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MODAF M3 1.2.004

2013-01-15

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# MODAF M3 version 1.2.004

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## 1. MODAF 1.2.004

### 1.1 Description of the work performed

This document contains the MODAF M3 version 1.2.004 views as figures and a table of all of the MODAF elements that are contained in MODAF M3 version 1.2.004.

The document contains the following sections:

- MODAF All views
- MODAF Strategic Views
- MODAF Operational Views
- MODAF Service Views
- MODAF System Views
- MODAF Technical Standards Views □      MODAF Acquisition Views

The sections or *Viewpoints* all contain several individual views from which the M3 meta-model can be viewed. Each of the above *Viewpoints* contains a descriptive figure that tries to summarize the Viewpoint as a whole. This is followed by individual figures for each of the views within the viewpoint and this in turn is followed by a list of all of the elements that are owned by a viewpoint.

**class Introduction**

### v1.2.004

The MODAF Meta-Model (M3) specifies a profile of UML 2.1 for MODAF. The M3 has two roles; tool configuration, and specification of the XMI exchange format between MODAF-compliant tools.

The M3 is an extension of the UML 2.1 Meta-Model - note that it makes no changes to the UML 2.1 model, it simply uses the built-in UML profiling mechanism.

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In order to control the way the profile is used, constraints have been added. Vendors planning to implement the M3 should examine these constraints carefully and ensure that tools behave according to the constraints. In addition, abstract classes have been used extensively to control the roles of allowable relationships. Again, vendors should note these carefully and ensure tool compliance.

The XMI import/export from MODAF tools shall conform to the XMI v2.1 and UML 2.1, with additional tags to support the stereotypes defined in M3. The production rules for these tags are specified in the UML 2.1 Superstructure document (sect 18.3.6 on Profiles). Although the productions rules are simple and straightforward, if there is sufficient demand from the vendor community an XML Schema for the stereotypes will be produced.

**Figure 1:** MODAF meta-model introduction

1.2 All Views

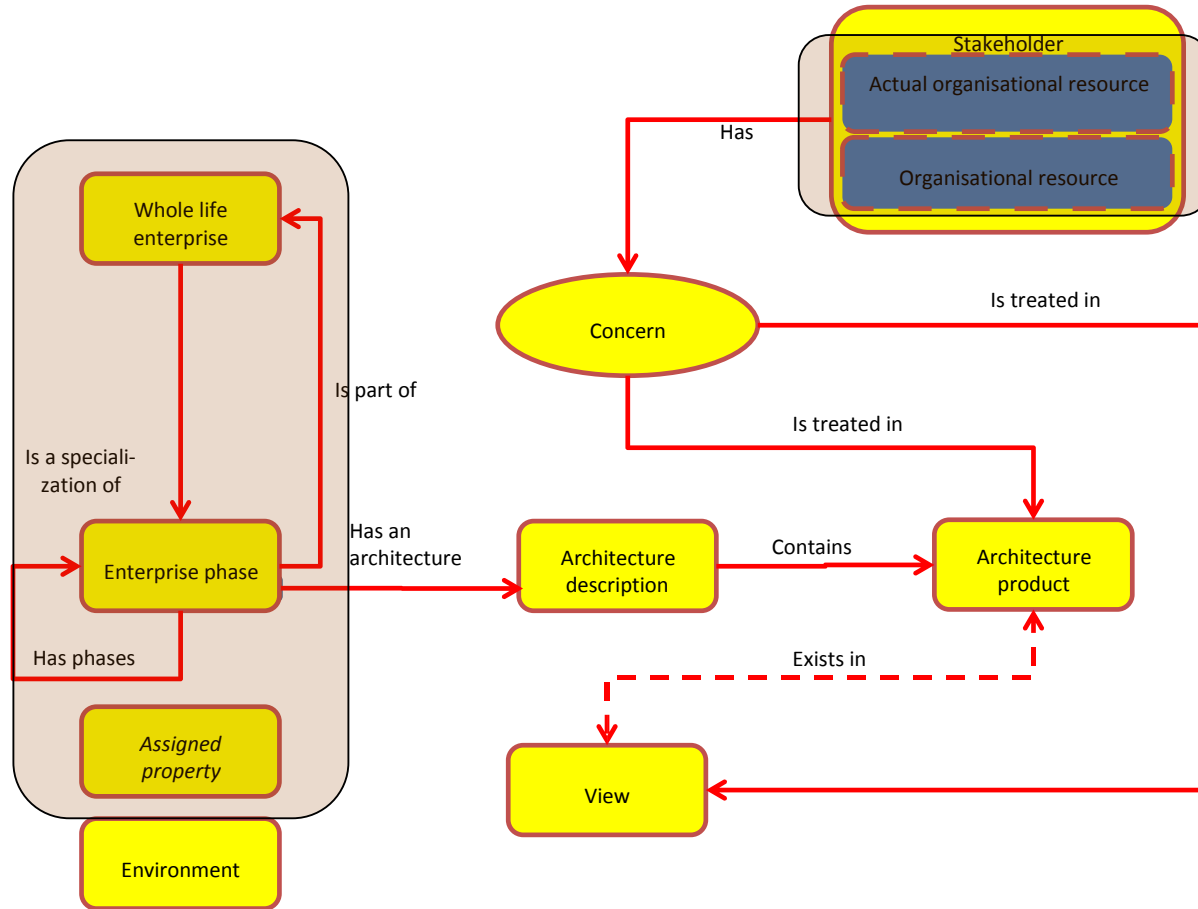


Figure 2: All Views MODAF M3 elements summary

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**1.2.1 AV-1: Overview and summary information**



