatedElement () : Element [0..1]
null
- Annotation::annotatingElement () : AnnotatingElement [1]
abstract rule
- Annotation::annotatedElement () : Element [1]
abstract rule

C.2.3.2.3 GenericToAssociation_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Association*.

General Mappings

GenericToRelationship_Mapping
GenericToClassifier_Mapping

Mapping Source

Mapping Target

Association

Owned Mappings

(none)

C.2.3.2.4 GenericToBehavior_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Behavior*.

General Mappings

GenericToClassifier_Mapping

Mapping Source

Mapping Target

Behavior

Owned Mappings

(none)

C.2.3.2.5 GenericToClassifier_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Classifier*.

General Mappings

GenericToType_Mapping

Mapping Source

Mapping Target

Classifier

Owned Mappings

(none)

C.2.3.2.6 GenericToComment_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Comment*.

General Mappings

GenericToAnnotatingElement_Mapping

Mapping Source

Mapping Target

Comment

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Comment::locale () : String [1]
 null
- Comment::body () : String [1]
 abstract rule

C.2.3.2.7 GenericToConjugation_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Conjugation*.

General Mappings

GenericToRelationship_Mapping

Mapping Source

Mapping Target

Conjugation

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Conjugation::conjugatedType () : Type [1]
abstract rule
- Conjugation::originalType () : Type [1]
abstract rule

C.2.3.2.8 GenericToConnector_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Connector*.

General Mappings

GenericToFeature_Mapping

GenericToRelationship_Mapping

Mapping Source

Mapping Target

Connector

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Connector::isDirected () : Boolean [1]
`false`

C.2.3.2.9 GenericToDocumentation_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Documentation*.

General Mappings

GenericToComment_Mapping

Mapping Source

Mapping Target

Documentation

Owned Mappings

(none)

C.2.3.2.10 GenericToElement_Mapping

Description

This is the general abstract class to be used as an ancestor for any class mapping specification.

General Mappings

No general mappings.

Mapping Source

Mapping Target

Element

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Element::aliasId () : String [0..*]
`Set {}`
- Element::name () : String [0..1]
`null`
- Element::shortName () : String [0..1]
`null`
- Element::elementId () : String [1]
`Helper.createUUID()`
- Element::ownedRelationship () : Relationship [0..*]
`Set {}`

C.2.3.2.11 GenericToEndFeatureMembership_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *EndFeatureMembership*.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Mapping Target

EndFeatureMembership

Owned Mappings

(none)

C.2.3.2.12 GenericToExpression_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Expression*.

General Mappings

GenericToStep_Mapping

Mapping Source

Mapping Target

Expression

Owned Mappings

(none)

C.2.3.2.13 GenericToFeature_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Feature*.

General Mappings

GenericToType_Mapping

Mapping Source

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::isPortion () : Boolean [1]
false
- Feature::isEnd () : Boolean [1]
false
- Feature::isReadOnly () : Boolean [1]
false
- Feature::direction () : FeatureDirectionKind [0..1]
null
- Feature::isDerived () : Boolean [1]
false
- Feature::isUnique () : Boolean [1]

true

- Feature::isComposite () : Boolean [1]

false

- Feature::isOrdered () : Boolean [1]

false

C.2.3.2.14 GenericToFeatureChaining_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *FeatureChaining*.

General Mappings

GenericToRelationship_Mapping

Mapping Source

Mapping Target

FeatureChaining

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureChaining::chainingFeature () : Feature [1]
abstract rule

C.2.3.2.15 GenericToFeatureMembership_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *FeatureMembership*.

General Mappings

GenericToOwningMembership_Mapping

GenericToTypeFeaturing_Mapping

Mapping Source

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]
abstract rule
- FeatureMembership::ownedRelatedElement () : Element [0..*]

```
Set { self.ownedMemberFeature () }
```

C.2.3.2.16 GenericToFeatureReferenceExpression_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *FeatureReferenceExpression*.

General Mappings

GenericToExpression_Mapping

Mapping Source

Mapping Target

FeatureReferenceExpression

Owned Mappings

(none)

C.2.3.2.17 GenericToFeatureTyping_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *FeatureTyping*.

General Mappings

GenericToSpecialization_Mapping

Mapping Source

Mapping Target

FeatureTyping

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureTyping::type () : Type [1]`
abstract rule
- `FeatureTyping::typedFeature () : Feature [1]`
abstract rule

C.2.3.2.18 GenericToFeatureValue_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *FeatureValue*.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureValue::isDefault () : Boolean [1]`
false
- `FeatureValue::isInitial () : Boolean [1]`
false

- FeatureValue::featureWithValue () : Feature [1]
abstract rule
- FeatureValue::value () : Expression [1]
abstract rule
- FeatureValue::ownedRelatedElement () : Element [0..*]

```
Set { self.value () }
```

C.2.3.2.19 GenericToFunction_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Function*.

General Mappings

GenericToBehavior_Mapping

Mapping Source

Mapping Target

Function

Owned Mappings

(none)

C.2.3.2.20 GenericToImport_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Import*.

General Mappings

GenericToRelationship_Mapping

Mapping Source

Mapping Target

Import

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Import::importedNamespace () : Namespace [1]
abstract rule
- Import::importedMemberName () : String [0..1]

null

- Import::isRecursive () : Boolean [1]

false

- Import::visibility () : VisibilityKind [1]

KerML::VisibilityKind::public

- Import::isImportAll () : Boolean [1]

false

C.2.3.2.21 GenericToInvocationExpression_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *InvocationExpression*.

General Mappings

GenericToExpression_Mapping

Mapping Source

Mapping Target

InvocationExpression

Owned Mappings

(none)

C.2.3.2.22 GenericToInteraction_Mapping

C.2.3.2.23 GenericToItemFlow_Mapping

C.2.3.2.24 GenericToMembership_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Membership*.

General Mappings

GenericToRelationship_Mapping

Mapping Source

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::membershipOwningNamespace () : Element [0..*]
abstract rule
- Membership::memberShortName () : String [0..1]

null

- Membership::memberName () : String [0..1]

null

- Membership::memberElement () : Element [1]
abstract rule
- Membership::visibility () : VisibilityKind [1]

KerML::VisibilityKind::public

C.2.3.2.25 GenericToNamespace_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Namespace*.

General Mappings

GenericToElement_Mapping

Mapping Source

Mapping Target

Namespace

Owned Mappings

(none)

C.2.3.2.26 GenericToOwningMembership_Mapping

C.2.3.2.27 GenericToPackage_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Package*.

General Mappings

GenericToNamespace_Mapping

Mapping Source

Mapping Target

Package

Owned Mappings

(none)

C.2.3.2.28 GenericToParameterMembership_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *ParameterMembership*.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Mapping Target

ParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ParameterMembership::ownedMemberParameter () : Feature [1]
`null`
- ParameterMembership::ownedRelatedElement () : Element [0..*]
`Set { self.ownedMemberParameter () }`

C.2.3.2.29 GenericToPredicate_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Predicate*.

General Mappings

GenericToFunction_Mapping

Mapping Source

Mapping Target

Predicate

Owned Mappings

(none)

C.2.3.2.30 GenericToRedefinition_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Redefinition*.

General Mappings

GenericToSubsetting_Mapping

Mapping Source

Mapping Target

Redefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Redefinition::redefinedFeature () : Feature [1]`
abstract rule
- `Redefinition::redefiningFeature () : Feature [1]`
abstract rule

C.2.3.2.31 GenericToRelationship_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Relationship*.

General Mappings

GenericToElement_Mapping

Mapping Source

Mapping Target

Relationship

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Relationship::ownedRelatedElement () : Element [0..*]
Set { }
- Relationship::source () : Element [0..*]
Set { }
- Relationship::target () : Element [0..*]
Set { }

C.2.3.2.32 GenericToReturnParameterMembership_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *ReturnParameterMembership*.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

Mapping Target

ReturnParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReturnParameterMembership::isComposite (in src : Element) : Boolean [1]

returns "true" if the element provided as the actual parameter value can have a mapping to an instance of the type specified by the "to" attribute (i.e. can be used as a value for the "from" attribute)

false

C.2.3.2.33 GenericToSpecialization_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Specialization*.

General Mappings

GenericToRelationship_Mapping

Mapping Source

Mapping Target

Specialization

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Specialization::specific () : Type [1]
abstract rule
- Specialization::general () : Type [1]
abstract rule

C.2.3.2.34 GenericToStep_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Step*.

General Mappings

GenericToFeature_Mapping

Mapping Source

Mapping Target

Step

Owned Mappings

(none)

C.2.3.2.35 GenericToSubclassification_Mapping

C.2.3.2.36 GenericToSubsetting_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Subsetting*.

General Mappings

GenericToSpecialization_Mapping

Mapping Source

Mapping Target

Subsetting

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Subsetting::ownedRelatedElement () : Element [0..*]

Set { }

- Subsetting::subsettingFeature () : Feature [1]
abstract rule
- Subsetting::subsettingFeature () : Feature [1]
abstract rule

C.2.3.2.37 GenericToSuccession_Mapping

C.2.3.2.38 GenericToSuccessionItemFlow_Mapping

C.2.3.2.39 GenericToTextualRepresentation_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *TextualRepresentation*.

General Mappings

GenericToAnnotatingElement_Mapping

Mapping Source

Mapping Target

TextualRepresentation

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- TextualRepresentation::language () : String [1]
abstract rule
- TextualRepresentation::body () : String [1]
abstract rule

C.2.3.2.40 GenericToType_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Type*.

General Mappings

GenericToNamespace_Mapping

Mapping Source

Mapping Target

Type

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Type::isSufficient () : Boolean [1]`
`false`
- `Type::isAbstract () : Boolean [1]`
`false`

C.2.3.2.41 GenericToTypeFeaturing_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *TypeFeaturing*.

General Mappings

GenericToRelationship_Mapping

Mapping Source

Mapping Target

TypeFeaturing

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `TypeFeaturing::featureOfType () : Feature [1]`
abstract rule
- `TypeFeaturing::featuringType () : Type [1]`
abstract rule

C.2.3.3 Generic Mappings FromTo KerML

C.2.3.3.1 CommonMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *TypedElement* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

TypedElement

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::memberElement () : Element [1]

from

C.2.3.3.2 CommonParameterReferenceUsageInMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Element* mapping.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

Element

Mapping Target

ParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ParameterMembership::ownedMemberParameter () : Feature [1]

```
if not from.ocIsKindOf(UML::TypedElement) then CommonParameterReferenceUsageIn_Mapping.getMa
else if from.ocIsType(UML::TypedElement).type.ocIsUndefined() then CommonParameterReference
else CommonParameterReferenceUsageInUntyped_Mapping.getMapped(from) endif endif
```

C.2.3.3.3 CommonParameterReferenceUsageIn_Mapping

Description

*** not specified yet ***

General Mappings

CommonParameterReferenceUsageInUntyped_Mapping

Mapping Source

Element

Mapping Target

ReferenceUsage

Owned Mappings

- commonParameterReferenceUsageInFeatureTyping :
CommonParameterReferenceUsageInFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

```
if from.ocIsKindOf(UML::TypedElement) then Set{commonParameterReferenceUsageInFeatureTyping
```

C.2.3.3.4 CommonParameterReferenceUsageInUntyped_Mapping

Description

*** not specified yet ***

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Element

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::direction () : FeatureDirectionKind [0..1]

`KerML::FeatureDirectionKind::_in'`

C.2.3.3.5 CommonReferenceUsageInFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *TypedElement* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

TypedElement

Mapping Target

FeatureTyping

Owned Mappings

- commonReferenceUsageIn : CommonReferenceUsageIn_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]

```
commonReferenceUsageIn.to
```

- FeatureTyping::type () : Type [1]

```
if from.type.ocIsKindOf(UML::PrimitiveType) then
    Helper.getScalarValueType(from.type)
else
    from.type
endif
```

C.2.3.3.6 CommonReferenceUsageInUntyped_Mapping

Description

*** not specified yet ***

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

TypedElement

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::name () : String [0..1]

```
from.name
```

- ReferenceUsage::direction () : FeatureDirectionKind [0..1]

```
KerML::FeatureDirectionKind::_in'
```

C.2.3.3.7 CommonReturnParameterFeature_Mapping

Description

*** not specified yet ***

General Mappings

CommonReturnParameterFeatureUntyped_Mapping

Mapping Source

Element

Mapping Target

Feature

Owned Mappings

- commonReturnParameterFeatureTyping : CommonReturnParameterFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]

```
if from.ocIsKindOf(UML::Property) then Set{commonReturnParameterFeatureTyping.to} else Set{
```

C.2.3.3.8 CommonReturnParameterFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Element* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Element

Mapping Target

FeatureTyping

Owned Mappings

- commonReturnParameterFeature : CommonReturnParameterFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]
`commonReturnParameterFeature.to`
- FeatureTyping::type () : Type [1]

```
if from.ocIsKindOf(UML::Property)
then
if from.ocAsType(UML::TypedElement).type.ocIsKindOf(UML::PrimitiveType) then
  Helper.getScalarValueType(from.ocAsType(UML::TypedElement).type)
else
  from.ocAsType(UML::TypedElement).type
endif
else OclUndefined endif
```

C.2.3.3.9 CommonReturnParameterFeatureUntyped_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

Element

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::direction () : FeatureDirectionKind [0..1]
`KerML::FeatureDirectionKind::_out'`

C.2.3.3.10 CommonReturnParameterFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *Element* mapping.

General Mappings

GenericToReturnParameterMembership_Mapping

Mapping Source

Element

Mapping Target

ReturnParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReturnParameterMembership::ownedMemberParameter () : Feature [1]

```
if not from.ocIsKindOf(UML::TypedElement) then CommonReturnParameterFeatureUntyped_Mapping.g
else if from.ocIsType(UML::TypedElement).type.ocIsUndefined() then CommonReturnParameterFea
else CommonReturnParameterFeatureUntyped_Mapping.getMapped(from) endif endif
```

C.2.3.3.11 CommonReturnParameterReferenceUsageMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Element* mapping.

General Mappings

GenericToReturnParameterMembership_Mapping

Mapping Source

Element

Mapping Target

ReturnParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReturnParameterMembership::ownedMemberParameter () : Feature [0..1]

```
if not from.ocIsKindOf(UML::TypedElement) then CommonReturnParameterReferenceUsageUntyped_Ma
else if from.ocIsType(UML::TypedElement).type.ocIsUndefined() then CommonReturnParameterRef
else CommonReturnParameterReferenceUsageUntyped_Mapping.getMapped(from) endif endif
```

C.2.3.3.12 CommonReturnParameterReferenceUsage_Mapping

Description

Creates a reference usage for the *Element* mapping.

General Mappings

CommonReturnParameterReferenceUsageUntyped_Mapping

Mapping Source

Element

Mapping Target

ReferenceUsage

Owned Mappings

- commonReturnParameterReferenceUsageFeatureTyping :
CommonReturnParameterReferenceUsageFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

```
if from.ocIsKindOf(UML::TypedElement) then Set{commonReturnParameterReferenceUsageFeatureTy
```

C.2.3.3.13 CommonParameterReferenceUsageInFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Element* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Element

Mapping Target

FeatureTyping

Owned Mappings

- commonParameterReferenceUsageIn : CommonParameterReferenceUsageIn_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]

```
commonParameterReferenceUsageIn.to
```
- FeatureTyping::type () : Type [1]

```
if from.ocIsKindOf(UML::TypedElement)
then
if from.ocAsType(UML::TypedElement).type.ocIsKindOf(UML::PrimitiveType) then
  Helper.getScalarValueType(from.ocAsType(UML::TypedElement).type)
else
  from.ocAsType(UML::TypedElement).type
endif
else OclUndefined endif
```

C.2.3.3.14 CommonReturnParameterReferenceUsageFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Element* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Element

Mapping Target

FeatureTyping

Owned Mappings

- commonReturnParameterReferenceUsage : CommonReturnParameterReferenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]

```
commonReturnParameterReferenceUsage.to
```
- FeatureTyping::type () : Type [1]

```
if from.ocIsKindOf (UML::TypedElement)
then
if from.ocAsType (UML::TypedElement).type.ocIsKindOf (UML::PrimitiveType) then
  Helper.getScalarValueType (from.ocAsType (UML::TypedElement).type)
else
  from.ocAsType (UML::TypedElement).type
endif
else OclUndefined endif
```

C.2.3.3.15 CommonReturnParameterReferenceUsageUntyped_Mapping

Description

*** not specified yet ***

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Element

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::direction () : FeatureDirectionKind [0..1]`
`KerML::FeatureDirectionKind::_out'`

C.2.3.3.16 EmptyReturnParameterFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *Element* mapping.

General Mappings

GenericToReturnParameterMembership_Mapping

Mapping Source

Element

Mapping Target

ReturnParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReturnParameterMembership::ownedMemberParameter () : Feature [1]`
`CommonReturnParameterFeatureUntyped_Mapping.getMapped (from)`

C.2.3.4 Generic Mappings to Systems

C.2.3.4.1 GenericToActionUsage_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *ActionUsage*.

General Mappings

GenericToUsage_Mapping
GenericToStep_Mapping

Mapping Source

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::isComposite () : Boolean [1]
true

C.2.3.4.2 GenericToActorMembership_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *ActorMembership*.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

Mapping Target

ActorMembership

Owned Mappings

(none)

C.2.3.4.3 GenericToAssignmentActionUsage_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *AssignmentActionUsage*.

General Mappings

GenericToActionUsage_Mapping

Mapping Source**Mapping Target**

AssignmentActionUsage

Owned Mappings

(none)

C.2.3.4.4 GenericToConnectionUsage_Mapping**Description**

Generic mapping class for mappings to the SysML v2 element *ConnectionUsage*.

General Mappings

GenericToPartUsage_Mapping

Mapping Source**Mapping Target**

ConnectionUsage

Owned Mappings

(none)

C.2.3.4.5 GenericToConjugatedPortDefinition_Mapping**Description**

Generic mapping class for mappings to the SysML v2 element *ConjugatedPortDefinition*.

General Mappings

GenericToPortDefinition_Mapping

Mapping Source**Mapping Target**

ConjugatedPortDefinition

Owned Mappings

(none)

C.2.3.4.6 GenericToConjugatedPortTyping_Mapping**Description**

Generic mapping class for mappings to the SysML v2 element *ConjugatedPortTyping*.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Mapping Target

ConjugatedPortTyping

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ConjugatedPortTyping::conjugatedPortDefinition () : ConjugatedPortDefinition [1]
abstract rule
- ConjugatedPortTyping::portDefinition () : PortDefinition [1]
abstract rule

C.2.3.4.7 GenericToConstraintDefinition_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *ConstraintDefinition*.

General Mappings

GenericToDefinition_Mapping

Mapping Source

Mapping Target

ConstraintDefinition

Owned Mappings

(none)

C.2.3.4.8 GenericToDefinition_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *Definition*.

General Mappings

GenericToClassifier_Mapping

Mapping Source

Mapping Target

Definition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Definition::isVariation () : Boolean [1]

false

C.2.3.4.9 GenericToEventOccurrenceUsage_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *EventOccurrenceUsage*.

General Mappings

GenericToOccurrenceUsage_Mapping

Mapping Source

Mapping Target

EventOccurrenceUsage

Owned Mappings

(none)

C.2.3.4.10 GenericToItemDefinition_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *ItemDefinition*.

General Mappings

GenericToDefinition_Mapping

Mapping Source

Mapping Target

ItemDefinition

Owned Mappings

(none)

C.2.3.4.11 GenericToMetadataUsage_Mapping**Description**

Generic mapping class for mappings to the SysML v2 element *MetadataUsage*.

General Mappings

GenericToUsage_Mapping

Mapping Source**Mapping Target**

MetadataUsage

Owned Mappings

(none)

C.2.3.4.12 GenericToObjectiveMembership_Mapping**Description**

Generic mapping class for mappings to the SysML v2 element *ObjectiveMembership*.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source**Mapping Target**

ObjectiveMembership

Owned Mappings

(none)

C.2.3.4.13 GenericToOccurrenceDefinition_Mapping**Description**

Generic mapping class for mappings to the SysML v2 element *OccurrenceDefinition*.

General Mappings

GenericToDefinition_Mapping

Mapping Source

Mapping Target

OccurrenceDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OccurrenceDefinition::isIndividual () : Boolean [1]
`false`

C.2.3.4.14 GenericToOccurrenceUsage_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *OccurrenceUsage*.

General Mappings

GenericToUsage_Mapping

Mapping Source

Mapping Target

OccurrenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OccurrenceUsage::portionKind () : PortionKind [1]

OclUndefined

- OccurrenceUsage::isIndividual () : Boolean [1]

false

C.2.3.4.15 GenericToPartUsage_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *PartUsage*.

General Mappings

GenericToUsage_Mapping

Mapping Source

Mapping Target

PartUsage

Owned Mappings

(none)

C.2.3.4.16 GenericToPortConjugation_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *PortConjugation*.

General Mappings

GenericToConjugation_Mapping

Mapping Source

Mapping Target

PortConjugation

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- PortConjugation::originalPortDefinition () : PortDefinition [1]
abstract rule

C.2.3.4.17 GenericToPortDefinition_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *PortDefinition*.

General Mappings

GenericToDefinition_Mapping

Mapping Source

Mapping Target

PortDefinition

Owned Mappings

(none)

C.2.3.4.18 GenericToReferenceUsage_Mapping

Description

Provides the basic features to map to a ReferenceUsage element.

General Mappings

GenericToUsage_Mapping

Mapping Source

Mapping Target

ReferenceUsage

Owned Mappings

(none)

C.2.3.4.19 GenericToRequirementUsage_Mapping

Description

Generic mapping class for mappings to the SysML v2 element *RequirementUsage*.

General Mappings

GenericToUsage_Mapping

Mapping Source

Mapping Target

RequirementUsage

Owned Mappings

(none)

C.2.3.4.20 GenericToStateUsage_Mapping**Description**

Generic mapping class for mappings to the SysML v2 element *StateUsage*.

General Mappings

GenericToActionUsage_Mapping

Mapping Source**Mapping Target**

StateUsage

Owned Mappings

(none)

C.2.3.4.21 GenericToSubjectMembership_Mapping**Description**

Generic mapping class for mappings to the SysML v2 element *SubjectMembership*.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source**Mapping Target**

SubjectMembership

Owned Mappings

(none)

C.2.3.4.22 GenericToUsage_Mapping**Description**

Generic mapping class for mappings to the SysML v2 element *Usage*.

General Mappings

GenericToFeature_Mapping

Mapping Source

Mapping Target

Usage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Usage::isVariation () : Boolean [1]

false

C.2.4 SysML v1.7

C.2.4.1 Overview

C.2.4.2 Activities

C.2.4.2.1 Overview

Table 7. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class
Continuous		*** not specified yet ***
ControlOperator		*** not specified yet ***
Discrete		*** not specified yet ***
NoBuffer		*** not specified yet ***
Optional		*** not specified yet ***
Overwrite		*** not specified yet ***
Probability		*** not specified yet ***
Rate		*** not specified yet ***

C.2.4.2.2 Mapping Specifications

C.2.4.3 Allocations

C.2.4.3.1 Overview

Table 8. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class
Allocate	AllocationUsage	_AllocationUsage_Mapping
AllocateActivityPartition		*** not specified yet ***

C.2.4.3.2 Mapping Specifications

C.2.4.3.2.1 AllocationDefinition_Mapping

Description

*** not specified yet ***

General Mappings

Abstraction_Mapping

Mapping Source

Dependency

Mapping Target

AllocationDefinition

Owned Mappings

- allocationDefinitionFromFeatureMembership : AllocationDefinitionFromFeatureMembership_Mapping
- allocationDefinitionToFeatureMembership : AllocationDefinitionToFeatureMembership_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(from, 'SysML::Allocations::Allocate') and from.client->select(t | t.ocl
```

Mapping rules

The following lists the mapping rules for the target element properties.

- AllocationDefinition::ownedRelationship () : Relationship [0..*]

```
Set{allocationDefinitionFromFeatureMembership.to, allocationDefinitionToFeatureMembership.to
```

C.2.4.3.2.2 AllocationDefinitionToFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *Dependency* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Dependency

Mapping Target

FeatureMembership

Owned Mappings

- allocationDefinitionToReferenceUsage : AllocationDefinitionToReferenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::memberName () : String [0..1]
`'allocatedTo'`
- FeatureMembership::ownedMemberFeature () : Feature [1]
`allocationDefinitionToReferenceUsage.to`

C.2.4.3.2.3 AllocationDefinitionFromFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *Dependency* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Dependency

Mapping Target

FeatureMembership

Owned Mappings

- allocationDefinitionFromReferenceUsage : AllocationDefinitionFromReferenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]
`allocationDefinitionFromReferenceUsage.to`
- FeatureMembership::memberName () : String [0..1]
`'allocatedFrom'`

C.2.4.3.2.4 AllocationDefinitionFromFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Dependency* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Dependency

Mapping Target

FeatureTyping

Owned Mappings

- allocationDefinitionFromReferenceUsage : AllocationDefinitionFromReferenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]
`allocationDefinitionFromReferenceUsage.to`
- FeatureTyping::type () : Type [1]
`from.source.get (0)`

C.2.4.3.2.5 AllocationDefinitionFromReferenceUsage_Mapping

Description

Creates a reference usage for the *Dependency* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Dependency

Mapping Target

ReferenceUsage

Owned Mappings

- allocationDefinitionFromFeatureTyping : AllocationDefinitionFromFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::isEnd () : Boolean [1]
`true`
- ReferenceUsage::ownedRelationship () : Relationship [0..*]
`Set{allocationDefinitionFromFeatureTyping.to}`

C.2.4.3.2.6 AllocationDefinitionToFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Dependency* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Dependency

Mapping Target

FeatureTyping

Owned Mappings

- allocationDefinitionToReferenceUsage : AllocationDefinitionToReferenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureTyping::typedFeature () : Feature [1]`
`allocationDefinitionToReferenceUsage.to`
- `FeatureTyping::type () : Type [1]`
`from.target.get (0)`

C.2.4.3.2.7 AllocationDefinitionToReferenceUsage_Mapping

Description

Creates a reference usage for the *Dependency* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Dependency

Mapping Target

ReferenceUsage

Owned Mappings

- `allocationDefinitionToFeatureTyping : AllocationDefinitionToFeatureTyping_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::isEnd () : Boolean [1]`
`true`
- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`
`Set {allocationDefinitionToFeatureTyping.to}`

C.2.4.4 Blocks

C.2.4.4.1 Overview

Table 9. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class
AdjunctProperty		*** not specified yet ***
BindingConnector	BindingConnectorAsUsage	BindingConnector_Mapping
Block	PartDefinition PartDefinition	EncapsulatedBlock_Mapping Block_Mapping
BoundReference		*** not specified yet ***
ClassifierBehaviorProperty		*** not specified yet ***
ConnectorProperty		*** not specified yet ***
DirectedRelationshipPropertyPath		*** not specified yet ***
DistributedProperty		*** not specified yet ***
ElementPropertyPath		*** not specified yet ***
EndPathMultiplicity		*** not specified yet ***
NestedConnectorEnd		*** not specified yet ***
ParticipantProperty		*** not specified yet ***
PropertySpecificType		*** not specified yet ***
ValueType		*** not specified yet ***

C.2.4.4.2 SysML v1 Blocks elements not mapped

Table 10. List of SysML v1 elements not mapped of this section

SysML v1 Concept	Rationale
AdjunctProperty	The concept of adjunct properties is not needed in SysML v2, where the principal of the adjunct property can be used directly in the appropriate place.
ConnectorProperty	The connector property is a special case of an adjunct property and is not mapped, just like the adjunct property.

C.2.4.4.3 Mapping Specifications

C.2.4.4.3.1 AssociationBlock_Mapping

Description

*** not specified yet ***

General Mappings

AssociationClass_Mapping

Mapping Source

AssociationClass

Mapping Target

ConnectionDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(from, 'SysML::Blocks::Block')
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.4.4.3.2 BindingConnector_Mapping

Description

*** not specified yet ***

General Mappings

Connector_Mapping

Mapping Source

Connector

Mapping Target

BindingConnectorAsUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(from, 'SysML::Blocks::BindingConnector')
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.4.4.3.3 Block_Mapping

Description

A SysML::Block is mapped to a SysMLv2::PartDefinition.

General Mappings

Class_Mapping

Mapping Source

Class

Mapping Target

PartDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
not from.oclIsTypeOf(UML::AssociationClass) and Helper.hasStereotypeApplied(src, 'SysML::Blocks::Bl
and not Helper.hasStereotypeApplied(src, 'SysML::ConstraintBlocks::ConstraintBlock')
and not Helper.hasStereotypeApplied(src, 'SysML::Ports&Flows::InterfaceBlock')
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.4.4.3.4 Part_Mapping

Description

A property with composite aggregation which is typed by a block is mapped to a SysMLv2::PartUsage.

General Mappings

Property_Mapping

Mapping Source

Property

Mapping Target

PartUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
let p: UML::Property = from.oclAsType(UML::Property) in
if p.type.oclIsUndefined() then false else Helper.hasStereotypeApplied(p.type, 'SysML::Blocks::
and (p.association.oclIsUndefined() or p.association.ownedEnd->excludes(p)) and p.aggregation =
```


Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.4.4.3.5 EncapsulatedBlock_Mapping

Description

A SysML::Block with *isEncapsulated=true* is mapped to a PartDefinition, and, additionally, gets a metadata feature defined by the SysML v1 library which represents the SysML v1 isEncapsulated property.

General Mappings

Block_Mapping

Mapping Source

Class

Mapping Target

PartDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
not from.oclIsTypeOf(UML::AssociationClass) and Helper.hasStereotypeApplied(src, 'SysML::Blocks::Block')
and not Helper.hasStereotypeApplied(src, 'SysML::ConstraintBlocks::ConstraintBlock')
and not Helper.hasStereotypeApplied(src, 'SysML::Ports&Flows::InterfaceBlock')
and Helper.getTagValue(src, 'SysML::Blocks::Block', 'isEncapsulated')
```

Mapping rules

The following lists the mapping rules for the target element properties.

- PartDefinition::ownedRelationship () : Relationship [0..*]

```
let toElementFMS: Set(UML::Element) = from.ownedElement->select(e | e.oclIsKindOf(UML::Property))
let redefinedAttributes: Set(UML::Element) = from.ownedElement->select(e | from.oclIsKindOf(UML::Property) and e.oclIsKindOf(UML::Property))
let generalizations : Set(UML::Generalization) = from.ownedElement->select(e | e.oclIsKindOf(UML::Generalization))
let toElementOMS: Set(UML::Element) = ((from.ownedElement - toElementFMS) - redefinedAttributes)
let relationships: Sequence(UML::Element) =
toElementOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(toElementFMS->collect(e | ElementFeatureMembership_Mapping.getMapped(e)))
->union(redefinedAttributes->collect(e | AttributeRedefinedMembership_Mapping.getMapped(e)))
->union(generalizations->collect(e | Generalization_Mapping.getMapped(e)))
->including(EncapsulatedBlockMetadataMembership_Mapping.getMapped(from)) in
if from.classifierBehavior.oclIsUndefined() then relationships else relationships->append(ClassifierBehavior_Mapping.getMapped(from))
```

C.2.4.4.3.6 EncapsulatedBlockMetadataMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Class* mapping.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

Class

Mapping Target

OwningMembership

Owned Mappings

- encapsulatedBlockMetadata : EncapsulatedBlockMetadata_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [1]
`encapsulatedBlockMetadata.to`

C.2.4.4.3.7 EncapsulatedBlockMetadata_Mapping

Description

*** not specified yet ***

General Mappings

GenericToMetadataUsage_Mapping

Mapping Source

Class

Mapping Target

MetadataUsage

Owned Mappings

- encapsulatedBlockMetadataFeatureMembership :
EncapsulatedBlockMetadataFeatureMembership_Mapping
- encapsulatedBlockMetadataFeatureTyping : EncapsulatedBlockMetadataFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- MetadataUsage::ownedRelationship () : Relationship [0..*]

`Set{encapsulatedBlockMetadataFeatureMembership.to, encapsulatedBlockMetadataFeatureTyping.to}`

C.2.4.4.3.8 EncapsulatedBlockMetadataFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *Class* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Class

Mapping Target

FeatureMembership

Owned Mappings

- encapsulatedBlockMetadataReferenceUsage : EncapsulatedBlockMetadataReferenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [0..1]

`encapsulatedBlockMetadataReferenceUsage.to`

C.2.4.4.3.9 EncapsulatedBlockMetadataFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Class* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Class

Mapping Target

FeatureTyping

Owned Mappings

- encapsulatedBlockMetadata : EncapsulatedBlockMetadata_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::type () : Type [1]

```
SysML2::MetadataDefinition.allInstances()->any(m | m.qualifiedName = 'SysMLv1Library::BlockD
```

- FeatureTyping::typedFeature () : Feature [1]

```
encapsulatedBlockMetadata.to
```

C.2.4.4.3.10 EncapsulatedBlockMetadataReferenceUsage_Mapping

Description

Creates a reference usage for the *Class* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Class

Mapping Target

ReferenceUsage

Owned Mappings

- encapsulatedBlockMetadataFeatureValue : EncapsulatedBlockMetadataFeatureValue_Mapping
- encapsulatedBlockMetadataRedefinition : EncapsulatedBlockMetadataRedefinition_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`
`Set{encapsulatedBlockMetadataRedefinition.to, encapsulatedBlockMetadataFeatureValue.to}`

C.2.4.4.3.11 EncapsulatedBlockMetadataFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *Class* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

Class

Mapping Target

FeatureValue

Owned Mappings

- `literalBooleanTrue : LiteralBooleanTrue_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureValue::value () : Expression [1]`
`literalBooleanTrue.to`

C.2.4.4.3.12 EncapsulatedBlockMetadataRedefinition_Mapping

Description

Creates a redefinition relationship for the *redefiningFeature()* and the *redefinedFeature()* for the *Class* mapping.

General Mappings

GenericToRedefinition_Mapping

Mapping Source

Class

Mapping Target

Redefinition

Owned Mappings

- encapsulatedBlockMetadataReferenceUsage : EncapsulatedBlockMetadataReferenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Redefinition::redefiningFeature () : Feature [1]`

`encapsulatedBlockMetadataReferenceUsage.to`

- `Redefinition::redefinedFeature () : Feature [1]`

`SYSMML2::AttributeUsage.allInstances()->any(m | m.qualifiedName = 'SysMLv1Library::BlockData`

C.2.4.5 Libraries

C.2.4.5.1 Requirements

C.2.4.5.1.1 VerdictKind

Description

The VerdictKind is an enumeration that contains the values fail, inconclusive, pass, and error indicating how this test case execution has performed.

A pass indicates that the test case is successful and that the system under test has behaved according to what should be expected. A fail on the other hand shows that the system under test is not behaving according to the specification. An inconclusive means that the test execution cannot determine whether the system under test performs well or not. An error tells that the test system itself and not the system under test fails.

The VerdictKind is derived from the Verdict element from the UTP specification v1.2.

Literals

- error
- fail
- inconclusive
- pass

C.2.4.5.2 UnitAndQuantityKind

C.2.4.6 Model Elements

C.2.4.6.1 Overview

Table 11. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class
Conform		*** not specified yet ***
ElementGroup	Package	ElementGroup_Mapping
Expose		*** not specified yet ***
Problem	Comment	ProblemRationale_Mapping
Rationale	Comment	ProblemRationale_Mapping
Stakeholder	PartDefinition	Stakeholder_Mapping
View		*** not specified yet ***
Viewpoint		*** not specified yet ***

C.2.4.6.2 Mapping Specifications

C.2.4.6.2.1 ProblemRationaleMetadataUsage_Mapping

Description

*** not specified yet ***

General Mappings

GenericToMetadataUsage_Mapping

Mapping Source

Comment

Mapping Target

MetadataUsage

Owned Mappings

- problemRationaleMetadataFeatureTyping : ProblemRationaleMetadataFeatureTyping_Mapping
- unnamed1 : Boolean

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- MetadataUsage::ownedRelationship () : Relationship [0..*]

Set {problemRationaleMetadataFeatureTyping.to, ProblemRationaleMetadataFeatureMembership_Mapping

C.2.4.6.2.2 CommentToConcern_Mapping

Description

*** not specified yet ***

General Mappings

Comment_Mapping

Mapping Source

Comment

Mapping Target

ConcernDefinition

Owned Mappings

- commentToConcernReturnParameterMembership :
CommentToConcernReturnParameterMembership_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
(not Helper.hasStereotypeApplied(from, 'SysML::ModelElements::ElementGroup')) and UML::Classifier.allInstances()->select(s | Helper.isStakeholder(s))->collect(e | StakeholderMembership_Mapping.getMapped(e))->append(commentToConcernReturnParameterMembership_Mapping.getMapped(e))
```

Mapping rules

The following lists the mapping rules for the target element properties.

- ConcernDefinition::ownedRelationship () : Relationship [0..*]

```
let toStakeholderMS : Set(UML::Classifier) = UML::Classifier.allInstances()->select(s | Helper.isStakeholder(s))->collect(e | StakeholderMembership_Mapping.getMapped(e))->append(commentToConcernReturnParameterMembership_Mapping.getMapped(e))
```

C.2.4.6.2.3 CommentToConcernComment_Mapping

Description

*** not specified yet ***

General Mappings

GenericToAnnotatingElement_Mapping

Mapping Source

Comment

Mapping Target

Comment

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Comment::body () : String [1]`

```
UML::Classifier.allInstances()->select(s | Helper.hasStereotypeApplied(s, 'SysML::ModelElement'))
```

C.2.4.6.2.4 CommentToConcernDocumentation_Mapping

Description

*** not specified yet ***

General Mappings

GenericToAnnotation_Mapping

Mapping Source

Comment

Mapping Target

Annotation

Owned Mappings

- `commentToConcernComment : CommentToConcernComment_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Annotation::ownedRelatedElement () : Element [0..*]`

```
Set { commentToConcernComment.to }
```

C.2.4.6.2.5 CommentToConcernReturnParameter_Mapping

Description

*** not specified yet ***

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Comment

Mapping Target

ReferenceUsage

Owned Mappings

(none)

C.2.4.6.2.6 CommentToConcernReturnParameterMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Comment* mapping.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

Comment

Mapping Target

ReturnParameterMembership

Owned Mappings

- commentToConcernDocumentation : CommentToConcernDocumentation_Mapping
- commentToConcernReturnParameter : CommentToConcernReturnParameter_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReturnParameterMembership::ownedRelatedElement () : Element [0..*]

```

    let member: KerML::Element = self.ownedMemberParameter() in
    if member.ocllIsUndefined() then
        Set{commentToConcernDocumentation.to}
    else
        Set{self.ownedMemberParameter(), commentToConcernDocumentation.to}
    endif

```

- ReturnParameterMembership::ownedMemberParameter () : Feature [0..1]

```
commentToConcernReturnParameter.to
```

C.2.4.6.2.7 ProblemRationaleMetadataFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *Comment* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Comment

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [0..1]

```
ProblemRationaleMetadataReferenceUsage_Mapping.getMapped(from)
```

C.2.4.6.2.8 ProblemRationaleMetadataFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Comment* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Comment

Mapping Target

FeatureTyping

Owned Mappings

- problemRationaleMetadataUsage : ProblemRationaleMetadataUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]

```
problemRationaleMetadataUsage.to
```

- FeatureTyping::type () : Type [1]

```
if Helper.hasStereotypeApplied(from, 'SysML::ModelElements::Problem') then
  SysML2::MetadataDefinition.allInstances()->any(m | m.qualifiedName = 'ModelingMetadata::Issue')
else if Helper.hasStereotypeApplied(from, 'SysML::ModelElements::Rationale') then
  SysML2::MetadataDefinition.allInstances()->any(m | m.qualifiedName = 'ModelingMetadata::Rationale')
else OclUndefined endif endif
```

C.2.4.6.2.9 ProblemRationaleMetadataReferenceUsage_Mapping

Description

Creates a reference usage for the *Comment* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Comment

Mapping Target

ReferenceUsage

Owned Mappings

- problemRationaleMetadataRedefinition : ProblemRationaleMetadataRedefinition_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`

`Set{problemRationaleMetadataRedefinition.to, ProblemRationaleMetadataFeatureValue_Mapping.ge`

C.2.4.6.2.10 ProblemRationaleMetadataFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *Comment* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

Comment

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureValue::value () : Expression [1]`

`ProblemRationaleMetadataFeatureValueString_Mapping.getMapped(from)`

C.2.4.6.2.11 ProblemRationaleMetadataMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Comment* mapping.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

Comment

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [1]
`ProblemRationaleMetadataUsage_Mapping.getMapped(from)`

C.2.4.6.2.12 ElementGroup_Mapping

Description

*** not specified yet ***

General Mappings

GenericToPackage_Mapping

Mapping Source

Comment

Mapping Target

Package

Owned Mappings

- elementGroupMetadaMembership : ElementGroupMetadaMembership_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Package::ownedRelationship () : Relationship [0..*]

```
ElementOwnership_Mapping.getMappedColl(from.ownedElement)->including(elementGroupMetadaMembe
```

C.2.4.6.2.13 ElementGroupCriterion_Mapping

Description

*** not specified yet ***

General Mappings

GenericToExpression_Mapping

Mapping Source

Comment

Mapping Target

LiteralString

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- LiteralString::value () : String [1]

```
Helper.getTagValueAsString(from, 'SysML::ModelElements::ElementGroup', 'criterion')
```

C.2.4.6.2.14 ElementGroupMetadaMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Comment* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

Comment

Mapping Target

Membership

Owned Mappings

- `elementGroupMetadataUsage : ElementGroupMetadataUsage_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Membership::ownedMemberElement () : Element [0..1]`
`elementGroupMetadataUsage.to`
- `Membership::memberName () : String [0..1]`
`'ElementGroupData'`
- `Membership::memberElement () : Element [1]`
`self.ownedMemberElement ()`

C.2.4.6.2.15 ElementGroupMetadataFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *Comment* mapping.

General Mappings

`GenericToFeatureMembership_Mapping`

Mapping Source

`Comment`

Mapping Target

`FeatureMembership`

Owned Mappings

- `elementGroupMetadataReferenceUsage : ElementGroupMetadataReferenceUsage_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::ownedMemberFeature () : Feature [0..1]`
`elementGroupMetadataReferenceUsage.to`
- `FeatureMembership::memberFeature () : Feature [1]`
`self.ownedMemberFeature ()`

C.2.4.6.2.16 ElementGroupMetadataFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Comment* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Comment

Mapping Target

FeatureTyping

Owned Mappings

- `elementGroupMetadataUsage : ElementGroupMetadataUsage_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureTyping::type () : Type [1]`

```
let m : SYSML2::Membership = SYSML2::AttributeDefinition.allInstances()->collect(dt | dt.own
if (m.oclisUndefined()) then
    OclUndefined
else
    m.memberElement
endif
```
- `FeatureTyping::typedFeature () : Feature [1]`
`elementGroupMetadataUsage.to`

C.2.4.6.2.17 ElementGroupMetadataFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *Comment* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

Comment

Mapping Target

FeatureValue

Owned Mappings

- elementGroupCriterion : ElementGroupCriterion_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::value () : Expression [1]

`elementGroupCriterion.to`

C.2.4.6.2.18 ElementGroupMetadataRedefinition_Mapping

Description

Creates a redefinition relationship for the *redefiningFeature()* and the *redefinedFeature()* for the *Comment* mapping.

General Mappings

GenericToRedefinition_Mapping

Mapping Source

Comment

Mapping Target

Redefinition

Owned Mappings

- elementGroupMetadataReferenceUsage : ElementGroupMetadataReferenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Redefinition::redefinedFeature () : Feature [1]`

```
let m : SYSML2::Membership = SYSML2::AttributeUsage.allInstances()->collect(dt | dt.owningRe
if (m.ocIsUndefined()) then
    OclUndefined
else
    m.memberElement
endif
```

- `Redefinition::redefiningFeature () : Feature [1]`

```
elementGroupMetadataReferenceUsage.to
```

C.2.4.6.2.19 ElementGroupMetadataReferenceUsage_Mapping

Description

Creates a reference usage for the *Comment* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Comment

Mapping Target

ReferenceUsage

Owned Mappings

- `elementGroupMetadataFeatureValue : ElementGroupMetadataFeatureValue_Mapping`
- `elementGroupMetadataRedefinition : ElementGroupMetadataRedefinition_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`

```
Set{elementGroupMetadataRedefinition.to, elementGroupMetadataFeatureValue.to}
```

C.2.4.6.2.20 ElementGroupMetadataUsage_Mapping

Description

*** not specified yet ***

General Mappings

GenericToMetadataUsage_Mapping

Mapping Source

Comment

Mapping Target

MetadataUsage

Owned Mappings

- elementGroupMetadataFeatureMembership : ElementGroupMetadataFeatureMembership_Mapping
- elementGroupMetadataFeatureTyping : ElementGroupMetadataFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- MetadataUsage::ownedRelationship () : Relationship [0..*]

Set{elementGroupMetadataFeatureTyping.to, elementGroupMetadataFeatureMembership.to}

C.2.4.6.2.21 ElementGroupMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Element* mapping.

General Mappings

ElementOwningMembership_Mapping

Mapping Source

Element

Mapping Target

OwningMembership

Owned Mappings

- : Comment
- elementGroup : ElementGroup_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(from, 'SysML::ModelElements::ElementGroup')
```

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [0..*]

```
self.memberElement()
```
- OwningMembership::memberElement () : Element [1]

```
elementGroup.to
```
- OwningMembership::ownedRelatedElement () : Element [0..*]

```
let member: KerML::Element = self.ownedMemberElement() in
if member.oclIsUndefined() then
  Set{}
else
  Set{self.ownedMemberElement()}
endif
```
- OwningMembership::memberName () : String [0..1]

```
Helper.getTagValueAsString(from, 'SysML::ModelElements::ElementGroup', 'name')
```

C.2.4.6.2.22 ProblemRationale_Mapping

Description

The mapping class combines the mapping of SysMLv1::Problem and SysMLv1::Rationale. The SysMLv1::Problem is mapped to the library element ModelingMetadata::Issue and the SysMLv1::Rationale is mapped to ModelingMetadata::Rationale. The expected SysML v2 textual syntax of the mapping is as follows.

```
metadata ModelingMetadata::Issue {text = "This is a problem statement";}
metadata ModelingMetadata::Rationale {text = "This is a rationale statement";}
```

General Mappings

Comment_Mapping

Mapping Source

Comment

Mapping Target

Comment

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
(not Helper.hasStereotypeApplied(from, 'SysML::ModelElements::ElementGroup')) and (Helper.hasStereot
```

Mapping rules

The following lists the mapping rules for the target element properties.

- `Comment::ownedRelationship () : Relationship [0..*]`

```
self.annotation()->append(ProblemRationaleMetadataMembership_Mapping.getMapped(from))
```

C.2.4.6.2.23 ProblemRationaleMetadataRedefinition_Mapping

Description

Creates a redefinition relationship for the *redefiningFeature()* and the *redefinedFeature()* for the *Comment* mapping.

General Mappings

GenericToRedefinition_Mapping

Mapping Source

Comment

Mapping Target

Redefinition

Owned Mappings

- `problemRationaleMetadataReferenceUsage : ProblemRationaleMetadataReferenceUsage_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Redefinition::redefinedFeature () : Feature [1]`

```
if Helper.hasStereotypeApplied(from, 'SysML::ModelElements::Problem') then
  SYSML2::AttributeUsage.allInstances()->any(m | m.qualifiedName = 'ModelingMetadata::Issue::')
else if Helper.hasStereotypeApplied(from, 'SysML::ModelElements::Rationale') then
```

```

        SYSML2::AttributeUsage.allInstances()->any(m | m.qualifiedName = 'ModelingMetadata::Rational
    else
        OclUndefined
    endif
endif
endif

```

- `Redefinition::redefiningFeature () : Feature [1]`

```

        problemRationaleMetadataReferenceUsage.to
    
```

C.2.4.6.2.24 ProblemRationaleMetadataFeatureValueString_Mapping

Description

*** not specified yet ***

General Mappings

GenericToExpression_Mapping

Mapping Source

Comment

Mapping Target

LiteralString

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `LiteralString::value () : String [1]`

```

        from.body
    
```

C.2.4.6.2.25 Stakeholder_Mapping

Description

*** not specified yet ***

General Mappings

Class_Mapping

Mapping Source

Class

Mapping Target

PartDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(from, 'SysML::ModelElements::Stakeholder')
```

Mapping rules

The following lists the mapping rules for the target element properties.

- `PartDefinition::ownedRelationship () : Relationship [0..*]`

```
let toClassifierMS: Sequence(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::Classifier))
let excludeOwnedConcerns: Sequence(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::Concern))
let toConcernMS: Sequence(UML::Element) = Helper.getTagValue(src, 'SysML::ModelElements::Stakeholder')
let toFeatureMS: Sequence(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::Property))
let toElementOMS: Set(UML::Element) = ((src.ownedElement - toFeatureMS) - excludeOwnedConcerns)
let relationships: Sequence(UML::Element) =
  toElementOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(toFeatureMS->collect(e | PropertyMembership_Mapping.getMapped(e)))
->union(toClassifierMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))) in
if from.classifierBehavior.ocIsUndefined() then relationships else relationships->append(ClassifierBehavior)
```

C.2.4.6.2.26 StakeholderMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Classifier* mapping.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

Classifier

Mapping Target

StakeholderMembership

Owned Mappings

- `stakeholderPartUsage : StakeholderPartUsage_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- StakeholderMembership::memberName () : String [0..1]
`from.name`
- StakeholderMembership::ownedMemberParameter () : Feature [0..1]
`StakeholderPartUsage_Mapping.getMapped(from)`

C.2.4.6.2.27 StakeholderPartUsage_Mapping

Description

*** not specified yet ***

General Mappings

GenericToPartUsage_Mapping

Mapping Source

Classifier

Mapping Target

PartUsage

Owned Mappings

(none)

C.2.4.6.2.28 Viewpoint_Mapping

Description

*** not specified yet ***

General Mappings

Class_Mapping

Mapping Source

Class

Mapping Target

ViewpointDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(from, 'SysML::ModelElements::Viewpoint')
```

Mapping rules

The following lists the mapping rules for the target element properties.

- ViewpointDefinition::ownedRelationship () : Relationship [0..*]

```
let toElementFMS: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Property))
let redefinedAttributes: Set(UML::Element) = from.ownedElement->select(e | from.ocIsKindOf(UML::Class) and e.ocIsKindOf(UML::Attribute))
let generalizations : Set(UML::Generalization) = from.ownedElement->select(e | e.ocIsKindOf(UML::Generalization))
let toElementOMS: Set(UML::Element) = ((from.ownedElement - toElementFMS) - redefinedAttributes)
let relationships: Sequence(UML::Element) =
toElementOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(toElementFMS->collect(e | ElementFeatureMembership_Mapping.getMapped(e)))
->union(redefinedAttributes->collect(e | AttributeRedefinedMembership_Mapping.getMapped(e)))
->union(generalizations->collect(e | Generalization_Mapping.getMapped(e)))
->including(CommonReturnParameterReferenceUsageMembership_Mapping.getMapped(from))
->including(ViewpointSubjectMembership_Mapping.getMapped(from))
->including(ViewpointPurposeMetadataMembership_Mapping.getMapped(from)) in
if from.classifierBehavior.ocIsUndefined() then relationships else relationships->append(ClassifierBehavior_Mapping.getMapped(from))
```

C.2.4.6.2.29 ViewpointPurposeMetadata_Mapping

Description

*** not specified yet ***

General Mappings

GenericToMetadataUsage_Mapping

Mapping Source

Class

Mapping Target

MetadataUsage

Owned Mappings

- viewpointPurposeMetadataFeatureTyping : ViewpointPurposeMetadataFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- MetadataUsage::ownedRelationship () : Relationship [0..*]
`Set{viewpointPurposeMetadataFeatureTyping.to}`

C.2.4.6.2.30 ViewpointPurposeMetadataFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Class* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Class

Mapping Target

FeatureTyping

Owned Mappings

- viewpointPurposeMetadata : ViewpointPurposeMetadata_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]
`viewpointPurposeMetadata.to`
- FeatureTyping::type () : Type [1]
`SysML2::MetadataDefinition.allInstances()->any(m | m.qualifiedName = 'SysMLv1Library::ViewpointPurposeMetadata')`

C.2.4.6.2.31 ViewpointPurposeMetadataMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Class* mapping.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

Class

Mapping Target

OwningMembership

Owned Mappings

- viewpointPurposeMetadata : ViewpointPurposeMetadata_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [1]

viewpointPurposeMetadata.to

C.2.4.6.2.32 ViewpointSubject_Mapping

Description

*** not specified yet ***

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Class

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::direction () : FeatureDirectionKind [0..1]

`KerML::FeatureDirectionKind::_in'`

C.2.4.6.2.33 ViewpointSubjectMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Class* mapping.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

Class

Mapping Target

SubjectMembership

Owned Mappings

- viewpointSubject : ViewpointSubject_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- SubjectMembership::ownedMemberParameter () : Feature [0..1]

`viewpointSubject.to`

C.2.4.7 PortsAndFlows

C.2.4.7.1 Overview

Table 12. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class
AcceptChangeStructuralFeatureEventAction		*** not specified yet ***
AddFlowPropertyValueOnNestedPortAction		*** not specified yet ***
ChangeStructuralFeatureEvent		*** not specified yet ***
DirectedFeature		*** not specified yet ***
FlowProperty		*** not specified yet ***

SysML v1 Concept	SysML v2 Concept	Mapping Class
FullPort	PartUsage	FullPort_Mapping
InterfaceBlock	PortDefinition	InterfaceBlock_Mapping
InvocationOnNestedPortAction		*** not specified yet ***
ItemFlow	FlowConnectionUsage	ItemFlow_Mapping
ProxyPort		*** not specified yet ***
TriggerOnNestedPort		*** not specified yet ***
~InterfaceBlock		*** not specified yet ***

C.2.4.7.2 Mapping Specifications

C.2.4.7.2.1 AcceptChangeStructuralFeatureEventAction_Mapping

Description

*** not specified yet ***

General Mappings

AcceptEventAction_Mapping

Mapping Source

AcceptEventAction

Mapping Target

AcceptActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(src, 'SysML::Ports&Flows::AcceptChangeStructuralFeatureEventAction')
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.4.7.2.2 FullPort_Mapping

Description

*** not specified yet ***

General Mappings

Port_Mapping

Mapping Source

Port

Mapping Target

PartUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(src, 'SysML::Ports&Flows::FullPort')
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.4.7.2.3 InterfaceBlock_Mapping**Description**

*** not specified yet ***

General Mappings

Block_Mapping

Mapping Source

Class

Mapping Target

PortDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(from, 'SysML::Ports&Flows::InterfaceBlock')
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.4.7.2.4 ItemFlow_Mapping**Description**

*** not specified yet ***

General Mappings

InformationFlow_Mapping

Mapping Source

InformationFlow

Mapping Target

FlowConnectionUsage

Owned Mappings

- itemFlowFeatureMembership : ItemFlowFeatureMembership_Mapping
- itemFlowSourceEndFeatureMembership : ItemFlowSourceEndFeatureMembership_Mapping
- itemFlowTargetEndFeatureMembership : ItemFlowTargetEndFeatureMembership_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(from, 'SysML::Ports&Flows::ItemFlow')
```

Mapping rules

The following lists the mapping rules for the target element properties.

- FlowConnectionUsage::target () : Element [0..*]

```
NamedElementMain_Mapping.getMappedColl(from.informationTarget)
```
- FlowConnectionUsage::ownedRelationship () : Relationship [0..*]

```
Set{itemFlowFeatureMembership.to, itemFlowSourceEndFeatureMembership.to, itemFlowTargetEndFeatureMembership.to}
```
- FlowConnectionUsage::source () : Element [0..*]

```
NamedElementMain_Mapping.getMappedColl(from.informationSource)
```

C.2.4.7.2.5 ItemFlowFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *InformationFlow* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

InformationFlow

Mapping Target

FeatureMembership

Owned Mappings

- itemFlowItemFeature : ItemFlowItemFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]

itemFlowItemFeature.to

C.2.4.7.2.6 ItemFlowItemFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

InformationFlow

Mapping Target

ItemFeature

Owned Mappings

- itemFlowItemFeatureTyping : ItemFlowItemFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ItemFeature::ownedRelationship () : Relationship [0..*]

Set{itemFlowItemFeatureTyping.to}

C.2.4.7.2.7 ItemFlowItemFeatureTyping_Mapping

Description

Currently, only one conveyed item is supported

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

InformationFlow

Mapping Target

FeatureTyping

Owned Mappings

- itemFlowItemFeature : ItemFlowItemFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::type () : Type [1]

```
if from.conveyed->size() > 0 then
Classifier_Mapping.getMapped(from.conveyed.get(0))
else OclUndefined
endif
```

- FeatureTyping::typedFeature () : Feature [1]

```
itemFlowItemFeature.to
```

C.2.4.7.2.8 ItemFlowSourceEndFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *InformationFlow* mapping.

General Mappings

GenericToEndFeatureMembership_Mapping

Mapping Source

InformationFlow

Mapping Target

FeatureMembership

Owned Mappings

- itemFlowSourceFeature : ItemFlowSourceFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]

itemFlowSourceFeature.to

C.2.4.7.2.9 ItemFlowSourceFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

InformationFlow

Mapping Target

ItemFlowEnd

Owned Mappings

- itemFlowSourceFeatureSubsetting : ItemFlowSourceFeatureSubsetting_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ItemFlowEnd::isEnd () : Boolean [1]

true
- ItemFlowEnd::ownedRelationship () : Relationship [0..*]

Set{itemFlowSourceFeatureSubsetting.to}

C.2.4.7.2.10 ItemFlowSourceFeatureSubsetting_Mapping

Description

Creates a subsetting relationship for the *subsettingFeature()* and the *subsettedFeature()* for the *InformationFlow* mapping.

General Mappings

GenericToSubsetting_Mapping

Mapping Source

InformationFlow

Mapping Target

Subsetting

Owned Mappings

- itemFlowSourceFeature : ItemFlowSourceFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Subsetting::subsettedFeature () : Feature [1]
`from.source.get (0)`
- Subsetting::subsettingFeature () : Feature [1]
`itemFlowSourceFeature.to`

C.2.4.7.2.11 ItemFlowTargetEndFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *InformationFlow* mapping.

General Mappings

GenericToEndFeatureMembership_Mapping

Mapping Source

InformationFlow

Mapping Target

FeatureMembership

Owned Mappings

- itemFlowTargetFeature : ItemFlowTargetFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]

itemFlowTargetFeature.to

C.2.4.7.2.12 ItemFlowTargetFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

InformationFlow

Mapping Target

ItemFlowEnd

Owned Mappings

- itemFlowTargetFeatureSubsetting : ItemFlowTargetFeatureSubsetting_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ItemFlowEnd::ownedRelationship () : Relationship [0..*]

Set{itemFlowTargetFeatureSubsetting.to}
- ItemFlowEnd::isEnd () : Boolean [1]

true

C.2.4.7.2.13 ItemFlowTargetFeatureSubsetting_Mapping

Description

Creates a subsetting relationship for the *subsettingFeature()* and the *subsettedFeature()* for the *InformationFlow* mapping.

General Mappings

GenericToSubsetting_Mapping

Mapping Source

InformationFlow

Mapping Target

Subsetting

Owned Mappings

- itemFlowTargetFeature : ItemFlowTargetFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Subsetting::subsettingFeature () : Feature [1]
`itemFlowTargetFeature.to`
- Subsetting::subsettedFeature () : Feature [1]
`from.target.get (0)`

C.2.4.7.2.14 OperationDirectedFeature_Mapping

Description

*** not specified yet ***

General Mappings

Operation_Mapping

Mapping Source

Operation

Mapping Target

PerformActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(src, 'SysML::Ports&Flows::DirectedFeature')
```

Mapping rules

The following lists the mapping rules for the target element properties.

- PerformActionUsage::direction() : FeatureDirectionKind [0..1]

```
Helper.getKerMLFeatureDirectionKind(Helper.getTagValueAsElement(from, 'SysML::Ports&Flows::DirectedFeature'))
```

C.2.4.8 Requirements

C.2.4.8.1 Overview

Table 13. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class
AbstractRequirement		*** not specified yet ***
Copy		*** not specified yet ***
DeriveReq		DeriveReq_Mapping
Refine		Refine_Mapping
Requirement	RequirementDefinition	Requirement_Mapping
Satisfy	SatisfyRequirementUsage	Satisfy_Mapping
TestCase	VerificationCaseDefinition	TestCaseActivity_Mapping
Trace	Dependency	Trace_Mapping
Verify	RequirementVerificationMembership	Verify_Mapping

C.2.4.8.2 SysML v1 Requirements elements not mapped

Table 14. List of SysML v1 elements not mapped of this section

SysML v1 Concept	Rationale
Copy	The copy relationship is not covered by SysML v2.

C.2.4.8.3 Mapping Specifications

C.2.4.8.3.1 Requirement_Mapping

Description

A SysML::Requirement is mapped to a SysMLv2::RequirementDefinition.

General Mappings

GenericToDefinition_Mapping
NamedElementMain_Mapping

Mapping Source

NamedElement

Mapping Target

RequirementDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.isRequirement(src)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- RequirementDefinition::reqId () : String [1]

```
let stereotype: UML::Stereotype = Helper.getRequirementStereotype(from) in  
Helper.getTagValue2(from, stereotype, 'id').oclAsType(String)
```

- RequirementDefinition::ownedRelationship () : Relationship [0..*]

```
ElementOwnership_Mapping.getMappedColl(from.ownedElement)  
->including(CommonReturnParameterReferenceUsageMembership_Mapping.getMapped(from))  
->including(RequirementDocumentationMembership_Mapping.getMapped(from))  
-->including(RequirementSubjectMembership_Mapping.getMapped(from))
```

C.2.4.8.3.2 DeriveReq_Mapping

Description

*** not specified yet ***

General Mappings

Abstraction_Mapping

Mapping Source

Abstraction

Mapping Target

Dependency

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(src, 'SysML::Requirements::DeriveReq')
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.4.8.3.3 Refine_Mapping

Description

*** not specified yet ***

General Mappings

Abstraction_Mapping

Mapping Source

Abstraction

Mapping Target

Dependency

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(from, 'SysML::Requirements::Refine')
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.4.8.3.4 RequirementDocumentation_Mapping

Description

The mapping class creates a Comment contained in a Requirement which contains the SysMLv1::AbstractRequirement::text property.

General Mappings

GenericToDocumentation_Mapping

Mapping Source

NamedElement

Mapping Target

Documentation

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Documentation::body () : String [1]
`Helper.getTagValueAsString(from, 'SysML::Requirements::AbstratRequirement', 'text')`

C.2.4.8.3.5 RequirementDocumentationMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *NamedElement* mapping.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

NamedElement

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [1]

```
RequirementDocumentation_Mapping.getMapped(from)
```

C.2.4.8.3.6 RequirementSubjectMembership_Mapping

Description

The subject is not used, because it is not a SysML v1 concept, but must be created for a SysML v2 requirement.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

NamedElement

Mapping Target

SubjectMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- SubjectMembership::ownedMemberParameter () : Feature [0..1]

```
Helper.getV1V2Lib_PartUsage('something')
```

C.2.4.8.3.7 Satisfy_Mapping

Description

*** not specified yet ***

General Mappings

GenericToOccurrenceUsage_Mapping
Abstraction_Mapping

Mapping Source

Abstraction

Mapping Target

SatisfyRequirementUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
let satisfy: UML::Abstraction = src.oclAsType(UML::Abstraction) in
  if satisfy.ocIsUndefined() then
    false
  else
    Helper.hasStereotypeApplied(satisfy, 'SysML::Requirements::Satisfy') and
    satisfy.client->exists(c | not c.ocIsKindOf(UML::Classifier))
  endif
```

Mapping rules

The following lists the mapping rules for the target element properties.

- SatisfyRequirementUsage::ownedRelationship () : Relationship [0..*]
Set{SatisfyFeatureTyping_Mapping.getMapped(from) }

C.2.4.8.3.8 TestCaseActivity_Mapping

Description

*** not specified yet ***

General Mappings

ActivityAsDefinition_Mapping

Mapping Source

Activity

Mapping Target

VerificationCaseDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(from, 'SysML::Requirements::TestCase')
```

Mapping rules

The following lists the mapping rules for the target element properties.

- VerificationCaseDefinition::ownedRelationship () : Relationship [0..*]

```

let relationships : Set(KerML::Relationship) = Helper.activityOwnedRelationship(from) in
let verdictParameter : Set(UML::Parameter) = from.ownedElement->select(e | e.ocliIsKindOf(UML::Parameter))
let parameters : Set(UML::Parameter) = ((from.ownedElement->select(e | e.ocliIsKindOf(UML::Parameter)))
let verifyRelationships : Set(UML::Abstraction) = from.clientDependency->select(v | Helper.verifyRelationships
relationships
->union(parameters->collect(p | ParameterMembership_Mapping.getMapped(p)))
->union(verdictParameter->collect(vp | TestCaseActivityReturnParameterMembership_Mapping.getMapped(vp)))
->including(CaseSubjectMembership_Mapping.getMapped(from))
->including(CaseObjectiveMembership_Mapping.getMapped(from))
-->union(verifyRelationships->collect(v | Verify_Mapping.getMapped(v)))

```

C.2.4.8.3.9 TestCaseActivityReturnParameterMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Parameter* mapping.

General Mappings

ParameterMembership_Mapping

Mapping Source

Parameter

Mapping Target

ReturnParameterMembership

Owned Mappings

(none)

C.2.4.8.3.10 TestCaseVerifyObjectiveMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Abstraction* mapping.

General Mappings

CaseObjectiveMembership_Mapping

Mapping Source

Abstraction

Mapping Target

ObjectiveMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ObjectiveMembership::ownedMemberFeature () : Feature [1]
`TestCaseVerifyObjectiveRequirementUsage_Mapping.getMapped(from)`

C.2.4.8.3.11 TestCaseVerifyObjectiveRequirementUsage_Mapping

Description

*** not specified yet ***

General Mappings

CaseObjectiveRequirementUsage_Mapping

Mapping Source

Abstraction

Mapping Target

RequirementUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- RequirementUsage::ownedRelationship () : Relationship [0..*]
`Set{Verify_Mapping.getMapped(from) }`

C.2.4.8.3.12 TestCaseVerifyRequirementUsageReferenceSubsetting_Mapping

Description

Creates a subsetting relationship for the *subsettingFeature()* and the *subsettedFeature()* for the *Abstraction* mapping.

General Mappings

GenericToSubsetting_Mapping

Mapping Source

Abstraction

Mapping Target

ReferenceSubsetting

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceSubsetting::referencedFeature () : Feature [1]
`from.supplier->get (0)`

C.2.4.8.3.13 TestCaseVerifyRequirementUsage_Mapping

Description

*** not specified yet ***

General Mappings

GenericToUsage_Mapping

Mapping Source

Abstraction

Mapping Target

RequirementUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- RequirementUsage::ownedRelationship () : Relationship [0..*]

```
Set{TestCaseVerifyRequirementUsageReferenceSubsetting_Mapping.getMapped(from), CaseSubjectMe
```

C.2.4.8.3.14 Trace_Mapping

Description

*** not specified yet ***

General Mappings

Abstraction_Mapping

Mapping Source

Abstraction

Mapping Target

Dependency

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
Helper.hasStereotypeApplied(from, 'SysML::Requirements::Trace')
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.4.8.3.15 Verify_Mapping

Description

*** not specified yet ***

General Mappings

GenericToRelationship_Mapping

Mapping Source

Abstraction

Mapping Target

RequirementVerificationMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- RequirementVerificationMembership::ownedRelatedElement () : Element [0..*]
`Set { TestCaseVerifyRequirementUsage_Mapping.getMapped (from) }`

C.2.5 UML4SysML

C.2.5.1 Overview

C.2.5.2 Actions

C.2.5.2.1 Overview

Table 15. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
AcceptCallAction	AcceptActionUsage	AcceptCallAction_Mapping	
AcceptEventAction	FeatureTyping ReferenceUsage ParameterMembership AcceptActionUsage	AcceptEventActionParameterFeatureTyping_Mapping AcceptEventActionParameter_Mapping AcceptEventActionParameterMembership_Mapping AcceptEventAction_Mapping	
Action	ActionUsage	CommonAction_Mapping	
ActionInputPin	FeatureReferenceExpression Feature ReferenceUsage FeatureTyping FeatureValue ParameterMembership Membership	RemoveVariableValueActionExpressionParameterFeatureReference_Mapping RemoveVariableValueActionExpressionParameter_Mapping UntypedPin_Mapping PinFeatureTyping_Mapping RemoveVariableValueActionExpressionParameterValue_Mapping RemoveVariableValueActionExpressionParameterMembership_Mapping RemoveVariableValueActionExpressionParameterFeatureReferenceMembe	ActionInputPin.type.ocllsUndefined() not src.type.ocllsUndefined() and not(src.type.ocllsKindOf(UML::Enumeration)) and Helper.getSysMLv2EnumerationDefinition(src
AddStructuralFeatureValueAssignment	ActionUsage AssignmentActionUsage FeatureMembership	AddStructuralFeatureValueAction_Mapping AddStructuralFeatureValueActionAssignmentAction_Mapping AddStructuralFeatureValueActionAssignmentActionMembership_Mapping	
AddVariableValueAction	ActionUsage FeatureTyping	AddVariableValueAction_Mapping AddVariableValueActionFeatureTyping_Mapping	
BroadcastSignalAction	ActionUsage	BroadcastSignalAction_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
CallAction	FeatureValue ReferenceUsage FeatureReferenceExpression FeatureValue ReferenceUsage ParameterMembership InvocationExpression FeatureTyping FeatureMembership Membership SendActionUsage ReferenceUsage ParameterMembership ParameterMembership	SendActionItemReferenceUsageFeatureValue_Mapping SendActionTargetReferenceUsage_Mapping SendActionTargetReferenceUsageFeatureValueExpression_Mapping SendActionTargetReferenceUsageFeatureValue_Mapping SendActionReferenceUsage_Mapping SendActionItemParameterMembership_Mapping SendActionItemReferenceUsageFeatureValueValue_Mapping SendActionItemReferenceUsageFeatureValueTyping_Mapping SendActionFeatureMembership_Mapping SendActionTargetReferenceUsageFeatureValueMembership_Mapping SendActionSendActionUsage_Mapping SendActionItemReferenceUsage_Mapping SendActionParameterMembership_Mapping SendActionTargetParameterMembership_Mapping	
CallBehaviorAction	FeatureTyping ActionUsage	CallBehaviorFeatureTyping_Mapping CallBehaviorAction_Mapping	
CallOperationAction	ActionUsage	CallOperationAction_Mapping	
Clause	FeatureTyping FeatureTyping Element Feature FeatureTyping Relationship Expression ReferenceUsage OwningMembership LiteralInteger ReturnParameterMembership ParameterMembership FeatureMembership FeatureTyping LiteralInteger MultiplicityRange ReferenceUsage LiteralInteger Element Membership ReturnParameterMembership ReturnParameterMembership	CommonParameterReferenceUsageInFeatureTyping_Mapping Mapping CommonReturnParameterFeatureUntyped_Mapping CommonReturnParameterFeatureTyping_Mapping ElementOwnership_Mapping CommonValueSpecification_Mapping CommonParameterReferenceUsageInUntyped_Mapping DefaultMultiplicityMembership_Mapping CommonReturnParameterFeatureMembership_Mapping CommonParameterReferenceUsageInMembership_Mapping DefaultMultiplicityBoundOwnership_Mapping CommonReturnParameterReferenceUsageFeatureTyping_Mapping DefaultUpperBound_Mapping DefaultMultiplicityElement_Mapping CommonReturnParameterReferenceUsageUntyped_Mapping DefaultLowerBound_Mapping ElementMain_Mapping ElementMembership_Mapping CommonReturnParameterReferenceUsageMembership_Mapping EmptyReturnParameterFeatureMembership_Mapping	
ClearAssociationAction	ActionUsage	ClearAssociationAction_Mapping	
ClearStructuralFeatureAction	ActionUsage	ClearStructuralFeatureAction_Mapping	
ClearVariableAction	FeatureMembership ActionUsage ReferenceUsage FeatureValue	ClearVariableActionFeatureMembership_Mapping ClearVariableAction_Mapping ClearVariableActionReferenceUsage_Mapping ClearVariableActionReferenceUsageFeatureValue_Mapping	
ConditionalNode	ActionUsage	StructuredActivityNode_Mapping	
CreateLinkAction	ActionUsage	CreateLinkAction_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
CreateLinkObjectAction	ActionUsage	CreateLinkAction_Mapping	
CreateObjectAction	FeatureTyping InvocationExpression ActionUsage	CreateObjectInvocationExpressionFeatureTyping_Mapping CreateObjectInvocationExpression_Mapping CreateObjectAction_Mapping	
DestroyLinkAction	ActionUsage	DestroyLinkAction_Mapping	
DestroyObjectAction	ActionUsage	DestroyObjectAction_Mapping	
ExpansionRegion	ActionUsage	StructuredActivityNode_Mapping	
InputPin	FeatureReferenceExpression Feature ReferenceUsage FeatureTyping FeatureValue ParameterMembership Membership	RemoveVariableValueActionExpressionParameterFeatureReference_Mapping RemoveVariableValueActionExpressionParameter_Mapping UntypedPin_Mapping PinFeatureTyping_Mapping RemoveVariableValueActionExpressionParameterValue_Mapping RemoveVariableValueActionExpressionParameterMembership_Mapping RemoveVariableValueActionExpressionParameterFeatureReferenceMembership_Mapping	InputPin.type.ocllsUndefined() not src.type.ocllsUndefined() and not(src.type.ocllsKindOf(UML::Enumeration)) and Helper.getSysMLv2EnumerationDefinition(src.type.ocllsKindOf(UML::Enumeration))
InvocationAction	FeatureValue ReferenceUsage FeatureReferenceExpression FeatureValue ReferenceUsage ParameterMembership InvocationExpression FeatureTyping FeatureMembership Membership SendActionUsage ReferenceUsage ParameterMembership ParameterMembership	SendActionItemReferenceUsageFeatureValue_Mapping SendActionTargetReferenceUsage_Mapping SendActionTargetReferenceUsageFeatureValueExpression_Mapping SendActionTargetReferenceUsageFeatureValue_Mapping SendActionReferenceUsage_Mapping SendActionItemParameterMembership_Mapping SendActionItemReferenceUsageFeatureValueValue_Mapping SendActionItemReferenceUsageFeatureValueTyping_Mapping SendActionFeatureMembership_Mapping SendActionTargetReferenceUsageFeatureValueMembership_Mapping SendActionSendActionUsage_Mapping SendActionItemReferenceUsage_Mapping SendActionParameterMembership_Mapping SendActionTargetParameterMembership_Mapping	
LinkAction	ActionUsage	CommonAction_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
LinkEndCreationData	FeatureTyping		
	FeatureTyping	CommonParameterReferenceUsageInFeatureTyping_Mapping	
	Element	Mapping	
	Feature	CommonReturnParameterFeatureUntyped_Mapping	
	FeatureTyping	CommonReturnParameterFeatureTyping_Mapping	
	Relationship	ElementOwnership_Mapping	
	Expression	CommonValueSpecification_Mapping	
	ReferenceUsage	CommonParameterReferenceUsageInUntyped_Mapping	
	OwningMembership	DefaultMultiplicityMembership_Mapping	
	LiteralInteger	CommonReturnParameterFeatureMembership_Mapping	
	ReturnParameterMembership	CommonParameterReferenceUsageInMembership_Mapping	
	ParameterMembership	DefaultMultiplicityBoundOwnership_Mapping	
	FeatureMembership	CommonReturnParameterReferenceUsageFeatureTyping_Mapping	
	FeatureTyping	DefaultUpperBound_Mapping	
	LiteralInteger	DefaultMultiplicityElement_Mapping	
	MultiplicityRange	CommonReturnParameterReferenceUsageUntyped_Mapping	
	ReferenceUsage	DefaultLowerBound_Mapping	
	LiteralInteger	ElementMain_Mapping	
	Element	ElementMembership_Mapping	
	Membership	CommonReturnParameterReferenceUsageMembership_Mapping	
	ReturnParameterMembership	EmptyReturnParameterFeatureMembership_Mapping	
	ReturnParameterMembership		
LinkEndData	FeatureTyping		
	FeatureTyping	CommonParameterReferenceUsageInFeatureTyping_Mapping	
	Element	Mapping	
	Feature	CommonReturnParameterFeatureUntyped_Mapping	
	FeatureTyping	CommonReturnParameterFeatureTyping_Mapping	
	Relationship	ElementOwnership_Mapping	
	Expression	CommonValueSpecification_Mapping	
	ReferenceUsage	CommonParameterReferenceUsageInUntyped_Mapping	
	OwningMembership	DefaultMultiplicityMembership_Mapping	
	LiteralInteger	CommonReturnParameterFeatureMembership_Mapping	
	ReturnParameterMembership	CommonParameterReferenceUsageInMembership_Mapping	
	ParameterMembership	DefaultMultiplicityBoundOwnership_Mapping	
	FeatureMembership	CommonReturnParameterReferenceUsageFeatureTyping_Mapping	
	FeatureTyping	DefaultUpperBound_Mapping	
	LiteralInteger	DefaultMultiplicityElement_Mapping	
	MultiplicityRange	CommonReturnParameterReferenceUsageUntyped_Mapping	
	ReferenceUsage	DefaultLowerBound_Mapping	
	LiteralInteger	ElementMain_Mapping	
	Element	ElementMembership_Mapping	
	Membership	CommonReturnParameterReferenceUsageMembership_Mapping	
	ReturnParameterMembership	EmptyReturnParameterFeatureMembership_Mapping	
	ReturnParameterMembership		

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
LinkEndDestructionData	FeatureTyping		
	FeatureTyping	CommonParameterReferenceUsageInFeatureTyping_Mapping	
	Element	Mapping	
	Feature	CommonReturnParameterFeatureUntyped_Mapping	
	FeatureTyping	CommonReturnParameterFeatureTyping_Mapping	
	Relationship	ElementOwnership_Mapping	
	Expression	CommonValueSpecification_Mapping	
	ReferenceUsage	CommonParameterReferenceUsageInUntyped_Mapping	
	OwningMembership	DefaultMultiplicityMembership_Mapping	
	LiteralInteger	CommonReturnParameterFeatureMembership_Mapping	
	ReturnParameterMembership	CommonParameterReferenceUsageInMembership_Mapping	
	ParameterMembership	DefaultMultiplicityBoundOwnership_Mapping	
	FeatureMembership	CommonReturnParameterReferenceUsageFeatureTyping_Mapping	
	FeatureTyping	DefaultUpperBound_Mapping	
	LiteralInteger	DefaultMultiplicityElement_Mapping	
	MultiplicityRange	CommonReturnParameterReferenceUsageUntyped_Mapping	
	ReferenceUsage	DefaultLowerBound_Mapping	
	LiteralInteger	ElementMain_Mapping	
	Element	ElementMembership_Mapping	
	Membership	CommonReturnParameterReferenceUsageMembership_Mapping	
	ReturnParameterMembership	EmptyReturnParameterFeatureMembership_Mapping	
	ReturnParameterMembership		
LoopNode	ActionUsage	LoopNode_Mapping	
OpaqueAction	ActionUsage	OpaqueAction_Mapping	
	TextualRepresentation	OpaqueActionBody_Mapping	
	OwningMembership	OpaqueActionBodyMembership_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
OutputPin	FeatureReferenceExpression FeatureValue FeatureMembership ReferenceUsage Membership Feature ParameterMembership Membership FeatureValue Feature FeatureChainExpression ReferenceUsage ReferenceUsage Feature ReferenceUsage FeatureValue OperatorExpression ReferenceUsage FeatureTyping ReferenceUsage Membership ReferenceUsage FeatureReferenceExpression FeatureMembership FeatureValue FeatureMembership FeatureValue FeatureValue	CallOperationOutputPinFeatureReferenceExpression_Mapping ReadSelfActionFeatureValue_Mapping CallOperationOutputPinFeatureFeatureMembership_Mapping CreateObjectPin_Mapping ReadSelfActionFeatureValueFeatureReferenceExpressionMembership_Mapping CallOperationOutputPinFeatureFeature_Mapping CallOperationOutputPinParameterMembership_Mapping CallOperationOutputPinFeatureReferenceExpressionMembership_Mapping CreateObjectPinFeatureValue_Mapping ReadExtentActionFeatureValueOperatorExpressionFeature_Mapping CallOperationOutputPinFeatureChainExpression_Mapping ReadIsClassifiedObjectActionOutputPin_Mapping CallOperationOutputPin_Mapping CallOperationOutputPinFeature_Mapping CallOperationOutputPinReferenceUsage_Mapping CallOperationOutputPinReferenceUsageFeatureValue_Mapping ReadExtentActionFeatureValueOperatorExpression_Mapping ReadExtentActionOutputPin_Mapping ReadExtentActionFeatureValueOperatorExpressionFeatureTyping_Mapping ValueSpecificationActionOutputPin_Mapping CallOperationOutputPinFeatureChainExpressionMembership_Mapping ReadSelfActionOutputPin_Mapping ReadSelfActionFeatureValueFeatureReferenceExpression_Mapping ReadExtentActionFeatureValueOperatorExpressionMembership_Mapping ReadExtentActionFeatureValue_Mapping CallOperationOutputPinFeatureMembership_Mapping CallOperationOutputPinFeatureFeatureValue_Mapping ValueSpecificationActionOutputPinFeatureValue_Mapping	OutputPin.owner.ocllsTypeOf(UML::CreateO OutputPin.owner.ocllsTypeOf(UML::CallOpe OutputPin.owner.ocllsTypeOf(UML::ReadExt OutputPin.owner.ocllsKindOf(UML::ValueSp OutputPin.owner.ocllsKindOf(UML::ReadSel
Pin	FeatureReferenceExpression Feature ReferenceUsage FeatureTyping FeatureValue ParameterMembership Membership	RemoveVariableValueActionExpressionParameterFeatureReference_Mapp RemoveVariableValueActionExpressionParameter_Mapping UntypedPin_Mapping PinFeatureTyping_Mapping RemoveVariableValueActionExpressionParameterValue_Mapping RemoveVariableValueActionExpressionParameterMembership_Mapping RemoveVariableValueActionExpressionParameterFeatureReferenceMemb	Pin.type.ocllsUndefined() not src.type.ocllsUndefined() and not(src.type.ocllsKindOf(UML::Enumeration) and Helper.getSysMLv2EnumerationDefinition(src
RaiseExceptionAction	ActionUsage	RaiseExceptionAction_Mapping	
ReadExtentAction	ActionUsage	ReadExtentAction_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
ReadIsClassifiedObjectAction	FeatureValue FeatureValue Feature ParameterMembership FeatureReferenceExpression Membership ActionUsage OperatorExpression	ReadIsClassifiedObjectActionFeatureValue_Mapping ReadIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValu ReadIsClassifiedObjectActionFeatureValueOperatorExpressionFeature_Ma ReadIsClassifiedObjectActionFeatureValueOperatorExpressionParameterM ReadIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValu ReadIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValu ReadIsClassifiedObjectAction_Mapping ReadIsClassifiedObjectActionFeatureValueOperatorExpression_Mapping	
ReadLinkAction	ActionUsage	ReadLinkAction_Mapping	
ReadLinkObjectEndAction	ActionUsage	ReadLinkObjectEndAction_Mapping	
ReadSelfAction	ActionUsage	ReadSelfAction_Mapping	
ReadStructuralFeatureAction	ActionUsage	ReadStructuralFeatureAction_Mapping	
ReadVariableAction	ActionUsage	ReadVariableAction_Mapping	
ReclassifyObjectAction	ActionUsage	ReclassifyObjectAction_Mapping	
ReduceAction	ActionUsage	ReduceAction_Mapping	
RemoveStructuralFeatureValueAction	ActionUsage	RemoveStructuralFeatureValueAction_Mapping	
RemoveVariableValueAction	FeatureMembership ParameterMembership ReferenceUsage AssignmentActionUsage ParameterMembership ReferenceUsage FeatureValue OwningMembership ActionUsage InvocationExpression FeatureMembership FeatureMembership FeatureTyping ReferenceUsage ReferenceUsage ReferenceUsage	RemoveVariableValueActionExpressionMembership_Mapping RemoveVariableValueActionAssignmentActionParameterMembership_Ma RemoveVariableValueActionAssignmentActionParameterReferenceReferer RemoveVariableValueActionAssignmentAction_Mapping RemoveVariableValueActionAssignmentActionSecondParameterMembersh RemoveVariableValueActionExpressionReferenceUsage_Mapping RemoveVariableValueActionExpressionReferenceUsageFeatureValue_Ma RemoveVariableValueActionAssignmentActionMembership_Mapping RemoveVariableValueAction_Mapping RemoveVariableValueActionInvocationExpression_Mapping RemoveVariableValueActionAssignmentActionParameterFeatureMembersh RemoveVariableValueActionAssignmentActionParameterReferenceFeature RemoveVariableValueActionInvocationExpressionFeatureTyping_Mapping RemoveVariableValueActionAssignmentActionSecondParameter_Mapping RemoveVariableValueActionAssignmentActionParameterReference_Mapp RemoveVariableValueActionAssignmentActionParameter_Mapping	
ReplyAction	ActionUsage	ReplyAction_Mapping	
SendObjectAction	ActionUsage	SendObjectAction_Mapping	
SendSignalAction	ActionUsage	SendSignalAction_Mapping	
SequenceNode	ActionUsage	SequenceNode_Mapping	
StartClassifierBehaviorAction	ActionUsage	StartClassifierBehaviorAction_Mapping	
StartObjectBehaviorAction	ActionUsage	StartObjectBehaviorAction_Mapping	
StructuralFeatureAction	ActionUsage	CommonAction_Mapping	
StructuredActivityNode	ActionUsage	StructuredActivityNode_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
TestIdentityAction	ResultExpressionMembership OperatorExpression CalculationUsage	TestIdentityActionResultExpressionMembership_Mapping TestIdentityActionOperator_Mapping TestIdentityAction_Mapping	
UnmarshallAction	ActionUsage	UnmarshallAction_Mapping	
ValuePin	ReferenceUsage FeatureValue Expression ReferenceUsage	ValuePin_Mapping ValuePinFeatureValue_Mapping ValuePinValue_Mapping ValuePinUntyped_Mapping	not ValuePin.type.ocllsUndefined() ValuePin.type.ocllsUndefined()
ValueSpecificationAction	ActionUsage	ValueSpecificationAction_Mapping	
VariableAction	ActionUsage	CommonAction_Mapping	
WriteLinkAction	ActionUsage	CommonAction_Mapping	
WriteStructuralFeatureAction	ActionUsage	CommonAction_Mapping	
WriteVariableAction	ActionUsage	CommonAction_Mapping	

C.2.5.2.2 SysML v1 Activities elements not mapped

Table 16. List of SysML v1 elements not mapped of this section

SysML v1 Concept	Rationale
ReclassifyObjectAction	The SysMLv1::ReclassifyObjectAction is not supported by SysML v2. It is mapped to an empty action usage to keep the connections within the activity respectively action definition.