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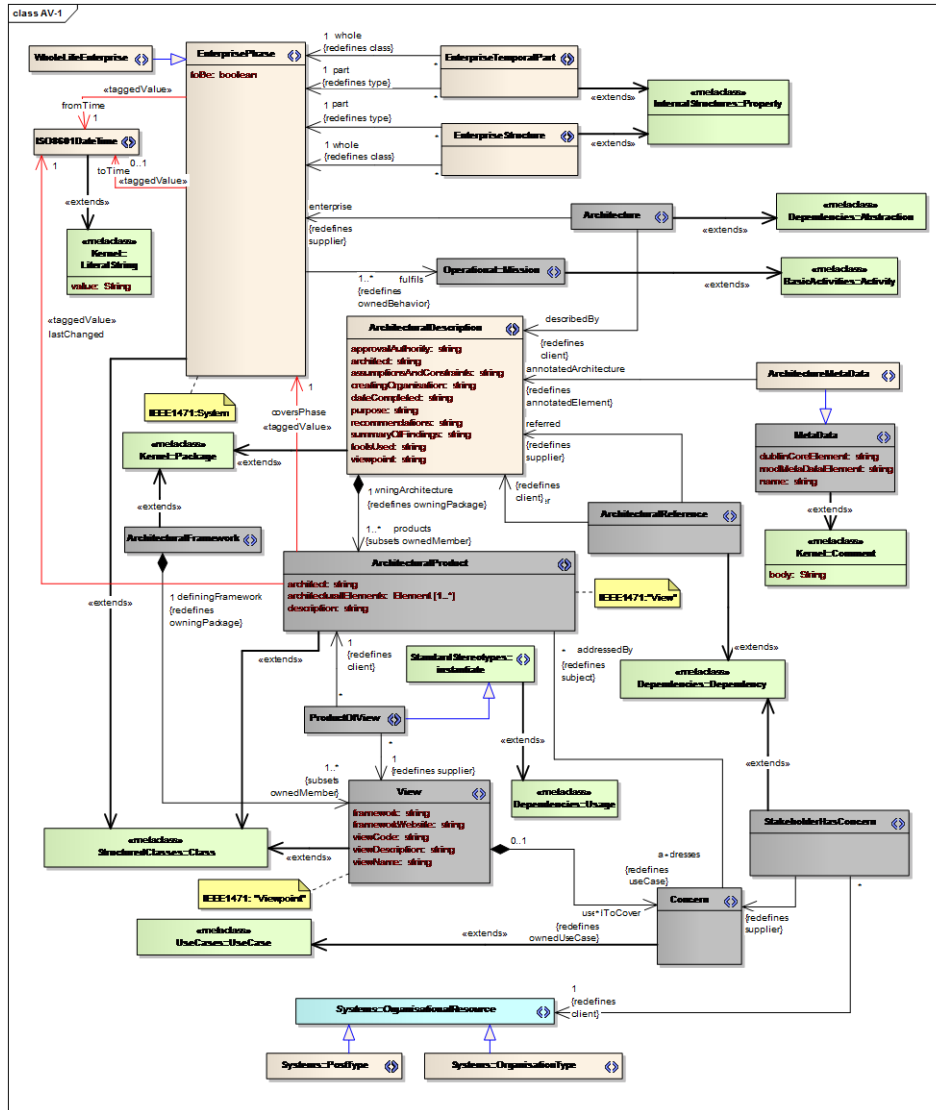
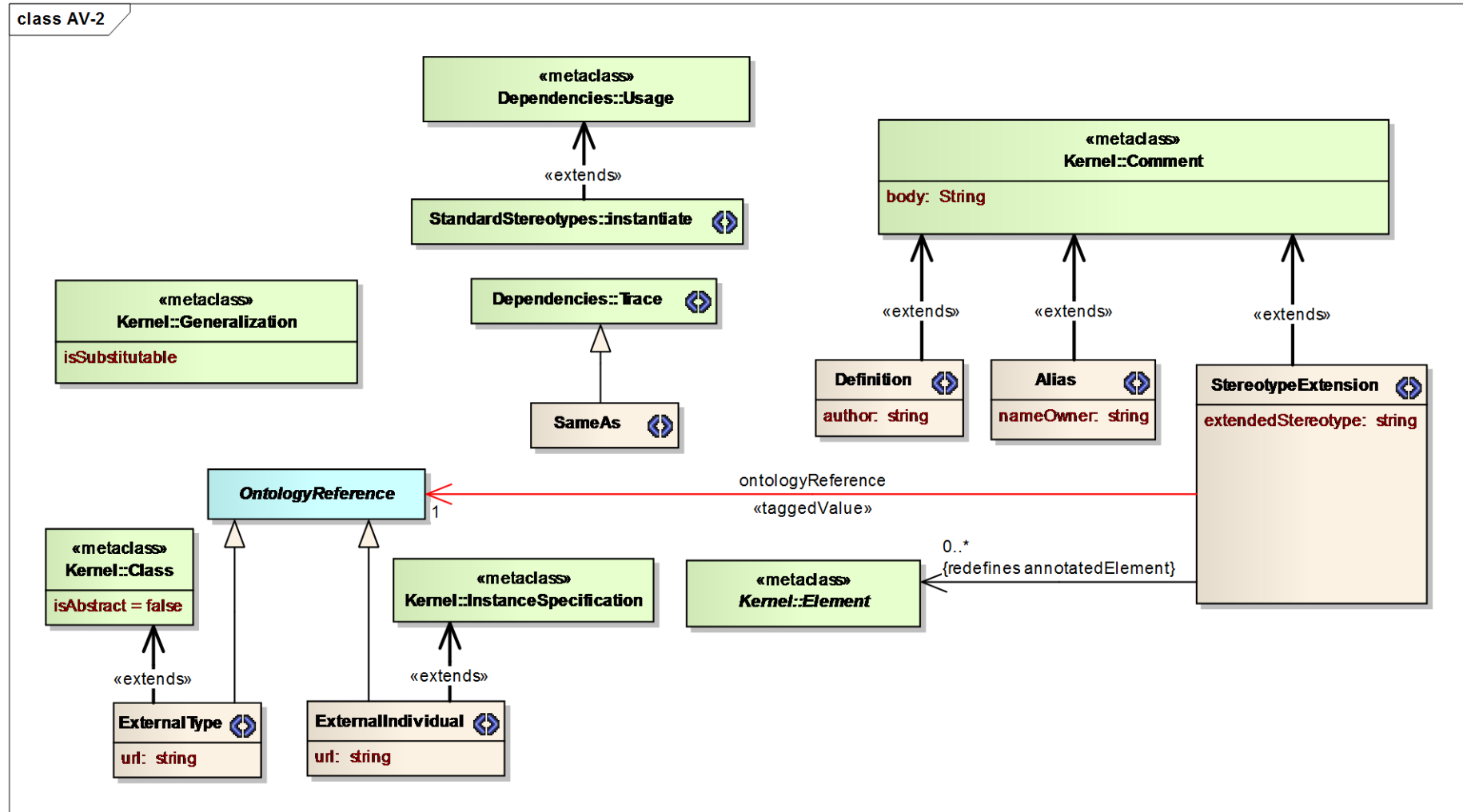