C.2.5.2.3 Mapping Specifications

C.2.5.2.3.1 Actions

C.2.5.2.3.1.1 CommonAction_Mapping

Description

Base mapping class for model elements of kind UML4SysML::Action. The target element is a SysMLv2::ActionUsage.

General Mappings

GenericToActionUsage_Mapping
NamedElementMain_Mapping

Mapping Source

Action

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::isComposite () : Boolean [1]
`true`
- ActionUsage::ownedRelationship () : Relationship [0..*]
`Helper.actionOwnedRelationship (from)`

C.2.5.2.3.1.2 OpaqueAction_Mapping

Description

The UML4SysML::OpaqueAction is mapped to a SysMLv2::ActionUsage with a textual representation. The following shows an example of the expected SysMLv2 textual syntax of a UML4SysML::OpaqueAction.

```
action thisIsAOpaqueAction {  
  in x : ScalarValues::Integer;  
  in y : ScalarValues::Integer;  
  out result : ScalarValues::Boolean;  
  
  language "OCL"  
  /*  
   * x = y + 1;  
  */  
}
```

General Mappings

CommonAction_Mapping

Mapping Source

OpaqueAction

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::ownedRelationship () : Relationship [0..*]

```
if from.body->size() > 0 then
  Helper.actionOwnedRelationship(from)->append(OpaqueActionBodyMembership_Mapping.getMapped(from))
else
  Helper.actionOwnedRelationship(from)
endif
```

C.2.5.2.3.1.3 OpaqueActionBody_Mapping

Description

The mapping class maps the language and the body properties from the UML4SysML::OpaqueAction to a SysMLv2::TextualRepresentation. Currently, multiple languages and bodies are not supported yet.

General Mappings

GenericToAnnotatingElement_Mapping

Mapping Source

OpaqueAction

Mapping Target

TextualRepresentation

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- TextualRepresentation::body () : String [1]

```
if from.body.notEmpty() then from.body.first() else OclUndefined endif
```

- TextualRepresentation::language () : String [1]

```
if from.language.notEmpty() then from.language.first() else OclUndefined endif
```

C.2.5.2.3.1.4 OpaqueActionBodyMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *OpaqueAction* mapping.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

OpaqueAction

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [1]
`OpaqueActionBody_Mapping.getMapped (from)`

C.2.5.2.3.1.5 Pin_Mapping

Description

Base mapping class for model elements of kind UML4SysML::Pin with a type. The target element is a SysMLv2::ReferenceUsage.

General Mappings

UntypedPin_Mapping

Mapping Source

Pin

Mapping Target

ReferenceUsage

Owned Mappings

- `pinFeatureTyping : PinFeatureTyping_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
not from.type.oclIsUndefined()
```

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`

```
Set{pinFeatureTyping.to, MultiplicityMembership_Mapping.getMapped(from)}
```

C.2.5.2.3.1.6 PinFeatureTyping_Mapping

Description

Creates the feature typing for the UML4SysML::Pin target ReferenceUsage.

General Mappings

`TypedElementToFeatureTyping_Mapping`

Mapping Source

`Pin`

Mapping Target

`FeatureTyping`

Owned Mappings

- `pin : Pin_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureTyping::typedFeature () : Feature [1]`

```
pin.to
```

C.2.5.2.3.1.7 UntypedPin_Mapping

Description

Base mapping class for model elements of kind UML4SysML::Pin without a type. The target element is a SysMLv2::ReferenceUsage.

General Mappings

GenericToReferenceUsage_Mapping
NamedElementMain_Mapping

Mapping Source

Pin

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.type.ocIsUndefined()
```

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

```
ElementOwnership_Mapping.getMappedColl(from.ownedElement)->including(MultiplicityMembership_
```

- ReferenceUsage::direction () : FeatureDirectionKind [0..1]

```
if src.ocIsTypeOf(UML::InputPin) then KerML::FeatureDirectionKind::_'in'  
else if src.ocIsTypeOf(UML::OutputPin) then KerML::FeatureDirectionKind::_'out'  
else OclUndefined endif endif
```

C.2.5.2.3.1.8 ValuePin_Mapping

Description

Mapping of UML4SysML::ValuePin with a specified type.

General Mappings

Pin_Mapping

Mapping Source

ValuePin

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

`Set{pinFeatureTyping.to, ValuePinFeatureValue_Mapping.getMapped(from), MultiplicityMembershi`

C.2.5.2.3.1.9 ValuePinFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *ValuePin* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

ValuePin

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::value () : Expression [1]

`ValuePinValue_Mapping.getMapped(from)`

C.2.5.2.3.1.10 ValuePinUntyped_Mapping

Description

Mapping of UML4SysML::ValuePin without a specified type.

General Mappings

UntypedPin_Mapping

Mapping Source

ValuePin

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

```
Set{ValuePinFeatureValue_Mapping.getMapped(from), MultiplicityMembership_Mapping.getMapped(f
```

C.2.5.2.3.1.11 ValuePinValue_Mapping

Description

*** not specified yet ***

General Mappings

GenericToExpression_Mapping

Mapping Source

ValuePin

Mapping Target

Expression

Owned Mappings

(none)

C.2.5.2.3.2 Invocation Actions

C.2.5.2.3.2.1 BroadcastSignalAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

BroadcastSignalAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.2.2 CallBehaviorAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

CallBehaviorAction

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::ownedRelationship () : Relationship [0..*]

```
Helper.actionOwnedRelationship (from) ->append (CallBehaviorFeatureTyping_Mapping.getMapped (from))
```


C.2.5.2.3.2.3 CallBehaviorFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *CallBehavior.Action* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

CallBehaviorAction

Mapping Target

FeatureTyping

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::type () : Type [1]
`from.behavior`
- FeatureTyping::typedFeature () : Feature [1]
`from`

C.2.5.2.3.2.4 CallOperationAction_Mapping

Description

A UML4SysML::CallOperationAction is mapped to a SysMLv2::ActionUsage which calls the operation. The expected SysML v2 textual syntax is as follows.

```
action thisIsACallOperationAction {  
    in paramIn;  
    in target : ThisIsABlock;  
    out paramReturn = target.thisIsAnOperation;  
}
```

General Mappings

CommonAction_Mapping

Mapping Source

CallOperationAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.2.5 CallOperationOutputPin_Mapping**Description**

*** not specified yet ***

General Mappings

Pin_Mapping

Mapping Source

OutputPin

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.owner.ocIsTypeOf(UML::CallOperationAction)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

```
Set{CallOperationOutputPinFeatureMembership_Mapping.getMapped(from), pinFeatureTyping.to, Mu
```

C.2.5.2.3.2.6 CallOperationOutputPinFeature_Mapping**Description**

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

OutputPin

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]

```
Set{CallOperationOutputPinFeatureFeatureValue_Mapping.getMapped(from), CallOperationOutputPi
```

- Feature::direction () : FeatureDirectionKind [0..1]

```
KerML::FeatureDirectionKind::_in'
```

C.2.5.2.3.2.7 CallOperationOutputPinFeatureChainExpression_Mapping

Description

*** not specified yet ***

General Mappings

GenericToInvocationExpression_Mapping

Mapping Source

OutputPin

Mapping Target

FeatureChainExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureChainExpression::ownedRelationship () : Relationship [0..*]`

```
Set{CallOperationOutputPinParameterMembership_Mapping.getMapped(from), CallOperationOutputPi
```

C.2.5.2.3.2.8 CallOperationOutputPinFeatureChainExpressionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *OutputPin* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

OutputPin

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Membership::memberElement () : Element [1]`

```
from.owner.oclAsType(UML::CallOperationAction).operation
```

C.2.5.2.3.2.9 CallOperationOutputPinFeatureFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

OutputPin

Mapping Target

Feature

Owned Mappings

(none)

C.2.5.2.3.2.10 CallOperationOutputPinFeatureFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *OutputPin* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

OutputPin

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]
`CallOperationOutputPinFeatureFeature_Mapping.getMapped(from)`

C.2.5.2.3.2.11 CallOperationOutputPinFeatureFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *OutputPin* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

OutputPin

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::value () : Expression [1]

`CallOperationOutputPinFeatureReferenceExpression_Mapping.getMapped(from)`

C.2.5.2.3.2.12 CallOperationOutputPinFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *OutputPin* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

OutputPin

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]

`CallOperationOutputPinReferenceUsage_Mapping.getMapped(from)`

C.2.5.2.3.2.13 CallOperationOutputPinFeatureReferenceExpression_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeatureReferenceExpression_Mapping

Mapping Source

OutputPin

Mapping Target

FeatureReferenceExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureReferenceExpression::ownedRelationship () : Relationship [0..*]

`Set{CallOperationOutputPinFeatureReferenceExpressionMembership_Mapping.getMapped(from), EmptySet}`

C.2.5.2.3.2.14 CallOperationOutputPinFeatureReferenceExpressionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *OutputPin* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

OutputPin

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::memberElement () : Element [1]
`from.owner.oclAsType(UML::CallOperationAction).target`

C.2.5.2.3.2.15 CallOperationOutputPinParameterMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *OutputPin* mapping.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

OutputPin

Mapping Target

ParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ParameterMembership::ownedMemberParameter () : Feature [1]
`CallOperationOutputPinFeature_Mapping.getMapped(from)`
- ParameterMembership::visibility () : VisibilityKind [1]
`KerML::VisibilityKind::private`

C.2.5.2.3.2.16 CallOperationOutputPinReferenceUsage_Mapping

Description

Creates a reference usage for the *OutputPin* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

OutputPin

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

```
Set{CallOperationOutputPinReferenceUsageFeatureValue_Mapping.getMapped(from) }
```

C.2.5.2.3.2.17 CallOperationOutputPinReferenceUsageFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *OutputPin* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

OutputPin

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureValue::value () : Expression [1]`

`CallOperationOutputPinFeatureChainExpression_Mapping.getMapped(from)`

C.2.5.2.3.2.18 SendSignalAction_Mapping

Description

*** not specified yet ***

General Mappings

`CommonAction_Mapping`

Mapping Source

`SendSignalAction`

Mapping Target

`ActionUsage`

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ActionUsage::ownedRelationship () : Relationship [0..*]`

`Helper.actionOwnedRelationship(from)->including(SendActionFeatureMembership_Mapping.getMapped(from))`

C.2.5.2.3.2.19 SendObjectAction_Mapping

Description

*** not specified yet ***

General Mappings

`SendSignalAction_Mapping`

Mapping Source

`SendObjectAction`

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.2.20 SendActionFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *InvocationAction* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

InvocationAction

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]
`SendActionSendActionUsage_Mapping.getMapped(from)`

C.2.5.2.3.2.21 SendActionParameterMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *InvocationAction* mapping.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

InvocationAction

Mapping Target

ParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ParameterMembership::ownedMemberParameter () : Feature [1]
`SendActionReferenceUsage_Mapping.getMapped(from)`

C.2.5.2.3.2.22 SendActionReferenceUsage_Mapping

Description

Creates a reference usage for the *InvocationAction* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

InvocationAction

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::direction () : FeatureDirectionKind [0..1]
`KerML::FeatureDirectionKind::_in'`

C.2.5.2.3.2.23 SendActionItemParameterMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *InvocationAction* mapping.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

InvocationAction

Mapping Target

ParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ParameterMembership::ownedMemberParameter () : Feature [1]
SendActionItemReferenceUsage_Mapping.getMapped (from)

C.2.5.2.3.2.24 SendActionItemReferenceUsage_Mapping

Description

Creates a reference usage for the *InvocationAction* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

InvocationAction

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`
`Set { SendActionItemReferenceUsageFeatureValue_Mapping.getMapped (from) }`
- `ReferenceUsage::direction () : FeatureDirectionKind [0..1]`
`KerML::FeatureDirectionKind::_in'`

C.2.5.2.3.2.25 SendActionItemReferenceUsageFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *InvocationAction* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

InvocationAction

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureValue::value () : Expression [1]`
`SendActionItemReferenceUsageFeatureValueValue_Mapping.getMapped (from)`

C.2.5.2.3.2.26 SendActionItemReferenceUsageFeatureValueTyping_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

InvocationAction

Mapping Target

FeatureTyping

Owned Mappings

- sendActionItemReferenceUsageFeatureValueValue :
SendActionItemReferenceUsageFeatureValueValue_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]

```
sendActionItemReferenceUsageFeatureValueValue.to
```

- FeatureTyping::type () : Type [1]

```
if from.ocIsTypeOf(UML::SendSignalAction) then from.signal  
else if from.ocIsTypeOf(UML::SendObjectAction) then from.request else OclUndefined endif end
```

C.2.5.2.3.2.27 SendActionItemReferenceUsageFeatureValueValue_Mapping

Description

*** not specified yet ***

General Mappings

GenericToInvocationExpression_Mapping

Mapping Source

InvocationAction

Mapping Target

InvocationExpression

Owned Mappings

- `sendActionItemReferenceUsageFeatureValueTyping :`
`SendActionItemReferenceUsageFeatureValueTyping_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `InvocationExpression::ownedRelationship () : Relationship [0..*]`
`Set{sendActionItemReferenceUsageFeatureValueTyping.to, EmptyReturnParameterFeatureMembership`

C.2.5.2.3.2.28 SendActionTargetParameterMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *InvocationAction* mapping.

General Mappings

`GenericToParameterMembership_Mapping`

Mapping Source

`InvocationAction`

Mapping Target

`ParameterMembership`

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ParameterMembership::ownedMemberParameter () : Feature [1]`
`SendActionTargetReferenceUsage_Mapping.getMapped(from)`

C.2.5.2.3.2.29 SendActionTargetReferenceUsage_Mapping

Description

Creates a reference usage for the *InvocationAction* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

InvocationAction

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::direction () : FeatureDirectionKind [0..1]
`KerML::FeatureDirectionKind::_in'`
- ReferenceUsage::ownedRelationship () : Relationship [0..*]
`Set{SendActionTargetReferenceUsageFeatureValue_Mapping.getMapped(from) }`

C.2.5.2.3.2.30 SendActionTargetReferenceUsageFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *InvocationAction* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

InvocationAction

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureValue::value () : Expression [1]`

```
SendActionTargetReferenceUsageFeatureValueValue_Mapping.getMapped(from)
```

C.2.5.2.3.2.31 SendActionTargetReferenceUsageFeatureValueMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *InvocationAction* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

InvocationAction

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Membership::memberElement () : Element [1]`

```
from.target
```

C.2.5.2.3.2.32 SendActionTargetReferenceUsageFeatureValueExpression_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeatureReferenceExpression_Mapping

Mapping Source

InvocationAction

Mapping Target

FeatureReferenceExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureReferenceExpression::ownedRelationship () : Relationship [0..*]

```
Set{SendActionTargetReferenceUsageFeatureValueMembership_Mapping.getMapped(from), EmptyReturn}
```

C.2.5.2.3.2.33 SendActionSendActionUsage_Mapping

Description

*** not specified yet ***

General Mappings

GenericToActionUsage_Mapping

Mapping Source

InvocationAction

Mapping Target

SendActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `SendActionUsage::ownedRelationship () : Relationship [0..*]`

```
Set{SendActionItemParameterMembership_Mapping.getMapped(from), SendActionParameterMembership
```

C.2.5.2.3.2.34 StartClassifierBehaviorAction_Mapping

Description

The SysMLv1::StartClassifierBehaviorAction is not supported by SysML v2. It is mapped to an empty action usage to keep the connections within the activity respectively action definition.

General Mappings

CommonAction_Mapping

Mapping Source

StartClassifierBehaviorAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.2.35 StartObjectBehaviorAction_Mapping

Description

The SysMLv1::StartObjectBehaviorAction is not supported by SysML v2. It is mapped to an empty action usage to keep the connections within the activity respectively action definition.

General Mappings

CommonAction_Mapping

Mapping Source

StartObjectBehaviorAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.3 Link Actions

C.2.5.2.3.3.1 ClearAssociationAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

ClearAssociationAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.3.2 CreateLinkAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

CreateLinkAction

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::ownedRelationship () : Relationship [0..*]

```
let linkEndCreationData : Set(UML::Element) = src.ownedElement->select(e | e.ocIsTypeOf(UML::Element))
let actionInputPin: Set(UML::Element) = src.ownedElement->select(e | e.ocIsTypeOf(UML::ActionInputPin))
let triggers: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::Trigger))
let toElementFMS: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::Pin))
let toElementOMS: Set(UML::Element) = (((src.ownedElement - toElementFMS) - actionInputPin)
```

```
toElementOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(toElementFMS->collect(e | ElementFeatureMembership_Mapping.getMapped(e)))
```

C.2.5.2.3.3.3 DestroyLinkAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

DestroyLinkAction

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::ownedRelationship () : Relationship [0..*]

```
let actionInputPin: Set(UML::Element) = src.ownedElement->select(e | e.ocIsTypeOf(UML::ActionInputPin))
let triggers: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::Trigger))
let linkData: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::LinkEndData))
let toElementFMS: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::Pin))
let toElementOMS: Set(UML::Element) = (((src.ownedElement - toElementFMS) - actionInputPin)
toElementOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(toElementFMS->collect(e | ElementFeatureMembership_Mapping.getMapped(e)))
```

C.2.5.2.3.3.4 ReadLinkAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

ReadLinkAction

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::ownedRelationship () : Relationship [0..*]

```
let actionInputPin: Set(UML::Element) = src.ownedElement->select(e | e.ocIsTypeOf(UML::ActionInputPin))
let triggers: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::Trigger))
let linkData: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::LinkEndData))
let toElementFMS: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::Pin))
let toElementOMS: Set(UML::Element) = (((src.ownedElement - toElementFMS) - actionInputPin) - triggers)
toElementOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(toElementFMS->collect(e | ElementFeatureMembership_Mapping.getMapped(e)))
```

C.2.5.2.3.3.5 ReadLinkObjectEndAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

ReadLinkObjectEndAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.3.6 ReadLinkObjectEndQualifierAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

ReadLinkObjectEndQualifierAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.4 Object Actions

C.2.5.2.3.4.1 CommonFeatureReferenceExpression_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeatureReferenceExpression_Mapping

Mapping Source

TypedElement

Mapping Target

FeatureReferenceExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureReferenceExpression::ownedRelationship () : Relationship [0..*]

Set { CommonMembership_Mapping.getMapped (from) , CommonReturnParameterFeatureMembership_Mapping

C.2.5.2.3.4.2 CommonReferenceUsageIn_Mapping

Description

*** not specified yet ***

General Mappings

CommonReferenceUsageInUntyped_Mapping

Mapping Source

TypedElement

Mapping Target

ReferenceUsage

Owned Mappings

- commonReferenceUsageInFeatureTyping : CommonReferenceUsageInFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]
`Set {commonReferenceUsageInFeatureTyping.to}`

C.2.5.2.3.4.3 CommonReferenceUsageInFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *TypedElement* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

TypedElement

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]

```
if from.type.ocIsUndefined() then CommonReferenceUsageInUntyped_Mapping.getMapped(from) els
```

C.2.5.2.3.4.4 CreateObjectAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

CreateObjectAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.4.5 CreateObjectInvocationExpressionFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *CreateObjectAction* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

CreateObjectAction

Mapping Target

FeatureTyping

Owned Mappings

- createObjectInvocationExpression : CreateObjectInvocationExpression_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureTyping::typedFeature () : Feature [1]`
`createObjectInvocationExpression.to`
- `FeatureTyping::type () : Type [1]`
`from.classifier`

C.2.5.2.3.4.6 CreateObjectInvocationExpression_Mapping

Description

*** not specified yet ***

General Mappings

GenericToInvocationExpression_Mapping

Mapping Source

CreateObjectAction

Mapping Target

InvocationExpression

Owned Mappings

- `createObjectInvocationExpressionFeatureTyping :`
`CreateObjectInvocationExpressionFeatureTyping_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `InvocationExpression::ownedRelationship () : Relationship [0..*]`
`Set{createObjectInvocationExpressionFeatureTyping.to, CommonReturnParameterFeatureMembership_`

C.2.5.2.3.4.7 CreateObjectPin_Mapping

Description

*** not specified yet ***

General Mappings

Pin_Mapping

Mapping Source

OutputPin

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.owner.oclIsTypeOf(UML::CreateObjectAction)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

```
Set{pinFeatureTyping.to, CreateObjectPinFeatureValue_Mapping.getMapped(from)}
```

C.2.5.2.3.4.8 CreateObjectPinFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *OutputPin* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

OutputPin

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::value () : Expression [1]

CreateObjectInvocationExpression_Mapping.getMapped(from.owner)

C.2.5.2.3.4.9 DestroyObjectAction_Mapping

Description

Expected SysML v2 textual syntax example:

```
action thisIsADestroyObjectAction {  
    // to be defined  
}
```

General Mappings

CommonAction_Mapping

Mapping Source

DestroyObjectAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.4.10 EqualOperatorExpressionOperand_Mapping

Description

*** not specified yet ***

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

TypedElement

Mapping Target

ParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ParameterMembership::ownedMemberParameter () : Feature [1]`
`EqualOperatorExpressionFeature_Mapping.getMapped(from)`
- `ParameterMembership::visibility () : VisibilityKind [1]`
`KerML::VisibilityKind::private`

C.2.5.2.3.4.11 ReadIsClassifiedObjectAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

ReadIsClassifiedObjectAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.4.12 ReadIsClassifiedObjectActionFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *ReadIsClassifiedObjectAction* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

ReadIsClassifiedObjectAction

Mapping Target

FeatureValue

Owned Mappings

- `readIsClassifiedObjectActionFeatureValueOperatorExpression :`
`ReadIsClassifiedObjectActionFeatureValueOperatorExpression_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureValue::value () : Expression [1]`
`readIsClassifiedObjectActionFeatureValueOperatorExpression.to`

C.2.5.2.3.4.13 ReadIsClassifiedObjectActionFeatureValueOperatorExpression_Mapping

Description

*** not specified yet ***

General Mappings

`GenericToExpression_Mapping`

Mapping Source

`ReadIsClassifiedObjectAction`

Mapping Target

`OperatorExpression`

Owned Mappings

- `readIsClassifiedObjectActionFeatureValueOperatorExpressionParameterMembership :`
`ReadIsClassifiedObjectActionFeatureValueOperatorExpressionParameterMembership_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `OperatorExpression::operator () : String [1]`
`if from.isDirect then 'istype' else 'hastype' endif`
- `OperatorExpression::ownedRelationship () : Relationship [0..*]`

```
Set{readIsClassifiedObjectActionFeatureValueOperatorExpressionParameterMembership.to}
```

C.2.5.2.3.4.14 ReadIsClassifiedObjectActionFeatureValueOperatorExpressionFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

ReadIsClassifiedObjectAction

Mapping Target

Feature

Owned Mappings

- readIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValue :
ReadIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValue_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::direction () : FeatureDirectionKind [0..1]

```
KerML::FeatureDirectionKind::_in'
```
- Feature::ownedRelationship () : Relationship [0..*]

```
Set{readIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValue.to}
```

C.2.5.2.3.4.15 ReadIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *ReadIsClassifiedObjectAction* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

ReadIsClassifiedObjectAction

Mapping Target

FeatureValue

Owned Mappings

- readIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValueExpression :
ReadIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValueExpression_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::value () : Expression [1]

`readIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValueExpression.to`

C.2.5.2.3.4.16

ReadIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValueExpression_Mapping

Description

*** not specified yet ***

General Mappings

GenericToExpression_Mapping

Mapping Source

ReadIsClassifiedObjectAction

Mapping Target

FeatureReferenceExpression

Owned Mappings

- readIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValueExpressionMembership :
ReadIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValueExpressionMembership_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureReferenceExpression::ownedRelationship () : Relationship [0..*]

`Set { readIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValueExpressionMembersh`

C.2.5.2.3.4.17

ReadIsClassifiedObjectActionFeatureValueOperatorExpressionFeatureValueExpressionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *ReadIsClassifiedObjectAction* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

ReadIsClassifiedObjectAction

Mapping Target

Membership

Owned Mappings

(none)

C.2.5.2.3.4.18

ReadIsClassifiedObjectActionFeatureValueOperatorExpressionParameterMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *ReadIsClassifiedObjectAction* mapping.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

ReadIsClassifiedObjectAction

Mapping Target

ParameterMembership

Owned Mappings

- readIsClassifiedObjectActionFeatureValueOperatorExpressionFeature :
ReadIsClassifiedObjectActionFeatureValueOperatorExpressionFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ParameterMembership::ownedMemberParameter () : Feature [1]
`readIsClassifiedObjectActionFeatureValueOperatorExpressionFeature.to`
- ParameterMembership::visibility () : VisibilityKind [1]
`KerML::VisibilityKind::private`

C.2.5.2.3.4.19 ReadIsClassifiedObjectActionOutputPin_Mapping

Description

*** not specified yet ***

General Mappings

Pin_Mapping

Mapping Source

OutputPin

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.owner.ocIsTypeOf(UML::ReadIsClassifiedObjectAction)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]
`Set{pinFeatureTyping.to, ReadIsClassifiedObjectActionFeatureValue_Mapping.getMapped(from.own`

C.2.5.2.3.4.20 ReadExtentAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

ReadExtentAction

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::ownedRelationship () : Relationship [0..*]
`Helper.actionOwnedRelationship (from)`

C.2.5.2.3.4.21 ReadExtentActionFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *OutputPin* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

OutputPin

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::value () : Expression [1]

`ReadExtentActionFeatureValueOperatorExpression_Mapping.getMapped(from)`

C.2.5.2.3.4.22 ReadExtentActionFeatureValueOperatorExpression_Mapping

Description

*** not specified yet ***

General Mappings

GenericToExpression_Mapping

Mapping Source

OutputPin

Mapping Target

OperatorExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `OperatorExpression::ownedRelationship () : Relationship [0..*]`

`Set {ReadExtentActionFeatureValueOperatorExpressionMembership_Mapping.getMapped(from), Common`

- `OperatorExpression::operator () : String [1]`

`'all'`

C.2.5.2.3.4.23 ReadExtentActionFeatureValueOperatorExpressionFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

OutputPin

Mapping Target

Feature

Owned Mappings

- readExtentActionFeatureValueOperatorExpressionFeatureTyping :
ReadExtentActionFeatureValueOperatorExpressionFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]

`Set { readExtentActionFeatureValueOperatorExpressionFeatureTyping.to }`

C.2.5.2.3.4.24 ReadExtentActionFeatureValueOperatorExpressionFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *OutputPin* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

OutputPin

Mapping Target

FeatureTyping

Owned Mappings

- readExtentActionFeatureValueOperatorExpressionFeature :
ReadExtentActionFeatureValueOperatorExpressionFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]

`readExtentActionFeatureValueOperatorExpressionFeature.to`

- FeatureTyping::type () : Type [1]

`from.owner.classifier`

C.2.5.2.3.4.25 ReadExtentActionFeatureValueOperatorExpressionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *OutputPin* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

OutputPin

Mapping Target

FeatureMembership

Owned Mappings

- readExtentActionFeatureValueOperatorExpressionFeature :
ReadExtentActionFeatureValueOperatorExpressionFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]
`readExtentActionFeatureValueOperatorExpressionFeature`

C.2.5.2.3.4.26 ReadExtentActionOutputPin_Mapping

Description

*** not specified yet ***

General Mappings

Pin_Mapping

Mapping Source

OutputPin

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.owner.ocIsTypeOf(UML::ReadExtentAction)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

```
Set{pinFeatureTyping.to, ReadExtentActionFeatureValue_Mapping.getMapped(from), MultiplicityM
```

C.2.5.2.3.4.27 ReadSelfAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

ReadSelfAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.4.28 ReadSelfActionFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *OutputPin* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

OutputPin

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureValue::value () : Expression [1]`

```
ReadSelfActionFeatureValueFeatureReferenceExpression_Mapping.getMapped(from)
```

C.2.5.2.3.4.29 ReadSelfActionFeatureValueFeatureReferenceExpression_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeatureReferenceExpression_Mapping

Mapping Source

OutputPin

Mapping Target

FeatureReferenceExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureReferenceExpression::ownedRelationship () : Relationship [0..*]`

```
Set { ReadSelfActionFeatureValueFeatureReferenceExpressionMembership_Mapping.getMapped(from),  
CommonReturnParameterFeatureMembership_Mapping.getMapped(from) }
```

C.2.5.2.3.4.30 ReadSelfActionFeatureValueFeatureReferenceExpressionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *OutputPin* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

OutputPin

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::memberElement () : Element [1]

```
SysML2::Feature.allInstances()->any(e | e.qualifiedName = 'Occurrences::Occurrence::this')
```

C.2.5.2.3.4.31 ReadSelfActionOutputPin_Mapping

Description

*** not specified yet ***

General Mappings

Pin_Mapping

Mapping Source

OutputPin

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.owner.oclIsKindOf(UML::ReadSelfAction)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::isUnique () : Boolean [1]

```
false
```

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

```
Set{pinFeatureTyping.to, ReadSelfActionFeatureValue_Mapping.getMapped(from), MultiplicityMen
```

- ReferenceUsage::isAbstract () : Boolean [1]

```
true
```

C.2.5.2.3.4.32 ReclassifyObjectAction_Mapping

Description

The SysMLv1::ReclassifyObjectAction is not supported by SysML v2. It is mapped to an empty action usage to keep the connections within the activity respectively action definition.

General Mappings

CommonAction_Mapping

Mapping Source

ReclassifyObjectAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.4.33 TestIdentityAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

TestIdentityAction

Mapping Target

CalculationUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- CalculationUsage::ownedRelationship () : Relationship [0..*]

```
Helper.actionOwnedRelationship (from)  
->including (TestIdentityActionResultExpressionMembership_Mapping.getMapped (from))
```

C.2.5.2.3.4.34 TestIdentityActionOperator_Mapping

Description

*** not specified yet ***

General Mappings

GenericToExpression_Mapping

Mapping Source

TestIdentityAction

Mapping Target

OperatorExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OperatorExpression::operator () : String [1]

'=='

- OperatorExpression::ownedRelationship () : Relationship [0..*]

```
Set{EqualOperatorExpressionOperand_Mapping.getMapped(from.first), EqualOperatorExpressionOpe
```

C.2.5.2.3.4.35 EqualOperatorExpressionFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

TypedElement

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]

```
Set{EqualOperatorExpressionFeatureValue_Mapping.getMapped(from) }
```

C.2.5.2.3.4.36 TestIdentityActionResultExpressionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *TestIdentityAction* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

TestIdentityAction

Mapping Target

ResultExpressionMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ResultExpressionMembership::ownedMemberFeature () : Feature [0..1]

`TestIdentityActionOperator_Mapping.getMapped(from)`

C.2.5.2.3.4.37 ValueSpecificationAction_Mapping

Description

The expected SysML v2 textual notation of a SysMLv1::ValueSpecificationAction is as follows:

```
action thisIsAValueSpecificationAction {
  out result : ScalarValues::Integer = 42;
}

action thisIsAnotherValueSpecificationAction {
  out result = thisIsAnOpaqueExpression.result;
  calc thisIsAnOpaqueExpression {
    language "Math"
    /*
     * 42 + 23
     */
  }
}
```

General Mappings

CommonAction_Mapping

Mapping Source

ValueSpecificationAction

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ActionUsage::ownedRelationship () : Relationship [0..*]`

```
let toElementFMS: Set(UML::Element) = from.ownedElement->select(e | e.oclIsKindOf(UML::Pin))
let toElementOMS: Set(UML::Element) = (from.ownedElement - toElementFMS) in
toElementFMS->collect(e | ElementFeatureMembership_Mapping.getMapped(e))
->union(toElementOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e)))
```

C.2.5.2.3.4.38 ValueSpecificationActionOutputPin_Mapping

Description

*** not specified yet ***

General Mappings

Pin_Mapping

Mapping Source

OutputPin

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.owner.oclIsKindOf(UML::ValueSpecificationAction)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`

```
Set{pinFeatureTyping.to, ValueSpecificationActionOutputPinFeatureValue_Mapping.getMapped(from)}
```

C.2.5.2.3.4.39 ValueSpecificationActionOutputPinFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *OutputPin* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

OutputPin

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::value () : Expression [1]

```
if from.owner.value.ocIsTypeOf(UML::OpaqueExpression) then OpaqueExpressionAsValue_Mapping.
```

C.2.5.2.3.5 Other Actions**C.2.5.2.3.5.1 RaiseExceptionAction_Mapping****Description**

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

RaiseExceptionAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.5.2 ReduceAction_Mapping**Description**

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

ReduceAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.6 Structural Feature Actions

C.2.5.2.3.6.1 AddStructuralFeatureValueAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

AddStructuralFeatureValueAction

Mapping Target

ActionUsage

Owned Mappings

- addStructuralFeatureValueActionAssignActionMembership :
AddStructuralFeatureValueActionAssignmentActionMembership_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::ownedRelationship () : Relationship [0..*]

Helper.actionOwnedRelationship(from)
->including(addStructuralFeatureValueActionAssignActionMembership.to)

C.2.5.2.3.6.2 AddStructuralFeatureValueActionAssignmentAction_Mapping

Description

*** not specified yet ***

General Mappings

GenericToAssignmentActionUsage_Mapping

Mapping Source

AddStructuralFeatureValueAction

Mapping Target

AssignmentActionUsage

Owned Mappings

(none)

C.2.5.2.3.6.3 AddStructuralFeatureValueActionAssignmentActionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *AddStructuralFeatureValueAction* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

AddStructuralFeatureValueAction

Mapping Target

FeatureMembership

Owned Mappings

- addStructuralFeatureValueActionAssignmentAction :
AddStructuralFeatureValueActionAssignmentAction_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]
addStructuralFeatureValueActionAssignmentAction.to
- FeatureMembership::memberFeature () : Feature [1]

```
self.ownedMemberFeature()
```

C.2.5.2.3.6.4 ClearStructuralFeatureAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

ClearStructuralFeatureAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.6.5 ReadStructuralFeatureAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

ReadStructuralFeatureAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.6.6 RemoveStructuralFeatureValueAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

RemoveStructuralFeatureValueAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.7 Structured Actions

C.2.5.2.3.7.1 LoopNode_Mapping

Description

*** not specified yet ***

General Mappings

StructuredActivityNode_Mapping

Mapping Source

LoopNode

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.7.2 SequenceNode_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

StructuredActivityNode_Mapping

Mapping Source

SequenceNode

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.7.3 StructuredActivityNode_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

StructuredActivityNode

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::ownedRelationship () : Relationship [0..*]

```
let initialNodes : Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::InitialNode))
let finalNodes : Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::FinalNode))
let objectFlowsWithGuard : Set(UML::ObjectFlow) = src.ownedElement->select(e | e.ocIsKindOf(UML::ObjectFlowGuard))
let objectFlows : Set(UML::ObjectFlow) = src.ownedElement->select(e | e.ocIsKindOf(UML::ObjectFlow))
let ignoreInterruptibleActivityRegion: Set(UML::InterruptibleActivityRegion) = src.ownedElement->select(e | e.ocIsKindOf(UML::InterruptibleActivityRegion))
let elementsFMS : Set(UML::Element) = ((src.ownedElement->select(e | e.ocIsKindOf(UML::Contract)))
let elementsOMS: Set(UML::Element) = ((((((src.ownedElement-initialNodes)-finalNodes)-objectFlowsWithGuard)-objectFlows)-ignoreInterruptibleActivityRegion)-elementsFMS)-elementsOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(elementsFMS->collect(e | ElementFeatureMembership_Mapping.getMapped(e)))
->union(initialNodes->collect(e | InitialNodeMembership_Mapping.getMapped(e)))
->union(finalNodes->collect(e | ActivityFinalNodeMembership_Mapping.getMapped(e)))
->union(objectFlowsWithGuard->collect(e | ObjectFlowGuardFeatureMembership_Mapping.getMapped(e)))
->union(objectFlows->collect(e | ObjectFlowFeatureMembership_Mapping.getMapped(e)))
```

C.2.5.2.3.8 Variable Actions

C.2.5.2.3.8.1 AddVariableValueAction_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