Figure 3: AV-1 meta-model in M3  
1.2.2 AV-2: Integrated dictionary



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**Figure 4:** AV-2 in M3

### 1.2.3 Environment and measurement handling

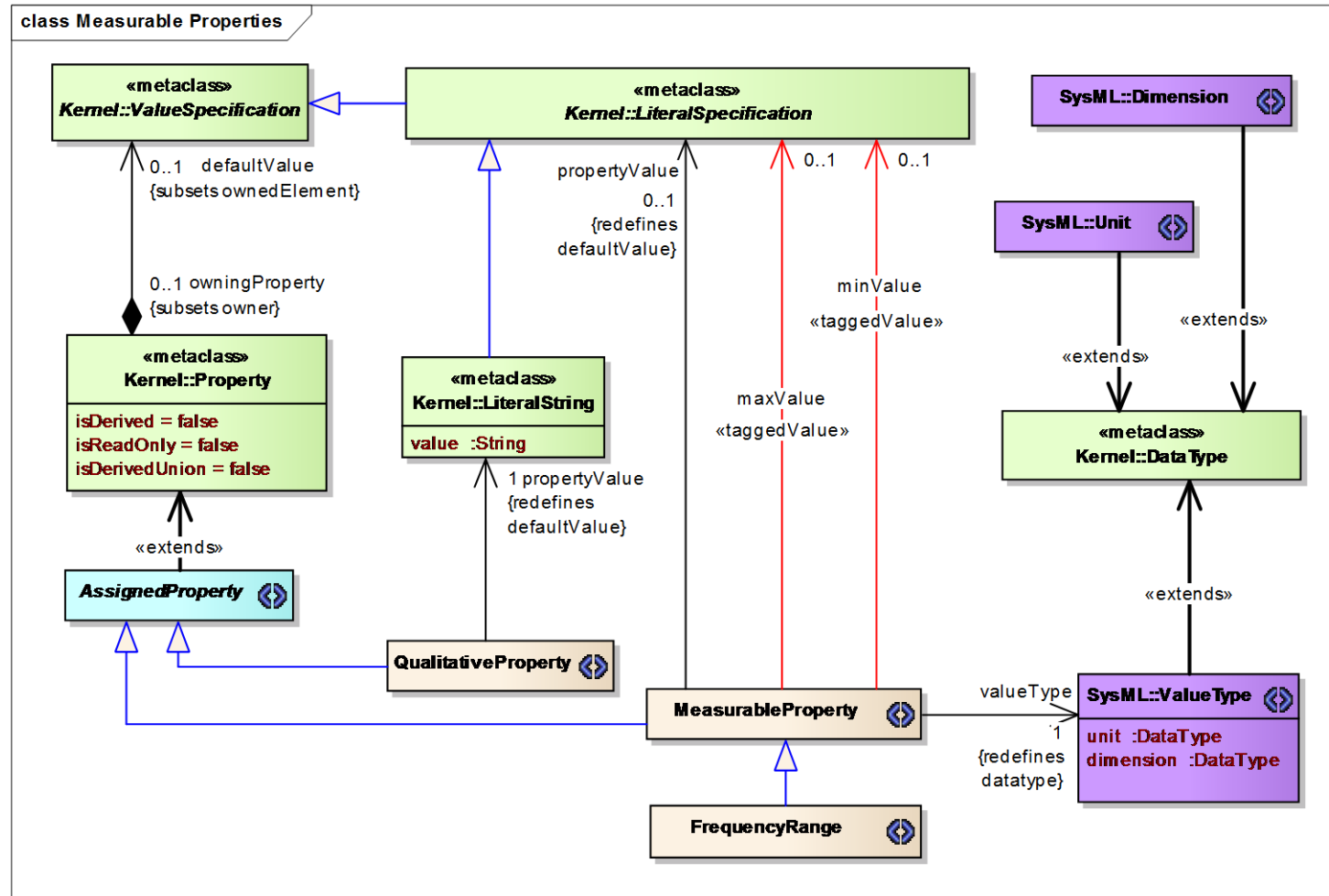


Figure 5: Measurement handling in M3

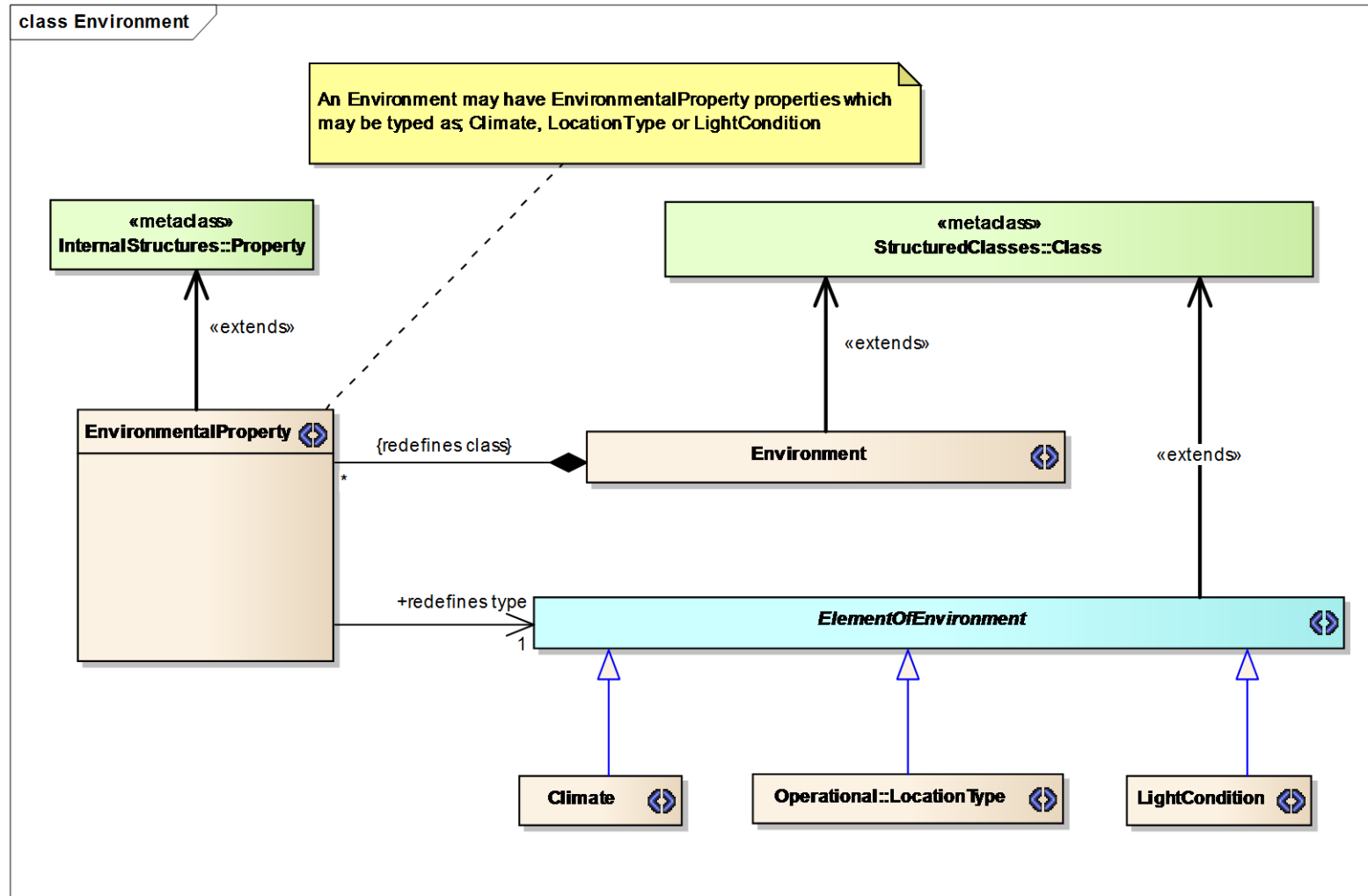


Figure 6: Environment handling in M3

class Requirements

Although not specified in the MODAF Handbook, tool vendors may wish to allow architects to assign and trace text requirements to various architectural elements. Rather than invent a new requirements model, M3 re-uses the stereotypes from SysML. Refer to the SysML documentation for how this is used.

Note that text requirements are not a normative part of the MODAF specification, therefore when exchanging data that conforms to the M3, a receiving system may not be able to read requirements data.

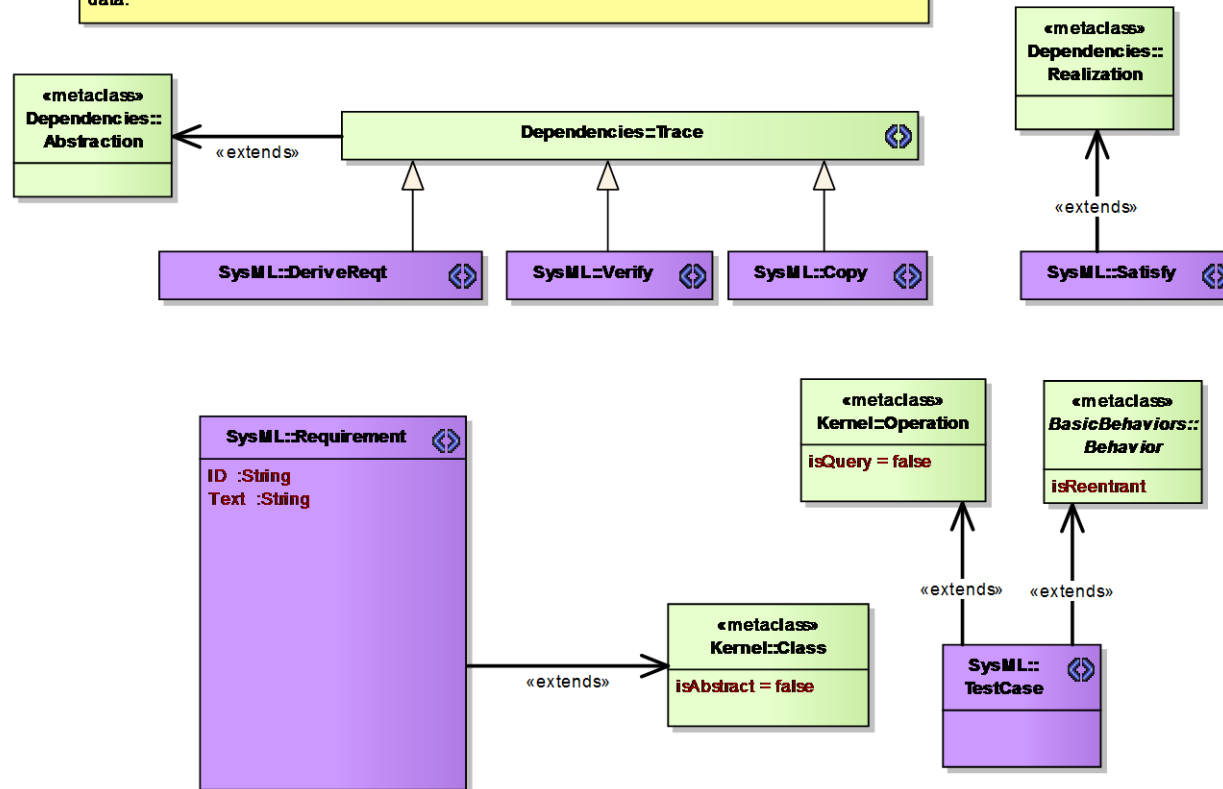


Figure 7: Requirements handling in M3

1.2.4 All Views elements table

MODAF 1.2.004 All Views
<p><b>Alias</b> «stereotype» <u>Associations:</u> -</p> <p><u>Extension:</u> Alias «extends» Comment <u>Attributes:</u> nameOwner</p> <p>An alternative name for an element.</p>

**ArchitecturalDescription** «stereotype» Associations:  
ArchitecturalDescription - ArchitecturalProduct Extension:  
ArchitecturalDescription «extends»  
Package Attributes: approvalAuthority  
architect  
assumptionsAndConstraints  
creatingOrganisation  
dateCompleted purpose  
recommendations  
summaryOfFindings  
toolsUsed  
viewpoint

A specification of a system of systems at a technical level which also provides the business context for the system of systems. IEEE1471 describes an architectural description as "a collection of products to document the architecture of a system". This is something of a circular definition (as product in this sense is an architectural product), and also assumes a technical system, whereas architectures complying with this meta-model describe an enterprise - i.e. the system of systems and the human processes they support.

**ArchitecturalFramework** «stereotype» Associations:  
ArchitecturalFramework - View Extension:  
ArchitecturalFramework «extends» Package Attributes:

-

A set of connected View specifications which serve to define how an Enterprise may be represented by an ArchitecturalDescription.



**ArchitecturalProduct** «stereotype» Associations:

ArchitecturalProduct - Concern

ArchitecturalProduct «taggedValue» EnterprisePhase

ArchitecturalProduct «taggedValue» ISO8601DateTime Extension:

ArchitecturalProduct «extends»

Class Attributes: architect

architecturalElements

description

A connected and coherent set of Architectural Elements which conform to a View.

**ArchitecturalReference** «stereotype» Associations:

ArchitecturalReference - ArchitecturalDescription

ArchitecturalReference - ArchitecturalDescription

Extension:

ArchitecturalReference «extends» Dependency Attributes:

-

Asserts that one architectural description (referrer) refers to another (referred).

**Architecture** «stereotype»

Associations:

Architecture - ArchitecturalDescription

Architecture - EnterprisePhase

Extension:

Architecture «extends» Abstraction Attributes:

-

An abstraction of an Enterprise, represented by an ArchitecturalDescription.

**ArchitectureMetaData** «stereotype» Associations:

ArchitectureMetaData - ArchitecturalDescription

Generalization:

ArchitectureMetaData - MetaData

Attributes:

-

A Metadata element that applies to the whole architecture.

**ArchitectureRealisation** «stereotype» Associations:

ArchitectureRealisation - PhysicalArchitecture

ArchitectureRealisation - LogicalArchitecture

Extension:

ArchitectureRealisation «extends» Realization Attributes:

-

An assertion that a PhysicalArchitecture is a realisation of a LogicalArchitecture.