AddVariableValueAction

Mapping Target

ActionUsage

Owned Mappings

- addVariableValueActionFeatureTyping : AddVariableValueActionFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::ownedRelationship () : Relationship [0..*]

```
Helper.actionOwnedRelationship (from) ->including (addVariableValueActionFeatureTyping.to)
```

C.2.5.2.3.8.2 AddVariableValueActionFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *AddVariableValueAction* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

AddVariableValueAction

Mapping Target

FeatureTyping

Owned Mappings

- addVariableValueAction : AddVariableValueAction_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::type () : Type [1]

```
SysML2::ActionUsage.allInstances()->any(m | m.qualifiedName = 'Actions::AssignmentAction')
```

- FeatureTyping::typedFeature () : Feature [1]

```
addVariableValueAction.to
```

C.2.5.2.3.8.3 ClearVariableAction_Mapping

Description

The expected SysML v2 textual notation of a SysMLv1::ClearVariableAction is as follows

```
action thisIsAClearVariableAction {  
    thisIsAVariable = null;  
}
```

General Mappings

CommonAction_Mapping

Mapping Source

ClearVariableAction

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::ownedRelationship () : Relationship [0..*]

```
Helper.actionOwnedRelationship(from)->including(ClearVariableActionFeatureMembership_Mapping
```

C.2.5.2.3.8.4 ClearVariableActionFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *ClearVariableAction* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

ClearVariableAction

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]

```
ClearVariableActionReferenceUsage_Mapping.getMapped(from)
```

C.2.5.2.3.8.5 ClearVariableActionReferenceUsage_Mapping

Description

Creates a reference usage for the *ClearVariableAction* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

ClearVariableAction

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`
`Set { ClearVariableActionReferenceUsageFeatureValue_Mapping.getMapped (from) }`
- `ReferenceUsage::name () : String [0..1]`
`from.variable.name`

C.2.5.2.3.8.6 ClearVariableActionReferenceUsageFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *ClearVariableAction* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

ClearVariableAction

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureValue::value () : Expression [1]`
`Null_Mapping.getMapped (from)`

C.2.5.2.3.8.7 Null_Mapping

Description

*** not specified yet ***

General Mappings

CommonValueSpecification_Mapping

Mapping Source

Element

Mapping Target

NullExpression

Owned Mappings

(none)

C.2.5.2.3.8.8 ReadVariableAction_Mapping**Description**

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

ReadVariableAction

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.2.3.8.9 RemoveVariableValueAction_Mapping**Description**

*** not specified yet ***

General Mappings

CommonAction_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::ownedRelationship () : Relationship [0..*]

```
let relationships : Set(KerML::Relationship) = Helper.actionOwnedRelationship(from)
->including(RemoveVariableValueActionExpressionMembership_Mapping.getMapped(from))
->including(EmptyReturnParameterFeatureMembership_Mapping.getMapped(from))
->including(RemoveVariableValueActionAssignmentActionMembership_Mapping.getMapped(from)) in
let relationshipsWithRemoveAt : Set(KerML::Relationship) = if from.removeAt.ocIsUndefined()
if from.value.ocIsUndefined() then relationshipsWithRemoveAt else relationshipsWithRemoveAt
```

C.2.5.2.3.8.10 RemoveVariableValueActionAssignmentAction_Mapping

Description

*** not specified yet ***

General Mappings

GenericToAssignmentActionUsage_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

AssignmentActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- AssignmentActionUsage::ownedRelationship () : Relationship [0..*]

```
Set{RemoveVariableValueActionAssignmentActionParameterMembership_Mapping.getMapped(from), Re
```

C.2.5.2.3.8.11 RemoveVariableValueActionAssignmentActionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *RemoveVariableValueAction* mapping.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [1]
`RemoveVariableValueActionAssignmentAction_Mapping.getMapped(from)`

C.2.5.2.3.8.12 RemoveVariableValueActionAssignmentActionParameter_Mapping

Description

*** not specified yet ***

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

`Set { RemoveVariableValueActionAssignmentActionParameterFeatureMembership_Mapping.getMapped (fr`

- ReferenceUsage::direction () : FeatureDirectionKind [0..1]

`KerML::FeatureDirectionKind::_in'`

C.2.5.2.3.8.13 RemoveVariableValueActionAssignmentActionParameterFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *RemoveVariableValueAction* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]

`RemoveVariableValueActionAssignmentActionParameterReference_Mapping.getMapped (from)`

C.2.5.2.3.8.14 RemoveVariableValueActionAssignmentActionParameterMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *RemoveVariableValueAction* mapping.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

ParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ParameterMembership::ownedMemberParameter () : Feature [1]

```
RemoveVariableValueActionAssignmentActionParameter_Mapping.getMapped(from)
```

C.2.5.2.3.8.15 RemoveVariableValueActionAssignmentActionParameterReference_Mapping

Description

*** not specified yet ***

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`

`Set { RemoveVariableValueActionAssignmentActionParameterReferenceFeatureMembership_Mapping.get`

C.2.5.2.3.8.16

RemoveVariableValueActionAssignmentActionParameterReferenceFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *RemoveVariableValueAction* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::ownedMemberFeature () : Feature [1]`

`RemoveVariableValueActionAssignmentActionParameterReferenceReference_Mapping.getMapped(from)`

C.2.5.2.3.8.17 RemoveVariableValueActionAssignmentActionParameterReferenceReference_Mapping

Description

*** not specified yet ***

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

ReferenceUsage

Owned Mappings

(none)

C.2.5.2.3.8.18 RemoveVariableValueActionAssignmentActionSecondParameter_Mapping**Description**

*** not specified yet ***

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

ReferenceUsage

Owned Mappings

(none)

C.2.5.2.3.8.19 RemoveVariableValueActionAssignmentActionSecondParameterMembership_Mapping**Description**

Creates a membership relationship for *memberElement()* for the *RemoveVariableValueAction* mapping.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

ParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ParameterMembership::ownedMemberParameter () : Feature [1]

`RemoveVariableValueActionAssignmentActionSecondParameter_Mapping.getMapped(from)`

C.2.5.2.3.8.20 RemoveVariableValueActionExpressionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *RemoveVariableValueAction* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]

`RemoveVariableValueActionExpressionReferenceUsage_Mapping.getMapped(from)`

C.2.5.2.3.8.21 RemoveVariableValueActionExpressionParameter_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

Pin

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]

```
Set { RemoveVariableValueActionExpressionParameterValue_Mapping.getMapped (from) }
```

C.2.5.2.3.8.22 RemoveVariableValueActionExpressionParameterFeatureReference_Mapping**Description**

*** not specified yet ***

General Mappings

GenericToFeatureReferenceExpression_Mapping

Mapping Source

Pin

Mapping Target

FeatureReferenceExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureReferenceExpression::ownedRelationship () : Relationship [0..*]`

`Set { RemoveVariableValueActionExpressionParameterFeatureReferenceMembership_Mapping.getMapped`

C.2.5.2.3.8.23 RemoveVariableValueActionExpressionParameterFeatureReferenceMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Pin* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

Pin

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Membership::memberElement () : Element [1]`

`from`

C.2.5.2.3.8.24 RemoveVariableValueActionExpressionParameterMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Pin* mapping.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

Pin

Mapping Target

ParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ParameterMembership::ownedMemberParameter () : Feature [1]

```
RemoveVariableValueActionExpressionParameter_Mapping.getMapped(from)
```

C.2.5.2.3.8.25 RemoveVariableValueActionExpressionParameterValue_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

Pin

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::value () : Expression [1]

```
RemoveVariableValueActionExpressionParameterFeatureReference_Mapping.getMapped(from)
```

C.2.5.2.3.8.26 RemoveVariableValueActionExpressionReferenceUsage_Mapping

Description

Creates a reference usage for the *RemoveVariableValueAction* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::name () : String [0..1]

`from.variable.name`

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

`Set{RemoveVariableValueActionExpressionReferenceUsageFeatureValue_Mapping.getMapped(from)}`

C.2.5.2.3.8.27 RemoveVariableValueActionExpressionReferenceUsageFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *RemoveVariableValueAction* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureValue::value () : Expression [1]`

`RemoveVariableValueActionInvocationExpression_Mapping.getMapped(from)`

C.2.5.2.3.8.28 RemoveVariableValueActionInvocationExpression_Mapping

Description

*** not specified yet ***

General Mappings

GenericToInvocationExpression_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

InvocationExpression

Owned Mappings

- `removeVariableValueActionInvocationExpressionFeatureTyping :`
`RemoveVariableValueActionInvocationExpressionFeatureTyping_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `InvocationExpression::ownedRelationship () : Relationship [0..*]`

`Set {removeVariableValueActionInvocationExpressionFeatureTyping.to}`

C.2.5.2.3.8.29 RemoveVariableValueActionInvocationExpressionFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *RemoveVariableValueAction* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

RemoveVariableValueAction

Mapping Target

FeatureTyping

Owned Mappings

- removeVariableValueActionInvocationExpression :
RemoveVariableValueActionInvocationExpression_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::type () : Type [1]

```
KerML::Function.allInstances()->any(m | m.qualifiedName = 'SequenceFunctions::excluding')
```
- FeatureTyping::typedFeature () : Feature [1]

```
removeVariableValueActionInvocationExpression.to
```

C.2.5.3 Activities

C.2.5.3.1 Overview

Table 17. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
Activity	Behavior	CommonActivity_Mapping	true
ActivityEdge	SuccessionAsUsage FeatureMembership OwningMembership FeatureTyping Redefinition MetadataUsage ReferenceUsage FeatureValue	CommonActivityEdgeSuccessionAsUsage_Mapping ActivityEdgeMetadataFeatureMembership_Mapping ActivityEdgeMetadataOwningMembership_Mapping ActivityEdgeMetadataFeatureTyping_Mapping ActivityEdgeMetadataRedefinition_Mapping ActivityEdgeMetadata_Mapping ActivityEdgeMetadataReferenceUsage_Mapping ActivityEdgeMetadataFeatureValue_Mapping	
ActivityFinalNode	Membership	ActivityFinalNodeMembership_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
ActivityGroup	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
ActivityNode	FeatureMembership Membership Feature FeatureMembership Feature Redefinition FeatureMembership FeatureMembership Subsetting Feature FeatureMembership ItemFlowEnd Subsetting Subsetting ItemFlowFeature Subsetting	ActivityEdgeSourceEndFeatureMembership_Mapping ActivityEdgeTransitionUsageSourceMembership_Mapping ControlFlowTargetEndFeature_Mapping ControlFlowTargetEndFeatureMembership_Mapping ActivityEdgeSourceEndFeature_Mapping ObjectFlowItemFlowRedefinition_Mapping ControlFlowFinalNodeTargetEndFeatureMembership_Mapping ObjectFlowEndFeatureMembership_Mapping ControlFlowTargetFinalNodeSubsetting_Mapping ControlFlowTargetFinalNode_Mapping ObjectFlowItemFlowFeatureMembership_Mapping ObjectFlowItemFlowEnd_Mapping ObjectFlowItemFlowSubsetting_Mapping ControlFlowTargetEndSubsetting_Mapping ObjectFlowItemFlowFeature_Mapping ActivityEdgeSourceEndSubsetting_Mapping	
ActivityParameterNode	FeatureTyping ItemFeature	ObjectFlowItemFeatureTyping_Mapping ObjectFlowItemFeatureUntyped_Mapping	not src.type.oclIsUndefined() and not(src.type.oclIsKindOf(UML::Enumeration)) and Helper.getSysMLv2EnumerationDefinition(src)
ActivityPartition	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
CentralBufferNode	ActionUsage	CentralBufferNode_Mapping	
ControlFlow	TransitionUsage SuccessionAsUsage FeatureReferenceExpression TransitionFeatureMembership Membership	ControlFlowTransitionUsage_Mapping ControlFlowSuccessionAsUsage_Mapping ControlFlowTransitionUsageFeatureReferenceExpression_Mapping ControlFlowTransitionUsageFeatureMembership_Mapping ControlFlowTransitionUsageFeatureReferenceExpressionMembership_Mapping	not ControlFlow.guard.oclIsUndefined() ControlFlow.guard.oclIsUndefined() ControlFlow.guard.oclIsUndefined()

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
ControlNode	FeatureMembership Membership Feature FeatureMembership Feature Redefinition FeatureMembership FeatureMembership Subsetting Feature FeatureMembership ItemFlowEnd Subsetting Subsetting Subsetting ItemFlowFeature Subsetting	ActivityEdgeSourceEndFeatureMembership_Mapping ActivityEdgeTransitionUsageSourceMembership_Mapping ControlFlowTargetEndFeature_Mapping ControlFlowTargetEndFeatureMembership_Mapping ActivityEdgeSourceEndFeature_Mapping ObjectFlowItemFlowRedefinition_Mapping ControlFlowFinalNodeTargetEndFeatureMembership_Mapping ObjectFlowEndFeatureMembership_Mapping ControlFlowTargetFinalNodeSubsetting_Mapping ControlFlowTargetFinalNode_Mapping ObjectFlowItemFlowFeatureMembership_Mapping ObjectFlowItemFlowEnd_Mapping ObjectFlowItemFlowSubsetting_Mapping ControlFlowTargetEndSubsetting_Mapping ObjectFlowItemFlowFeature_Mapping ActivityEdgeSourceEndSubsetting_Mapping	
DataStoreNode	ActionUsage	DataStoreNode_Mapping	
DecisionNode	DecisionNode	DecisionNode_Mapping	
ExceptionHandler	FeatureTyping FeatureTyping Element Feature FeatureTyping Relationship Expression ReferenceUsage OwningMembership LiteralInteger ReturnParameterMembership ParameterMembership FeatureMembership FeatureTyping LiteralInteger MultiplicityRange ReferenceUsage LiteralInteger Element Membership ReturnParameterMembership ReturnParameterMembership	CommonParameterReferenceUsageInFeatureTyping_Mapping Mapping CommonReturnParameterFeatureUntyped_Mapping CommonReturnParameterFeatureTyping_Mapping ElementOwnership_Mapping CommonValueSpecification_Mapping CommonParameterReferenceUsageInUntyped_Mapping DefaultMultiplicityMembership_Mapping CommonReturnParameterFeatureMembership_Mapping CommonParameterReferenceUsageInMembership_Mapping DefaultMultiplicityBoundOwnership_Mapping CommonReturnParameterReferenceUsageFeatureTyping_Mapping DefaultUpperBound_Mapping DefaultMultiplicityElement_Mapping CommonReturnParameterReferenceUsageUntyped_Mapping DefaultLowerBound_Mapping ElementMain_Mapping ElementMembership_Mapping CommonReturnParameterReferenceUsageMembership_Mapping EmptyReturnParameterFeatureMembership_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
ExecutableNode	FeatureMembership Membership Feature FeatureMembership Feature Redefinition FeatureMembership FeatureMembership Subsetting Feature FeatureMembership ItemFlowEnd Subsetting Subsetting Subsetting ItemFlowFeature Subsetting	ActivityEdgeSourceEndFeatureMembership_Mapping ActivityEdgeTransitionUsageSourceMembership_Mapping ControlFlowTargetEndFeature_Mapping ControlFlowTargetEndFeatureMembership_Mapping ActivityEdgeSourceEndFeature_Mapping ObjectFlowItemFlowRedefinition_Mapping ControlFlowFinalNodeTargetEndFeatureMembership_Mapping ObjectFlowEndFeatureMembership_Mapping ControlFlowTargetFinalNodeSubsetting_Mapping ControlFlowTargetFinalNode_Mapping ObjectFlowItemFlowFeatureMembership_Mapping ObjectFlowItemFlowEnd_Mapping ObjectFlowItemFlowSubsetting_Mapping ControlFlowTargetEndSubsetting_Mapping ObjectFlowItemFlowFeature_Mapping ActivityEdgeSourceEndSubsetting_Mapping	
FinalNode	Membership	ActivityFinalNodeMembership_Mapping	
FlowFinalNode	Membership	ActivityFinalNodeMembership_Mapping	
ForkNode	ForkNode	ForkNode_Mapping	
InitialNode	Membership FeatureMembership Feature Subsetting	InitialNodeMembership_Mapping ActivityEdgeInitialNodeSourceEndFeatureMembership_Mapping ActivityEdgeSourceInitialNode_Mapping ActivityEdgeSourceInitialNodeSubsetting_Mapping	
InterruptibleActivityRegion	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
JoinNode	JoinNode	JoinNode_Mapping	
MergeNode	MergeNode	MergeNode_Mapping	
ObjectFlow	TransitionUsage Feature FeatureMembership FeatureMembership FeatureMembership FeatureMembership Subsetting SuccessionFlowConnectionUsage	ObjectFlowGuard_Mapping ObjectFlowGuardSuccessionTargetEndFeature_Mapping ObjectFlowFeatureMembership_Mapping ObjectFlowGuardSuccessionTargetEndFeatureMembership_Mapping ObjectFlowItemFeatureMembership_Mapping ObjectFlowGuardFeatureMembership_Mapping ObjectFlowGuardSuccessionTargetEndSubsetting_Mapping ObjectFlow_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
ObjectNode	FeatureTyping ItemFeature	ObjectFlowItemFeatureTyping_Mapping ObjectFlowItemFeatureUntyped_Mapping	not src.type.ocllsUndefined() and not(src.type.ocllsKindOf(UML::Enumeration)) and Helper.getSysMLv2EnumerationDefinition(src)
Variable	FeatureTyping FeatureMembership Feature	VariableFeatureTyping_Mapping VariableMembership_Mapping CommonVariable_Mapping	not src.type.ocllsUndefined() and not(src.type.ocllsKindOf(UML::Enumeration)) and Helper.getSysMLv2EnumerationDefinition(src)

C.2.5.3.2 SysML v1 Activities elements not mapped

Table 18. List of SysML v1 elements not mapped of this section

SysML v1 Concept	Rationale
ActivityParameterNode	The parameter of the activity is mapped from SysML v1 to SysML v2. The additional concept of the activity parameter node is necessary for the token semantic of SysML v1 activities, which is not part of SysML v2. Therefore, the additional concept of the activity parameter node is not mapped to SysML v2.
FlowFinalNode	The flow final node is required for the token semantic, which is not part of SysML v2. Therefore, the element FlowFinalNode is not mapped.

C.2.5.3.3 Mapping Specifications

C.2.5.3.3.1 ActivityAsDefinition_Mapping

Description

A UML4SysML::Activity is mapped to a SysMLv2::ActionDefinition if the owner of the activity is a UML4SysML::Package. The following shows an example of what the textual SysML v2 syntax of the result of the transformation may look like.

```

action def SysMLv1Activity {
  in parIn : AnItemDef;
  out parOut;
  out parReturn;
}

```

General Mappings

CommonActivity_Mapping

Mapping Source

Activity

Mapping Target

ActionDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from, owner.ocIsKindOf(UML::Package)
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.5.3.3.2 ActivityAsUsage_Mapping

Description

A UML4SysML::Activity is mapped to a SysMLv2::ActionUsage if the owner of the activity is not a UML4SysML::Package. To follow the informal naming convention that usage elements start with a lowercase letter, the first letter of the activity's name is converted to a lowercase letter. The following shows an example of what the textual SysML v2 syntax of the result of the transformation may look like.

```
part def SysMLv1Block {  
  action sysMLv1Activity {  
    in parIn : SysMLv1Enumeration;  
    out parOut : ScalarValues::Integer;  
  }  
}  
enum def SysMLv1Enumeration;
```

General Mappings

CommonActivity_Mapping

Mapping Source

Activity

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
not from.owner.oclIsKindOf(UML::Package)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- ActionUsage::name () : String [0..1]

```
if from.name.size() > 1 then from.name.substring(1,1).toLowerCase().concat(from.name.substri
```

C.2.5.3.3.3 ActivityEdgeMetadata_Mapping

Description

Adds metadata to the transformation target elements of UML::ControlFlow and UML::ObjectFlow to map the UML::ActivityEdge::weight property which has no direct target in SysML v2.

General Mappings

GenericToMetadataUsage_Mapping

Mapping Source

ActivityEdge

Mapping Target

MetadataUsage

Owned Mappings

- activityEdgeMetadataFeatureTyping : ActivityEdgeMetadataFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- MetadataUsage::ownedRelationship () : Relationship [0..*]

```
Set{activityEdgeMetadataFeatureTyping.to, ActivityEdgeMetadataFeatureMembership_Mapping.getM
```

- MetadataUsage::name () : String [0..1]

```
'weight'
```

C.2.5.3.3.4 ActivityEdgeMetadataFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *ActivityEdge* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

ActivityEdge

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::ownedMemberFeature () : Feature [1]`
`ActivityEdgeMetadataReferenceUsage_Mapping.getMapped(from)`

C.2.5.3.3.5 ActivityEdgeMetadataFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *ActivityEdge* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

ActivityEdge

Mapping Target

FeatureTyping

Owned Mappings

- `activityEdgeMetadata : ActivityEdgeMetadata_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureTyping::typedFeature () : Feature [1]`

`activityEdgeMetadata.to`

- `FeatureTyping::type () : Type [1]`

`SysML2::MetadataDefinition.allInstances () ->any (m | m.qualifiedName = 'SysMLv1Library::Activi`

C.2.5.3.3.6 ActivityEdgeMetadataFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *ActivityEdge* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

ActivityEdge

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureValue::value () : Expression [1]`

`from.weight`

C.2.5.3.3.7 ActivityEdgeMetadataOwningMembership_Mapping

Description

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

ActivityEdge

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [1]

`ActivityEdgeMetadata_Mapping.getMapped(from)`

C.2.5.3.3.8 ActivityEdgeMetadataRedefinition_Mapping**Description**

Creates a redefinition relationship for the *redefiningFeature()* and the *redefinedFeature()* for the *ActivityEdge* mapping.

General Mappings

GenericToRedefinition_Mapping

Mapping Source

ActivityEdge

Mapping Target

Redefinition

Owned Mappings

- activityEdgeMetadataReferenceUsage : ActivityEdgeMetadataReferenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Redefinition::redefiningFeature () : Feature [1]`

`activityEdgeMetadataReferenceUsage.to`

- `Redefinition::redefinedFeature () : Feature [1]`

`SysML2::AttributeUsage.allInstances()->any(m | m.qualifiedName = 'SysMLv1Library::ActivityEdgeMetadataReferenceUsage')`

C.2.5.3.3.9 ActivityEdgeMetadataReferenceUsage_Mapping

Description

Creates a reference usage for the *ActivityEdge* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

ActivityEdge

Mapping Target

ReferenceUsage

Owned Mappings

- `activityEdgeMetadataRedefinition : ActivityEdgeMetadataRedefinition_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`

`Set{activityEdgeMetadataRedefinition.to, ActivityEdgeMetadataFeatureValue_Mapping.getMappedTo()}`

C.2.5.3.3.10 ActivityEdgeSourceEndFeature_Mapping

Description

Creates a SysML v2 feature for the source activity node of the SysML v1 activity edge which subsets the SysML v2 target element of the source activity node.

General Mappings

GenericToFeature_Mapping

Mapping Source

ActivityNode

Mapping Target

Feature

Owned Mappings

- activityEdgeSourceEndSubsetting : ActivityEdgeSourceEndSubsetting_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::isEnd () : Boolean [1]
`true`
- Feature::ownedRelationship () : Relationship [0..*]
`Set{activityEdgeSourceEndSubsetting.to}`

C.2.5.3.3.11 ActivityEdgeInitialNodeSourceEndFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *InitialNode* mapping.

General Mappings

GenericToEndFeatureMembership_Mapping

Mapping Source

InitialNode

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::ownedMemberFeature () : Feature [1]`
`ActivityEdgeSourceInitialNode_Mapping.getMapped(from)`

C.2.5.3.3.12 ActivityEdgeSourceInitialNode_Mapping

Description

The SysMLv1::InitialNode is mapped to a subsetted feature of the SysML v2 Actions::start feature.

General Mappings

GenericToFeature_Mapping

Mapping Source

InitialNode

Mapping Target

Feature

Owned Mappings

- `activityEdgeSourceInitialNodeSubsetting : ActivityEdgeSourceInitialNodeSubsetting_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Feature::isEnd () : Boolean [1]`
`true`
- `Feature::ownedRelationship () : Relationship [0..*]`
`Set{activityEdgeSourceInitialNodeSubsetting.to}`

C.2.5.3.3.13 ActivityEdgeSourceEndFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *ActivityNode* mapping.

General Mappings

GenericToEndFeatureMembership_Mapping

Mapping Source

ActivityNode

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]
`ActivityEdgeSourceEndFeature_Mapping.getMapped(from)`

C.2.5.3.3.14 ActivityEdgeSourceInitialNodeSubsetting_Mapping

Description

Creates a subsetting relationship for the *subsettingFeature()* and the *subsettedFeature()* for the *InitialNode* mapping.

General Mappings

GenericToSubsetting_Mapping

Mapping Source

InitialNode

Mapping Target

Subsetting

Owned Mappings

- activityEdgeSourceInitialNode : ActivityEdgeSourceInitialNode_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Subsetting::subsettingFeature () : Feature [1]

```
activityEdgeSourceInitialNode.to
```

- Subsetting::subsettingFeature () : Feature [1]

```
SysML2::ActionUsage.allInstances()->any(m | m.qualifiedName = 'Actions::Action::start')
```

C.2.5.3.3.15 ActivityEdgeSourceEndSubsetting_Mapping

Description

Creates a subsetting relationship for the *subsettingFeature()* and the *subsettingFeature()* for the *ActivityNode* mapping.

General Mappings

GenericToSubsetting_Mapping

Mapping Source

ActivityNode

Mapping Target

Subsetting

Owned Mappings

- activityEdgeSourceEndFeature : ActivityEdgeSourceEndFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Subsetting::subsettingFeature () : Feature [1]

```
from
```

- Subsetting::subsettingFeature () : Feature [1]

```
activityEdgeSourceEndFeature.to
```

C.2.5.3.3.16 ActivityFinalNodeMembership_Mapping

Description

The mapping creates a membership relationship to the action usage library element Systems Library::Actions::Action::done.

General Mappings

GenericToMembership_Mapping

Mapping Source

FinalNode

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::memberElement () : Element [1]

```
SysMLv2::ActionUsage.allInstances()->any(e | e.qualifiedName = 'Actions::Action::done')
```

C.2.5.3.3.17 CommonActivity_Mapping

Description

Abstract mapping class for UML4SysML::Activity. A UML4SysML::Activity is mapped to a SysMLv2::ActionDefinition or SysMLv2::ActionUsage. See specialized mapping classes for the specific mapping rules.

General Mappings

Behavior_Mapping

Mapping Source

Activity

Mapping Target

Behavior

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Behavior::ownedRelationship () : Relationship [0..*]

```
let relationships : Set(KerML::Relationship) = Helper.activityOwnedRelationship(from) in
let parameters : Set(UML::Paramter) = from.ownedElement->select(e | e.ocIsKindOf(UML::Paramter))
relationships->union(parameters->collect(p | ParameterMembership_Mapping.getMapped(p)))
```

C.2.5.3.3.18 CommonActivityEdgeSuccessionAsUsage_Mapping

Description

*** not specified yet ***

General Mappings

GenericToConnector_Mapping

Mapping Source

ActivityEdge

Mapping Target

SuccessionAsUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- SuccessionAsUsage::ownedRelationship () : Relationship [0..*]

```
let relationships : Set(KerML::Relationship) = Set{
if from.source.ocIsKindOf(UML::InitialNode) then ActivityEdgeInitialNodeSourceEndFeatureMembership
if from.ocIsKindOf(UML::ObjectFlow) then ObjectFlowGuardSuccessionTargetEndFeatureMembership
if from.target.ocIsKindOf(UML::FinalNode) then ControlFlowFinalNodeTargetEndFeatureMembership
if src.guard.ocIsUndefined() then relationships else relationships->including(ElementFeatureMembership)
```

C.2.5.3.3.19 CommonVariable_Mapping

Description

*** not specified yet ***

General Mappings

PropertyCommon_Mapping

Mapping Source

Variable

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::isDerived () : Boolean [1]

false

- Feature::isEnd () : Boolean [1]

false

- Feature::ownedRelationship () : Relationship [0..*]

```
let typing: KerML::FeatureTyping = VariableFeatureTyping_Mapping.getMapped(from) in
if typing.oclIsUndefined() then
    Set{MultiplicityMembership_Mapping.getMapped(from)}
else
    Set{MultiplicityMembership_Mapping.getMapped(from), typing}
endif
```

- Feature::isComposite () : Boolean [1]

false

C.2.5.3.3.20 ControlFlowTransitionUsage_Mapping

Description

*** not specified yet ***

General Mappings

GenericToUsage_Mapping
NamedElementMain_Mapping

Mapping Source

ControlFlow

Mapping Target

TransitionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
not from.guard.ocIsUndefined()
```

Mapping rules

The following lists the mapping rules for the target element properties.

- TransitionUsage::ownedRelationship () : Relationship [0..*]

```
let relationships : Set(KerML::Relationship) =  
Set{ActivityEdgeTransitionUsageSourceMembership_Mapping.getMapped(from.source)}  
->including(CommonParameterReferenceUsageInMembership_Mapping.getMapped(from.source))  
->including(ControlFlowTransitionUsageFeatureMembership_Mapping.getMapped(from))  
->including(CommonActivityEdgeSuccessionAsUsage_Mapping.getMapped(from))  
->including(CommonReturnParameterReferenceUsageMembership_Mapping.getMapped(from)) in  
let relationshipsWithGuard : Set(KerML::Relationship) = if from.guard.ocIsTypeOf(UML::Opaque  
if from.weight.ocIsUndefined() then relationshipsWithGuard else relationshipsWithGuard->incl
```

- TransitionUsage::isComposite () : Boolean [1]

```
true
```

C.2.5.3.3.21 CentralBufferNode_Mapping

Description

*** not specified yet ***

General Mappings

GenericToActionUsage_Mapping

NamedElementMain_Mapping

Mapping Source

CentralBufferNode

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.3.3.22 ControlFlowFinalNodeTargetEndFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *ActivityNode* mapping.

General Mappings

GenericToEndFeatureMembership_Mapping

Mapping Source

ActivityNode

Mapping Target

FeatureMembership

Owned Mappings

- controlFlowTargetFinalNode : ControlFlowTargetFinalNode_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]

`controlFlowTargetFinalNode.to`

C.2.5.3.3.23 ControlFlowTargetFinalNodeSubsetting_Mapping

Description

Creates a subsetting relationship for the *subsettingFeature()* and the *subsettedFeature()* for the *ActivityNode* mapping.

General Mappings

GenericToSubsetting_Mapping

Mapping Source

ActivityNode

Mapping Target

Subsetting

Owned Mappings

- `controlFlowTargetFinalNode : ControlFlowTargetFinalNode_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Subsetting::subsettingFeature () : Feature [1]`
`controlFlowTargetFinalNode.to`
- `Subsetting::subsettingFeature () : Feature [1]`
`SysML2::ActionUsage.allInstances()->any(m | m.qualifiedName = 'Actions::Action::done')`

C.2.5.3.3.24 ControlFlowSuccessionAsUsage_Mapping

Description

*** not specified yet ***

General Mappings

`NamedElementMain_Mapping`
`CommonActivityEdgeSuccessionAsUsage_Mapping`

Mapping Source

`ControlFlow`

Mapping Target

`SuccessionAsUsage`

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

`from.guard.oclisUndefined()`

Mapping rules

The following lists the mapping rules for the target element properties.

- `SuccessionAsUsage::ownedRelationship () : Relationship [0..*]`

```

let relationships : Set(KerML::Relationship) = Set{
if from.source.ocIsKindOf(UML::InitialNode) then ActivityEdgeInitialNodeSourceEndFeatureMem
if from.ocIsKindOf(UML::ObjectFlow) then ObjectFlowGuardSuccessionTargetEndFeatureMembershi
if from.target.ocIsKindOf(UML::FinalNode) then ControlFlowFinalNodeTargetEndFeatureMembershi
let relationshipsWithGuard : Set(KerML::Relationship) = if src.guard.ocIsUndefined() then re
if from.weight.ocIsUndefined() then relationshipsWithGuard else relationshipsWithGuard->incl

```

C.2.5.3.3.25 ControlFlowTargetFinalNode_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

ActivityNode

Mapping Target

Feature

Owned Mappings

- controlFlowTargetFinalNodeSubsetting : ControlFlowTargetFinalNodeSubsetting_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]

```
Set{controlFlowTargetFinalNodeSubsetting.to}
```
- Feature::isEnd () : Boolean [1]

```
true
```

C.2.5.3.3.26 ControlFlowTargetEndFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

ActivityNode

Mapping Target

Feature

Owned Mappings

- controlFlowTargetEndSubsetting : ControlFlowTargetEndSubsetting_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]
`Set {controlFlowTargetEndSubsetting.to}`
- Feature::isEnd () : Boolean [1]
`true`

C.2.5.3.3.27 ControlFlowTargetEndFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *ActivityNode* mapping.

General Mappings

GenericToEndFeatureMembership_Mapping

Mapping Source

ActivityNode

Mapping Target

FeatureMembership

Owned Mappings

- controlFlowTargetEndFeature : ControlFlowTargetEndFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::ownedMemberFeature () : Feature [1]`

`controlFlowTargetEndFeature.to`

C.2.5.3.3.28 ControlFlowTargetEndSubsetting_Mapping

Description

Creates a subsetting relationship for the *subsettingFeature()* and the *subsettedFeature()* for the *ActivityNode* mapping.

General Mappings

GenericToSubsetting_Mapping

Mapping Source

ActivityNode

Mapping Target

Subsetting

Owned Mappings

- `controlFlowTargetEndFeature : ControlFlowTargetEndFeature_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Subsetting::subsettedFeature () : Feature [1]`

`from`

- `Subsetting::subsettingFeature () : Feature [1]`

`controlFlowTargetEndFeature.to`

C.2.5.3.3.29 ControlFlowTransitionUsageFeatureMembership_Mapping

C.2.5.3.3.30 ControlFlowTransitionUsageFeatureReferenceExpression_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeatureReferenceExpression_Mapping

Mapping Source

ControlFlow

Mapping Target

FeatureReferenceExpression

Owned Mappings

- controlFlowTransitionUsageFeatureReferenceExpressionMembership :
ControlFlowTransitionUsageFeatureReferenceExpressionMembership_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureReferenceExpression::ownedRelationship () : Relationship [0..*]
`Set{controlFlowTransitionUsageFeatureReferenceExpressionMembership.to, CommonReturnParameter`

C.2.5.3.3.31 ControlFlowTransitionUsageFeatureReferenceExpressionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *ControlFlow* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

ControlFlow

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::memberElement () : Element [1]

`from.guard`

C.2.5.3.3.32 ActivityEdgeTransitionUsageSourceMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *ActivityNode* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

ActivityNode

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::memberElement () : Element [1]

`if from.ocIsTypeOf(UML::ActivityParameterNode) then from.parameter else from endif`

C.2.5.3.3.33 DataStoreNode_Mapping

Description

*** not specified yet ***

General Mappings

CentralBufferNode_Mapping

Mapping Source

DataStoreNode

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.3.3.34 DecisionNode_Mapping

Description

There is no suitable element in SysML v2 for the else condition of an outgoing SysMLv1::ActivityEdge. Therefore, it is mapped to a TextualRepresentation with language "SysML v1" and body "else" (see ExpressionElse_Mapping class). The expected SysML v2 textual notation of a SysMLv1::DecisionNode is as follows

```
decide thisIsADecisionNode;
    succession flow1 first thisIsADecisionNode if {
        return : ScalarValues::Boolean;
        // guard expression, for example, opaque expression
    }.result then nextAction;
    succession flow2 first thisIsADecisionNode if {
        return : ScalarValues::Boolean;
        language "SysMLv1"
        /*
         * else
         */
    }.result then nextAction;
```

General Mappings

GenericToUsage_Mapping

NamedElementMain_Mapping

Mapping Source

DecisionNode

Mapping Target

DecisionNode

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- DecisionNode::isComposite () : Boolean [1]

true

C.2.5.3.3.35 ForkNode_Mapping

Description

*** not specified yet ***

General Mappings

GenericToUsage_Mapping
NamedElementMain_Mapping

Mapping Source

ForkNode

Mapping Target

ForkNode

Owned Mappings

(none)

C.2.5.3.3.36 InitialNodeMembership_Mapping

Description

The InitialNode_Mapping class creates a membership relationship to reference the action usage "start" from the system library. The mapping is called in the ownedRelationship() operation of the Activity_Mapping class.

General Mappings

GenericToMembership_Mapping

Mapping Source

InitialNode

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::memberName () : String [0..1]

```
if from.name = '' then null else from.name endif
```

- Membership::memberElement() : Element [1]

```
SysMLv2::ActionUsage.allInstances()->any(e | e.qualifiedName = 'Actions::Action::start')
```

C.2.5.3.3.37 JoinNode_Mapping

Description

*** not specified yet ***

General Mappings

GenericToUsage_Mapping
NamedElementMain_Mapping

Mapping Source

JoinNode

Mapping Target

JoinNode

Owned Mappings

(none)

C.2.5.3.3.38 MergeNode_Mapping

Description

*** not specified yet ***

General Mappings

GenericToUsage_Mapping
NamedElementMain_Mapping

Mapping Source

MergeNode

Mapping Target

MergeNode

Owned Mappings

(none)

C.2.5.3.3.39 ObjectFlow_Mapping

Description

A UML4SysmL::ObjectFlow is mapped to a SysMLv2::SuccessionFlowConnectionUsage. The expected SysML v2 textual syntax of a mapped object flow between two pins is as follows.

```
succession flow of1 of BlockA from action1.outputValue to action2.inputValue;

action action1 {
    out outputValue : BlockA;
}
action action2 {
    in inputValue : BlockA;
}
part def BlockA;
```

The mapping does not yet support the case where the source node of the object flow is not an object node.

General Mappings

GenericToConnector_Mapping

Mapping Source

ObjectFlow

Mapping Target

SuccessionFlowConnectionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- SuccessionFlowConnectionUsage::ownedRelationship () : Relationship [0..*]

```
let relationships : Set(KerML::Relationship) = if from.source.ocIsKindOf(UML::ObjectNode) then
Set{ObjectFlowItemFeatureMembership_Mapping.getMapped(from), ObjectFlowEndFeatureMembership_M
else Set{ObjectFlowEndFeatureMembership_Mapping.getMapped(from.source), ObjectFlowEndFeatureM
if from.weight.ocIsUndefined() then relationships else relationships->including(ActivityEdge
```

- SuccessionFlowConnectionUsage::name () : String [0..1]

```
from.name
```

C.2.5.3.3.40 ObjectFlowFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *ObjectFlow* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

ObjectFlow

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]

`ObjectFlow_Mapping.getMapped(from)`

C.2.5.3.3.41 ObjectFlowGuardFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *ObjectFlow* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

ObjectFlow

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]

```
ObjectFlowGuard_Mapping.getMapped(from)
```

C.2.5.3.3.42 ObjectFlowGuard_Mapping

Description

*** not specified yet ***

General Mappings

GenericToUsage_Mapping

Mapping Source

ObjectFlow

Mapping Target

TransitionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- TransitionUsage::ownedRelationship () : Relationship [0..*]

```
Set{ActivityEdgeTransitionUsageSourceMembership_Mapping.getMapped(from.source),  
CommonParameterReferenceUsageInMembership_Mapping.getMapped(from.source),  
ObjectFlowGuardSuccessionTargetEndFeatureMembership_Mapping.getMapped(from),  
CommonActivityEdgeSuccessionAsUsage_Mapping.getMapped(from),  
CommonReturnParameterReferenceUsageMembership_Mapping.getMapped(from)  
}
```

C.2.5.3.3.43 ObjectFlowGuardSuccessionTargetEndFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

ObjectFlow

Mapping Target

Feature

Owned Mappings

- objectFlowGuardSuccessionTargetEndSubsetting :
ObjectFlowGuardSuccessionTargetEndSubsetting_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::isEnd () : Boolean [1]

true
- Feature::ownedRelationship () : Relationship [0..*]

Set {objectFlowGuardSuccessionTargetEndSubsetting.to}

C.2.5.3.3.44 ObjectFlowGuardSuccessionTargetEndFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *ObjectFlow* mapping.

General Mappings

GenericToEndFeatureMembership_Mapping

Mapping Source

ObjectFlow

Mapping Target

FeatureMembership

Owned Mappings

- objectFlowGuardSuccessionTargetEndFeature : ObjectFlowGuardSuccessionTargetEndFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::ownedMemberFeature () : Feature [1]`
`objectFlowGuardSuccessionTargetEndFeature.to`

C.2.5.3.3.45 ObjectFlowGuardSuccessionTargetEndSubsetting_Mapping

Description

Creates a subsetting relationship for the *subsettingFeature()* and the *subsettedFeature()* for the *ObjectFlow* mapping.

General Mappings

GenericToSubsetting_Mapping

Mapping Source

ObjectFlow

Mapping Target

Subsetting

Owned Mappings

- `objectFlowGuardSuccessionTargetEndFeature : ObjectFlowGuardSuccessionTargetEndFeature_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Subsetting::subsettingFeature () : Feature [1]`
`objectFlowGuardSuccessionTargetEndFeature.to`
- `Subsetting::subsettedFeature () : Feature [1]`
`ObjectFlow_Mapping.getMapped(from)`

C.2.5.3.3.46 ObjectFlowItemFeature_Mapping

Description

*** not specified yet ***

General Mappings

ObjectFlowItemFeatureUntyped_Mapping

Mapping Source

ObjectNode

Mapping Target

ItemFeature

Owned Mappings

- objectFlowItemFeatureTyping : ObjectFlowItemFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ItemFeature::ownedRelationship () : Relationship [0..*]
`Set {objectFlowItemFeatureTyping.to}`

C.2.5.3.3.47 ObjectFlowItemFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *ObjectFlow* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

ObjectFlow

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::ownedMemberFeature () : Feature [1]`

```
if from.source.type.oclIsUndefined() then ObjectFlowItemFeatureUntyped_Mapping.getMapped(fro
```

C.2.5.3.3.48 ObjectFlowItemFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *ObjectNode* mapping.

General Mappings

TypedElementToFeatureTyping_Mapping

Mapping Source

ObjectNode

Mapping Target

FeatureTyping

Owned Mappings

- `objectFlowItemFeature : ObjectFlowItemFeature_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureTyping::typedFeature () : Feature [1]`

```
objectFlowItemFeature.to
```

C.2.5.3.3.49 ObjectFlowItemFeatureUntyped_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

ObjectNode

Mapping Target

ItemFeature

Owned Mappings

(none)

C.2.5.3.3.50 ObjectFlowEndFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *ActivityNode* mapping.

General Mappings

GenericToEndFeatureMembership_Mapping

Mapping Source

ActivityNode

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]
`ObjectFlowItemFlowEnd_Mapping.getMapped (from)`

C.2.5.3.3.51 ObjectFlowItemFlowEnd_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

ActivityNode

Mapping Target

ItemFlowEnd

Owned Mappings

- objectFlowItemFlowSubsetting : ObjectFlowItemFlowSubsetting_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ItemFlowEnd::ownedRelationship () : Relationship [0..*]

Set{objectFlowItemFlowSubsetting.to, ObjectFlowItemFlowFeatureMembership_Mapping.getMapped(f

C.2.5.3.3.52 ObjectFlowItemFlowFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

ActivityNode

Mapping Target

ItemFlowFeature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ItemFlowFeature::ownedRelationship () : Relationship [0..*]

Set{ObjectFlowItemFlowRedefinition_Mapping.getMapped(from) }

C.2.5.3.3.53 ObjectFlowItemFlowFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *ActivityNode* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

ActivityNode

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]
`ObjectFlowItemFlowFeature_Mapping.getMapped (from)`

C.2.5.3.3.54 ObjectFlowItemFlowRedefinition_Mapping

Description

Creates a redefinition relationship for the *redefiningFeature()* and the *redefinedFeature()* for the *ActivityNode* mapping.

General Mappings

GenericToRedefinition_Mapping

Mapping Source

ActivityNode

Mapping Target

Redefinition

Owned Mappings

(none)

C.2.5.3.3.55 ObjectFlowItemFlowSubsetting_Mapping

Description

Creates a subsetting relationship for the *subsettingFeature()* and the *subsettedFeature()* for the *ActivityNode* mapping.

General Mappings

GenericToSubsetting_Mapping

Mapping Source

ActivityNode

Mapping Target

Subsetting

Owned Mappings

- objectFlowItemFlowEnd : ObjectFlowItemFlowEnd_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Subsetting::subsettingFeature () : Feature [1]

```
objectFlowSourceItemFlowEnd.to
```

- Subsetting::subsettedFeature () : Feature [1]

```
if from.ocIsKindOf(UML::ActivityParameterNode) then Parameter_Mapping.getMapped(from.parameter)
else if from.ocIsKindOf(UML::Pin) then CommonAction_Mapping.getMapped(from.owner)
else if from.ocIsKindOf(UML::InitialNode) then SysMLv2::ActionUsage.allInstances()->any(e | e.isKindOf(UML::InitialNode))
else if from.ocIsKindOf(UML::FinalNode) then SysMLv2::ActionUsage.allInstances()->any(e | e.isKindOf(UML::FinalNode))
else from endif endif endif endif
```

C.2.5.3.3.56 VariableAttribute_Mapping

Description

*** not specified yet ***

General Mappings

NamedElementMain_Mapping

CommonVariable_Mapping

Mapping Source

Variable

Mapping Target

AttributeUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from, type.oclIsKindOf(UML::DataType)
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.5.3.3.57 VariableFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Variable* mapping.

General Mappings

TypedElementToFeatureTyping_Mapping

Mapping Source

Variable

Mapping Target

FeatureTyping

Owned Mappings

(none)

C.2.5.3.3.58 VariableItem_Mapping

Description

*** not specified yet ***

General Mappings

NamedElementMain_Mapping

CommonVariable_Mapping

Mapping Source

Variable

Mapping Target

ItemUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
not from.type.ocIsKindOf(UML::DataType)
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.5.3.3.59 VariableMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Variable* mapping.

General Mappings

ElementFeatureMembership_Mapping

Mapping Source

Variable

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::visibility () : VisibilityKind [1]

```
KerML::VisibilityKind::private
```

C.2.5.4 Classification

C.2.5.4.1 Overview

Table 19. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
BehavioralFeature	Usage	BehavioralFeature_Mapping	
Classifier	ObjectiveMembership FeatureTyping SubjectMembership PartUsage RequirementUsage ReferenceUsage Classifier StakeholderMembership	CaseObjectiveMembership_Mapping CaseSubjectFeatureTyping_Mapping CaseSubjectMembership_Mapping StakeholderPartUsage_Mapping CaseObjectiveRequirementUsage_Mapping CaseEmptySubjectReferenceUsage_Mapping Classifier_Mapping StakeholderMembership_Mapping	
Feature	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
Generalization	Subclassification	Generalization_Mapping	
GeneralizationSet	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
InstanceSpecification	PartUsage Membership FeatureTyping ConnectionUsage	InstanceSpecification_Mapping InstanceValueInstanceSpecification_Mapping InstanceSpecificationFeatureTyping_Mapping InstanceSpecificationLink_Mapping	InstanceSpecification.classifier->select(c c.oclIsTypeOf(UML::Association))->size() = 0 InstanceSpecification.classifier->select(c c.oclIsTypeOf(UML::Association))->size() > 0
InstanceValue	FeatureReferenceExpression	InstanceValue_Mapping	
Operation	PerformActionUsage	Operation_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
Parameter	FeatureValue FeatureTyping FeatureReferenceExpression ParameterMembership Membership ReferenceUsage ReferenceUsage	ParameterSetParameterReferenceUsageFeatureValue_Mapping ParameterToFeatureTyping_Mapping ParameterSetParameterReferenceUsageFeatureValueExpression_Mapping ParameterMembership_Mapping ParameterSetParameterReferenceUsageFeatureValueExpressionMembership_Mapping Parameter_Mapping ParameterSetParameterReferenceUsage_Mapping	not src.type.oclIsUndefined() and Mapping not src.type.oclIsKindOf(UML::Enumeration) and Helper.getSysMLv2EnumerationDefinition(src)
ParameterSet	ReferenceUsage FeatureMembership FeatureMembership	ParameterSet_Mapping ParameterSetMembership_Mapping ParameterSetParameterFeatureMembership_Mapping	
Property	FeatureTyping FeatureMembership FeatureChaining Subsetting FeatureChaining OwningMembership EndFeatureMembership Subsetting ActorMembership Redefinition PartUsage Feature	UseCaseActorFeatureTypings_Mapping NonOwnedEndToSubsettingMembership_Mapping EndToSubsettingFeatureChaining_Mapping NonOwnedEndSubsetting_Mapping PropertyToFeatureChaining_Mapping NonOwnedEndSubsettingMembership_Mapping EndMembership_Mapping PropertySubsetting_Mapping UseCaseActorMembership_Mapping AttributeRedefinedRedefinition_Mapping UseCaseActor_Mapping PropertyCommon_Mapping	not src.type.oclIsKindOf(UML::Property) and Mapping src.type.oclIsKindOf(UML::Property).association.oc
RedefinableElement	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
Slot	FeatureMembership Feature FeatureTyping	SlotMembership_Mapping Slot_Mapping SlotToFeatureTyping_Mapping	
StructuralFeature	FeatureTyping FeatureMembership Feature	StructuralFeatureToFeatureTyping_Mapping StructuralFeatureMembership_Mapping StructuralFeature_Mapping	not src.type.oclIsUndefined() and Mapping not src.type.oclIsKindOf(UML::Enumeration) and Helper.getSysMLv2EnumerationDefinition(src)
Substitution	Dependency	Realization_Mapping	

C.2.5.4.2 Mapping Specifications

C.2.5.4.2.1 BehavioralFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToUsage_Mapping
Namespace_Mapping

Mapping Source

BehavioralFeature

Mapping Target

Usage

Owned Mappings

(none)

C.2.5.4.2.2 Classifier_Mapping

Description

*** not specified yet ***

General Mappings

GenericToClassifier_Mapping
Namespace_Mapping

Mapping Source

Classifier

Mapping Target

Classifier

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Classifier::isAbstract () : Boolean [1]

```
from.isAbstract
```

- Classifier::ownedRelationship () : Relationship [0..*]

```
let generalizations : Set(UML::Generalization) = from.ownedElement->select(e | e.ocIsKindOf(UML::Generalization))
let toElementFMS: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::FeatureMembership))
let toElementOMS: Set(UML::Element) = (from.ownedElement - toElementFMS) - generalizations
toElementOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(toElementFMS->collect(e | ElementFeatureMembership_Mapping.getMapped(e)))
->union(generalizations->collect(e | Generalization_Mapping.getMapped(e)))
```

C.2.5.4.2.3 DefaultLowerBound_Mapping

Description

*** not specified yet ***

General Mappings

GenericToExpression_Mapping

Mapping Source

Element

Mapping Target

LiteralInteger

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- LiteralInteger::ownedRelationship () : Relationship [0..*]

```
let ownerships: Set(SYSML2::Relationship) = ElementOwnership_Mapping.getMappedColl(from.ownedRelationship)
->including(CommonReturnParameterFeatureMembership_Mapping.getMapped(from)) in
ownerships
```

- LiteralInteger::value () : Integer [1]

```
1
```

C.2.5.4.2.4 DefaultMultiplicityBoundOwnership_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Element

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::isComposite () : Boolean [1]

true

C.2.5.4.2.5 DefaultMultiplicityElement_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

Element

Mapping Target

MultiplicityRange

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- MultiplicityRange::isUnique () : Boolean [1]
`true`
- MultiplicityRange::ownedRelationship () : Relationship [0..*]
`OrderedSet{DefaultMultiplicityLowerBoundOwnership_Mapping.getMapped(from), DefaultMultiplicityLowerBoundOwnership_Mapping.getMapped(to)}`
- MultiplicityRange::name () : String [0..1]
`'defaultMultiplicity'`

C.2.5.4.2.6 DefaultMultiplicityLowerBoundOwnership_Mapping

Description

*** not specified yet ***

General Mappings

DefaultMultiplicityBoundOwnership_Mapping

Mapping Source

Element

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : MultiplicityRange [1]
`DefaultLowerBound_Mapping.getMapped(from)`

C.2.5.4.2.7 DefaultMultiplicityMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Element* mapping.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

Element

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [1]
`DefaultMultiplicityElement_Mapping.getMapped(from)`

C.2.5.4.2.8 DefaultMultiplicityUpperBoundOwnership_Mapping

Description

*** not specified yet ***

General Mappings

DefaultMultiplicityBoundOwnership_Mapping

Mapping Source

Element

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::ownedMemberFeature () : MultiplicityRange [1]`
`DefaultUpperBound_Mapping.getMapped(from)`

C.2.5.4.2.9 DefaultUpperBound_Mapping

Description

*** not specified yet ***

General Mappings

GenericToExpression_Mapping

Mapping Source

Element

Mapping Target

LiteralInteger

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `LiteralInteger::ownedRelationship () : Relationship [0..*]`

```
let ownerships: Set(SYSML2::Relationship) = ElementOwnership_Mapping.getMappedColl(from.ownedRelationships)
->including(CommonReturnParameterFeatureMembership_Mapping.getMapped(from)) in
ownerships
```
- `LiteralInteger::value () : Integer [1]`
`1`

C.2.5.4.2.10 ElementFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *NamedElement* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

NamedElement

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::visibility () : VisibilityKind [1]
`Helper.getKerMLVisibilityKind(from.oclAsType(UML::NamedElement).visibility)`
- FeatureMembership::ownedMemberFeature () : Feature [1]
`NamedElementMain_Mapping.getMapped(from)`

C.2.5.4.2.11 Generalization_Mapping

Description

*** not specified yet ***

General Mappings

GenericToSpecialization_Mapping
ElementMain_Mapping

Mapping Source

Generalization

Mapping Target

Subclassification

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Subclassification::subclassifier () : Classifier [1]

```
Classifier_Mapping.getMapped(from.specific)
```

- Subclassification::superclassifier () : Classifier [1]

```
if from.general.oclIsTypeOf(UML::PrimitiveType) and not (Helper.getScalarValueType(from.general)
    Helper.getScalarValueType(from.general)
else
    Classifier_Mapping.getMapped(from.general)
endif
```

C.2.5.4.2.12 InstanceSpecificationLink_Mapping

Description

*** not specified yet ***

General Mappings

NamedElementMain_Mapping

GenericToConnectionUsage_Mapping

Mapping Source

InstanceSpecification

Mapping Target

ConnectionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.classifier->select( c | c.oclIsTypeOf(UML::Association))->size() > 0
```

Mapping rules

The following lists the mapping rules for the target element properties.

- `ConnectionUsage::ownedRelationship () : Relationship [0..*]`

```
SlotMembership_Mapping.getMappedColl(from.slot)
->union(from.classifier->collect(g | InstanceSpecificationFeatureTyping_Mapping.getMapped(fro
```

C.2.5.4.2.13 InstanceSpecification_Mapping

Description

*** not specified yet ***

General Mappings

NamedElementMain_Mapping

GenericToPartUsage_Mapping

Mapping Source

InstanceSpecification

Mapping Target

PartUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.classifier->select( c | c.oclIsTypeOf(UML::Association))->size() = 0
```

Mapping rules

The following lists the mapping rules for the target element properties.

- `PartUsage::ownedFeatureMembership () : FeatureMembership [0..*]`

```
from.classifier->collect(c | InstanceSpecificationToGeneralization_Mapping.getMapped(from, c
```

- `PartUsage::ownedRelationship () : Relationship [0..*]`

```
SlotMembership_Mapping.getMappedColl(from.slot)
->union(from.classifier->collect(g | InstanceSpecificationFeatureTyping_Mapping.getMapped(fro
```

C.2.5.4.2.14 InstanceSpecificationFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *InstanceSpecification* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

InstanceSpecification

Mapping Target

FeatureTyping with qualifier: classifier:Classifier

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Type [1]
`InstanceSpecification_Mapping.getMapped(from)`
- FeatureTyping::type (in classifier : Classifier) : Type [1]
`Classifier_Mapping.getMapped(classifier)`

C.2.5.4.2.15 InstanceValue_Mapping

Description

*** not specified yet ***

General Mappings

ValueSpecification_Mapping

Mapping Source

InstanceValue

Mapping Target

FeatureReferenceExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureReferenceExpression::ownedRelationship () : Relationship [0..*]`

```
ElementOwnership_Mapping.getMappedColl(from.ownedElement)
->including(InstanceValueInstanceSpecification_Mapping.getMapped(from.instance))
->including(EmptyReturnParameterFeatureMembership_Mapping.getMapped(from))
```

C.2.5.4.2.16 InstanceValueInstanceSpecification_Mapping

Description

*** not specified yet ***

General Mappings

GenericToMembership_Mapping

Mapping Source

InstanceSpecification

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Membership::memberElement () : Element [1]`

from

C.2.5.4.2.17 LowerBoundValueOwnership_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

MultiplicityElement

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::ownedMemberFeature () : Feature [0..1]`
`LiteralInteger_Mapping.getMapped(from.lowerValue)`

C.2.5.4.2.18 MultiplicityElement_Mapping**Description**

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

MultiplicityElement

Mapping Target

MultiplicityRange

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- MultiplicityRange::ownedRelationship () : Relationship [0..*]
`OrderedSet{MultiplicityLowerBoundOwnership_Mapping.getMapped(from), MultiplicityUpperBoundOwnership_Mapping.getMapped(from)}`
- MultiplicityRange::isUnique () : Boolean [1]
`from.isUnique`
- MultiplicityRange::name () : String [0..1]
`'multiplicity'`

C.2.5.4.2.19 MultiplicityLowerBoundOwnership_Mapping

Description

*** not specified yet ***

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

MultiplicityElement

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::memberName () : String [0..1]
`'lowerBound'`
- OwningMembership::ownedMemberElement () : Element [1]
`if from.lowerValue.oclIsUndefined() then DefaultLowerBound_Mapping.getMapped(from) else Element`

C.2.5.4.2.20 MultiplicityMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *MultiplicityElement* mapping.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

MultiplicityElement

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [1]
`MultiplicityElement_Mapping.getMapped(from)`

C.2.5.4.2.21 MultiplicityUpperBoundOwnership_Mapping

Description

*** not specified yet ***

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

MultiplicityElement

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `OwningMembership::ownedMemberElement () : Element [1]`

```
if from.upperValue.oclIsUndefined() then
  DefaultUpperBound_Mapping.getMapped(from)
else
  ElementMain_Mapping.getMapped(from.upperValue)
endif
```
- `OwningMembership::memberName () : String [0..1]`

```
'upperBound'
```

C.2.5.4.2.22 Operation_Mapping

Description

The expected SysML v2 textual syntax of a mapped `UML4SysML::Operation` is as follows.

```
part def ThisIsABlock {
  perform action thisIsAnOperation {
    in parIn : ScalarValues::Boolean;
    inout parInOut [0..*] : ScalarValues::String;
    out parOut;
    out result : ScalarValues::Integer;
  }
}
```

General Mappings

BehavioralFeature_Mapping
GenericToActionUsage_Mapping

Mapping Source

Operation

Mapping Target

PerformActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `PerformActionUsage::ownedRelationship () : Relationship [0..*]`

```
let parameters: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::Parameter))
let parameterSets: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::ParameterSet))
let elementsOMS: Set(UML::Element) = ((src.ownedElement - parameters) - parameterSets) in
elementsOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(parameters->collect(e | ParameterMembership_Mapping.getMapped(e)))
->union(parameterSets->collect(e | ParameterSetMembership_Mapping.getMapped(e)))
```

C.2.5.4.2.23 Parameter_Mapping

Description

*** not specified yet ***

General Mappings

GenericToReferenceUsage_Mapping
NamedElementMain_Mapping

Mapping Source

Parameter

Mapping Target

ReferenceUsage

Owned Mappings

- `parameterToFeatureTyping : ParameterToFeatureTyping_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::name () : String [0..1]`

```
if from.direction = UML::ParameterDirectionKind::return then 'result' else from.name endif
```

- `ReferenceUsage::direction () : FeatureDirectionKind [0..1]`

```
Helper.getKerMLParameterDirectionKind(from.direction)
```

- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`

```

let typing: KerML::FeatureTyping = parameterToFeatureTyping.to in
let multiplicities : Set(KerML::Relationship) = if typing.ocIsUndefined() then
    Set{MultiplicityMembership_Mapping.getMapped(from)}
else
    Set{MultiplicityMembership_Mapping.getMapped(from), typing}
endif in

let relationships: Set(KerML::Relationship) = if from.defaultValue.ocIsTypeOf(UML::OpaqueExp

if from.defaultValue.ocIsUndefined() then
    relationships
else
    relationships->including(if from.defaultValue.ocIsTypeOf(UML::OpaqueExpression) then Def
endif

```

C.2.5.4.2.24 ParameterMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Parameter* mapping.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

Parameter

Mapping Target

ParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ParameterMembership::ownedMemberParameter () : Feature [1]

```
Parameter_Mapping.getMapped(from)
```

C.2.5.4.2.25 ParameterSet_Mapping

Description

*** not specified yet ***

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

ParameterSet

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::name () : String [0..1]

`from.name`

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

`from.parameter->collect (p | ParameterSetParameterFeatureMembership_Mapping.getMapped (from, p`

C.2.5.4.2.26 ParameterSetMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *ParameterSet* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

ParameterSet

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::ownedMemberFeature () : Feature [1]`
`ParameterSet_Mapping.getMapped(from)`

C.2.5.4.2.27 ParameterSetParameterFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *ParameterSet* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

ParameterSet

Mapping Target

FeatureMembership with qualifier: parameter:Parameter

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::ownedMemberFeature (in parameter : Parameter) : Feature [1]`
`ParameterSetParameterReferenceUsage_Mapping.getMapped(parameter)`

C.2.5.4.2.28 ParameterSetParameterReferenceUsage_Mapping

Description

Creates a reference usage for the *Parameter* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Parameter

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

```
Set{ParameterSetParameterReferenceUsageFeatureValue_Mapping.getMapped(from), MultiplicityMen
```

C.2.5.4.2.29 ParameterSetParameterReferenceUsageFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *Parameter* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

Parameter

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::value () : Expression [1]

```
ParameterSetParameterReferenceUsageFeatureValueExpression_Mapping.getMapped(from)
```

C.2.5.4.2.30 ParameterSetParameterReferenceUsageFeatureValueExpression_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeatureReferenceExpression_Mapping

Mapping Source

Parameter

Mapping Target

FeatureReferenceExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureReferenceExpression::ownedRelationship () : Relationship [0..*]

```
Set { ParameterSetParameterReferenceUsageFeatureValueExpressionMembership_Mapping.getMapped(fr
```

C.2.5.4.2.31 ParameterSetParameterReferenceUsageFeatureValueExpressionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Parameter* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

Parameter

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::memberElement () : Element [1]

from

C.2.5.4.2.32 ParameterToFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Parameter* mapping.

General Mappings

TypedElementToFeatureTyping_Mapping

Mapping Source

Parameter

Mapping Target

FeatureTyping

Owned Mappings

- parameter : Parameter_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]

parameter.to

C.2.5.4.2.33 Property_Mapping

Description

*** not specified yet ***

General Mappings

PropertyCommon_Mapping
NamedElementMain_Mapping

Mapping Source

Property

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
if from.type.ocIsUndefined() then false
else
let p: UML::Property = src.ocAsType(UML::Property) in
not p.ocIsUndefined() and
not p.type.ocIsKindOf(UML::DataType) and
not (p.name.indexOf('base_') > 0) and
(p.association.ocIsUndefined() or p.association.ownedEnd->excludes(p))
endif
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.5.4.2.34 PropertyCommon_Mapping

Description

*** not specified yet ***

General Mappings

StructuralFeature_Mapping

Mapping Source

Property

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Feature::isComposite () : Boolean [1]`

```
from.isComposite
```

- `Feature::ownedRelationship () : Relationship [0..*]`

```
let typing: KerML::FeatureTyping = StructuralFeatureToFeatureTyping_Mapping.getMapped(from)
let subsetting: Set(KerML::Subsetting) = from.subsettedProperty->collect(p | PropertySubsetting)
let subsettingMultiplicityTyping: Set(KerML::Relationship) = subsetting->union(if typing.oclc
    Set{MultiplicityMembership_Mapping.getMapped(from)}
else
    Set{MultiplicityMembership_Mapping.getMapped(from), typing}
endif)->asSet() in

let relationships: Set(KerML::Relationship) = if from.defaultValue.oclcIsTypeOf(UML::OpaqueExp
if from.defaultValue.oclcIsUndefined() then
    relationships
else
    relationships->including(if from.defaultValue.oclcIsTypeOf(UML::OpaqueExpression) then Def
endif
```

- `Feature::isEnd () : Boolean [1]`

```
if from.association.oclcIsUndefined() then
    false
else
    from.association.ownedEnd->includes(from)
endif
```

- `Feature::isDerived () : Boolean [1]`

```
from.isDerived
```

C.2.5.4.2.35 DefaultValue_Mapping

Description

The expected SysML v2 textual syntax of a mapped SysML v2 default value is as follows:

```
attribute value : ScalarValues::String default := "thisIsTheDefaultValue";
```

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

ValueSpecification

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::isDefault () : Boolean [1]

```
if from.oclIsUndefined() then false else true endif
```
- FeatureValue::value () : Expression [1]

```
ValueSpecification_Mapping.getMapped(from)
```

C.2.5.4.2.36 DefaultValueOpaqueExpression_Mapping

Description

*** not specified yet ***

General Mappings

DefaultValue_Mapping

Mapping Source

OpaqueExpression

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureValue::value () : Expression [1]`

```
ValueSpecification_Mapping.getMapped(OpaqueExpressionAsValue_Mapping.getMapped(from))
```

C.2.5.4.2.37 PropertySubsetting_Mapping

Description

Creates a subsetting relationship for the *subsettingFeature()* and the *subsettingFeature()* for the *Property* mapping.

General Mappings

GenericToSubsetting_Mapping

Mapping Source

Property

Mapping Target

Subsetting with qualifier: `subsettingProperty:Property`

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Subsetting::subsettingFeature () : Feature [1]`

```
Property_Mapping.getMapped(from)
```

- `Subsetting::subsettingFeature (in subsettingProperty : Property) : Feature [1]`

```
Property_Mapping.getMapped(subsettingProperty)
```

C.2.5.4.2.38 PropertyUntyped_Mapping

Description

*** not specified yet ***

General Mappings

PropertyCommon_Mapping

GenericToReferenceUsage_Mapping

NamedElementMain_Mapping

Mapping Source

Property

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.type.ocIsUndefined() and not from.ocIsKindOf(UML::Port)
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.5.4.2.39 Realization_Mapping**Description**

*** issue *** This mapping is not appropriate since the Realization can have more than one client and more than one supplier and that the semantics defined in UML is much more informal than those of a generalization

General Mappings

Abstraction_Mapping

Mapping Source

Realization

Mapping Target

Dependency

Owned Mappings

(none)

C.2.5.4.2.40 Slot_Mapping**Description**

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

ElementMain_Mapping

Mapping Source

Slot

Mapping Target

Feature

Owned Mappings

(none)

C.2.5.4.2.41 SlotMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Slot* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Slot

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::isReadOnly () : Boolean [1]
`from.isReadOnly`
- FeatureMembership::ownedMemberFeature () : Feature [1]
`from`
- FeatureMembership::memberName () : String [0..1]
`from.definingFeature.name`

C.2.5.4.2.42 SlotToFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Slot* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Slot

Mapping Target

FeatureTyping

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::type () : Type [1]
`ElementMain_Mapping.getMapped(from)`
- FeatureTyping::typedFeature () : Feature [1]
`Slot_Mapping.getMapped(from)`

C.2.5.4.2.43 SlotValue_Mapping

Description

Issue here since a KerML feature cannot have more than one FeatureValue while a UML::Slot can. How to manage collection of values?

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

ValueSpecification

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
src.owner.oclIsKindOf(UML::Slot)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::value () : Expression [1]
`ValueSpecification_Mapping.getMapped(from)`
- FeatureValue::featureWithValue () : Feature [1]
`Slot_Mapping.getMapped(from.owner)`

C.2.5.4.2.44 StructuralFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

StructuralFeature

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::isOrdered () : Boolean [1]
`from.isOrdered`

- Feature::isAbstract () : Boolean [1]

false

- Feature::isUnique () : Boolean [1]

from.isUnique

- Feature::ownedRelationship () : Relationship [0..*]

```
let typing: KerML::FeatureTyping = StructuralFeatureToFeatureTyping_Mapping.getMapped(from)
if typing.ocllsUndefined() then
    Set{MultiplicityMembership_Mapping.getMapped(from)}
else
    Set{MultiplicityMembership_Mapping.getMapped(from), typing}
endif
```

- Feature::isReadOnly () : Boolean [1]

abstract rule

C.2.5.4.2.45 StructuralFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *StructuralFeature* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

StructuralFeature

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [0..1]

NamedElementMain_Mapping.getMapped(from)

- FeatureMembership::visibility () : VisibilityKind [1]

```

    if (from.oclIsKindOf(UML::NamedElement)) then
        Helper.getKerMLVisibilityKind(from.oclAsType(UML::NamedElement).visibility)
    else
        KerML::VisibilityKind::public
    endif

```

C.2.5.4.2.46 StructuralFeatureToFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *StructuralFeature* mapping.

General Mappings

TypedElementToFeatureTyping_Mapping

Mapping Source

StructuralFeature

Mapping Target

FeatureTyping

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]

```

    ElementMain_Mapping.getMapped(from)

```

C.2.5.4.2.47 TypedElementToFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *TypedElement* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

TypedElement

Mapping Target

FeatureTyping

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
not src.type.ocIsUndefined()
  and not (src.type.ocIsKindOf(UML::Enumeration) and Helper.getSysMLv2EnumerationDefinition(src.type))
```

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]
abstract rule
- FeatureTyping::type () : Type [1]

```
if from.type.ocIsKindOf(UML::PrimitiveType) then
  Helper.getScalarValueType(from.type)
else if from.type.ocIsKindOf(UML::Enumeration) then
  Helper.getEnumerationType(from.type)
else
  Classifier_Mapping.getMapped(from.type)
endif endif
```

C.2.5.4.2.48 UpperBoundValueOwnership_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

MultiplicityElement

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [0..1]

```

if from.upper <> -1 then
    LiteralUnlimitedToInteger_Mapping.getMapped(from.upperValue)
else
    LiteralUnlimitedToUnbounded_Mapping.getMapped(from.upperValue)
endif

```

C.2.5.5 CommonBehavior

C.2.5.5.1 Overview

Table 20. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
AnyReceiveEvent	Element	AnyReceiveEvent_Mapping	
Behavior	Behavior	Behavior_Mapping	true
CallEvent	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
ChangeEvent	TextualRepresentation	ChangeEvent_Mapping	
Event	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
FunctionBehavior	TextualRepresentation OwningMembership Behavior	OpaqueBehaviorSpecification_Mapping OpaqueBehaviorMembership_Mapping CommonOpaqueBehavior_Mapping	
MessageEvent	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
OpaqueBehavior	TextualRepresentation OwningMembership Behavior	OpaqueBehaviorSpecification_Mapping OpaqueBehaviorMembership_Mapping CommonOpaqueBehavior_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
SignalEvent	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
TimeEvent	TextualRepresentation	TimeEvent_Mapping	
Trigger	AcceptActionUsage	Trigger_Mapping	

C.2.5.5.2 Mapping Specifications

C.2.5.5.2.1 AnyReceiveEvent_Mapping

Description

*** not specified yet ***

General Mappings

NamedElementMain_Mapping

Mapping Source

AnyReceiveEvent

Mapping Target

Element

Owned Mappings

(none)

C.2.5.5.2.2 Behavior_Mapping

Description

*** not specified yet ***

General Mappings

GenericToBehavior_Mapping
Class_Mapping

Mapping Source

Behavior

Mapping Target

Behavior

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
true
```

Mapping rules

The following lists the mapping rules for the target element properties.

- Behavior::ownedRelationship () : Relationship [0..*]

```
let parameters: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Parameter))
let parameterSets: Set(UML::Element) = src.ownedElement->select(e | e.ocIsKindOf(UML::ParameterSet))
let features: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Property))
let elementsOMS: Set(UML::Element) = (((from.ownedElement - parameters) parameterSets) - features)
elementsOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(features->collect(e | PropertyMembership_Mapping.getMapped(e)))
->union(parameters->collect(e | ParameterMembership_Mapping.getMapped(e)))
->union(parameterSets->collect(e | ParameterSetMembership_Mapping.getMapped(e)))
```

C.2.5.5.2.3 ChangeEvent_Mapping

Description

*** not specified yet ***

General Mappings

GenericToTextualRepresentation_Mapping

NamedElementMain_Mapping

Mapping Source

ChangeEvent

Mapping Target

TextualRepresentation

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `TextualRepresentation::body () : String [1]`

```
if from.changeExpression.ocIsKindOf(UML::OpaqueExpression)
then if from.changeExpression.ocAsType(UML::OpaqueExpression).body.ocIsUndefined() then OclUndefined
else OclUndefined
endif
```

- `TextualRepresentation::language () : String [1]`

```
if from.changeExpression.ocIsKindOf(UML::OpaqueExpression)
then if from.changeExpression.ocAsType(UML::OpaqueExpression).language->size() = 0 then OclUndefined
else OclUndefined
endif
```

C.2.5.5.2.4 CommonOpaqueBehavior_Mapping

Description

*** not specified yet ***

General Mappings

Behavior_Mapping

Mapping Source

OpaqueBehavior

Mapping Target

Behavior

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Behavior::ownedRelationship () : Relationship [0..*]`

```
let parameters : Set(UML::Parameter) = from.ownedElement->select(e | e.ocIsKindOf(UML::Parameter))
let parameterSets : Set(UML::ParameterSet) = from.ownedElement->select(e | e.ocIsKindOf(UML::ParameterSet))
let features : Set(UML::Property) = from.ownedElement->select(e | e.ocIsKindOf(UML::Property))
let elementsOMS : Set(UML::Element) = (((from.ownedElement - parameters) - parameterSets) - features)
elementsOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
```

```

->union(features->collect(e | PropertyMembership_Mapping.getMapped(e)))
->union(parameters->collect(e | ParameterMembership_Mapping.getMapped(e)))
->union(parameterSets->collect(e | ParameterSetMembership_Mapping.getMapped(e)))
->union(from.language->collect(l | OpaqueBehaviorMembership_Mapping.getMapped(from, l)))

```

C.2.5.5.2.5 OpaqueBehaviorAsDefinition_Mapping

Description

*** not specified yet ***

General Mappings

GenericToDefinition_Mapping
CommonOpaqueBehavior_Mapping

Mapping Source

OpaqueBehavior

Mapping Target

ActionDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
src.owner.ocIsKindOf(UML::Package)
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.5.5.2.6 OpaqueBehaviorAsUsage_Mapping

Description

*** not specified yet ***

General Mappings

CommonOpaqueBehavior_Mapping
GenericToActionUsage_Mapping

Mapping Source

OpaqueBehavior

Mapping Target

ActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
not src.owner.oclIsKindOf(UML::Package)
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.5.5.2.7 OpaqueBehaviorMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *OpaqueBehavior* mapping.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

OpaqueBehavior

Mapping Target

OwningMembership with qualifier: language:String

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement (in language : String) : Element [1]

```
OpaqueBehaviorSpecification_Mapping.getMapped(from, language)
```

C.2.5.5.2.8 OpaqueBehaviorSpecification_Mapping

Description

*** not specified yet ***

General Mappings

GenericToTextualRepresentation_Mapping

Mapping Source

OpaqueBehavior

Mapping Target

TextualRepresentation with qualifier: language:String

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- TextualRepresentation::body () : String [1]

```
let index:Integer = from.language->indexOf(language) in  
from._'body'->at(index)
```
- TextualRepresentation::language () : String [1]

```
language
```

C.2.5.5.2.9 TimeEvent_Mapping

Description

tbd - just a placeholder yet

General Mappings

NamedElementMain_Mapping
GenericToTextualRepresentation_Mapping

Mapping Source

TimeEvent

Mapping Target

TextualRepresentation

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- TextualRepresentation::body () : String [1]
' tbd timeevent '

C.2.5.5.2.10 Trigger_Mapping

C.2.5.6 CommonStructure

C.2.5.6.1 Overview

Table 22. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
Abstraction	ReturnParameterMembership		
	ReferenceUsage		
	Feature		
	ReferenceUsage		
	FeatureReferenceExpression		
	FeatureValue		
	RequirementUsage	TestCaseVerifyObjectiveRequirementUsage_Mapping	let satisfy:
	SubjectMembership	TestCaseVerifyRequirementUsageReferenceSubsetting_Mapping	UML::Abstraction =
	FeatureTyping	Abstraction_Mapping	src.oclaAsType(UML::Abstraction)
	Membership	TestCaseVerifyRequirementUsage_Mapping	in if
	FeatureMembership	TestCaseVerifyObjectiveMembership_Mapping	satisfy.ocIsUndefined()
	ReferenceSubsetting	Verify_Mapping	then false else
	Dependency	Satisfy_Mapping	Helper.hasStereotypeApplied(satisfy,
	RequirementUsage		'SysML::Requirements::Satisfy')
	ObjectiveMembership		and satisfy.client->exists(c
	FeatureTyping		not
	RequirementVerificationMembership		c.ocIsKindOf(UML::Classifier))
	SatisfyRequirementUsage		endif

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
Comment	FeatureValue Comment OwingMembership Redefinition Package MetadataUsage FeatureTyping FeatureMembership FeatureValue Comment Annotation Redefinition MetadataUsage ReturnParameterMembership Membership ReferenceUsage LiteralString Annotation FeatureTyping FeatureMembership ReferenceUsage ReferenceUsage LiteralString	ElementGroupMetadataFeatureValue_Mapping Comment_Mapping ProblemRationaleMetadataMembership_Mapping ProblemRationaleMetadataRedefinition_Mapping ElementGroup_Mapping ProblemRationaleMetadataUsage_Mapping ProblemRationaleMetadataFeatureTyping_Mapping ProblemRationaleMetadataFeatureMembership_Mapping ProblemRationaleMetadataFeatureValue_Mapping CommentToConcernComment_Mapping CommentToAnnotation_Mapping ElementGroupMetadataRedefinition_Mapping ElementGroupMetadataUsage_Mapping CommentToConcernReturnParameterMembership_Mapping ElementGroupMetadaMembership_Mapping CommentToConcernReturnParameter_Mapping ProblemRationaleMetadataFeatureValueString_Mapping CommentToConcernDocumentation_Mapping ElementGroupMetadataFeatureTyping_Mapping ElementGroupMetadataFeatureMembership_Mapping ProblemRationaleMetadataReferenceUsage_Mapping ElementGroupMetadataReferenceUsage_Mapping ElementGroupCriterion_Mapping	Helper.hasStereotypeApplied(Comment, SysML::Elements::ElementGroup')
Constraint	AssertConstraintUsage ConstraintDefinition FeatureTyping FeatureMembership	ConstraintUsage_Mapping Constraint_Mapping ConstraintUsageFeatureTyping_Mapping ConstrainedElementFeatureMembership_Mapping	
Dependency	FeatureMembership Dependency AllocationUsage FeatureTyping ReferenceUsage AllocationDefinition	AllocationDefinitionFromFeatureMembership_Mapping Dependency_Mapping AllocationDefinitionFromFeatureTyping_Mapping AllocationDefinitionFromReferenceUsage_Mapping AllocationDefinition_Mapping	Helper.hasStereotypeApplied(Dependency, SysML::Allocations::Allocate') and Dependency.client- >select(t t.oclIsKindOf(UML::Type))- >notEmpty()
DirectedRelationship	Relationship	DirectedRelationship_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
Element	FeatureTyping FeatureTyping Element Feature FeatureTyping Relationship Expression ReferenceUsage OwningMembership LiteralInteger ReturnParameterMembership ParameterMembership FeatureMembership FeatureTyping LiteralInteger MultiplicityRange ReferenceUsage LiteralInteger Element Membership ReturnParameterMembership ReturnParameterMembership	CommonParameterReferenceUsageInFeatureTyping_Mapping Mapping CommonReturnParameterFeatureUntyped_Mapping CommonReturnParameterFeatureTyping_Mapping ElementOwnership_Mapping CommonValueSpecification_Mapping CommonParameterReferenceUsageInUntyped_Mapping DefaultMultiplicityMembership_Mapping CommonReturnParameterFeatureMembership_Mapping CommonParameterReferenceUsageInMembership_Mapping DefaultMultiplicityBoundOwnership_Mapping CommonReturnParameterReferenceUsageFeatureTyping_Mapping DefaultUpperBound_Mapping DefaultMultiplicityElement_Mapping CommonReturnParameterReferenceUsageUntyped_Mapping DefaultLowerBound_Mapping ElementMain_Mapping ElementMembership_Mapping CommonReturnParameterReferenceUsageMembership_Mapping EmptyReturnParameterFeatureMembership_Mapping	
ElementImport	Membership	ElementImport_Mapping	
MultiplicityElement	OwningMembership OwningMembership OwningMembership FeatureMembership MultiplicityRange FeatureMembership	MultiplicityUpperBoundOwnership_Mapping MultiplicityLowerBoundOwnership_Mapping MultiplicityMembership_Mapping UpperBoundValueOwnership_Mapping MultiplicityElement_Mapping LowerBoundValueOwnership_Mapping	
NamedElement	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
Namespace	Namespace	Namespace_Mapping	
PackageableElement	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
PackageImport	Import	PackageImport_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
ParameterableElement	FeatureTyping FeatureTyping Element Feature FeatureTyping Relationship Expression ReferenceUsage OwningMembership LiteralInteger ReturnParameterMembership ParameterMembership FeatureMembership FeatureTyping LiteralInteger MultiplicityRange ReferenceUsage LiteralInteger Element Membership ReturnParameterMembership ReturnParameterMembership	CommonParameterReferenceUsageInFeatureTyping_Mapping Mapping CommonReturnParameterFeatureUntyped_Mapping CommonReturnParameterFeatureTyping_Mapping ElementOwnership_Mapping CommonValueSpecification_Mapping CommonParameterReferenceUsageInUntyped_Mapping DefaultMultiplicityMembership_Mapping CommonReturnParameterFeatureMembership_Mapping CommonParameterReferenceUsageInMembership_Mapping DefaultMultiplicityBoundOwnership_Mapping CommonReturnParameterReferenceUsageFeatureTyping_Mapping DefaultUpperBound_Mapping DefaultMultiplicityElement_Mapping CommonReturnParameterReferenceUsageUntyped_Mapping DefaultLowerBound_Mapping ElementMain_Mapping ElementMembership_Mapping CommonReturnParameterReferenceUsageMembership_Mapping EmptyReturnParameterFeatureMembership_Mapping	
Realization	Dependency	Realization_Mapping	
Relationship	Relationship	Relationship_Mapping	
Type	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
TypedElement	FeatureMembership FeatureTyping FeatureTyping FeatureValue ParameterMembership FeatureReferenceExpression Membership Feature ReferenceUsage	CommonReferenceUsageInFeatureMembership_Mapping CommonReferenceUsageInFeatureTyping_Mapping TypedElementToFeatureTyping_Mapping EqualOperatorExpressionFeatureValue_Mapping EqualOperatorExpressionOperand_Mapping CommonFeatureReferenceExpression_Mapping CommonMembership_Mapping EqualOperatorExpressionFeature_Mapping CommonReferenceUsageInUntyped_Mapping	not src.type.oclIsUndefined() and not(src.type.oclIsKindOf(UML::Enumeration)) and Helper.getSysMLv2EnumerationDefinition(src)
Usage	Dependency	Usage_Mapping	

C.2.5.6.2 Mapping Specifications

C.2.5.6.2.1 Abstraction_Mapping

Description

There is no way to represent the "mapping" property on the target metaclass

General Mappings

Dependency_Mapping

Mapping Source

Abstraction

Mapping Target

Dependency

Owned Mappings

(none)

C.2.5.6.2.2 Comment_Mapping

Description

test

General Mappings

ElementMain_Mapping

GenericToAnnotatingElement_Mapping

Mapping Source

Comment

Mapping Target

Comment

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
not Helper.hasStereotypeApplied(from, 'SysML::ModelElements::ElementGroup')
```

Mapping rules

The following lists the mapping rules for the target element properties.