**AssignedProperty** «stereotype» Associations:

-

Extension:

AssignedProperty «extends» Property

Attributes:

-

A property with a value assigned.

**Climate** «stereotype» Associations:

-

Generalization:

Climate - ElementOfEnvironment Attributes:

-

A type of weather condition, or combination of weather conditions (e.g. high temperature & dry).

**Concern** «stereotype» Associations:

-

Extension:

Concern «extends» UseCase Attributes:

-

An interest in a subject held by one or more stakeholder OrganisationalResource.

**ConformsTo** «stereotype»

Associations:

ConformsTo - Standard

Extension:

ConformsTo «extends» Dependency Attributes:

-

Asserts that an element in the architecture conforms to a Standard.

**Definition** «stereotype» Associations:

-

Extension:

Definition «extends»

Comment Attributes: author

A definition of an element in the architecture. Note - every element added by an architect must have a definition.

**ElementOfEnvironment** «stereotype»

Associations:

-

Extension:

ElementOfEnvironment «extends» Class Attributes:

-

Any MODAF element that forms part of an Environment.

**EnterprisePhase** «stereotype»

Associations:

EnterprisePhase - Mission

EnterprisePhase «taggedValue» EnterpriseVision

EnterprisePhase «taggedValue» Capability

EnterprisePhase «taggedValue» ISO8601DateTime

EnterprisePhase «taggedValue» ISO8601DateTime Extension:

EnterprisePhase «extends»

Class Attributes: toBe

A current or future state of a WholeLifeEnterprise or another EnterprisePhase.

**EnterpriseStructure** «stereotype»

Associations:

EnterpriseStructure - EnterprisePhase

EnterpriseStructure - EnterprisePhase

Extension:

EnterpriseStructure «extends» Property

Attributes:

-

Asserts that one EnterprisePhase is a spatial part of another. Note: This is a topological structuring relationship, hence the parent EnterprisePhase may be physically disjoint.

**EnterpriseTemporalPart** «stereotype» Associations:

EnterpriseTemporalPart - EnterprisePhase

EnterpriseTemporalPart - EnterprisePhase

Extension:

EnterpriseTemporalPart «extends» Property Attributes:

-

Asserts that one EnterprisePhase is a temporal part of another (i.e. it is a phase of the other). Note: This means that both EnterprisePhases have the same spatial extent - i.e. this is only a temporal structure.

**Environment** «stereotype»

Associations:

-

Extension:

Environment «extends» Class Attributes:

-

A definition of the conditions in which something exists or functions. An Environment may be specified in terms of LocationType (e.g. terrain), Climate (e.g. tropical), and LightCondition (e.g. dark, light, dusk, etc.).

**EnvironmentalProperty** «stereotype» Associations:

EnvironmentalProperty - Environment

EnvironmentalProperty - ElementOfEnvironment

Extension:

EnvironmentalProperty «extends» Property Attributes:

-

Asserts that an Environment has one or more properties. These may be Climate, LocationType, or LightCondition.

**ExternalIndividual** «stereotype»

Associations:

-

Extension:

ExternalIndividual «extends» InstanceSpecification

Generalization:

ExternalIndividual -

OntologyReference Attributes: url

An individual (i.e. something which has spatial and temporal extent) defined by an external ontology.

**ExternalType** «stereotype»

Associations:

-

Extension:

ExternalType «extends» Class Generalization:

ExternalType -

OntologyReference Attributes: url

A type defined by an external ontology. Note: this may be higher-order - i.e. a type of a type.

**FrequencyRange** «stereotype»

Associations:

-

Generalization:

FrequencyRange - MeasurableProperty Attributes:

-

A MeasurableProperty that specifies maximum and minimum frequencies, measured in Hertz as real numbers.



**ISO8601DateTime** «stereotype» Associations:

-

Extension:

ISO8601DateTime «extends» LiteralString Attributes:

-

A date and time specified in the ISO8601 date-time format including time zone designator (TZD): YYYY-MM-DDThh:mm:ssTZD So, 7:20pm and 30 seconds on 30th July 2005 in the CET timezone would be represented as "2005-07-30T19:20:30+01:00". The date time string is represented by the value attribute of UML::LiteralString.

**InformationModel** «stereotype» Associations:

-

Generalization:

InformationModel - ArchitecturalProduct Attributes:

-

An ArchitecturalProduct that represents the structure of information - e.g. a logical or physical data model.

**LightCondition** «stereotype»

Associations:

-

Generalization:

LightCondition - ElementOfEnvironment

Attributes:

-

A specification of environmental lighting conditions. Examples would be daylight, dusk, night, moonlight, artificial.

**Matrix** «stereotype» Associations:

-

Generalization:

Matrix - ArchitecturalProduct Attributes:

-

An ArchitecturalProduct that presents information in a tabular form.

**MeasurableProperty** «stereotype» Associations:

MeasurableProperty - ValueType

MeasurableProperty - LiteralSpecification

MeasurableProperty«taggedValue»LiteralSpecification

MeasurableProperty«taggedValue»LiteralSpecification

Generalization:

MeasurableProperty - AssignedProperty Attributes:

-

An AssignedProperty of something in the physical world, expressed in amounts of a unit of measure. The property may have a required value - either specified by the [defaultValue] from uml::property attribute, or the [minValue] and [maxValue] to specify a required range.

**MetaData** «stereotype» Associations:

-

Extension:

MetaData «extends» Comment

Attributes:

name

dublinCoreElement

modMetaDataElement

Annotation that can be applied to any element in the architecture. Note: wherever possible, standard Meta-Data types should be used - e.g. conforming to Dublin Core. Note for MOD Users: The MOD Meta Data Standard categories shall be used.

**Ontology** «stereotype»

Associations:

-

Generalization:

Ontology - ArchitecturalProduct Attributes:

-

An ArchitecturalProduct that represents real-world individuals and classes, and the relationships between them.

**OntologyReference** Associations:

-

Attributes:

-

A reference to an element in a recognised external ontology or taxonomy.

**ProductOfView** «stereotype»

Associations:

ProductOfView - View

ProductOfView - ArchitecturalProduct Generalization:

ProductOfView - instantiate Attributes:

-

Asserts that an ArchitecturalProduct conforms to a View specification.

**QualitativeProperty** «stereotype» Associations:

QualitativeProperty - LiteralString

Generalization:

QualitativeProperty - AssignedProperty Association:

Attributes:

-

An AssignedProperty whose value is a text literal (string).

**SameAs** «stereotype»

Associations:

-

Generalization:

SameAs - Trace

Attributes:

-

Asserts that two elements refer to the same real-world thing.

**StakeholderHasConcern** «stereotype» Associations:

StakeholderHasConcern - Concern

StakeholderHasConcern - OrganisationalResource

Extension:

StakeholderHasConcern «extends» Dependency Attributes:

-

An assertion that a OrganisationalResource has a Concern.

**Standard** «stereotype» Associations:

-

Extension:

Standard «extends» Class

Generalization:

Standard -

SubjectOfforecast

Attributes: identifier

publishedWebsite publisher

ratificationDate version

withdrawalDate

A ratified and peer-reviewed specification that is used to guide or constrain the architecture. A Standard may be applied to any element in the architecture via the [constrainedItem] property of UML::Constraint.

**StereotypeExtension** «stereotype»

Associations:

StereotypeExtension – Element

StereotypeExtension «taggedValue» OntologyReference

Extension

StereotypeExtension «extends»

Comment Attributes: extendedStereotype

Defines an additional stereotype used in the architecture which is not defined in this meta-model. The body attribute contains the name of the new stereotype. The extendedStereotype tagged value shall contain the name of the meta-model stereotype which is extended. The ontologyReference tagged value shall be populated with a reference to the external ontology element represented by the new stereotype.

Note: this is effectively a short-hand method for representing ontology items in the architecture. New stereotype names can be created at will by the architect, provided that they reference an element in a recognised external ontology.

Note: Any stereotypes added by the architect which do not have a corresponding StereotypeExtension will be deemed non-compliant and ignored by tools importing data compliant to this meta-model.

**TextProduct** «stereotype»

Associations:

-

Generalization:

TextProduct - ArchitecturalProduct Attributes:

-

An ArchitecturalProduct that is represented as text.

**View** «stereotype»

Associations:

View - Concern

Extension:

View «extends»

Class Attributes:

viewCode viewName

viewDescription

framework

frameworkWebsite

A specification of a way to present an aspect of the architecture. Views are defined with one or more purposes in mind - e.g. showing the logical topology of the enterprise, describing a process model, defining a data model, etc.