- Comment::annotation () : Annotation [0..*]

```
from.annotatedElement->collect(e | CommentToAnnotation_Mapping.getMapped(from, e))
```

- Comment::ownedRelationship () : Relationship [0..*]

```
self.annotation()
```

- Comment::body () : String [1]

```
if from.body->isEmpty() then '' else from.body endif
```

C.2.5.6.2.3 CommentToAnnotation_Mapping

Description

*** not specified yet ***

General Mappings

GenericToAnnotation_Mapping

Mapping Source

Comment

Mapping Target

Annotation with qualifier: annotatedElement:Element

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Annotation::annotatedElement (in annotatedElement : Element) : Element [1]

```
ElementMain_Mapping.getMapped(annotatedElement)
```

- Annotation::annotatingElement () : AnnotatingElement [1]

```
Comment_Mapping.getMapped(from)
```

- Annotation::owningAnnotatedElement () : Element [0..1]

```
null
```

C.2.5.6.2.4 Constraint_Mapping

Description

*** not specified yet ***

General Mappings

GenericToConstraintDefinition_Mapping
NamedElementMain_Mapping

Mapping Source

Constraint

Mapping Target

ConstraintDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ConstraintDefinition::ownedRelationship () : Relationship [0..*]

```
Set{ElementFeatureMembership_Mapping.getMapped(from.specification), CommonReturnParameterRef
```

C.2.5.6.2.5 ConstrainedElementFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *Constraint* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Constraint

Mapping Target

FeatureMembership

Owned Mappings

- constraintUsage : ConstraintUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::ownedMemberFeature () : Feature [1]`

`constraintUsage.to`

C.2.5.6.2.6 ConstraintUsageFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Constraint* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Constraint

Mapping Target

FeatureTyping

Owned Mappings

- `constraintUsage : ConstraintUsage_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureTyping::type () : Type [1]`

`from`

- `FeatureTyping::typedFeature () : Feature [1]`

`constraintUsage.to`

C.2.5.6.2.7 ConstraintUsage_Mapping

Description

*** not specified yet ***

General Mappings

GenericToUsage_Mapping

Mapping Source

Constraint

Mapping Target

AssertConstraintUsage

Owned Mappings

- constraintUsageFeatureTyping : ConstraintUsageFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- AssertConstraintUsage::name () : String [0..1]
`'assert_' + from.name`
- AssertConstraintUsage::ownedRelationship () : Relationship [0..*]
`Set{constraintUsageFeatureTyping.to, CommonReturnParameterReferenceUsageMembership_Mapping.g`

C.2.5.6.2.8 Dependency_Mapping

Description

*** not specified yet ***

General Mappings

DirectedRelationship_Mapping

Mapping Source

Dependency

Mapping Target

Dependency

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Dependency::supplier () : Element [0..*]`
`from.target->collect (e | ElementMain_Mapping.getMapped (e))`
- `Dependency::name () : String [0..1]`
`from.name`
- `Dependency::client () : Element [0..*]`
`from.source->collect (e | ElementMain_Mapping.getMapped (e))`

C.2.5.6.2.9 DirectedRelationship_Mapping

Description

*** not specified yet ***

General Mappings

Relationship_Mapping

Mapping Source

DirectedRelationship

Mapping Target

Relationship

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Relationship::target () : Element [0..*]`
`from.target->collect (e | ElementMain_Mapping.getMapped (e))`
- `Relationship::source () : Element [0..*]`
`from.source->collect (e | ElementMain_Mapping.getMapped (e))`

C.2.5.6.2.10 ElementMain_Mapping

Description

This is the general abstract class to be used as an ancestor for any class mapping specification.

General Mappings

GenericToElement_Mapping

Mapping Source

Element

Mapping Target

Element

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Element::ownedRelationship () : Relationship [0..*]
`ElementOwnership_Mapping.getMappedColl(from.ownedElement)`
- Element::elementId () : String [1]
`Helper.getID(from)`

C.2.5.6.2.11 ElementMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Element* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

Element

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::membershipOwningNamespace () : Element [0..*]

```
Set{ElementMain_Mapping(from)} -- will not be used since corresponding att is derived, but r
```

- Membership::memberElement () : Element [1]

```
ElementMain_Mapping.getMapped(from)
```

- Membership::visibility () : VisibilityKind [1]

```
if (from.ocIsKindOf(UML::NamedElement)) then
    from.ocAsType(UML::NamedElement).visibility
else
    KerML::VisibilityKind::public
endif
```

C.2.5.6.2.12 ElementOwnership_Mapping

Description

General Mappings

GenericToRelationship_Mapping

Mapping Source

Element

Mapping Target

Relationship

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Relationship::target () : Element [0..*]`
`OrderedSet{ElementMain_Mapping.getMapped(from) }`
- `Relationship::source () : Element [0..*]`
`OrderedSet{ElementMain_Mapping.getMapped(from.owner) }`
- `Relationship::ownedRelatedElement () : Element [0..*]`
`self.target ()`

C.2.5.6.2.13 ElementOwningMembership_Mapping

Description

Creates a owning membership relationship for *ownedMemberElement()* for the *Element* mapping.

General Mappings

ElementMembership_Mapping
ElementOwnership_Mapping

Mapping Source

Element

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `OwningMembership::ownedMemberElement () : Element [1]`
`ElementMain_Mapping.getMapped(from)`
- `OwningMembership::membershipOwningNamespace () : Element [0..*]`
`Set{ElementMain_Mapping(from) } -- will not be used since corresponding att is derived, but r`
- `OwningMembership::ownedRelatedElement () : Element [0..*]`
`Set{self.ownedMemberElement () }`

C.2.5.6.2.14 NamedElementMain_Mapping

Description

*** not specified yet ***

General Mappings

ElementMain_Mapping

Mapping Source

NamedElement

Mapping Target

Element

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Element::name () : String [0..1]

from.name

C.2.5.6.2.15 Namespace_Mapping

Description

*** not specified yet ***

General Mappings

GenericToNamespace_Mapping

NamedElementMain_Mapping

Mapping Source

Namespace

Mapping Target

Namespace

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Namespace::ownedImport () : Import [0..*]`

`Set { }`

- `Namespace::ownedRelationship () : Relationship [0..*]`

`from.ownedElement->collect (e | ElementOwningMembership_Mapping.getMapped (e))`

C.2.5.6.2.16 Relationship_Mapping

Description

*** not specified yet ***

General Mappings

GenericToRelationship_Mapping

ElementMain_Mapping

Mapping Source

Relationship

Mapping Target

Relationship

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Relationship::owningRelatedElement () : Element [0..1]`

`ElementMain_Mapping.getMapped (from.owner)`

- `Relationship::ownedRelatedElement () : Element [0..*]`

```
from.relatedElement->select(e | from.ownedElement->includes(e))->collect(e | ElementMain_Map
```

C.2.5.6.2.17 Usage_Mapping

Description

*** not specified yet ***

General Mappings

Dependency_Mapping

Mapping Source

Usage

Mapping Target

Dependency

Owned Mappings

(none)

C.2.5.7 InformationFlows

C.2.5.7.1 Overview

Table 23. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
InformationFlow	FeatureMembership	ItemFlowFeatureMembership_Mapping	
	FeatureMembership	ItemFlowTargetEndFeatureMembership_Mapping	
	Subsetting	ItemFlowSourceFeatureSubsetting_Mapping	
	FeatureTyping	InformationFlowSourceTyping_Mapping	
	FeatureTyping	ItemFlowItemFeatureTyping_Mapping	
	Subsetting	ItemFlowTargetFeatureSubsetting_Mapping	
	Feature	InformationFlowSource_Mapping	
	FlowConnectionDefinition	InformationFlow_Mapping	
	FeatureMembership	ItemFlowSourceEndFeatureMembership_Mapping	
	ItemFlowEnd	ItemFlowSourceFeature_Mapping	
	ItemFlowEnd	ItemFlowTargetFeature_Mapping	
	FeatureTyping	InformationFlowTargetTyping_Mapping	
	Element	InformationFlowEndCommonMembership_Mapping	
	ItemFeature	ItemFlowItemFeature_Mapping	
	Feature	InformationFlowTarget_Mapping	
InformationItem	ItemDefinition	InformationItem_Mapping	

C.2.5.7.2 Mapping Specifications

C.2.5.7.2.1 InformationFlow_Mapping

Description

*** not specified yet ***

General Mappings

Relationship_Mapping

Mapping Source

InformationFlow

Mapping Target

FlowConnectionDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FlowConnectionDefinition::ownedRelationship () : Relationship [0..*]

```
from.source->collect(s | InformationFlowSourceMembership_Mapping.getMapped(from, s))  
->union(from.target->collect(t | InformationFlowTargetMembership_Mapping.getMapped(from, t)))  
->asOrderedSet()
```

C.2.5.7.2.2 InformationFlowEndCommonMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *InformationFlow* mapping.

General Mappings

GenericToElement_Mapping

Mapping Source

InformationFlow

Mapping Target

Element

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Element::ownedMemberFeature (in end : NamedElement) : Feature [1]
abstract rule
- Element::ownedRelatedElement () : Element [0..*]

`Set { self.ownedMemberFeature () }`
- Element::memberName () : String [0..1]

`null`
- Element::visibility () : VisibilityKind [1]

`KerML::VisibilityKind::public`
- Element::memberShortName () : String [0..1]

`null`

C.2.5.7.2.3 InformationFlowSource_Mapping

Description

*** not specified yet ***

General Mappings

GenericToElement_Mapping

Mapping Source

InformationFlow

Mapping Target

Feature with qualifier: source:NamedElement

Owned Mappings

- informationFlowSourceTyping : InformationFlowSourceTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::isEnd () : Boolean [1]

true

- Feature::name (in source : NamedElement) : String [0..1]

'source'

- Feature::ownedRelationship () : Relationship [0..*]

Set{informationFlowSourceTyping.to}

C.2.5.7.2.4 InformationFlowSourceMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *InformationFlow* mapping.

General Mappings

InformationFlowEndCommonMembership_Mapping

Mapping Source

InformationFlow

Mapping Target

FeatureMembership with qualifier: source:NamedElement

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature (in source : NamedElement) : Feature [1]

InformationFlowSource_Mapping.getMapped(from, source)

C.2.5.7.2.5 InformationFlowSourceTyping_Mapping

Description

*** not specified yet ***

General Mappings

GenericToElement_Mapping

Mapping Source

InformationFlow

Mapping Target

FeatureTyping with qualifier: source:NamedElement

Owned Mappings

- informationFlowSource : InformationFlowSource_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature (in source : NamedElement) : Feature [1]
`InformationFlowSource_Mapping.getMapped(from, source)`
- FeatureTyping::type (in source : NamedElement) : Type [1]
`ElementMain_Mapping.getMapped(source)`

C.2.5.7.2.6 InformationFlowTarget_Mapping

Description

*** not specified yet ***

General Mappings

GenericToElement_Mapping

Mapping Source

InformationFlow

Mapping Target

Feature with qualifier: target:NamedElement

Owned Mappings

- informationFlowTargetTyping : InformationFlowTargetTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]
`Set{informationFlowTargetTyping.to}`
- Feature::name (in target : NamedElement) : String [0..1]
`'target_'+target.name`
- Feature::isEnd () : Boolean [1]
`true`

C.2.5.7.2.7 InformationFlowTargetMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *InformationFlow* mapping.

General Mappings

InformationFlowEndCommonMembership_Mapping

Mapping Source

InformationFlow

Mapping Target

FeatureMembership with qualifier: target:NamedElement

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature (in target : NamedElement) : Feature [1]
`InformationFlowTarget_Mapping.getMapped(from, target)`

C.2.5.7.2.8 InformationFlowTargetTyping_Mapping

Description

*** not specified yet ***

General Mappings

GenericToElement_Mapping

Mapping Source

InformationFlow

Mapping Target

FeatureTyping with qualifier: target:NamedElement

Owned Mappings

- informationTarget : InformationFlowTarget_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::type (in target : NamedElement) : Type [1]
`ElementMain_Mapping.getMapped(target)`
- FeatureTyping::typedFeature (in target : NamedElement) : Feature [1]
`InformationFlowTarget_Mapping.getMapped(from, target)`

C.2.5.7.2.9 InformationItem_Mapping

Description

*** not specified yet ***

General Mappings

Classifier_Mapping

Mapping Source

InformationItem

Mapping Target

ItemDefinition

Owned Mappings

(none)

C.2.5.8 Interactions

C.2.5.8.1 Overview

Table 24. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
ActionExecutionSpecification	ActionUsage	ActionExecutionSpecification_Mapping	
BehaviorExecutionSpecification	ActionUsage	BehaviorExecutionSpecification_Mapping	
CombinedFragment	Interaction FeatureMembership	CombinedFragment_Mapping CombinedFragmentMembership_Mapping	
ConsiderIgnoreFragment	Interaction FeatureMembership	CombinedFragment_Mapping CombinedFragmentMembership_Mapping	
Continuation	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
DestructionOccurrenceSpecification	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
ExecutionOccurrenceSpecification	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
ExecutionSpecification	FeatureMembership	ExecutionSpecificationMembership_Mapping	
Gate	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
GeneralOrdering	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
Interaction	Interaction	Interaction_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
InteractionConstraint	AssertConstraintUsage ConstraintDefinition FeatureTyping FeatureMembership	ConstraintUsage_Mapping Constraint_Mapping ConstraintUsageFeatureTyping_Mapping ConstrainedElementFeatureMembership_Mapping	
InteractionFragment	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
InteractionOperand	Interaction FeatureMembership	InteractionOperand_Mapping InteractionOperandMembership_Mapping	
InteractionUse	FeatureMembership FeatureTyping Step	InteractionUseMembership_Mapping InteractionUseTyping_Mapping InteractionUse_Mapping	
Lifeline	PartUsage FeatureMembership FeatureTyping	LifelinePartUsage_Mapping LifelineMembership_Mapping LifelineFeatureTyping_Mapping	
Message	ItemFlow FeatureMembership	Message_Mapping MessageMembership_Mapping	
MessageEnd	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
MessageOccurrenceSpecification	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
OccurrenceSpecification	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
PartDecomposition	FeatureMembership FeatureTyping Step	InteractionUseMembership_Mapping InteractionUseTyping_Mapping InteractionUse_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
StateInvariant	Invariant FeatureMembership FeatureTyping	StateInvariant_Mapping StateInvariantMembership_Mapping StateInvariantTyping_Mapping	

C.2.5.8.2 Mapping Specifications

C.2.5.8.2.1 ActionExecutionSpecification_Mapping

Description

*** not specified yet ***

General Mappings

GenericToActionUsage_Mapping
NamedElementMain_Mapping

Mapping Source

ActionExecutionSpecification

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.8.2.2 BehaviorExecutionSpecification_Mapping

Description

*** not specified yet ***

General Mappings

GenericToActionUsage_Mapping
NamedElementMain_Mapping

Mapping Source

BehaviorExecutionSpecification

Mapping Target

ActionUsage

Owned Mappings

(none)

C.2.5.8.2.3 CombinedFragment_Mapping

Description

A UML4SysML::Interaction is mapped to a SysMLv2::Interaction.

General Mappings

NamedElementMain_Mapping
GenericToInteraction_Mapping

Mapping Source

CombinedFragment

Mapping Target

Interaction

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Interaction::ownedRelationship () : Relationship [0..*]

```
let operands: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Interaction))
let occurrencesSpecs: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Occurrence))

let elements: Set(UML::Element) = (from.ownedElement - operands) - occurrencesSpecs in
elements->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(operands->collect(e | InteractionOperandMembership_Mapping.getMapped(e)))
```

C.2.5.8.2.4 CombinedFragmentMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *CombinedFragment* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

CombinedFragment

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [0..1]
`self.memberFeature()`
- FeatureMembership::memberFeature () : Feature [1]
`ElementMain_Mapping.getMapped(from)`

C.2.5.8.2.5 ExecutionSpecificationMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *ExecutionSpecification* mapping.

General Mappings

GenericToEndFeatureMembership_Mapping

Mapping Source

ExecutionSpecification

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [0..1]
`self.memberFeature()`

- FeatureMembership::memberFeature () : Feature [1]

```
ElementMain_Mapping.getMapped(from)
```

C.2.5.8.2.6 Interaction_Mapping

Description

A UML4SysML::Interaction is mapped to a SysMLv2::Interaction.

General Mappings

Namespace_Mapping

GenericToInteraction_Mapping

Mapping Source

Interaction

Mapping Target

Interaction

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Interaction::ownedRelationship () : Relationship [0..*]

```
let lifelines: Set(UML::Element) = from.lifeline in
let messageOccurrences: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::InteractionMessageOccurrence))
let executionOccurrences: Set(UML::Element) = from.fragment->select(e | e.ocIsKindOf(UML::ExecutionSpecification))
let occurrencesSpecs: Set(UML::Element) = from.fragment->select(e | e.ocIsKindOf(UML::OccurrenceSpecification))
let messages: Set(UML::Element) = from.message in
let invariants: Set(UML::Element) = from.fragment->select(e | e.ocIsKindOf(UML::StateInvariantDefinition))
let interactionUsages: Set(UML::Element) = from.fragment->select(e | e.ocIsKindOf(UML::InteractionUsage))
let combinedFragments: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::CombinedFragment))
let continuations: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Continuation))
let elements: Set(UML::Element) = (((((((from.ownedElement - lifelines) - messageOccurrences) - executionOccurrences) - occurrencesSpecs) - messages) - combinedFragments) - invariants) - interactionUsages) - continuations in
elements->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(lifelines->collect(e | LifelineMembership_Mapping.getMapped(e)))
->union(executionOccurrences->collect(e | ExecutionSpecificationMembership_Mapping.getMapped(e)))
->union(messages->collect(e | MessageMembership_Mapping.getMapped(e)))
->union(combinedFragments->collect(e | CombinedFragmentMembership_Mapping.getMapped(e)))
```

```
->union(invariants->collect(e | StateInvariantMembership_Mapping.getMapped(e)))
->union(interactionUsages->collect(e | InteractionUseMembership_Mapping.getMapped(e)))
```

C.2.5.8.2.7 InteractionOperand_Mapping

Description

A UML4SysML::Interaction is mapped to a SysMLv2::Interaction.

General Mappings

NamedElementMain_Mapping
GenericToInteraction_Mapping

Mapping Source

InteractionOperand

Mapping Target

Interaction

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Interaction::ownedRelationship () : Relationship [0..*]

```
let executionOccurrences: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Occurrence))
let occurrencesSpecs: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::OccurrenceSpecification))
let continuations: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Continuation))
let elements: Set(UML::Element) = ((from.ownedElement - executionOccurrences) - occurrencesSpecs - continuations)
elements->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(executionOccurrences->collect(e | ExecutionSpecificationMembership_Mapping.getMapped(e)))
```

C.2.5.8.2.8 InteractionOperandMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *InteractionOperand* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

InteractionOperand

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [0..1]
`self.memberFeature()`
- FeatureMembership::memberFeature () : Feature [1]
`ElementMain_Mapping.getMapped(from)`

C.2.5.8.2.9 InteractionUse_Mapping

Description

*** not specified yet ***

General Mappings

GenericToStep_Mapping

Namespace_Mapping

Mapping Source

InteractionUse

Mapping Target

Step

Owned Mappings

- interactionUseTyping : InteractionUseTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Step::ownedRelationship () : Relationship [0..*]

```
Set{interactionUseTyping.to}
```

C.2.5.8.2.10 InteractionUseMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *InteractionUse* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

InteractionUse

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [0..1]

```
self.memberFeature()
```

- FeatureMembership::memberFeature () : Feature [1]

```
ElementMain_Mapping.getMapped(from)
```

C.2.5.8.2.11 InteractionUseTyping_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

InteractionUse

Mapping Target

FeatureTyping

Owned Mappings

- interactionUse : InteractionUse_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]
`interactionUse.to`
- FeatureTyping::type () : Type [1]
`ElementMain_Mapping.getMapped(from.refersTo)`

C.2.5.8.2.12 LifelineMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Lifeline* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Lifeline

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [0..1]

```
self.memberFeature()
```

- FeatureMembership::memberFeature () : Feature [1]

```
ElementMain_Mapping.getMapped(from)
```

C.2.5.8.2.13 LifelinePartUsage_Mapping

Description

*** not specified yet ***

General Mappings

GenericToPartUsage_Mapping

NamedElementMain_Mapping

Mapping Source

Lifeline

Mapping Target

PartUsage

Owned Mappings

- lifelineFeatureTyping : LifelineFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- PartUsage::ownedRelationship () : Relationship [0..*]

```
Set{lifelineFeatureTyping.to}
```

C.2.5.8.2.14 LifelineFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Lifeline* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Lifeline

Mapping Target

FeatureTyping

Owned Mappings

- lifelinePartUsage : LifelinePartUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::type () : Type [1]
`ElementMain_Mapping.getMapped(from.represents.type)`
- FeatureTyping::typedFeature () : Feature [1]
`lifelinePartUsage.to`

C.2.5.8.2.15 Message_Mapping

Description

*** not specified yet ***

General Mappings

GenericToItemFlow_Mapping
NamedElementMain_Mapping

Mapping Source

Message

Mapping Target

ItemFlow

Owned Mappings

(none)

C.2.5.8.2.16 MessageMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Message* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Message

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::memberFeature () : Feature [1]
`ElementMain_Mapping.getMapped(from)`
- FeatureMembership::ownedMemberFeature () : Feature [0..1]
`self.memberFeature()`

C.2.5.8.2.17 StateInvariant_Mapping

Description

*** not specified yet ***

General Mappings

GenericToExpression_Mapping
Namespace_Mapping

Mapping Source

StateInvariant

Mapping Target

Invariant

Owned Mappings

- stateInvariantTyping : StateInvariantTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Invariant::ownedRelationship () : Relationship [0..*]`
`Set {stateInvariantTyping.to}`

C.2.5.8.2.18 StateInvariantMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *StateInvariant* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

StateInvariant

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::memberFeature () : Feature [1]`
`ElementMain_Mapping.getMapped(from)`
- `FeatureMembership::ownedMemberFeature () : Feature [0..1]`
`self.memberFeature()`

C.2.5.8.2.19 StateInvariantTyping_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

StateInvariant

Mapping Target

FeatureTyping

Owned Mappings

- stateInvariant : StateInvariant_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::type () : Type [1]
`ElementMain_Mapping.getMapped(from.invariant)`
- FeatureTyping::typedFeature () : Feature [1]
`stateInvariant.to`

C.2.5.9 Packages

C.2.5.9.1 Overview

Table 25. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
Extension	FeatureMembership FeatureMembership Redefinition MetadataFeature FeatureTyping Association Feature FeatureValue Annotation	AssociationToMetadataMembership_Mapping AssociationToFeatureMembership_Mapping AssociationToRedefinition_Mapping AssociationToAnnotatingFeature_Mapping AssociationToFeatureTyping_Mapping AssociationCommon_Mapping AssociationToMetadataFeature_Mapping AssociationToMetadataFeatureValue_Mapping AssociationToAnnotation_Mapping	<code>select(m m.type.oclIsKindOf(UML::UseCase))->isEmpty()</code>

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
ExtensionEnd	FeatureTyping FeatureMembership FeatureChaining Subsetting FeatureChaining OwningMembership EndFeatureMembership Subsetting ActorMembership Redefinition PartUsage Feature	UseCaseActorFeatureTypings_Mapping NonOwnedEndToSubsettingMembership_Mapping EndToSubsettingFeatureChaining_Mapping NonOwnedEndSubsetting_Mapping PropertyToFeatureChaining_Mapping NonOwnedEndSubsettingMembership_Mapping EndMembership_Mapping PropertySubsetting_Mapping UseCaseActorMembership_Mapping AttributeRedefinedRedefinition_Mapping UseCaseActor_Mapping PropertyCommon_Mapping	MappingKindOf(UML::Property) and (UML::Property).association.oc
Image	FeatureTyping FeatureTyping Element Feature FeatureTyping Relationship Expression ReferenceUsage OwningMembership LiteralInteger ReturnParameterMembership ParameterMembership FeatureMembership FeatureTyping LiteralInteger MultiplicityRange ReferenceUsage LiteralInteger Element Membership ReturnParameterMembership ReturnParameterMembership	CommonParameterReferenceUsageInFeatureTyping_Mapping Mapping CommonReturnParameterFeatureUntyped_Mapping CommonReturnParameterFeatureTyping_Mapping ElementOwnership_Mapping CommonValueSpecification_Mapping CommonParameterReferenceUsageInUntyped_Mapping DefaultMultiplicityMembership_Mapping CommonReturnParameterFeatureMembership_Mapping CommonParameterReferenceUsageInMembership_Mapping DefaultMultiplicityBoundOwnership_Mapping CommonReturnParameterReferenceUsageFeatureTyping_Mapping DefaultUpperBound_Mapping DefaultMultiplicityElement_Mapping CommonReturnParameterReferenceUsageUntyped_Mapping DefaultLowerBound_Mapping ElementMain_Mapping ElementMembership_Mapping CommonReturnParameterReferenceUsageMembership_Mapping EmptyReturnParameterFeatureMembership_Mapping	
Model	LiteralString Redefinition FeatureTyping Package FeatureValue ReferenceUsage FeatureMembership MetadataUsage OwningMembership	ModelViewpointValue_Mapping ModelViewpointMetadataRedefinition_Mapping ModelViewpointMetadataFeatureTyping_Mapping Model_Mapping ModelViewpointMetadataFeatureValue_Mapping ModelViewpointMetadataReferenceUsage_Mapping ModelViewpointMetadataFeatureMembership_Mapping ModelViewpointMetadataUsage_Mapping ModelViewpointMetadataMembership_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
Package	FeatureMembership FeatureValue FeatureTyping OwningMembership Package MetadataUsage LiteralString Redefinition ReferenceUsage	PackageURIFeatureMembership_Mapping PackageURIMetadataFeatureValue_Mapping PackageURIFeatureTyping_Mapping PackageURIMetadataMembership_Mapping Package_Mapping PackageURIMetadataUsage_Mapping PackageURIValue_Mapping PackageURIRedefinition_Mapping PackageURIMetadataReferenceUsage_Mapping	
PackageMerge	Relationship	DirectedRelationship_Mapping	
Profile	Package OwningMembership MetadataUsage	Profile_Mapping ProfileMetadataMembership_Mapping ProfileMetadataUsage_Mapping	
ProfileApplication	Relationship	DirectedRelationship_Mapping	
Stereotype	OccurrenceDefinition OwningMembership Subclassification ReturnParameterMembership FeatureValue FeatureTyping Membership Membership Feature FeatureReferenceExpression FeatureMembership FeatureMembership OwningMembership Redefinition FeatureTyping OccurrenceUsage OperatorExpression LiteralInfinity Membership FeatureMembership MultiplicityRange MetadataDefinition ReferenceUsage ReturnParameterMembership Feature Membership Feature	StereotypeMetadataDefinitionMembership_Mapping StereotypeOccurrenceUsageMultiplicityRangeInfinityReturnParameterMem StereotypeOccurrenceUsageFeatureTyping_Mapping StereotypeOccurrenceUsageMembership_Mapping StereotypeOccurrenceUsage_Mapping StereotypeOccurrenceUsageMultiplicityRangeInfinity_Mapping StereotypeOccurrenceUsageMultiplicityRangeMembership_Mapping StereotypeOccurrenceUsageMultiplicityRangeTypeOfRequirementMapping StereotypeMetadataDefinitionMapping StereotypeMetadataDefinitionReferenceUsage_Mapping StereotypeOccurrenceUsageMultiplicityRangeTypeOfRequirementMapping StereotypeOccurrenceUsageMultiplicityMembership_Mapping	

C.2.5.9.2 UML4SysML Packages elements not mapped

Table 26. List of SysML v1 elements not mapped of this section

SysML v1 Concept	Rationale
Extension	The mapping of the extension relationship is performed in the context of Stereotype_Mapping.

SysML v1 Concept	Rationale
ExtensionEnd	The mapping of the extension end property is performed in the context of Stereotype_Mapping.
PackageMerge	The concept of the PackageMerge relationship is not supported by SysML v2.

C.2.5.9.3 Mapping Specifications

C.2.5.9.3.1 ElementImport_Mapping

Description

*** not specified yet ***

General Mappings

GenericToMembership_Mapping
DirectedRelationship_Mapping

Mapping Source

ElementImport

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::memberElement () : Element [1]
ElementMain_Mapping.getMapped(from.importedElement)
- Membership::visibility () : VisibilityKind [0..1]
Helper.getKerMLVisibilityKind(from.visibility)
- Membership::aliases () : String [0..*]
from.alias->asSet()
- Membership::membershipOwningPackage () : Namespace [1]
Namespace_Mapping.getMapped(from.importingNamespace)

- Membership::memberName () : String [0..1]

`from.importedElement.name`

C.2.5.9.3.2 Package_Mapping

Description

A UML::Package is mapped to a SysMLv2::Package. The property "URI" is mapped to a metadata if it has a value. The expected SysML v2 textual notation of a SysMLv1::Package is as follows:

```
package ThisIsAPackageWithURI {
  metadata SysMLv1Library::PackageData {URI="https://omg.org";}
}
```

General Mappings

Namespace_Mapping

Mapping Source

Package

Mapping Target

Package

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Package::ownedRelationship () : Relationship [0..*]

`Helper.packageOwnedRelationship(from)`

C.2.5.9.3.3 PackageImport_Mapping

Description

*** not specified yet ***

General Mappings

DirectedRelationship_Mapping

Mapping Source

PackageImport

Mapping Target

Import

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Import::importOwningPackage () : Namespace [1]
`Namespace_Mapping.getMapped(from.importingNamespace)`
- Import::importedPackage () : Namespace [1]
`Namespace_Mapping.getMapped(from.importedPackage)`
- Import::visibility () : VisibilityKind [0..1]
`Helper.getKerMLVisibilityKind(from.visibility)`

C.2.5.9.3.4 Model_Mapping

Description

SysMLv2 has no explicit model element for a model. The SysMLv1::Model element is mapped to a SysMLv2::Package. The property "viewpoint" is mapped to a metadata defined in the SysML v1 library. The expected SysML v2 textual notation of a SysMLv1::Model with URI and viewpoint is as follows. If URI or viewpoint are not set in the source model, the metadata is not generated.

```
package ThisIsAModel {  
  metadata SysMLv1Library::PackageData {URI="https://omg.org";}   
  metadata SysMLv1Library::ModelData {'viewpoint'="thisIsTheViewpointOfTheModel";}   
}
```

General Mappings

Package_Mapping

Mapping Source

Model

Mapping Target

Package

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Package::ownedRelationship () : Relationship [0..*]

```
let relationships : Set(KerML::Relationship) = Helper.packageOwnedRelationship(from) in
if from.viewpoint.ocllsUndefined() or from.viewpoint = '' then
    relationships
else
    relationships->including (ModelViewpointMetadataMembership_Mapping.getMapped(from))
endif
```

C.2.5.9.3.5 ModelViewpointMetadataUsage_Mapping

C.2.5.9.3.6 ModelViewpointMetadataFeatureMembership_Mapping

Description

The mapping class creates the feature membership relationship for the metadata feature to store the UML::Model::viewpoint property.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Model

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [0..1]

```
ModelViewpointMetadataReferenceUsage_Mapping.getMapped(from)
```

C.2.5.9.3.7 ModelViewpointMetadataReferenceUsage_Mapping

Description

The mapping class creates the MetadataFeature for the mapping of the property UML::Model::viewpoint.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Model

Mapping Target

ReferenceUsage

Owned Mappings

- modelViewpointMetadataRedefinition : ModelViewpointMetadataRedefinition_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

```
Set{modelViewpointMetadataRedefinition.to, ModelViewpointMetadataFeatureValue_Mapping.getMap
```

C.2.5.9.3.8 ModelViewpointMetadataFeatureTyping_Mapping

Description

The mapping class creates the FeatureTyping relationship for the AnnotatingFeature for the metadata to store the UML::Model::viewpoint property.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Model

Mapping Target

FeatureTyping

Owned Mappings

- `modelViewpointMetadataUsage : ModelViewpointMetadataUsage_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureTyping::typedFeature () : Feature [1]`

`modelViewpointMetadataUsage.to`

- `FeatureTyping::type () : Type [1]`

`SysMLv2::MetadataDefinition.allInstances()->any(m | m.qualifiedName = 'SysMLv1Library::Model`

C.2.5.9.3.9 ModelViewpointMetadataMembership_Mapping

Description

The mapping class creates a membership relationship for the metadata feature value for the UML::Model::viewpoint property.

General Mappings

`GenericToOwningMembership_Mapping`

Mapping Source

`Model`

Mapping Target

`OwningMembership`

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `OwningMembership::ownedMemberElement () : Element [1]`

`ModelViewpointMetadataUsage_Mapping.getMapped(from)`

C.2.5.9.3.10 ModelViewpointMetadataFeatureValue_Mapping

Description

The mapping class maps the value of the property UML::Model::viewpoint.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

Model

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::value () : Expression [1]
`ModelViewpointValue_Mapping.getMapped(from)`

C.2.5.9.3.11 ModelViewpointMetadataRedefinition_Mapping

Description

The mapping class creates the redefinition of the attribute for the metadata UML::Model::viewpoint.

General Mappings

GenericToRedefinition_Mapping

Mapping Source

Model

Mapping Target

Redefinition

Owned Mappings

- modelViewpointMetadataReferenceUsage : ModelViewpointMetadataReferenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Redefinition::redefinedFeature () : Feature [1]`

```
let m : SYSML2::Membership = SYSML2::AttributeUsage.allInstances()->collect(dt | dt.owningRe  
if (m.oclIsUndefined()) then OclUndefined else m.memberElement endif
```

- `Redefinition::redefiningFeature () : Feature [1]`

```
modelViewpointMetadataReferenceUsage.to
```

C.2.5.9.3.12 ModelViewpointValue_Mapping

Description

The mapping class maps the value expression of the property `UML::Model::viewpoint`.

General Mappings

`GenericToExpression_Mapping`

Mapping Source

`Model`

Mapping Target

`LiteralString`

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `LiteralString::value () : String [1]`

```
from.viewpoint
```

C.2.5.9.3.13 PackageURIMetadataUsage_Mapping

Description

The mapping class creates the annotating feature to annotate the generated Package element with metadata to store the UML::Package::URI property.

General Mappings

GenericToMetadataUsage_Mapping

Mapping Source

Package

Mapping Target

MetadataUsage

Owned Mappings

- packageURIFeatureTyping : PackageURIFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- MetadataUsage::name () : String [0..1]
`'URI '`
- MetadataUsage::ownedRelationship () : Relationship [0..*]
`Set{packageURIFeatureTyping.to, PackageURIFeatureMembership_Mapping.getMapped(from) }`

C.2.5.9.3.14 PackageURIFeatureMembership_Mapping

Description

The mapping class creates the feature membership relationship for the metadata feature to store the UML::Package::URI property.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Package

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureMembership::ownedMemberFeature () : Feature [1]`
`PackageURIMetadataReferenceUsage_Mapping.getMapped(from)`

C.2.5.9.3.15 PackageURIFeatureTyping_Mapping

Description

The mapping class creates the FeatureTyping relationship for the AnnotatingFeature for the metadata to store the UML::Package::URI property.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Package

Mapping Target

FeatureTyping

Owned Mappings

- `packageURIMetadataUsage : PackageURIMetadataUsage_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureTyping::type () : Type [1]`

```
let m: SysMLv2::Membership = SysMLv2::AttributeDefinition.allInstances()  
->collect(dt | dt.owningRelationship)  
->select(r | r.ocIsKindOf(SysMLv2::Membership))  
->any(m | m.memberName = 'PackageData' ) in  
  
if (m.ocIsUndefined()) then  
    invalid  
else
```

```

        m.memberElement
    endif

```

- FeatureTyping::typedFeature () : Feature [1]

```

packageURIMetadataUsage.to

```

C.2.5.9.3.16 PackageURIMetadataReferenceUsage_Mapping

Description

The mapping class creates the MetadataFeature for the mapping of the property UML::Package::URI.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Package

Mapping Target

ReferenceUsage

Owned Mappings

- packageURIMetadataFeatureValue : PackageURIMetadataFeatureValue_Mapping
- packageURIRedefinition : PackageURIRedefinition_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

```

Set{packageURIRedefinition.to, packageURIMetadataFeatureValue.to}

```

C.2.5.9.3.17 PackageURIMetadataFeatureValue_Mapping

Description

The mapping class maps the value of the property UML::Package::URI.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

Package

Mapping Target

FeatureValue

Owned Mappings

- packageURIMetadataReferenceUsage : PackageURIMetadataReferenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::featureWithValue () : Feature [1]
`packageURIMetadataReferenceUsage.to`
- FeatureValue::value () : Expression [1]
`PackageURIValue_Mapping.getMapped (from)`

C.2.5.9.3.18 PackageURIMetadataMembership_Mapping

Description

The mapping class creates a membership relationship for the metadata feature value for the UML::Package::URI property.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

Package

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `OwningMembership::ownedMemberElement () : Element [1]`
`PackageURIMetadataUsage_Mapping.getMapped(from)`

C.2.5.9.3.19 PackageURIRedefinition_Mapping

Description

The mapping class creates the redefinition of the attribute for the metadata `UML::Package::URI`.

General Mappings

`GenericToRedefinition_Mapping`

Mapping Source

`Package`

Mapping Target

`Redefinition`

Owned Mappings

- `packageURIMetadataReferenceUsage : PackageURIMetadataReferenceUsage_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Redefinition::redefinedFeature () : Feature [1]`

```
let m : SysMLv2::Membership = SysMLv2::AttributeUsage.allInstances()->collect(dt | dt.owning
if (m.oclisUndefined()) then invalid else m.memberElement endif
```
- `Redefinition::redefiningFeature () : Feature [1]`
`packageURIMetadataReferenceUsage.to`

C.2.5.9.3.20 PackageURIValue_Mapping

Description

The mapping class maps the value expression of the property `UML::Package::URI`.

General Mappings

`GenericToExpression_Mapping`

Mapping Source

Package

Mapping Target

LiteralString

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- LiteralString::value () : String [1]

from.URI

C.2.5.9.3.21 Profile_Mapping

Description

*** not specified yet ***

General Mappings

Package_Mapping

Mapping Source

Profile

Mapping Target

Package

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Package::ownedRelationship () : Relationship [0..*]

```
Helper.packageOwnedRelationship(from) -> including (ProfileMetadataMembership_Mapping.getMapped
```

C.2.5.9.3.22 ProfileMetadataMembership_Mapping

Description

The mapping class creates a membership relationship for the metadata feature value for the UML::Model::viewpoint property.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

Profile

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [1]

```
ProfileMetadataUsage_Mapping.getMapped(from)
```

C.2.5.9.3.23 ProfileMetadataUsage_Mapping

Description

The mapping class creates the annotating feature to annotate the generated Package element with metadata to store the UML::Model::viewpoint property.