**WholeLifeEnterprise** «stereotype»

Associations:

WholeLifeEnterprise «taggedValue» ActualOrganisation

WholeLifeEnterprise «taggedValue» Project

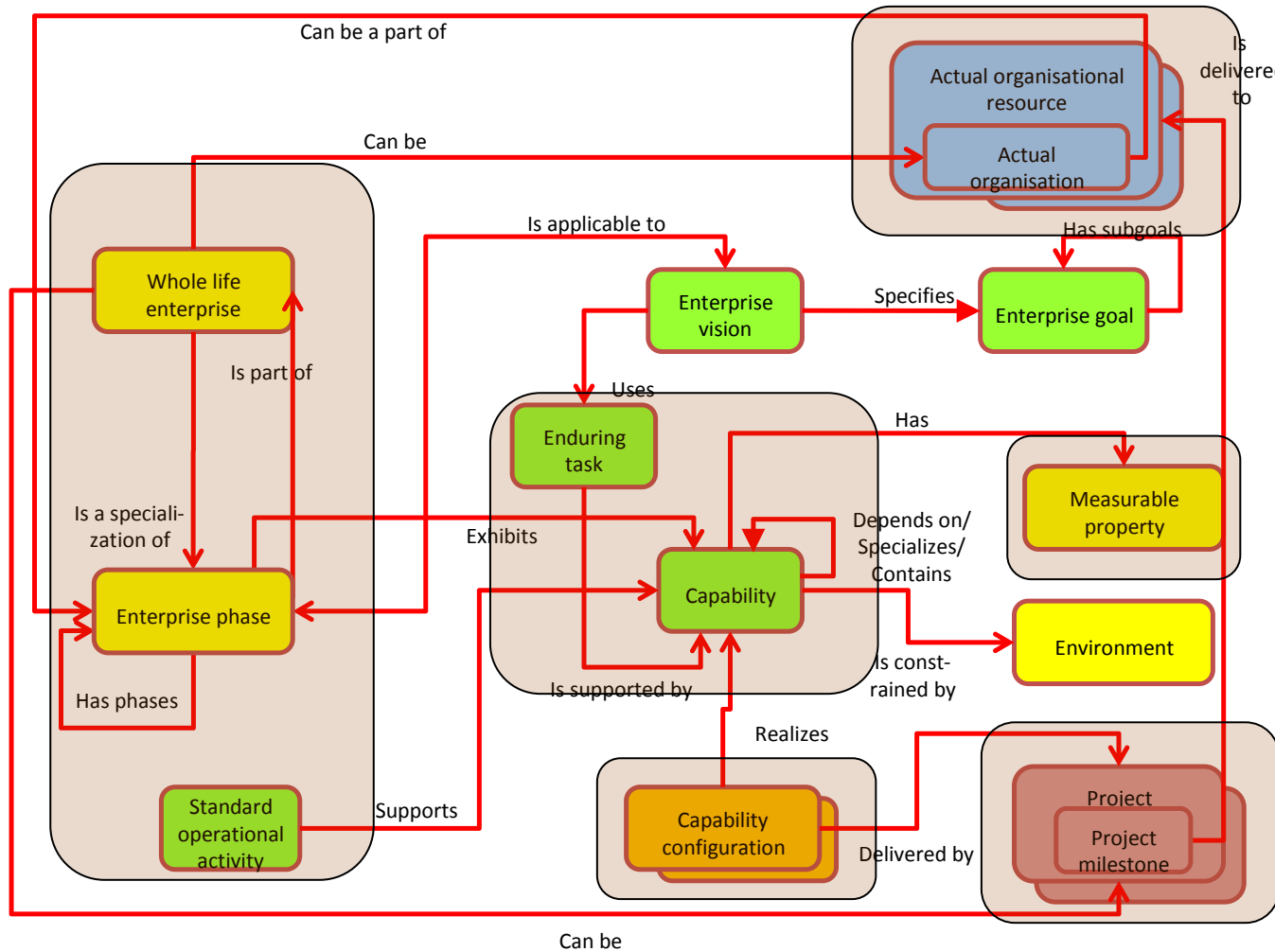
Generalization:

WholeLifeEnterprise - EnterprisePhase Attributes:

-

An EnterprisePhase that represents the whole existance of an enterprise.

1.3 Strategic views





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**Figure 8:** Strategic Views MODAF M3 elements summary

StV-

1.3.1

1: Enterprise vision

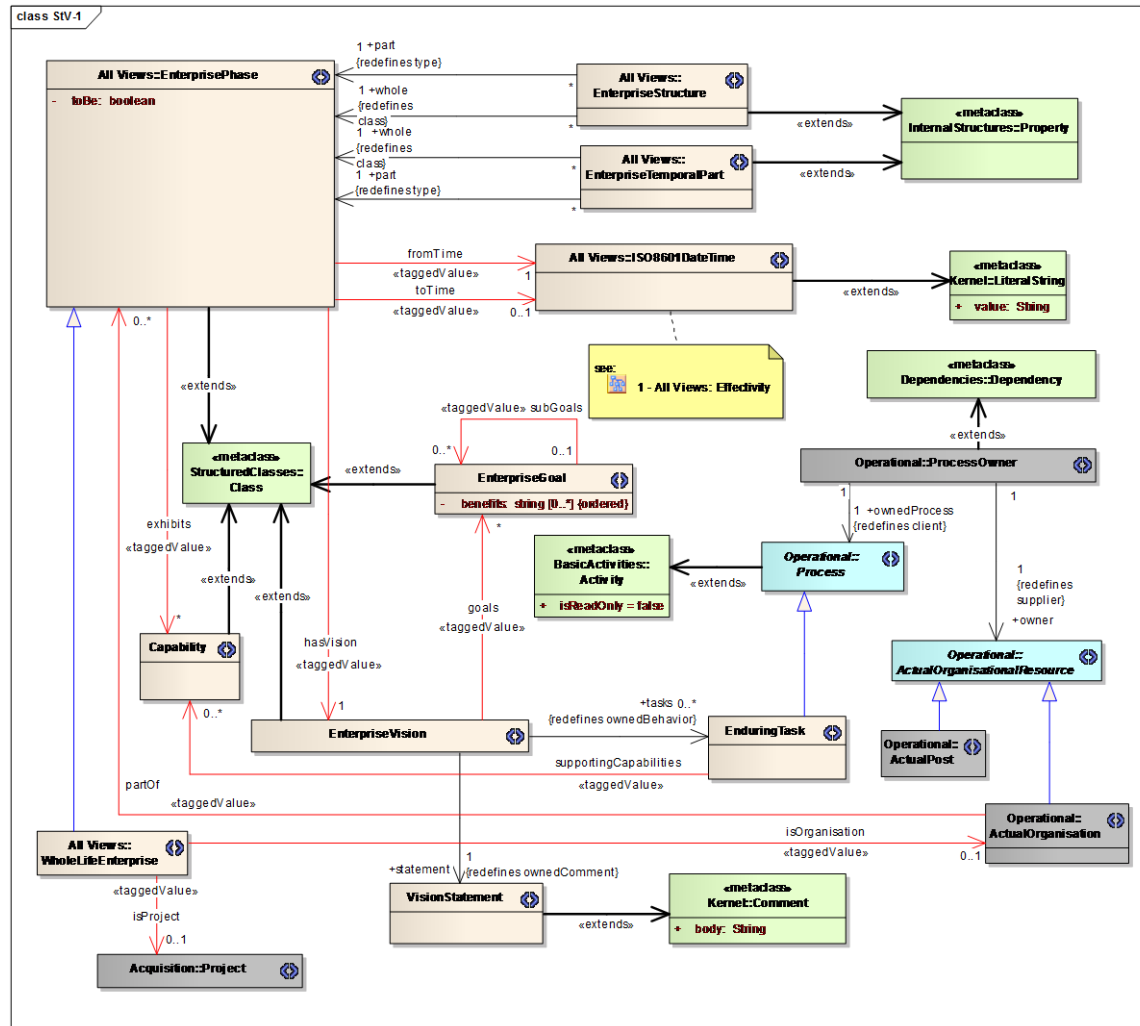
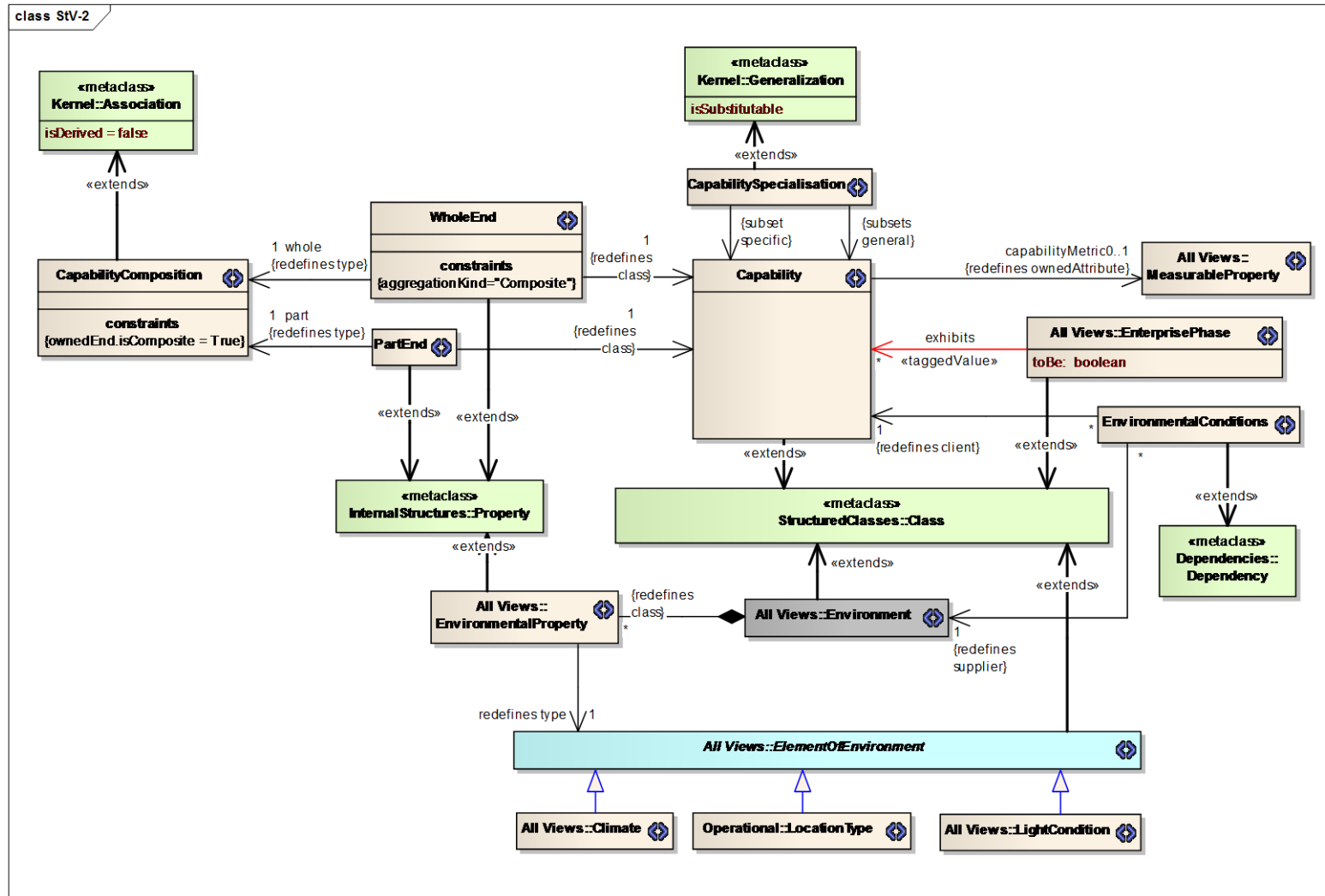