General Mappings

GenericToMetadataUsage_Mapping

Mapping Source

Profile

Mapping Target

MetadataUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- MetadataUsage::name () : String [0..1]
'Profile'

C.2.5.9.3.24 StereotypeMetadataDefinition_Mapping

Description

*** not specified yet ***

General Mappings

Class_Mapping

Mapping Source

Stereotype

Mapping Target

MetadataDefinition

Owned Mappings

(none)

C.2.5.9.3.25 StereotypeMetadataDefinitionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Stereotype* mapping.

General Mappings

ElementOwningMembership_Mapping

Mapping Source

Stereotype

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `OwningMembership::ownedMemberElement () : Element [0..1]`

`ElementMain_Mapping.getMapped(from)`

C.2.5.9.3.26 StereotypeMetadataDefinitionReferenceUsage_Mapping

Description

Creates a reference usage for the *Stereotype* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Stereotype

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`

`Set{stereotypeMetadataDefinitionReferenceUsageRedefinition.to, stereotypeMetadataDefinitionRedefinition.to}`

C.2.5.9.3.27 StereotypeOccurrenceUsage_Mapping

Description

*** not specified yet ***

General Mappings

GenericToOccurrenceUsage_Mapping

Mapping Source

Stereotype

Mapping Target

OccurrenceUsage

Owned Mappings

- stereotypeOccurrenceUsageFeatureTyping : StereotypeOccurrenceUsageFeatureTyping_Mapping
- stereotypeOccurrenceUsageMultiplicityMembership : StereotypeOccurrenceUsageMultiplicityMembership_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OccurrenceUsage::ownedRelationship () : Relationship [0..*]

`Set{stereotypeOccurrenceUsageFeatureTyping.to, stereotypeOccurrenceUsageMultiplicityMembership`

C.2.5.9.3.28 StereotypeOccurrenceUsageFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Stereotype* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Stereotype

Mapping Target

FeatureTyping

Owned Mappings

- stereotypeOccurrenceUsage : StereotypeOccurrenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureTyping::type () : Type [1]`
`StereotypeOccurenceDefinition_Mapping.getMapped(from)`
- `FeatureTyping::typedFeature () : Feature [1]`
`stereotypeOccurenceUsage.to`

C.2.5.9.3.29 StereotypeOccurenceUsageMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Stereotype* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

Stereotype

Mapping Target

Membership

Owned Mappings

- `stereotypeOccurenceUsage : StereotypeOccurenceUsage_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Membership::memberName () : String [0..1]`
`from.name.substring(1,1).toLowerCase() + from.name.substring(2,from.name.size()) + 's'`
- `Membership::memberElement () : Element [1]`
`self.ownedMemberElement()`
- `Membership::ownedMemberElement () : Element [0..1]`
`stereotypeOccurenceUsage.to`

C.2.5.9.3.30 StereotypeOccurenceUsageMultiplicityMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Stereotype* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

Stereotype

Mapping Target

Membership

Owned Mappings

- stereotypeOccurenceUsageMultiplicityRange : StereotypeOccurenceUsageMultiplicityRange_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::ownedMemberElement () : Element [0..1]
`stereotypeOccurenceUsageMultiplicityRange.to`
- Membership::memberElement () : Element [1]
`self.ownedMemberElement ()`

C.2.5.9.3.31 StereotypeOccurenceUsageMultiplicityRange_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

Stereotype

Mapping Target

MultiplicityRange

Owned Mappings

- stereotypeOccurenceUsageMultiplicityRangeMembership :
StereotypeOccurenceUsageMultiplicityRangeMembership_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- MultiplicityRange::ownedRelationship () : Relationship [0..*]

Set {stereotypeOccurenceUsageMultiplicityRangeMembership.to}

C.2.5.9.3.32 StereotypeOccurenceUsageMultiplicityRangeInfinity_Mapping

Description

*** not specified yet ***

General Mappings

GenericToExpression_Mapping

Mapping Source

Stereotype

Mapping Target

LiteralInfinity

Owned Mappings

- stereotypeOccurenceUsageMultiplicityRangeInfinityReturnParameterMembership :
StereotypeOccurenceUsageMultiplicityRangeInfinityReturnParameterMembership_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- LiteralInfinity::ownedRelationship () : Relationship [0..*]

Set {stereotypeOccurenceUsageMultiplicityRangeInfinityReturnParameterMembership.to}

C.2.5.9.3.33 StereotypeOccurenceUsageMultiplicityRangeInfinityReturnParameter_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

Stereotype

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::direction () : FeatureDirectionKind [0..1]

SysMLv2::FeatureDirectionKind::out

C.2.5.9.3.34 StereotypeOccurenceUsageMultiplicityRangeInfinityReturnParameterMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Stereotype* mapping.

General Mappings

GenericToReturnParameterMembership_Mapping

Mapping Source

Stereotype

Mapping Target

ReturnParameterMembership

Owned Mappings

- stereotypeOccurenceUsageMultiplicityRangeInfinityReturnParameter :
StereotypeOccurenceUsageMultiplicityRangeInfinityReturnParameter_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReturnParameterMembership::ownedRelatedElement () : Element [0..*]

```
let member: KerML::Element = self.ownedMemberParameter() in
if member.ocllIsUndefined() then
    Set{}
else
    Set{self.ownedMemberParameter()}
endif
```
- ReturnParameterMembership::ownedMemberParameter () : Feature [0..1]

```
stereotypeOccurenceUsageMultiplicityRangeInfinityReturnParameter.to
```
- ReturnParameterMembership::memberParameter () : Feature [1]

```
self.ownedMemberParameter()
```

C.2.5.9.3.35 StereotypeOccurenceUsageMultiplicityRangeMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Stereotype* mapping.

General Mappings

GenericToMembership_Mapping

Mapping Source

Stereotype

Mapping Target

Membership

Owned Mappings

- stereotypeOccurenceUsageMultiplicityRangeInfinity :
StereotypeOccurenceUsageMultiplicityRangeInfinity_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::memberElement () : Element [1]
`self.ownedMemberElement ()`
- Membership::ownedMemberElement () : Element [0..1]
`stereotypeOccurenceUsageMultiplicityRangeInfinity.to`

C.2.5.10 SimpleClassifiers

C.2.5.10.1 Overview

This chapter specifies the mapping of the metaclasses defined in the UML specification in the SimpleClassifiers chapter, which are part of the UML4SysML subset.

Table 27. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
BehavioredClassifier	PerformActionUsage Classifier FeatureTyping FeatureMembership	BehavioredClassifierToPerformActionUsage_Mapping BehavioredClassifier_Mapping BehavioredClassifierToFeatureTyping_Mapping ClassifierBehaviorMembership_Mapping	
DataType	AttributeDefinition	DataType_Mapping	
Enumeration	EnumerationDefinition	Enumeration_Mapping	
EnumerationLiteral	EnumerationUsage VariantMembership	EnumerationLiteral_Mapping EnumerationVariantMembership_Mapping	EnumerationLiteral.classifier->select(c c.oclIsTypeOf(UML::Association))->size() = 0
Interface	PortConjugation OwningMembership ConjugatedPortDefinition PortDefinition	InterfacePortConjugation_Mapping InterfaceConjugatedPortDefinitionMembership_Mapping InterfaceConjugatedPortDefinition_Mapping Interface_Mapping	
InterfaceRealization	Subclassification	InterfaceRealization_Mapping	
PrimitiveType	AttributeDefinition	PrimitiveType_Mapping	
Reception	FeatureTyping ItemUsage	ReceptionToFeatureTyping_Mapping Reception_Mapping	
Signal	ItemDefinition	Signal_Mapping	

C.2.5.10.2 Mapping Specifications

C.2.5.10.2.1 Attribute_Mapping

Description

An UML::SimpleClassifiers::Property is mapped to a SysMLv2::Systems::Attributes::AttributeUsage.

General Mappings

Property_Mapping

Mapping Source

Property

Mapping Target

AttributeUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.type.ocIsKindOf(UML::DataType) and not from.ocIsTypeOf(UML::Port)
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.5.10.2.2 AttributeRedefined_Mapping

Description

An UML::SimpleClassifiers::Property is mapped to a SysMLv2::Systems::Attributes::AttributeUsage.

General Mappings

PropertyCommon_Mapping

Mapping Source

Property

Mapping Target

ReferenceUsage

Owned Mappings

- attributeRedefinedFeatureTyping : AttributeRedefinedFeatureTyping_Mapping
- attributeRedefinedRedefinition : AttributeRedefinedRedefinition_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`

```
let typing: KerML::FeatureTyping = attributeRedefinedFeatureTyping.to in
let subsetting: Set(KerML::Subsetting) = from.subsettedProperty->collect(p | PropertySubsetting)
let subsettingMultiplicityTyping: Set(KerML::Relationship) = subsetting->union(Set{attributeRedefinedFeatureTyping}
    Set{MultiplicityMembership_Mapping.getMapped(from)})
else
    Set{MultiplicityMembership_Mapping.getMapped(from), typing}
endif->asSet() in
if from.defaultValue.ocllsUndefined() then
    subsettingMultiplicityTyping
else
    subsettingMultiplicityTyping->including(PropertyDefaultValue_Mapping.getMapped(from))
endif
```

C.2.5.10.2.3 AttributeRedefinedRedefinition_Mapping

Description

Creates a redefinition relationship for the *redefiningFeature()* and the *redefinedFeature()* for the *Property* mapping.

General Mappings

GenericToRedefinition_Mapping

Mapping Source

Property

Mapping Target

Redefinition

Owned Mappings

- `attributeRedefined : AttributeRedefined_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Redefinition::redefiningFeature () : Feature [1]`
`attributeRedefined.to`
- `Redefinition::redefinedFeature () : Feature [1]`

```
from.redefinedProperty.get(0)
```

C.2.5.10.2.4 AttributeRedefinedMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *NamedElement* mapping.

General Mappings

ElementFeatureMembership_Mapping

Mapping Source

NamedElement

Mapping Target

FeatureMembership

Owned Mappings

- attributeRedefined : AttributeRedefined_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.ocIsKindOf(UML::Property) and (from.ocAsType(UML::Property).redefinedElement->size() > 0)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [0..1]

```
attributeRedefined.to
```

C.2.5.10.2.5 AttributeRedefinedFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *StructuralFeature* mapping.

General Mappings

StructuralFeatureToFeatureTyping_Mapping

Mapping Source

StructuralFeature

Mapping Target

FeatureTyping

Owned Mappings

- attributeRedefined : AttributeRedefined_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]

```
attributeRedefined.to
```

C.2.5.10.2.6 BehavoredClassifier_Mapping

Description

The abstract mapping class BehavoredClassifier_Mapping maps the abstract metaclass UML::SimpleClassifiers::BehavoredClassifiers to a SysMLv2::Core::Classifiers::Classifier. The mapping class is used by concrete mapping classes, for example, Block_Mapping.

General Mappings

Classifier_Mapping

Mapping Source

BehavoredClassifier

Mapping Target

Classifier

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Classifier::ownedRelationship () : Relationship [0..*]

```
let toElementFMS: Set(UML::Element) = from.ownedElement->select(e | (e.oclIsKindOf(UML::Prop
let redefinedAttributes: Set(UML::Element) = from.ownedElement->select(e | from.oclIsKindOf(U
let generalizations : Set(UML::Generalization) = from.ownedElement->select(e | e.oclIsKindOf
```

```

let constraints : Set(UML::Constraint) = UML::Constraint.allInstances()->select( c | c.constraintName = 'ClassifierBehaviorMembership_Mapping' )
let toElementOMS: Set(UML::Element) = ((from.ownedElement - toElementFMS) - redefinedAttributes)
let relationships: Sequence(KerML::Relationship) =
toElementOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(toElementFMS->collect(e | ElementFeatureMembership_Mapping.getMapped(e)))
->union(constraints->collect(e | ConstrainedElementFeatureMembership_Mapping.getMapped(e)))
->union(redefinedAttributes->collect(e | AttributeRedefinedMembership_Mapping.getMapped(e)))
->union(generalizations->collect(e | Generalization_Mapping.getMapped(e))) in
if from.classifierBehavior.oclIsUndefined() then relationships else relationships->append(ClassifierBehaviorMembership_Mapping)

```

C.2.5.10.2.7 ClassifierBehaviorMembership_Mapping

Description

The ClassifierBehaviorMembership_Mapping class creates a membership relationship for a PerformActionUsage element to call the transformed SysML v1 classifier behavior.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

BehavioredClassifier

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [0..1]

```
BehavioredClassifierToPerformActionUsage_Mapping.getMapped(from)
```

C.2.5.10.2.8 BehavioredClassifierToFeatureTyping_Mapping

Description

The BehavioredClassifierToFeatureTyping_Mapping creates the relationship from the PerformActionUsage element to its type which is the transformed SysML v1 classifier behavior.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

BehavioredClassifier

Mapping Target

FeatureTyping

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::type () : Type [1]

from

C.2.5.10.2.9 BehavioredClassifierToPerformActionUsage_Mapping

Description

The BehavioredClassifierToPerformActionUsage_Mapping class creates a PerformActionUsage element to call the transformed SysML v1 classifier behavior.

General Mappings

GenericToFeature_Mapping

Mapping Source

BehavioredClassifier

Mapping Target

PerformActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- PerformActionUsage::isComposite () : Boolean [1]
`true`
- PerformActionUsage::ownedRelationship () : Relationship [0..*]
`Set { BehavioredClassifierToFeatureTyping_Mapping.getMapped (from) }`
- PerformActionUsage::name () : String [0..1]
`'classifierBehavior'`

C.2.5.10.2.10 DataType_Mapping

Description

A UML::SimpleClassifiers::DataType is mapped to a SysMLv2::Systems::Attributes::AttributeDefinition. The mapping also cover the transformation of UML4SysML::PrimitiveType elements.

General Mappings

Classifier_Mapping

Mapping Source

DataType

Mapping Target

AttributeDefinition

Owned Mappings

(none)

C.2.5.10.2.11 Enumeration_Mapping

Description

A UML4SysML::Enumeration is mapped to a SysMLv2::EnumerationDefinition.

General Mappings

DataType_Mapping

Mapping Source

Enumeration

Mapping Target

EnumerationDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- EnumerationDefinition::isVariation () : Boolean [1]

true

- EnumerationDefinition::ownedRelationship () : Relationship [0..*]

```
let generalizations : Set(UML::Generalization) = from.ownedElement->select(e | e.ocIsKindOf(UML::Generalization))
let toElementFMS: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Property))
let literals: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::EnumerationLiteral))
let toElementOMS: Set(UML::Element) = ((from.ownedElement - toElementFMS) - generalizations)
toElementOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(toElementFMS->collect(e | ElementFeatureMembership_Mapping.getMapped(e)))
->union(generalizations->collect(e | Generalization_Mapping.getMapped(e)))
->union(literals->collect(e | EnumerationVariantMembership_Mapping.getMapped(e)))
```

C.2.5.10.2.12 EnumerationLiteral_Mapping

Description

A UML4SysML::EnumerationLiteral is mapped to a SysMLv2::EnumerationUsage.

General Mappings

GenericToFeature_Mapping
InstanceSpecification_Mapping

Mapping Source

EnumerationLiteral

Mapping Target

EnumerationUsage

Owned Mappings

(none)

C.2.5.10.2.13 EnumerationVariantMembership_Mapping

Description

The EnumerationVariantMembership_Mapping class creates the variant membership relationship between the enumeration definition and a enumeration usage.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

EnumerationLiteral

Mapping Target

VariantMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- VariantMembership::ownedMemberElement () : Element [1]
from

C.2.5.10.2.14 Interface_Mapping

Description

A UML4SysML::Interface is mapped to a SysMLv2::PortDefinition. The mapping also includes the generation of an appropriate ConjugatedPortDefinition. That mappings is performed by the mapping classes InterfaceConjugatedPortDefinitionMembership_Mapping, InterfacePortConjugation_Mapping, and InterfaceConjugatedPortDefinition_Mapping.

General Mappings

GenericToPortDefinition_Mapping
Classifier_Mapping

Mapping Source

Interface

Mapping Target

PortDefinition

Owned Mappings

- conjugatedPortDefinitionMembership : InterfaceConjugatedPortDefinitionMembership_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- PortDefinition::ownedRelationship () : Relationship [0..*]

```
let properties: Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Property))
let generalizations : Set(UML::Generalization) = from.ownedElement->select(e | e.ocIsKindOf(UML::Generalization))
let elements: Set(UML::Element) = (from.ownedElement - properties) - generalizations in
elements->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(properties->collect(e | PropertyMembership_Mapping.getMapped(e)))
->union(generalizations->collect(e | Generalization_Mapping.getMapped(e)))
->append(conjugatedPortDefinitionMembership)
```

C.2.5.10.2.15 InterfaceConjugatedPortDefinition_Mapping

Description

As part of the mapping from a UML4SysML::Interface to a SysMLv2::PortDefinition, this mapping class is used to create the appropriate ConjugatedPortDefinition.

General Mappings

GenericToPortDefinition_Mapping

Mapping Source

Interface

Mapping Target

ConjugatedPortDefinition

Owned Mappings

- portConjugation : InterfacePortConjugation_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ConjugatedPortDefinition::ownedRelationship () : Relationship [0..*]

```
Set{portConjugation}
```

- ConjugatedPortDefinition::name () : String [0..1]

```
'~'+from.name
```

C.2.5.10.2.16 InterfaceConjugatedPortDefinitionMembership_Mapping

Description

As part of the mapping from a UML4SysML::Interface to a SysMLv2::PortDefinition, this mapping class is used to create the membership relationship for the ConjugatedPortDefinition.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

Interface

Mapping Target

OwningMembership

Owned Mappings

- conjugatedPortDefinitionMapping : InterfaceConjugatedPortDefinition_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [1]
`conjugatedPortDefinitionMapping.to`
- OwningMembership::ownedRelationship () : Relationship [0..*]
`Set{portConjugation}`

C.2.5.10.2.17 InterfacePortConjugation_Mapping

Description

As part of the mapping from a UML4SysML::Interface to a SysMLv2::PortDefinition, this mapping class is used to create the appropriate PortConjugation relationship.

General Mappings

GenericToRelationship_Mapping

Mapping Source

Interface

Mapping Target

PortConjugation

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- PortConjugation::originalPortDefinition () : PortDefinition [1]

from

- PortConjugation::conjugatedType () : Type [1]

```
SysMLv2::ConjugatedPortDefinition.allInstances()->collect(cpd | cpd.owningRelationship)->sel
```

C.2.5.10.2.18 InterfaceRealization_Mapping

Description

A UML4SysML::InterfaceRealization is mapped to a SysMLv2::Superclassing.

General Mappings

GenericToSpecialization_Mapping

Mapping Source

InterfaceRealization

Mapping Target

Subclassification

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Subclassification::subclassifier () : Type [1]

```
Classifier_Mapping.getMapped(from.specific)
```

- Subclassification::superclassifier () : Type [1]

```
Classifier_Mapping.getMapped(from.general)
```

C.2.5.10.2.19 PrimitiveType_Mapping

Description

The PrimitiveType_Mapping class maps a UML4SysML::PrimitiveType to a SysML v2 AttributeDefinition.

General Mappings

DataType_Mapping

Mapping Source

PrimitiveType

Mapping Target

AttributeDefinition

Owned Mappings

(none)

C.2.5.10.2.20 Reception_Mapping

Description

A UML4SysML::Reception is mapped to a SysMLv2::AttributeUsage with feature direction "in".

General Mappings

BehavioralFeature_Mapping

Mapping Source

Reception

Mapping Target

ItemUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ItemUsage::direction () : FeatureDirectionKind [0..1]`
`SysMLv2::FeatureDirectionKind::in`
- `ItemUsage::ownedRelationship () : Relationship [0..*]`
`Set {ReceptionToFeatureTyping_Mapping.getMapped(from) }`

C.2.5.10.2.21 ReceptionToFeatureTyping_Mapping

Description

A `UML4SysML::Reception` is mapped to `SysMLv2::AttributeUsage`. The `ReceptionToFeatureTyping_Mapping` class creates the type of the `AttributeUsage` which is the `Signal` of the `Reception`.

General Mappings

`TypedElementToFeatureTyping_Mapping`

Mapping Source

`Reception`

Mapping Target

`FeatureTyping`

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureTyping::typedFeature () : Feature [1]`
`Reception_Mapping.getMapped(from)`
- `FeatureTyping::type () : Type [1]`
`Classifier_Mapping.getMapped(from.signal)`

C.2.5.10.2.22 Signal_Mapping

Description

A `UML4SysML::Signal` is mapped to a `SysMLv2::AttributeDefinition`.

General Mappings

Classifier_Mapping

Mapping Source

Signal

Mapping Target

ItemDefinition

Owned Mappings

(none)

C.2.5.11 StructuredClassifiers

C.2.5.11.1 Overview

Table 28. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
Association	FeatureMembership FeatureMembership Redefinition MetadataFeature FeatureTyping Association Feature FeatureValue Annotation	AssociationToMetadataMembership_Mapping AssociationToFeatureMembership_Mapping AssociationToRedefinition_Mapping AssociationToAnnotatingFeature_Mapping AssociationToFeatureTyping_Mapping AssociationCommon_Mapping AssociationToMetadataFeature_Mapping AssociationToMetadataFeatureValue_Mapping AssociationToAnnotation_Mapping	Association.memberEnd- >select(m m.type.oclIsKindOf(UML::UseCase))- >isEmpty()
AssociationClass	ConnectionDefinition	AssociationClass_Mapping	not Helper.hasStereotypeApplied(AssociationClass 'SysML::Blocks::Block')

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
Class			Helper.hasStereotypeApplied(Class, 'SysML::ModelElements::Viewpoint')
	ViewpointDefinition	Viewpoint_Mapping	
	SubjectMembership	ViewpointSubjectMembership_Mapping	
	FeatureTyping	EncapsulatedBlockMetadataFeatureTyping_Mapping	
	MetadataUsage	EncapsulatedBlockMetadata_Mapping	
	FeatureValue	EncapsulatedBlockMetadataFeatureValue_Mapping	
	FeatureTyping	ViewpointPurposeMetadataFeatureTyping_Mapping	
	FeatureMembership	EncapsulatedBlockMetadataFeatureMembership_Mapping	
	ReferenceUsage	ViewpointSubject_Mapping	
	OwningMembership	ViewpointPurposeMetadataMembership_Mapping	
	ReferenceUsage	EncapsulatedBlockMetadataReferenceUsage_Mapping	
	OwningMembership	EncapsulatedBlockMetadataMembership_Mapping	
	OccurrenceDefinition	Class_Mapping	Helper.hasStereotypeApplied(Class, 'SysML::Requirements::Requirement')
	MetadataUsage	ViewpointPurposeMetadata_Mapping	
	Redefinition	EncapsulatedBlockMetadataRedefinition_Mapping	
			Class.oclIsTypeOf(UML::AssociationClass)

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
ConnectableElement	FeatureMembership FeatureTyping FeatureTyping FeatureValue ParameterMembership FeatureReferenceExpression Membership Feature ReferenceUsage FeatureTyping FeatureTyping Element Feature FeatureTyping Relationship Expression ReferenceUsage OwningMembership LiteralInteger ReturnParameterMembership ParameterMembership FeatureMembership FeatureTyping LiteralInteger MultiplicityRange ReferenceUsage LiteralInteger Element Membership ReturnParameterMembership ReturnParameterMembership	CommonReferenceUsageInFeatureMembership_Mapping CommonReferenceUsageInFeatureTyping_Mapping TypedElementToFeatureTyping_Mapping EqualOperatorExpressionFeatureValue_Mapping EqualOperatorExpressionOperand_Mapping CommonFeatureReferenceExpression_Mapping CommonMembership_Mapping EqualOperatorExpressionFeature_Mapping CommonReferenceUsageInUntyped_Mapping CommonParameterReferenceUsageInFeatureTyping_Mapping Mapping CommonReturnParameterFeatureUntyped_Mapping CommonReturnParameterFeatureTyping_Mapping ElementOwnership_Mapping CommonValueSpecification_Mapping CommonParameterReferenceUsageInUntyped_Mapping DefaultMultiplicityMembership_Mapping CommonReturnParameterFeatureMembership_Mapping CommonParameterReferenceUsageInMembership_Mapping DefaultMultiplicityBoundOwnership_Mapping CommonReturnParameterReferenceUsageFeatureTyping_Mapping DefaultUpperBound_Mapping DefaultMultiplicityElement_Mapping CommonReturnParameterReferenceUsageUntyped_Mapping DefaultLowerBound_Mapping ElementMain_Mapping ElementMembership_Mapping CommonReturnParameterReferenceUsageMembership_Mapping EmptyReturnParameterFeatureMembership_Mapping	not src.type.ocllsUndefined() and not src.type.ocllsKindOf(UML::Enumeration) and Helper.getSysMLv2EnumerationDefinition(src)
Connector	ConnectionUsage OwningMembership	Connector_Mapping ConnectorMultiplicityMembership_Mapping	
ConnectorEnd	Feature Subsetting EndFeatureMembership EndFeatureMembership	ConnectorEndToFeatureCommon_Mapping ConnectionEndToSubsetting_Mapping ConnectorEndToSubsettedFeatureMembership_Mapping ConnectorEndToMembership_Mapping	
EncapsulatedClassifier	ObjectiveMembership FeatureTyping SubjectMembership PartUsage RequirementUsage ReferenceUsage Classifier StakeholderMembership	CaseObjectiveMembership_Mapping CaseSubjectFeatureTyping_Mapping CaseSubjectMembership_Mapping StakeholderPartUsage_Mapping CaseObjectiveRequirementUsage_Mapping CaseEmptySubjectReferenceUsage_Mapping Classifier_Mapping StakeholderMembership_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
Port	PortUsage	Port_Mapping	<pre> result = not Helper.hasStereotypeApplied(Port.owner, 'SysML::ConstraintBlocks::ConstraintBlock') or ((Port.type.ocIsUndefined() or Helper.hasStereotypeApplied(Port.type, 'SysML::Ports&Flows::InterfaceBlock')) and not (Helper.hasStereotypeApplied(Port, 'SysML::Ports&Flows::FullPort') or (Port.type.ocIsKindOf(UML::Classifier) and not Helper.hasStereotypeApplied(Port.type, 'SysML::Ports&Flows::InterfaceBlock')))) </pre>
StructuredClassifier	ObjectiveMembership FeatureTyping SubjectMembership PartUsage RequirementUsage ReferenceUsage Classifier StakeholderMembership	CaseObjectiveMembership_Mapping CaseSubjectFeatureTyping_Mapping CaseSubjectMembership_Mapping StakeholderPartUsage_Mapping CaseObjectiveRequirementUsage_Mapping CaseEmptySubjectReferenceUsage_Mapping Classifier_Mapping StakeholderMembership_Mapping	

C.2.5.11.2 Mapping Specifications

C.2.5.11.2.1 AssociationCommon_Mapping

Description

A UML4SysML::Association is mapped to a SysMLv2::ConnectionDefinition. The UML4SysML::Association::isDerived property is not supported in SysML v2. To preserve the information, it is stored in a metadata annotation.

General Mappings

Classifier_Mapping
Relationship_Mapping

Mapping Source

Association

Mapping Target

Association

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.memberEnd->select( m | m.type.ocIsKindOf(UML::UseCase))->isEmpty()
```

Mapping rules

The following lists the mapping rules for the target element properties.

- Association::ownedRelationship () : Relationship [0..*]

```
let nonOwnedEnds: OrderedSet(UML::Property) = (from.memberEnd-from.ownedEnd)->asOrderedSet()
let generalizations : Set(UML::Generalization) = from.ownedElement->select(e | e.ocIsKindOf
let others: OrderedSet(UML::Element) = ((from.ownedElement-from.memberEnd)-generalizations)->
nonOwnedEnds->collect(e | NonOwnedEndMembership_Mapping.getMapped(e))
->union(from.ownedEnd->collect(e | OwnedEndMembership_Mapping.getMapped(e)))
->union(generalizations->collect(e | Generalization_Mapping.getMapped(e)))
->union(others->collect(e | ElementOwningMembership_Mapping.getMapped(e)))
->asOrderedSet()
```

C.2.5.11.2.2 AssociationClass_Mapping

Description

*** not specified yet ***

General Mappings

AssociationCommon_Mapping

Mapping Source

AssociationClass

Mapping Target

ConnectionDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
not Helper.hasStereotypeApplied(from, 'SysML::Blocks::Block')
```

Mapping rules

The following lists the mapping rules for the target element properties.

- ConnectionDefinition::ownedRelationship () : Relationship [0..*]

```
let nonOwnedEnds: OrderedSet(UML::Property) = (from.memberEnd-from.ownedEnd)->asOrderedSet()
let generalizations : Set(UML::Generalization) = from.ownedElement->select(e | e.ocIsKindOf
```

```

let others: OrderedSet(UML::Element) = ((from.ownedElement-from.memberEnd)-generalizations)->
nonOwnedEnds->collect(e | NonOwnedEndMembership_Mapping.getMapped(e))
->union(from.ownedEnd->collect(e | OwnedEndMembership_Mapping.getMapped(e)))
->union(generalizations->collect(e | Generalization_Mapping.getMapped(e)))
->union(others->collect(e | ElementOwningMembership_Mapping.getMapped(e)))
->asOrderedSet()

```

C.2.5.11.2.3 AssociationToAnnotation_Mapping

Description

*** not specified yet ***

General Mappings

GenericToAnnotation_Mapping

Mapping Source

Association

Mapping Target

Annotation

Owned Mappings

(none)

C.2.5.11.2.4 AssociationToAnnotatingFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToAnnotatingElement_Mapping

Mapping Source

Association

Mapping Target

MetadataFeature

Owned Mappings

- associationToAnnotation : AssociationToAnnotation_Mapping
- associationToFeatureMembership : AssociationToFeatureMembership_Mapping
- associationToFeatureTyping : AssociationToFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- MetadataFeature::name () : String [0..1]
`'isDerived'`
- MetadataFeature::ownedRelationship () : Relationship [0..*]
`Set{associationToFeatureMembership.to, associationToAnnotation.to, associationToFeatureTyping.to}`

C.2.5.11.2.5 AssociationToFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *Association* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Association

Mapping Target

FeatureMembership

Owned Mappings

- associationToMetadataFeature : AssociationToMetadataFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]
`self.associationToMetadataFeatureValue.to`

C.2.5.11.2.6 AssociationToFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Association* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Association

Mapping Target

FeatureTyping

Owned Mappings

- associationToAnnotatingFeature : AssociationToAnnotatingFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]

```
self.associationToAnnotatingFeature.to
```

- FeatureTyping::type () : Type [1]

```
let m : SYSML2::Membership = SYSML2::AttributeDefinition.allInstances()->collect(dt | dt.own  
if (m.ocIsUndefined()) then  
    OclUndefined  
else  
    m.memberElement  
endif
```

C.2.5.11.2.7 AssociationToMetadataFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

Association

Mapping Target

Feature

Owned Mappings

- associationToMetadataFeatureValue : AssociationToMetadataFeatureValue_Mapping
- associationToRedefinition : AssociationToRedefinition_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]

```
Set{self.associationToRedefinition.to, self.associationToMetadataFeatureValue.to}
```

C.2.5.11.2.8 AssociationToMetadataFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *Association* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

Association

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::value () : Expression [1]

```
ValueSpecification_Mapping.getMapped(from.isDerived)
```

- FeatureValue::ownedMemberElement () : Element [1]

```
Helper.getScalarValueTypeByName('Boolean')
```

C.2.5.11.2.9 AssociationToMetadataMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Association* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Association

Mapping Target

FeatureMembership

Owned Mappings

- associationToAnnotatingFeature : AssociationToAnnotatingFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]

```
self.associationToAnnotatingFeature.to
```

C.2.5.11.2.10 AssociationToRedefinition_Mapping

Description

Creates a redefinition relationship for the *redefiningFeature()* and the *redefinedFeature()* for the *Association* mapping.

General Mappings

GenericToRedefinition_Mapping

Mapping Source

Association

Mapping Target

Redefinition

Owned Mappings

- associationToMetadataFeature : AssociationToMetadataFeature_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Redefinition::redefiningFeature () : Feature [1]`

```
self.associationToMetadataFeatureValue.to
```

- `Redefinition::redefinedFeature () : Feature [1]`

```
let m : SYSML2::Membership = SYSML2::AttributeUsage.allInstances()->collect(dt | dt.owningRe
if (m.ocIsUndefined()) then
    OclUndefined
else
    m.memberElement
endif
```

C.2.5.11.2.11 BehavioredClassifier_Mapping

Description

The abstract mapping class `BehavioredClassifier_Mapping` maps the abstract metaclass `UML::SimpleClassifiers::BehavioredClassifiers` to a `SysMLv2::Core::Classifiers::Classifier`. The mapping class is used by concrete mapping classes, for example, `Block_Mapping`.

General Mappings

`Classifier_Mapping`

Mapping Source

`BehavioredClassifier`

Mapping Target

`Classifier`

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Classifier::ownedRelationship () : Relationship [0..*]`

```
let toElementFMS: Set(UML::Element) = from.ownedElement->select(e | (e.ocIsKindOf(UML::Prope
let redefinedAttributes: Set(UML::Element) = from.ownedElement->select(e | from.ocIsKindOf(U
let generalizations : Set(UML::Generalization) = from.ownedElement->select(e | e.ocIsKindOf
let constraints : Set(UML::Constraint) = UML::Constraint.allInstances()->select( c | c.constr
```

```

let toElementOMS: Set(UML::Element) = (((from.ownedElement - toElementFMS) - redefinedAttributes) - redefinedAttributes)
let relationships: Sequence(KerML::Relationship) =
toElementOMS->collect(e | ElementOwningMembership_Mapping.getMapped(e))
->union(toElementFMS->collect(e | ElementFeatureMembership_Mapping.getMapped(e)))
->union(constraints->collect(e | ConstrainedElementFeatureMembership_Mapping.getMapped(e)))
->union(redefinedAttributes->collect(e | AttributeRedefinedMembership_Mapping.getMapped(e)))
->union(generalizations->collect(e | Generalization_Mapping.getMapped(e))) in
if from.classifierBehavior.oclIsUndefined() then relationships else relationships->append(ClassifierBehavior)

```

C.2.5.11.2.12 BehavoredClassifierToFeatureTyping_Mapping

Description

The BehavoredClassifierToFeatureTyping_Mapping creates the relationship from the PerformActionUsage element to its type which is the transformed SysML v1 classifier behavior.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

BehavoredClassifier

Mapping Target

FeatureTyping

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::type () : Type [1]

from

C.2.5.11.2.13 BehavoredClassifierToPerformActionUsage_Mapping

Description

The BehavoredClassifierToPerformActionUsage_Mapping class creates a PerformActionUsage element to call the transformed SysML v1 classifier behavior.

General Mappings

GenericToFeature_Mapping

Mapping Source

BehavioredClassifier

Mapping Target

PerformActionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- PerformActionUsage::isComposite () : Boolean [1]
`true`
- PerformActionUsage::ownedRelationship () : Relationship [0..*]
`Set { BehavioredClassifierToFeatureTyping_Mapping.getMapped (from) }`
- PerformActionUsage::name () : String [0..1]
`'classifierBehavior'`

C.2.5.11.2.14 Class_Mapping

Description

*** not specified yet ***

General Mappings

BehavioredClassifier_Mapping

Mapping Source

Class

Mapping Target

OccurrenceDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
not Helper.hasStereotypeApplied(from, 'SysML::Requirements::Requirement') and not from.ocIsTypeOf(
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.5.11.2.15 ClassifierBehaviorMembership_Mapping

Description

The ClassifierBehaviorMembership_Mapping class creates a membership relationship for a PerformActionUsage element to call the transformed SysML v1 classifier behavior.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

BehavioredClassifier

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [0..1]

```
BehavioredClassifierToPerformActionUsage_Mapping.getMapped(from)
```

C.2.5.11.2.16 ConnectionEndToSubsetting_Mapping

Description

Creates a subsetting relationship for the *subsettingFeature()* and the *subsettingFeature()* for the *ConnectorEnd* mapping.

General Mappings

GenericToSubsetting_Mapping

Mapping Source

ConnectorEnd

Mapping Target

Subsetting

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Subsetting::subsettingFeature () : Feature [1]

```
let propertyPath: OrderedSet(UML::Property) = Helper.getTagValueAsElementColl(src, 'SysML::E
if propertyPath->isEmpty() then
    ElementMain_Mapping.getMapped(from.role)
else
    ConnectorEndToSubsettingFeature_Mapping.getMapped(from)
endif
```

- Subsetting::ownedRelationship () : Relationship [0..*]

```
let propertyPath: OrderedSet(UML::Property) = Helper.getTagValueAsElementColl(from, 'SysML::E
if propertyPath->notEmpty() then
    OrderedSet{ConnectorEndToSubsettingFeatureMembership_Mapping.getMapped(from)}
else
    OrderedSet{}
endif
```

- Subsetting::subsettingFeature () : Feature [1]

```
ConnectorEndToOwnedFeature_Mapping.getMapped(from)
```

C.2.5.11.2.17 Connector_Mapping

Description

*** not specified yet ***

General Mappings

NamedElementMain_Mapping
GenericToConnector_Mapping

Mapping Source

Connector

Mapping Target

ConnectionUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ConnectionUsage::ownedRelationship () : Relationship [0..*]`

```
from.end->collect (e | ConnectorEndToMembership_Mapping.getMapped (e) )  
->including (ConnectorMultiplicityMembership_Mapping.getMapped (from) )
```

C.2.5.11.2.18 ConnectorEndToFeatureCommon_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

ConnectorEnd

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Feature::isOrdered () : Boolean [1]`

```
from.isOrdered
```

C.2.5.11.2.19 ConnectorEndToMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *ConnectorEnd* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

ConnectorEnd

Mapping Target

EndFeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- EndFeatureMembership::ownedMemberFeature () : Feature [1]
`ConnectorEndToOwnedFeature_Mapping.getMapped(from)`

C.2.5.11.2.20 ConnectorEndToOwnedFeature_Mapping

Description

*** not specified yet ***

General Mappings

ConnectorEndToFeatureCommon_Mapping
ElementMain_Mapping

Mapping Source

ConnectorEnd

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]

```
let subsetting: KerML::Subsetting = ConnectionEndToSubsetting_Mapping.getMapped(from) in
if subsetting.oclIsUndefined() then
    OrderedSet{MultiplicityMembership_Mapping.getMapped(from)}
else
    OrderedSet{MultiplicityMembership_Mapping.getMapped(from), subsetting}
endif
```

C.2.5.11.2.21 ConnectorEndToSubsettedFeature_Mapping

Description

*** not specified yet ***

General Mappings

ConnectorEndToFeatureCommon_Mapping

Mapping Source

ConnectorEnd

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
let propertyPath: OrderedSet(UML::Property) = Helper.getTagValueAsElementColl(src, 'SysML::Blocks::N
propertyPath->notEmpty()
```

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]

```
let propertyPath: OrderedSet(UML::Property) = Helper.getTagValueAsElementColl(from, 'SysML::
let chain: OrderedSet(KerML::FeatureChaining) = propertyPath->collect(p | PropertyToFeatureCh
->asOrderedSet()->including(PropertyToFeatureChaining_Mapping.getMapped(from.role)) in
chain->union(OrderedSet{MultiplicityMembership_Mapping.getMapped(from)})
```

- Feature::name () : String [0..1]

'featureChain'

C.2.5.11.2.22 ConnectorEndToSubsettedFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *ConnectorEnd* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

ConnectorEnd

Mapping Target

EndFeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- EndFeatureMembership::ownedMemberFeature () : Feature [1]
`ConnectorEndToSubsettedFeature_Mapping.getMapped (from)`

C.2.5.11.2.23 ConnectorMultiplicityMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Connector* mapping.

General Mappings

DefaultMultiplicityMembership_Mapping

Mapping Source

Connector

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `OwningMembership::memberName () : String [0..1]`

```
from.name+'_Connector_multiplicity'
```

C.2.5.11.2.24 ConnectorType_Mapping

Description

*** not specified yet ***

General Mappings

AssociationCommon_Mapping

Mapping Source

Association

Mapping Target

ConnectionDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
(from.memberEnd->select( m | m.type.ocIsKindOf(UML::UseCase))->isEmpty()) and
(let this: UML::Association = src.ocIsType(UML::Association) in
if this.ocIsUndefined() then
    false
else
    not this.isDerived and
    not this.ocIsTypeOf(UML::AssociationClass) and
    Helper.isConnectionDef(this)
endif)
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.5.11.2.25 ConnectorTypeDerived_Mapping

Description

*** not specified yet ***

General Mappings

AssociationCommon_Mapping

Mapping Source

Association

Mapping Target

ConnectionDefinition

Owned Mappings

- associationToMetadataMembership : AssociationToMetadataMembership_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
(from.memberEnd->select( m | m.type.ocIsKindOf(UML::UseCase))->isEmpty()) and
(let this: UML::Association = src.ocAsType(UML::Association) in
if this.ocIsUndefined() then
    false
else
    this.isDerived and
    not this.ocIsTypeOf(UML::AssociationClass) and
    Helper.isConnectionDef(this)
endif)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- ConnectionDefinition::ownedRelationship () : Relationship [0..*]

```
let nonOwnedEnds: OrderedSet(UML::Property) = (from.memberEnd-from.ownedEnd)->asOrderedSet()
let generalizations : Set(UML::Generalization) = from.ownedElement->select(e | e.ocIsKindOf(UML::Generalization))
let others: OrderedSet(UML::Element) = ((from.ownedElement-from.memberEnd)-generalizations)->asOrderedSet()
nonOwnedEnds->collect(e | NonOwnedEndMembership_Mapping.getMapped(e))
->union(from.ownedEnd->collect(e | OwnedEndMembership_Mapping.getMapped(e)))
->union(generalizations->collect(e | Generalization_Mapping.getMapped(e)))
->union(others->collect(e | ElementOwningMembership_Mapping.getMapped(e)))
->asOrderedSet()
->append(self.associationToMetadataMembership.to)
```

C.2.5.11.2.26 End_Mapping

Description

*** not specified yet ***

General Mappings

PropertyCommon_Mapping

Mapping Source

Property

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
src.ocIsKindOf(UML::Property) and not src.ocIsType(UML::Property).association.ocIsUndefined()
```

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::isEnd () : Boolean [1]

true

C.2.5.11.2.27 EndMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Property* mapping.

General Mappings

StructuralFeatureMembership_Mapping

Mapping Source

Property

Mapping Target

EndFeatureMembership

Owned Mappings

(none)

C.2.5.11.2.28 NonOwnedEndSubsetting_Mapping

Description

Creates a subsetting relationship for the *subsettingFeature()* and the *subsettedFeature()* for the *Property* mapping.

General Mappings

GenericToSubsetting_Mapping

Mapping Source

Property

Mapping Target

Subsetting

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Subsetting::subsettingFeature () : Feature [1]

`Property_Mapping.getMapped (from)`

C.2.5.11.2.29 EndToSubsettingFeature_Mapping

Description

*** not specified yet ***

General Mappings

PropertyCommon_Mapping

Mapping Source

Property

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
let property: UML::Property = src.oclAsType(UML::Property) in
not property.association.oclIsUndefined()
and property.association.ownedEnd->excludes(property)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]

```
let chain: OrderedSet(KerML::FeatureChaining) = OrderedSet{EndToSubsettedFeatureChaining_Map
chain->including(MultiplicityMembership_Mapping.getMapped(from))
```

C.2.5.11.2.30 EndToSubsettedFeatureChaining_Mapping

Description

*** not specified yet ***

General Mappings

GenericToRelationship_Mapping

Mapping Source

Property

Mapping Target

FeatureChaining

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureChaining::name () : String [0..1]

```
'featureChain'
```

- FeatureChaining::chainingFeature () : Feature [1]

```
Property_Mapping.getMapped(from)
```

C.2.5.11.2.31 NonOnedEndToSubsettedFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *Property* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Property

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
src.oclIsKindOf(UML::Property) and not src.oclAsType(UML::Property).association.oclIsUndefined()
```

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]
`EndToSubsettedFeature_Mapping.getMapped(from)`

C.2.5.11.2.32 NonOwnedEnd_Mapping

Description

*** not specified yet ***

General Mappings

End_Mapping

Mapping Source

Property

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Feature::ownedRelationship () : Relationship [0..*]`

```
Set{MultiplicityMembership_Mapping.getMapped(from)
, StructuralFeatureToFeatureTyping_Mapping.getMapped(from)
, NonOwnedEndSubsettingMembership_Mapping.getMapped(from)
, NonOwnedEndToSubsettedFeatureMembership_Mapping.getMapped(from) }
->union(from.qualifier->collect(q | ElementFeatureMembership_Mapping.getMapped(q)) ->asSet
```

- `Feature::name () : String [0..1]`

```
'nonOwnedEnd'
```

C.2.5.11.2.33 NonOwnedEndMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Property* mapping.

General Mappings

EndMembership_Mapping

Mapping Source

Property

Mapping Target

EndFeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
src.ocIsKindOf(UML::Property)
and not src.ocIsType(UML::Property).association.ocIsUndefined()
and src.ocIsType(UML::Property).association.ownedEnd->excludes(src)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- `EndFeatureMembership::ownedMemberFeature () : Feature [1]`

```
NonOwnedEnd_Mapping.getMapped(from)
```

C.2.5.11.2.34 NonOwnedEndSubsettingMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Property* mapping.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

Property

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [1]
`NonOwnedEndSubsetting_Mapping.getMapped(from)`

C.2.5.11.2.35 OwnedEnd_Mapping

Description

*** not specified yet ***

General Mappings

End_Mapping

NamedElementMain_Mapping

Mapping Source

Property

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
let p: UML::Property = src.oclAsType(UML::Property) in
not p.oclIsUndefined() and
(not p.association.oclIsUndefined() and p.association.ownedEnd->includes(p)) and
(not p.association.memberEnd->select( m | (not m.type.oclIsUndefined()) and m.type.oclIsTypeOf(UML::
```

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]

```
let qualifiers: Set(KerML::FeatureMembership) = from.qualifier->collect(q | ElementFeatureMem
let typing: KerML::FeatureTyping = StructuralFeatureToFeatureTyping_Mapping.getMapped(from) i
let subsetting: Set(KerML::Subsetting) = from.subsettedProperty->collect(p | PropertySubsetti
let subsettingMultiplicityTyping: Set(KerML::Relationship) = subsetting->union(if typing.oclI
    Set{MultiplicityMembership_Mapping.getMapped(from)}
else
    Set{MultiplicityMembership_Mapping.getMapped(from), typing}
endif)->asSet() in
let relationships: Set(KerML::Relationship) = qualifiers->union(
    if from.defaultValue.oclIsTypeOf(UML::OpaqueExpression) then
        subsettingMultiplicityTyping->including(ElementOwningMembership_Mapping.getMapped(fro
    else
        subsettingMultiplicityTyping
    endif) in

if from.defaultValue.oclIsUndefined() then
    relationships
else
    relationships->including(if from.defaultValue.oclIsTypeOf(UML::OpaqueExpression) then Def
endif
```

C.2.5.11.2.36 OwnedEndMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Property* mapping.

General Mappings

EndMembership_Mapping

Mapping Source

Property

Mapping Target

EndFeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
src.ocIsKindOf(UML::Property)
and not src.ocAsType(UML::Property).association.ocIsUndefined()
and src.ocAsType(UML::Property).association.ownedEnd->includes(src)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- EndFeatureMembership::ownedMemberFeature () : Feature [1]
OwnedEnd_Mapping.getMapped(from)

C.2.5.11.2.37 Port_Mapping

Description

A port which is untyped or typed by an interface block is mapped to a SysMLv2::PortUsage.

General Mappings

Part_Mapping

Mapping Source

Port

Mapping Target

PortUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
result =
not Helper.hasStereotypeApplied(from.owner, 'SysML::ConstraintBlocks::ConstraintBlock') or
((from.type.ocIsUndefined() or Helper.hasStereotypeApplied(from.type, 'SysML::Ports&Flows::InterfaceBlock')
and not (Helper.hasStereotypeApplied(from, 'SysML::Ports&Flows::FullPort') or (from.type.ocIsKindOf(SysML::Ports&Flows::PortUsage))))
```

Mapping rules

The mapping class only has inherited rules. See the mapping classes in the general mapping section for details.

C.2.5.11.2.38 PropertyToFeatureChaining_Mapping

Description

*** not specified yet ***

General Mappings

GenericToRelationship_Mapping

Mapping Source

Property

Mapping Target

FeatureChaining

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureChaining::chainingFeature () : Feature [1]
`ElementMain_Mapping.getMapped (from)`

C.2.5.11.2.39 QualifierMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *StructuralFeature* mapping.

General Mappings

StructuralFeatureMembership_Mapping

Mapping Source

StructuralFeature

Mapping Target

FeatureMembership

Owned Mappings

(none)

C.2.5.12 UseCases

C.2.5.12.1 Overview

Table 29. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
Actor	PartDefinition	Actor_Mapping	
Extend	Relationship FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	DirectedRelationship_Mapping ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
ExtensionPoint	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
Include	FeatureMembership IncludeUseCaseUsage FeatureTyping	IncludeMembership_Mapping Include_Mapping IncludeFeatureTyping_Mapping	
UseCase	SubjectMembership ReferenceUsage SubjectMembership RequirementUsage ObjectiveMembership FeatureTyping UseCaseDefinition	UseCaseObjectiveSubjectMembership_Mapping UseCaseEmptySubjectReferenceUsage_Mapping UseCaseSubjectMembership_Mapping UseCaseObjectiveRequirementUsage_Mapping UseCaseObjectiveMembership_Mapping UseCaseSubjectFeatureTyping_Mapping UseCase_Mapping	

C.2.5.12.2 SysML v1 UseCases elements not mapped

Table 30. List of SysML v1 elements not mapped of this section

SysML v1 Concept	Rationale
Extend	The semantics of the UML4SysML::Extend relationship is not supported by SysML v2.
ExtensionPoint	The semantics of the UML4SysML::Extend relationship is not supported by SysML v2 Therefore, UML4SysML::ExtensionPoint is also not covered by the transformation.

C.2.5.12.3 Mapping Specifications

C.2.5.12.3.1 Actor_Mapping

Description

*** not specified yet ***

General Mappings

ElementMain_Mapping
BehavioeredClassifier_Mapping

Mapping Source

Actor

Mapping Target

PartDefinition

Owned Mappings

(none)

C.2.5.12.3.2 UseCaseActor_Mapping

Description

*** not specified yet ***

General Mappings

GenericToPartUsage_Mapping

Mapping Source

Property

Mapping Target

PartUsage

Owned Mappings

- useCaseActorFeatureTyping : UseCaseActorFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- PartUsage::ownedRelationship () : Relationship [0..*]

```
Set { useCaseActorFeatureTyping.to }
```
- PartUsage::name () : String [0..1]

```
from.name
```

C.2.5.12.3.3 UseCaseActorFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Property* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Property

Mapping Target

FeatureTyping

Owned Mappings

- useCaseActor : UseCaseActor_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]
`useCaseActor.to`
- FeatureTyping::type () : Type [1]
`from.type`

C.2.5.12.3.4 UseCaseActorMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Property* mapping.

General Mappings

GenericToActorMembership_Mapping

Mapping Source

Property

Mapping Target

ActorMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ActorMembership::ownedMemberParameter () : Feature [1]

`UseCaseActor_Mapping.getMapped(from)`

C.2.5.12.3.5 Include_Mapping

Description

*** not specified yet ***

General Mappings

GenericToOccurrenceUsage_Mapping

Mapping Source

Include

Mapping Target

IncludeUseCaseUsage

Owned Mappings

- includeFeatureTyping : IncludeFeatureTyping_Mapping

C.2.5.12.3.6 IncludeFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Include* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Include

Mapping Target

FeatureTyping

Owned Mappings

- includeUsage : Include_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]
`includeUsage.to`
- FeatureTyping::type () : Type [1]
`from.addition`

C.2.5.12.3.7 IncludeMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Include* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

Include

Mapping Target

FeatureMembership

Owned Mappings

- includeUsage : Include_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]

```
includeUsage.to
```

C.2.5.12.3.8 UseCase_Mapping

Description

The expected SysML v2 textual syntax of a mapped UML4SysML::UseCase with a defined subject is as follows.

```
use case def ThisIsAUseCase {  
    subject subject_ThisIsABlock : ThisIsABlock;  
}
```

Currently, only one use case subject is supported by the mapping class. Since the UML4SysML::Extend relationship is not considered by the SysML v1 to SysML v2 transformation, the extension points of a use case are also not mapped.

General Mappings

BehavioredClassifier_Mapping

NamedElementMain_Mapping

Mapping Source

UseCase

Mapping Target

UseCaseDefinition

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- UseCaseDefinition::ownedRelationship () : Relationship [0..*]

```
let properties : Set(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Property))  
let actors : Set(UML::Property) = UML::Association.allInstances()->collect(m | m.memberEnd->select(e | e.ocIsKindOf(UML::Property)))  
let extensionPoints : Sequence(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::ExtensionPoint))  
let extend : Sequence(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Extend))  
let include : Sequence(UML::Element) = from.ownedElement->select(e | e.ocIsKindOf(UML::Include))  
let elements : Set(UML::Element) = (((from.ownedElement-properties) - extensionPoints) - extend)  
let relationships : Sequence(KerML::Relationship) =  
elements->collect(e | ElementOwningMembership_Mapping.getMapped(e))  
->union(properties->collect(e | PropertyMembership_Mapping.getMapped(e)))  
->including(UseCaseSubjectMembership_Mapping.getMapped(from))  
->including(UseCaseObjectiveMembership_Mapping.getMapped(from))  
->including(CommonReturnParameterReferenceUsageMembership_Mapping.getMapped(from))
```

```
->union(actors->collect(e | UseCaseActorMembership_Mapping.getMapped(e)) in
if from.classifierBehavior.oclIsUndefined() then relationships else relationships->including
```

C.2.5.12.3.9 CaseObjectiveMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *Classifier* mapping.

General Mappings

GenericToObjectiveMembership_Mapping

Mapping Source

Classifier

Mapping Target

ObjectiveMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ObjectiveMembership::ownedMemberFeature () : Feature [1]
CaseObjectiveRequirementUsage_Mapping.getMapped(from)

C.2.5.12.3.10 CaseEmptySubjectReferenceUsage_Mapping

Description

Creates a reference usage for the *Classifier* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

Classifier

Mapping Target

ReferenceUsage

Owned Mappings

(none)

C.2.5.12.3.11 CaseObjectiveRequirementUsage_Mapping

Description

*** not specified yet ***

General Mappings

GenericToRequirementUsage_Mapping

Mapping Source

Classifier

Mapping Target

RequirementUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- RequirementUsage::ownedRelationship () : Relationship [0..*]

```
Set { CaseSubjectMembership_Mapping.getMapped (from) , CommonReturnParameterReferenceUsageMember
```

C.2.5.12.3.12 CaseSubjectMembership_Mapping

Description

The current version only supports one specified subject.

General Mappings

GenericToSubjectMembership_Mapping

Mapping Source

Classifier

Mapping Target

SubjectMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- SubjectMembership::ownedMemberParameter () : Feature [0..1]

```
if (from.ocIsTypeOf(UML::UseCase)) and (from.ocIsType(UML::UseCase).subject->size() > 0) t
```

C.2.5.12.3.13 CaseSubjectFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *Classifier* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

Classifier

Mapping Target

FeatureTyping

Owned Mappings

- useCaseSubjectReferenceUsage : CaseSubjectReferenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::type () : Type [1]

```
if from->size() > 0 then from->get(0) else OclUndefined endif
```

- FeatureTyping::typedFeature () : Feature [1]

```
useCaseSubjectReferenceUsage.to
```

C.2.5.12.3.14 CaseSubjectReferenceUsage_Mapping

Description

Creates a reference usage for the *Classifier* mapping.

General Mappings

CaseEmptySubjectReferenceUsage_Mapping

Mapping Source

Classifier

Mapping Target

ReferenceUsage

Owned Mappings

- useCaseSubjectFeatureTyping : CaseSubjectFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::ownedRelationship () : Relationship [0..*]
`Set {useCaseSubjectFeatureTyping.to}`
- ReferenceUsage::name () : String [0..1]
`'subject_' + from->get(0).name`

C.2.5.12.3.15 UseCaseEmptySubjectReferenceUsage_Mapping

Description

Creates a reference usage for the *UseCase* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

UseCase

Mapping Target

ReferenceUsage

Owned Mappings

(none)

C.2.5.12.3.16 UseCaseObjectiveMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *UseCase* mapping.

General Mappings

GenericToObjectiveMembership_Mapping

Mapping Source

UseCase

Mapping Target

ObjectiveMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ObjectiveMembership::ownedMemberFeature () : Feature [1]`
`UseCaseObjectiveRequirementUsage_Mapping.getMapped(from)`

C.2.5.12.3.17 UseCaseObjectiveRequirementUsage_Mapping

Description

*** not specified yet ***

General Mappings

GenericToRequirementUsage_Mapping

Mapping Source

UseCase

Mapping Target

RequirementUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- RequirementUsage::ownedRelationship () : Relationship [0..*]

`Set{UseCaseObjectiveSubjectMembership_Mapping.getMapped(from), CommonReturnParameterReferenc`

C.2.5.12.3.18 UseCaseObjectiveSubjectMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *UseCase* mapping.

General Mappings

GenericToSubjectMembership_Mapping

Mapping Source

UseCase

Mapping Target

SubjectMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- SubjectMembership::ownedMemberParameter () : Feature [1]

`UseCaseEmptySubjectReferenceUsage_Mapping.getMapped(from)`

C.2.5.12.3.19 UseCaseSubjectFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *UseCase* mapping.

General Mappings

GenericToFeatureTyping_Mapping

Mapping Source

UseCase

Mapping Target

FeatureTyping

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]
`useCaseSubjectReferenceUsage.to`
- FeatureTyping::type () : Type [1]
`if from.subject->size() > 0 then from.subject->get(0) else OclUndefined endif`

C.2.5.12.3.20 UseCaseSubjectMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *UseCase* mapping.

General Mappings

GenericToSubjectMembership_Mapping

Mapping Source

UseCase

Mapping Target

SubjectMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `SubjectMembership::ownedMemberParameter () : Feature [1]`

```
if from.subject->size() > 0 then UseCaseSubjectReferenceUsage_Mapping.getMapped(from) else U
```

C.2.5.12.3.21 UseCaseSubjectReferenceUsage_Mapping

Description

Creates a reference usage for the *UseCase* mapping.

General Mappings

UseCaseEmptySubjectReferenceUsage_Mapping

Mapping Source

UseCase

Mapping Target

ReferenceUsage

Owned Mappings

- `useCaseSubjectFeatureTyping : UseCaseSubjectFeatureTyping_Mapping`

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `ReferenceUsage::name () : String [0..1]`

```
'subject_' + from.subject->get(0).name
```
- `ReferenceUsage::ownedRelationship () : Relationship [0..*]`

```
Set{useCaseSubjectFeatureTyping.to}
```

C.2.5.13 Values

C.2.5.13.1 Overview

Table 31. List of all Overview Mapping Specifications

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
Duration	Expression FeatureValue FeatureValue	ValueSpecification_Mapping DefaultValue_Mapping SlotValue_Mapping	src.owner.ocllsKindOf(UML::Slot)
DurationConstraint	AssertConstraintUsage ConstraintDefinition FeatureTyping FeatureMembership	ConstraintUsage_Mapping Constraint_Mapping ConstraintUsageFeatureTyping_Mapping ConstrainedElementFeatureMembership_Mapping	
DurationInterval	Expression FeatureValue FeatureValue	ValueSpecification_Mapping DefaultValue_Mapping SlotValue_Mapping	src.owner.ocllsKindOf(UML::Slot)
DurationObservation	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
Expression	OperatorExpression OwningMembership TextualRepresentation	Expression_Mapping ExpressionElseMembership_Mapping ExpressionElseSpecification_Mapping	
Interval	Expression FeatureValue FeatureValue	ValueSpecification_Mapping DefaultValue_Mapping SlotValue_Mapping	src.owner.ocllsKindOf(UML::Slot)
IntervalConstraint	AssertConstraintUsage ConstraintDefinition FeatureTyping FeatureMembership	ConstraintUsage_Mapping Constraint_Mapping ConstraintUsageFeatureTyping_Mapping ConstrainedElementFeatureMembership_Mapping	
LiteralBoolean	LiteralBoolean	LiteralBoolean_Mapping	
LiteralInteger	LiteralInteger	LiteralInteger_Mapping	
LiteralNull	NullExpression	LiteralNull_Mapping	
LiteralReal	LiteralRational	LiteralReal_Mapping	
LiteralSpecification	LiteralExpression LiteralExpression FeatureTyping	LiteralSpecificationCommon_Mapping LiteralSpecification_Mapping LiteralSpecificationTyping_Mapping	not src.type.ocllsUndefined() and not(src.type.ocllsKindOf(UML::Enumeration)) and Helper.getSysMLv2EnumerationDefinition(src)
LiteralString	LiteralString	LiteralString_Mapping	

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
LiteralUnlimitedNatural	LiteralInfinity LiteralInteger	LiteralUnlimitedToUnbounded_Mapping LiteralUnlimitedToInteger_Mapping	(LiteralUnlimitedNatural.value <= Integer.MAX_VALUE)
Observation	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
OpaqueExpression	OwningMembership ReferenceUsage ReturnParameterMembership Feature Feature Membership FeatureMembership FeatureChainExpression FeatureTyping ParameterMembership FeatureValue CalculationUsage FeatureValue TextualRepresentation FeatureReferenceExpression ReferenceUsage	OpaqueExpressionMembership_Mapping OpaqueExpressionReturnParameterReferenceUsage_Mapping OpaqueExpressionReturnParameterMembershipReferenceUsage_Mapping OpaqueExpressionFeatureFeature_Mapping OpaqueExpressionFeature_Mapping OpaqueExpressionFeatureValueExpressionMembership_Mapping OpaqueExpressionFeatureFeatureMembership_Mapping OpaqueExpressionAsValue_Mapping OpaqueExpressionReturnParameterReferenceUsageFeatureTyping_Mapping OpaqueExpressionParameterMembership_Mapping OpaqueExpressionFeatureValue_Mapping OpaqueExpression_Mapping DefaultValueOpaqueExpression_Mapping OpaqueExpressionSpecification_Mapping OpaqueExpressionFeatureValueExpression_Mapping OpaqueExpressionReturnParameterReferenceUsageUntyped_Mapping	not src.type.oclIsUndefined() and not(src.type.oclIsKindOf(UML::Enumeration)) and Helper.getSysMLv2EnumerationDefinition(src)

SysML v1 Concept	SysML v2 Concept	Mapping Class	Filter
StringExpression	OperatorExpression OwningMembership TextualRepresentation FeatureTyping FeatureTyping Element Feature FeatureTyping Relationship Expression ReferenceUsage OwningMembership LiteralInteger ReturnParameterMembership ParameterMembership FeatureMembership FeatureTyping LiteralInteger MultiplicityRange ReferenceUsage LiteralInteger Element Membership ReturnParameterMembership ReturnParameterMembership	Expression_Mapping ExpressionElseMembership_Mapping ExpressionElseSpecification_Mapping CommonParameterReferenceUsageInFeatureTyping_Mapping Mapping CommonReturnParameterFeatureUntyped_Mapping CommonReturnParameterFeatureTyping_Mapping ElementOwnership_Mapping CommonValueSpecification_Mapping CommonParameterReferenceUsageInUntyped_Mapping DefaultMultiplicityMembership_Mapping CommonReturnParameterFeatureMembership_Mapping CommonParameterReferenceUsageInMembership_Mapping DefaultMultiplicityBoundOwnership_Mapping CommonReturnParameterReferenceUsageFeatureTyping_Mapping DefaultUpperBound_Mapping DefaultMultiplicityElement_Mapping CommonReturnParameterReferenceUsageUntyped_Mapping DefaultLowerBound_Mapping ElementMain_Mapping ElementMembership_Mapping CommonReturnParameterReferenceUsageMembership_Mapping EmptyReturnParameterFeatureMembership_Mapping ReturnParameterMembership	
TimeConstraint	AssertConstraintUsage ConstraintDefinition FeatureTyping FeatureMembership	ConstraintUsage_Mapping Constraint_Mapping ConstraintUsageFeatureTyping_Mapping ConstrainedElementFeatureMembership_Mapping	
TimeExpression	TriggerInvocationExpression	TimeExpression_Mapping	
TimeInterval	Expression FeatureValue FeatureValue	ValueSpecification_Mapping DefaultValue_Mapping SlotValue_Mapping	src.owner.ocIsKindOf(UML::Slot)
TimeObservation	FeatureMembership ReferenceUsage RequirementDefinition OwningMembership Element Documentation SubjectMembership	ElementFeatureMembership_Mapping Requirement_Mapping RequirementDocumentationMembership_Mapping NamedElementMain_Mapping RequirementDocumentation_Mapping RequirementSubjectMembership_Mapping	Helper.isRequirement(src)
ValueSpecification	Expression FeatureValue FeatureValue	ValueSpecification_Mapping DefaultValue_Mapping SlotValue_Mapping	src.owner.ocIsKindOf(UML::Slot)

C.2.5.13.2 Mapping Specifications

C.2.5.13.2.1 CommonValueSpecification_Mapping

Description

*** not specified yet ***

General Mappings

GenericToExpression_Mapping

Mapping Source

Element

Mapping Target

Expression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Expression::ownedRelationship () : Relationship [0..*]

```
ElementOwnership_Mapping.getMappedColl (from.ownedElement) ->append (CommonReturnParameterFeatu
```

C.2.5.13.2.2 EqualOperatorExpressionFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *TypedElement* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

TypedElement

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureValue::value () : Expression [1]

`CommonFeatureReferenceExpression_Mapping.getMapped (from)`

C.2.5.13.2.3 Expression_Mapping

Description

*** not specified yet ***

General Mappings

GenericToExpression_Mapping
NamedElementMain_Mapping

Mapping Source

Expression

Mapping Target

OperatorExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OperatorExpression::operator () : String [1]

`from.symbol`

C.2.5.13.2.4 ExpressionElse_Mapping

Description

*** not specified yet ***

General Mappings

Expression_Mapping

Mapping Source

Expression

Mapping Target

OperatorExpression

Owned Mappings

- expressionElseMembership : ExpressionElseMembership_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
from.symbol = 'else'
```

Mapping rules

The following lists the mapping rules for the target element properties.

- OperatorExpression::ownedRelationship () : Relationship [0..*]

```
Set {expressionElseMembership.to}
```

C.2.5.13.2.5 ExpressionElseMembership_Mapping

Description

Creates the membership relationship for the textual representation for the else guard condition specification.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

Expression

Mapping Target

OwningMembership

Owned Mappings

- expressionElseSpecification : ExpressionElseSpecification_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `OwningMembership::ownedMemberElement () : Element [1]`
`expressionElseSpecification.to`

C.2.5.13.2.6 ExpressionElseSpecification_Mapping

Description

Creates the textual representation for the else guard condition specification.

General Mappings

GenericToTextualRepresentation_Mapping

Mapping Source

Expression

Mapping Target

TextualRepresentation

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `TextualRepresentation::language () : String [1]`
`'SysMLv1'`
- `TextualRepresentation::body () : String [1]`
`'else'`

C.2.5.13.2.7 LiteralBoolean_Mapping

Description

Maps the UML4SysML::LiteralBoolean to the SysMLv2::LiteralBoolean.

General Mappings

LiteralSpecificationCommon_Mapping
ElementMain_Mapping

Mapping Source

LiteralBoolean

Mapping Target

LiteralBoolean

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- LiteralBoolean::ownedRelationship () : Relationship [0..*]

```
let ownerships: Set(SYSML2::Relationship) = ElementOwnership_Mapping.getMappedColl(from.ownedRelationships)
->including(CommonReturnParameterFeatureMembership_Mapping.getMapped(from)) in
if from.type.oclisUndefined() then
    ownerships
else
    ownerships->including(LiteralSpecificationTyping_Mapping.getMapped(from))
endif
```

- LiteralBoolean::value () : Boolean [1]

```
from.value
```

C.2.5.13.2.8 LiteralBooleanTrue_Mapping

Description

*** not specified yet ***

General Mappings

LiteralSpecificationCommon_Mapping

Mapping Source

Element

Mapping Target

LiteralBoolean

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- LiteralBoolean::value () : Boolean [1]

true

C.2.5.13.2.9 LiteralInteger_Mapping

Description

Maps the UML4SysML::LiteralInteger to the SysMLv2::LiteralInteger.

General Mappings

LiteralSpecificationCommon_Mapping
ElementMain_Mapping

Mapping Source

LiteralInteger

Mapping Target

LiteralInteger

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- LiteralInteger::ownedRelationship () : Relationship [0..*]

```
let ownerships: Set(SYSML2::Relationship) = ElementOwnership_Mapping.getMappedColl(from.ownedRelationships)
->including(CommonReturnParameterFeatureMembership_Mapping.getMapped(from)) in
if from.type.ocIsUndefined() then
  ownerships
else
  ownerships->including(LiteralSpecificationTyping_Mapping.getMapped(from))
endif
```

- LiteralInteger::value () : Integer [1]

from.value

C.2.5.13.2.10 LiteralNull_Mapping

Description

Maps the UML4SysML::LiteralNull to the SysMLv2::LiteralNull.

General Mappings

LiteralSpecificationCommon_Mapping
ElementMain_Mapping

Mapping Source

LiteralNull

Mapping Target

NullExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- NullExpression::ownedRelationship () : Relationship [0..*]

```
let ownerships: Set (SYSML2::Relationship) = ElementOwnership_Mapping.getMappedColl(from.ownedRelationships)
->including (CommonReturnParameterFeatureMembership_Mapping.getMapped(from)) in
if from.type.ocIsUndefined() then
    ownerships
else
    ownerships->including (LiteralSpecificationTyping_Mapping.getMapped(from))
endif
```

C.2.5.13.2.11 LiteralReal_Mapping

Description

Maps the UML4SysML::LiteralReal to the SysMLv2::LiteralReal.

General Mappings

LiteralSpecificationCommon_Mapping
ElementMain_Mapping

Mapping Source

LiteralReal

Mapping Target

LiteralRational

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- LiteralRational::ownedRelationship () : Relationship [0..*]

```
let ownerships: Set(SYSML2::Relationship) = ElementOwnership_Mapping.getMappedColl(from.ownedRelationships)
->including(CommonReturnParameterFeatureMembership_Mapping.getMapped(from)) in
if from.type.ocIsUndefined() then
  ownerships
else
  ownerships->including(LiteralSpecificationTyping_Mapping.getMapped(from))
endif
```

- LiteralRational::value () : Real [1]

```
from.value
```

C.2.5.13.2.12 LiteralSpecification_Mapping

Description

*** not specified yet ***

General Mappings

ElementMain_Mapping

LiteralSpecificationCommon_Mapping

Mapping Source

LiteralSpecification

Mapping Target

LiteralExpression

Owned Mappings

(none)

C.2.5.13.2.13 LiteralSpecificationCommon_Mapping

Description

*** not specified yet ***

General Mappings

GenericToExpression_Mapping

Mapping Source

LiteralSpecification

Mapping Target

LiteralExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- LiteralExpression::ownedRelationship () : Relationship [0..*]

```
let ownerships: Set(SYSML2::Relationship) = ElementOwnership_Mapping.getMappedColl(from.ownedRelationships)
->including(CommonReturnParameterFeatureMembership_Mapping.getMapped(from)) in
if from.type.ocIsUndefined() then
  ownerships
else
  ownerships->including(LiteralSpecificationTyping_Mapping.getMapped(from))
endif
```

C.2.5.13.2.14 LiteralSpecificationTyping_Mapping

Description

*** not specified yet ***

General Mappings

TypedElementToFeatureTyping_Mapping

Mapping Source

LiteralSpecification

Mapping Target

FeatureTyping

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureTyping::typedFeature () : Feature [1]`

`from`

C.2.5.13.2.15 LiteralString_Mapping

Description

Maps the UML4SysML::LiteralString to the SysMLv2::LiteralString.

General Mappings

LiteralSpecificationCommon_Mapping

ElementMain_Mapping

Mapping Source

LiteralString

Mapping Target

LiteralString

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `LiteralString::ownedRelationship () : Relationship [0..*]`

```
let ownerships: Set(SYSML2::Relationship) = ElementOwnership_Mapping.getMappedColl(from.ownedRelationships)
->including(CommonReturnParameterFeatureMembership_Mapping.getMapped(from)) in
if from.type.ocIsUndefined() then
  ownerships
else
  ownerships->including(LiteralSpecificationTyping_Mapping.getMapped(from))
endif
```


- LiteralString::value () : String [1]

```
if from.value.ocIsUndefined() then '' else from.value endif
```

C.2.5.13.2.16 LiteralUnlimitedToUnbounded_Mapping

Description

Maps the UML4SysML::LiteralUnlimited to the SysMLv2::LiteralInfinity if it is the unlimited value.

General Mappings

LiteralSpecificationCommon_Mapping
ElementMain_Mapping

Mapping Source

LiteralUnlimitedNatural

Mapping Target

LiteralInfinity

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
(from.value = -1)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- LiteralInfinity::ownedRelationship () : Relationship [0..*]

```
let ownerships: Set(SysML2::Relationship) = ElementOwnership_Mapping.getMappedColl(from.ownedRelationships)
->including(CommonReturnParameterFeatureMembership_Mapping.getMapped(from)) in
if from.type.ocIsUndefined() then
  ownerships
else
  ownerships->including(LiteralSpecificationTyping_Mapping.getMapped(from))
endif
```

C.2.5.13.2.17 LiteralUnlimitedToInteger_Mapping

Description

Maps the UML4SysML::LiteralUnlimited to the SysMLv2::LiteralInteger if it is not the unlimited value.

General Mappings

LiteralSpecificationCommon_Mapping
ElementMain_Mapping

Mapping Source

LiteralUnlimitedNatural

Mapping Target

LiteralInteger

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

```
(from.value <> -1)
```

Mapping rules

The following lists the mapping rules for the target element properties.

- LiteralInteger::value () : Integer [1]

```
from.value
```

- LiteralInteger::ownedRelationship () : Relationship [0..*]

```
let ownerships: Set (SYSML2::Relationship) = ElementOwnership_Mapping.getMappedColl (from.ownedRelationships)
->including (CommonReturnParameterFeatureMembership_Mapping.getMapped (from)) in
if from.type.ocIsUndefined() then
  ownerships
else
  ownerships->including (LiteralSpecificationTyping_Mapping.getMapped (from))
endif
```

C.2.5.13.2.18 OpaqueExpressionAsValue_Mapping

Description

*** not specified yet ***

General Mappings

CommonValueSpecification_Mapping

Mapping Source

OpaqueExpression

Mapping Target

FeatureChainExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureChainExpression::ownedRelationship () : Relationship [0..*]

Set{OpaqueExpressionParameterMembership_Mapping.getMapped(from), CommonReturnParameterFeatur

C.2.5.13.2.19 OpaqueExpression_Mapping

Description

*** not specified yet ***

General Mappings

CommonAction_Mapping
ValueSpecification_Mapping

Mapping Source

OpaqueExpression

Mapping Target

CalculationUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- CalculationUsage::ownedRelationship () : Relationship [0..*]

Set{OpaqueExpressionMembership_Mapping.getMapped(from), OpaqueExpressionReturnParameterMembe

C.2.5.13.2.20 OpaqueExpressionFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

OpaqueExpression

Mapping Target

Feature

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Feature::ownedRelationship () : Relationship [0..*]

`Set{OpaqueExpressionFeatureValue_Mapping.getMapped(from), OpaqueExpressionFeatureFeatureMem`

C.2.5.13.2.21 OpaqueExpressionFeatureFeature_Mapping

Description

*** not specified yet ***

General Mappings

GenericToFeature_Mapping

Mapping Source

OpaqueExpression

Mapping Target

Feature

Owned Mappings

(none)

C.2.5.13.2.22 OpaqueExpressionFeatureFeatureMembership_Mapping

Description

Creates a feature membership relationship for *ownedMemberFeature()* for the *OpaqueExpression* mapping.

General Mappings

GenericToFeatureMembership_Mapping

Mapping Source

OpaqueExpression

Mapping Target

FeatureMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureMembership::ownedMemberFeature () : Feature [1]
`OpaqueExpressionFeatureFeature_Mapping.getMapped(from)`

C.2.5.13.2.23 OpaqueExpressionFeatureValue_Mapping

Description

Creates a feature value relationship for *value()* for the *OpaqueExpression* mapping.

General Mappings

GenericToFeatureValue_Mapping

Mapping Source

OpaqueExpression

Mapping Target

FeatureValue

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureValue::value () : Expression [1]`

`OpaqueExpressionFeatureValueExpression_Mapping.getMapped(from)`

C.2.5.13.2.24 OpaqueExpressionFeatureValueExpression_Mapping

Description

*** not specified yet ***

General Mappings

`GenericToExpression_Mapping`

Mapping Source

`OpaqueExpression`

Mapping Target

`FeatureReferenceExpression`

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `FeatureReferenceExpression::ownedRelationship () : Relationship [0..*]`

`Set{OpaqueExpressionFeatureValueExpressionMembership_Mapping.getMapped(from), EmptyReturnPar`

C.2.5.13.2.25 OpaqueExpressionFeatureValueExpressionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *OpaqueExpression* mapping.

General Mappings

`GenericToMembership_Mapping`

Mapping Source

`OpaqueExpression`

Mapping Target

Membership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- Membership::memberElement () : Element [1]

from

C.2.5.13.2.26 OpaqueExpressionMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *OpaqueExpression* mapping.

General Mappings

GenericToOwningMembership_Mapping

Mapping Source

OpaqueExpression

Mapping Target

OwningMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- OwningMembership::ownedMemberElement () : Element [1]

OpaqueExpressionSpecification_Mapping.getMapped(from)

C.2.5.13.2.27 OpaqueExpressionParameterMembership_Mapping

Description

Creates a membership relationship for *memberElement()* for the *OpaqueExpression* mapping.

General Mappings

GenericToParameterMembership_Mapping

Mapping Source

OpaqueExpression

Mapping Target

ParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:

(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ParameterMembership::ownedMemberParameter () : Feature [1]
`OpaqueExpressionFeature_Mapping.getMapped(from)`

C.2.5.13.2.28 OpaqueExpressionReturnParameterMembershipReferenceUsage_Mapping

Description

Creates a reference usage for the *OpaqueExpression* mapping.

General Mappings

GenericToReturnParameterMembership_Mapping

Mapping Source

OpaqueExpression

Mapping Target

ReturnParameterMembership

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReturnParameterMembership::ownedMemberParameter () : Feature [1]

```
if from.type.oclIsUndefined() then OpaqueExpressionReturnParameterReferenceUsageUntyped_Mapping
```

C.2.5.13.2.29 OpaqueExpressionReturnParameterReferenceUsage_Mapping

Description

Creates a reference usage for the *OpaqueExpression* mapping.

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

OpaqueExpression

Mapping Target

ReferenceUsage

Owned Mappings

- opaqueExpressionReturnParameterReferenceUsageFeatureTyping :
OpaqueExpressionReturnParameterReferenceUsageFeatureTyping_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::direction () : FeatureDirectionKind [0..1]

```
KerML::FeatureDirectionKind::_out'
```

- ReferenceUsage::ownedRelationship () : Relationship [0..*]

```
Set {opaqueExpressionReturnParameterReferenceUsageFeatureTyping.to}
```

C.2.5.13.2.30 OpaqueExpressionReturnParameterReferenceUsageFeatureTyping_Mapping

Description

Creates a feature typing relationship owned by the element *typedFeature()* and typed by *type()* for the *OpaqueExpression* mapping.

General Mappings

TypedElementToFeatureTyping_Mapping

Mapping Source

OpaqueExpression

Mapping Target

FeatureTyping

Owned Mappings

- opaqueExpressionReturnParameterReferenceUsage :
OpaqueExpressionReturnParameterReferenceUsage_Mapping

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- FeatureTyping::typedFeature () : Feature [1]

opaqueExpressionReturnParameterReferenceUsage.to

C.2.5.13.2.31 OpaqueExpressionReturnParameterReferenceUsageUntyped_Mapping

Description

*** not specified yet ***

General Mappings

GenericToReferenceUsage_Mapping

Mapping Source

OpaqueExpression

Mapping Target

ReferenceUsage

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- ReferenceUsage::direction () : FeatureDirectionKind [0..1]

```
KerML::FeatureDirectionKind::_'out'
```

C.2.5.13.2.32 OpaqueExpressionSpecification_Mapping

Description

*** not specified yet ***

General Mappings

GenericToTextualRepresentation_Mapping

Mapping Source

OpaqueExpression

Mapping Target

TextualRepresentation

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- TextualRepresentation::body () : String [1]

```
if from.body->size() = 0 then OclUndefined else from.body.get(0) endif
```

- TextualRepresentation::language () : String [1]

```
if from.language->size() = 0 then OclUndefined else from.language.get(0) endif
```

C.2.5.13.2.33 TimeExpression_Mapping

Description

*** not specified yet ***

General Mappings

ValueSpecification_Mapping

Mapping Source

TimeExpression

Mapping Target

TriggerInvocationExpression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- TriggerInvocationExpression::kind () : TriggerKind [1]

`SysMLv2::TriggerKind::at`

C.2.5.13.2.34 ValueSpecification_Mapping

Description

*** not specified yet ***

General Mappings

CommonValueSpecification_Mapping
NamedElementMain_Mapping

Mapping Source

ValueSpecification

Mapping Target

Expression

Owned Mappings

(none)

Applicable filters

This mapping applies only if the following (OCL) condition is verified:
(none)

Mapping rules

The following lists the mapping rules for the target element properties.

- `Expression::ownedRelationship () : Relationship [0..*]`

```
    if from.type.oclIsUndefined() then
        Set{CommonReturnParameterFeatureMembership_Mapping.getMapped(from) }
    else
        Set{LiteralSpecificationTyping_Mapping.getMapped(from), CommonReturnParameterFeatureMembe
    endif
```