Figure 9: StV-1 in M3

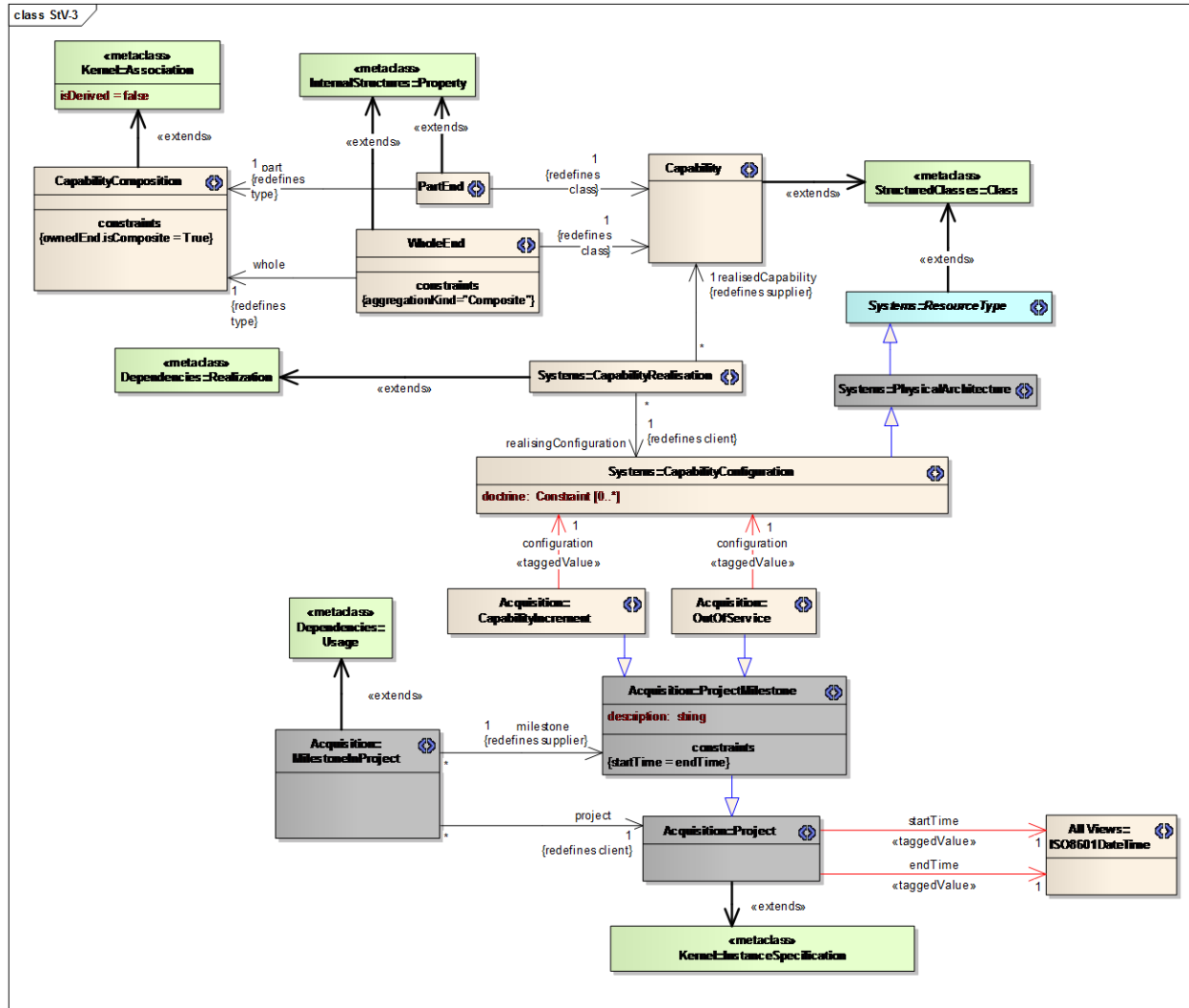
1.3.2 StV-  
2: Capability taxonomy



**StV-**

**Figure 10: StV-2 in M3**

### 1.3.3 StV-3: Capability phasing



StV-

Figure 11: StV-3 in M3

1.3.4 4: Capability dependencies

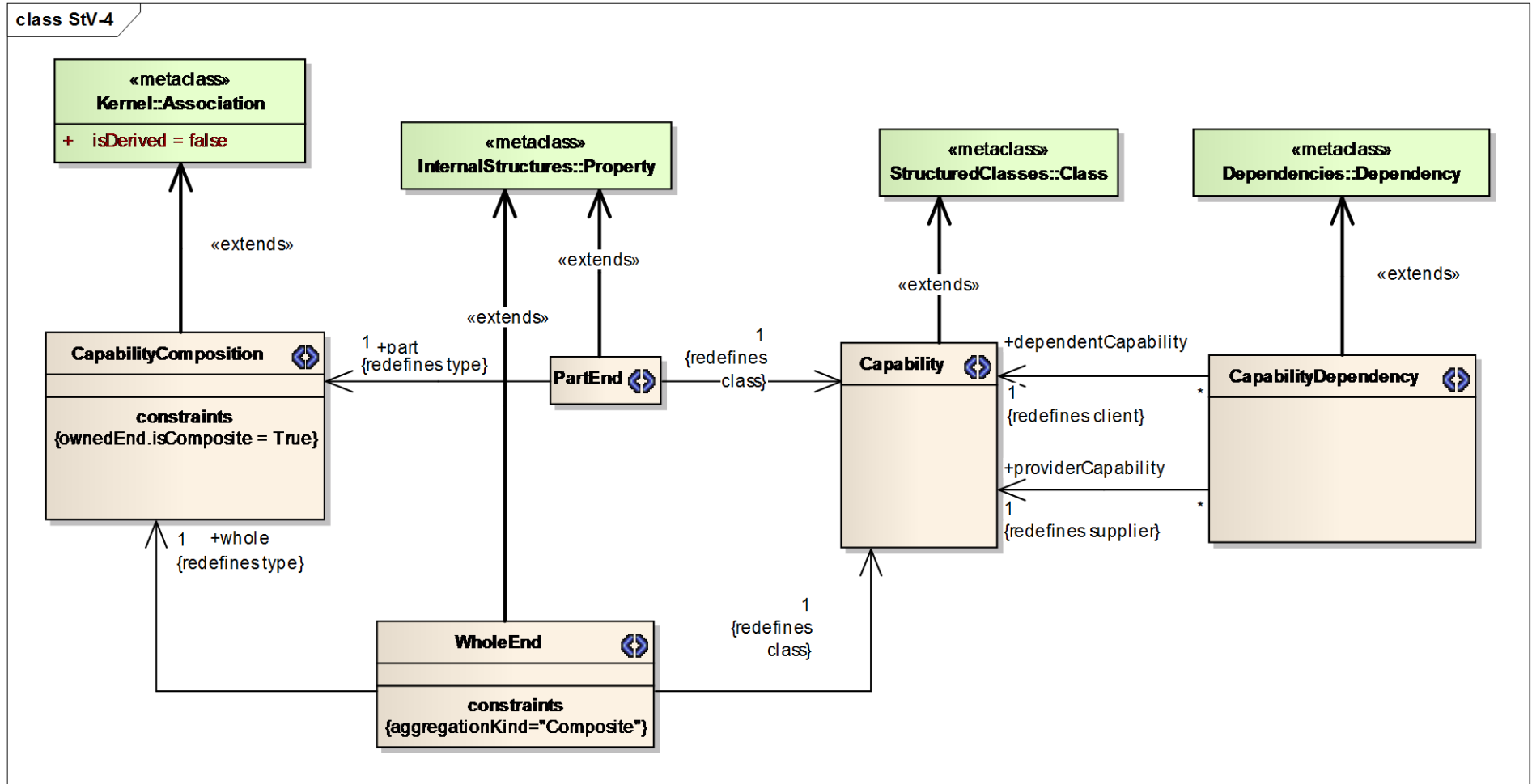


Figure 12: StV-4 in M3

1.3.5 StV-  
5: Capability to organisational deployment mapping

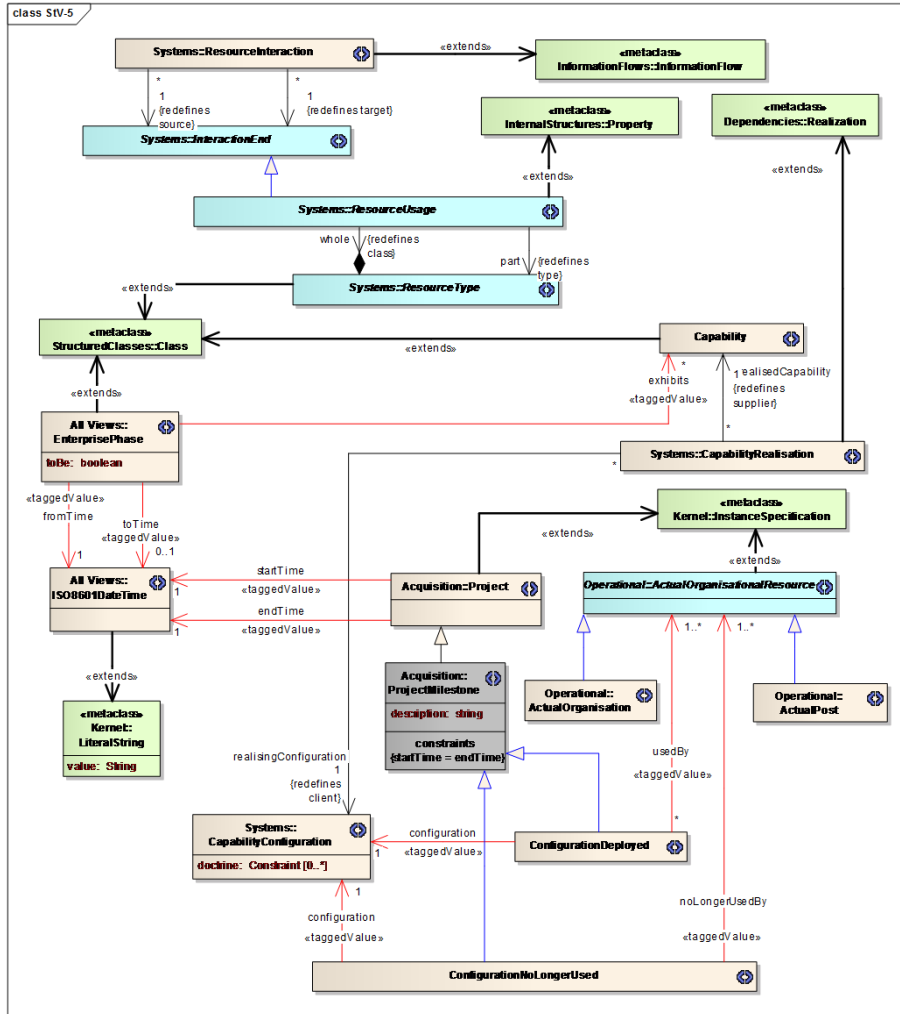


Figure 13: StV-5 in M3

1.3.6 StV-6: Operational activity to capability mapping

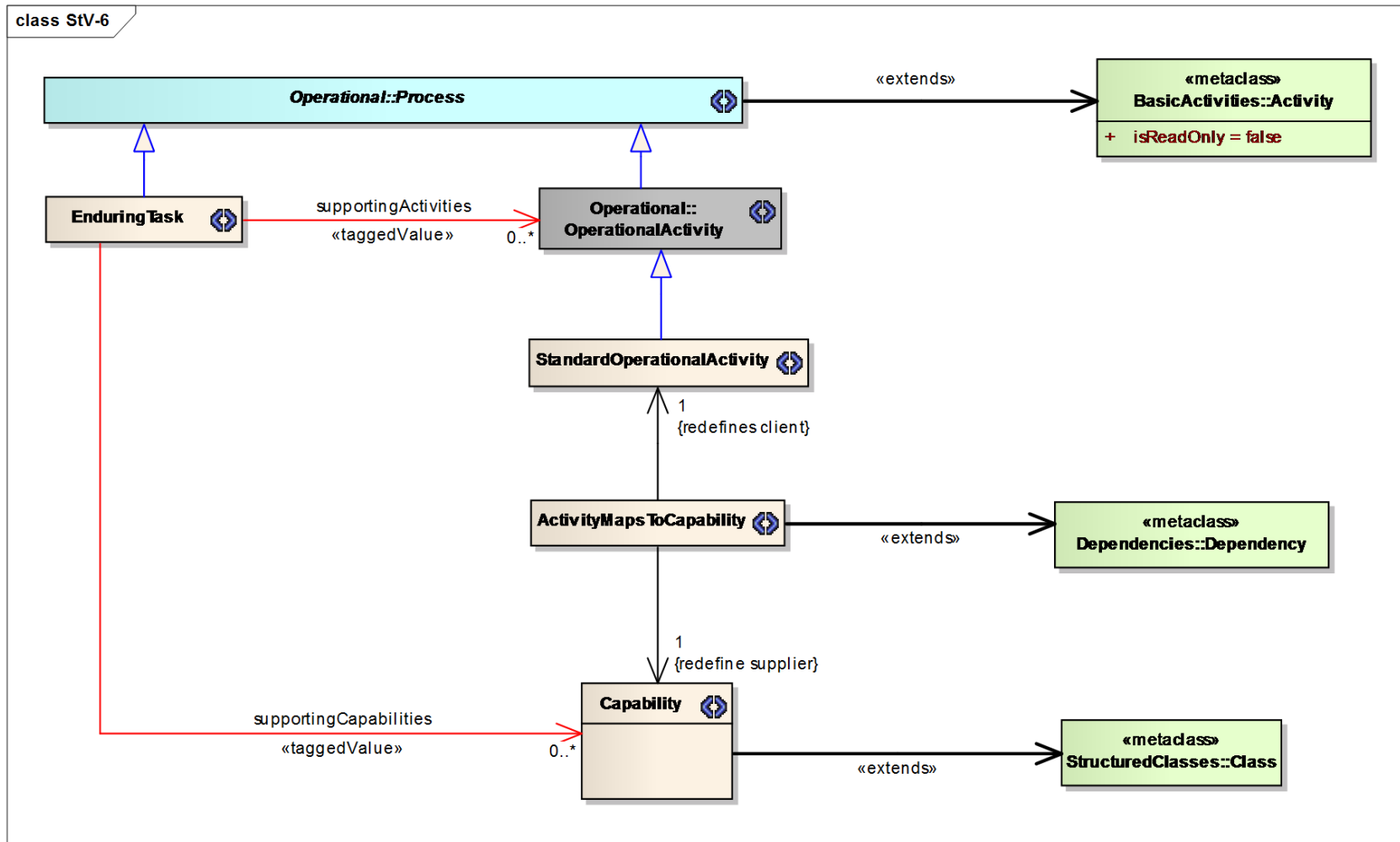


Figure 14: StV-6 in M3



1.3.7 Strategic Views elements table

**MODAF 1.2.004 Strategic Views**

**ActivityMapsToCapability** «stereotype» Associations:

ActivityMapsToCapability - Capability

ActivityMapsToCapability - StandardOperationalActivity Extension:

ActivityMapsToCapability «extends» Dependency Attributes:

-

Asserts that a StandardOperationalActivity is in some way part of a capability.

The nature of the mapping should be specified in the name of the dependency.

**Capability** «stereotype» Associations:

Capability - CapabilityDependency

Capability - CapabilityDependency Capability

- MeasurableProperty Generalization:

Capability - SubjectOfforecast Extension:

Capability «extends» Class Attributes:

-

A high level specification of the enterprise's ability. Note: A capability is specified independently of how it is implemented. or example, a "target acquisition" capability might be implemented by a forward observation team, a UAV or an aircraft targeting system.

Note: Capabilities are dispositional. A given system or organisation that has a capability (i.e. it is disposed to do something) may never actually have manifested it.

IDEAS defines a capability as being the set of things that are disposed to achieve a particular effect.

**CapabilityComposition** «stereotype» Associations:

-

Extension:

CapabilityComposition «extends» Association Attributes:

-

A whole-part relationship between two capabilities - i.e. the relationship indicates one capability (child) is a part of the other (parent).

Note: This indicates one capability is a part of another, and should be used in conjunction with the other capability relationships; CapabilitySpecialisation and CapabilityDependency.

**CapabilityDependency** «stereotype» Associations:

-

Extension:

CapabilityDependency «extends» Dependency Attributes:

-

A relationship which asserts that a capability (toCapability) is dependent on another (fromCapability) capability in the context of an overall capability.

**CapabilitySpecialisation** «stereotype» Associations:

CapabilitySpecialisation - Capability

CapabilitySpecialisation - Capability Extension:

CapabilitySpecialisation «extends» Generalization Attributes:

-

Asserts that one Capability is a special case of the other.

**ConfigurationDeployed** «stereotype» Associations:

ConfigurationDeployed «taggedValue» CapabilityConfiguration

ConfigurationDeployed «taggedValue» ActualOrganisationalResource

Generalization:

ConfigurationDeployed - ProjectMilestone Attributes:

-

Asserts that an ActualOrganisationResource started to use, or is slated to start using a CapabilityConfiguration from a specific point in time. This is used to describe capabilities going into service with specific organisations or posts.

**ConfigurationNoLongerUsed** «stereotype» Associations:

ConfigurationNoLongerUsed «taggedValue» CapabilityConfiguration

ConfigurationNoLongerUsed «taggedValue» ActualOrganisationalResource

Generalization:

ConfigurationNoLongerUsed - ProjectMilestone Attributes:

-

Asserts that an ActualOrganisationResource ceased to use or is slated to cease using a CapabilityConfiguration from a specific point in time. This is used to describe capabilities going out of service with specific organisations or posts.

**EnduringTask** «stereotype»

Associations:

EnduringTask «taggedValue» Capability

EnduringTask «taggedValue» OperationalActivity

Generalization:

EnduringTask - Process

Attributes:

-

A type of behaviour recognised by an enterprise as being essential to achieving its goals - i.e. a strategic specification of what the enterprise does.

**EnterpriseGoal** «stereotype»

Associations:

EnterpriseGoal «taggedValue» EnterpriseGoal

Extension:

EnterpriseGoal «extends»

Class Attributes: benefits

A specific, required objective of the enterprise that the architecture represents. Note: Benefits of achieving the goal are presented as a list of textual items.

**EnterpriseVision** «stereotype»

Associations:

EnterpriseVision - VisionStatement

EnterpriseVision - EnduringTask

EnterpriseVision «taggedValue» EnterpriseGoal

Extension:

EnterpriseVision «extends» Class Attributes:

-

The overall aims of an enterprise over a given period of time.

**EnvironmentalConditions** «stereotype» Associations:

EnvironmentalConditions - Environment

EnvironmentalConditions - Capability

Extension:

EnvironmentalConditions «extends» Dependency Attributes:

-

Asserts that a Capability's capabilityMetric (MeasureableProperty) is valid for a particular environment. Example - a capability with a rate of advance of 40 km per day must be qualified by the environment for which this is specified - e.g. desert conditions.

**PartEnd** «stereotype» Associations:

PartEnd – Capability

PartEnd - CapabilityComposition Extension:

PartEnd «extends» Property Attributes:

-

The end of a CapabilityComposition relationship that represents the "part" Capability.

**StandardOperationalActivity** «stereotype» Associations:

-

Generalization:

StandardOperationalActivity - OperationalActivity Attributes:

-

An OperationalActivity that is a standard procedure (e.g. doctrinal tasks). Note: This is equivalent to what some defence organisations call JETLs.

**VisionStatement** «stereotype» Associations:

-

Extension:

VisionStatement «extends» Comment Attributes:

-

A high-level textual description of a EnterpriseVision. Note: VisionStatement is a stereotype of UML::Comment and the [body] of the comment shall be represented as XHTML. If plain text is required, then no HTML tags should be embedded.

**WholeEnd** «stereotype» Associations:

WholeEnd – Capability

WholeEnd - CapabilityComposition

Extension:

WholeEnd «extends» Property

Attributes:

-

The end of a CapabilityComposition relationship that represents the "whole" Capability.



1.4 Operational views

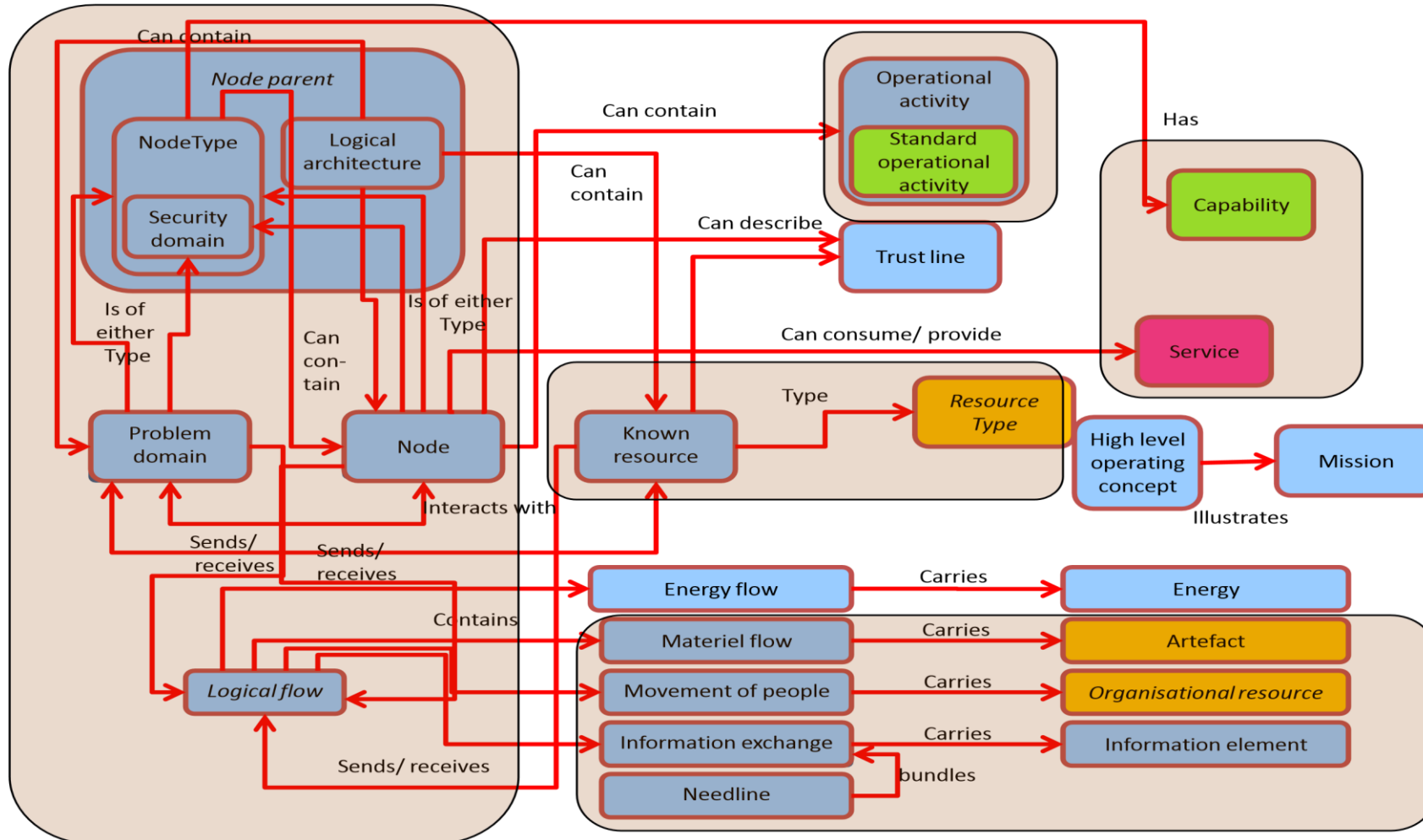


Figure 15: Operational Views MODAF M3 elements summary

OV-  
1.4.1 1: High level operational concept graphic (a, b, c)

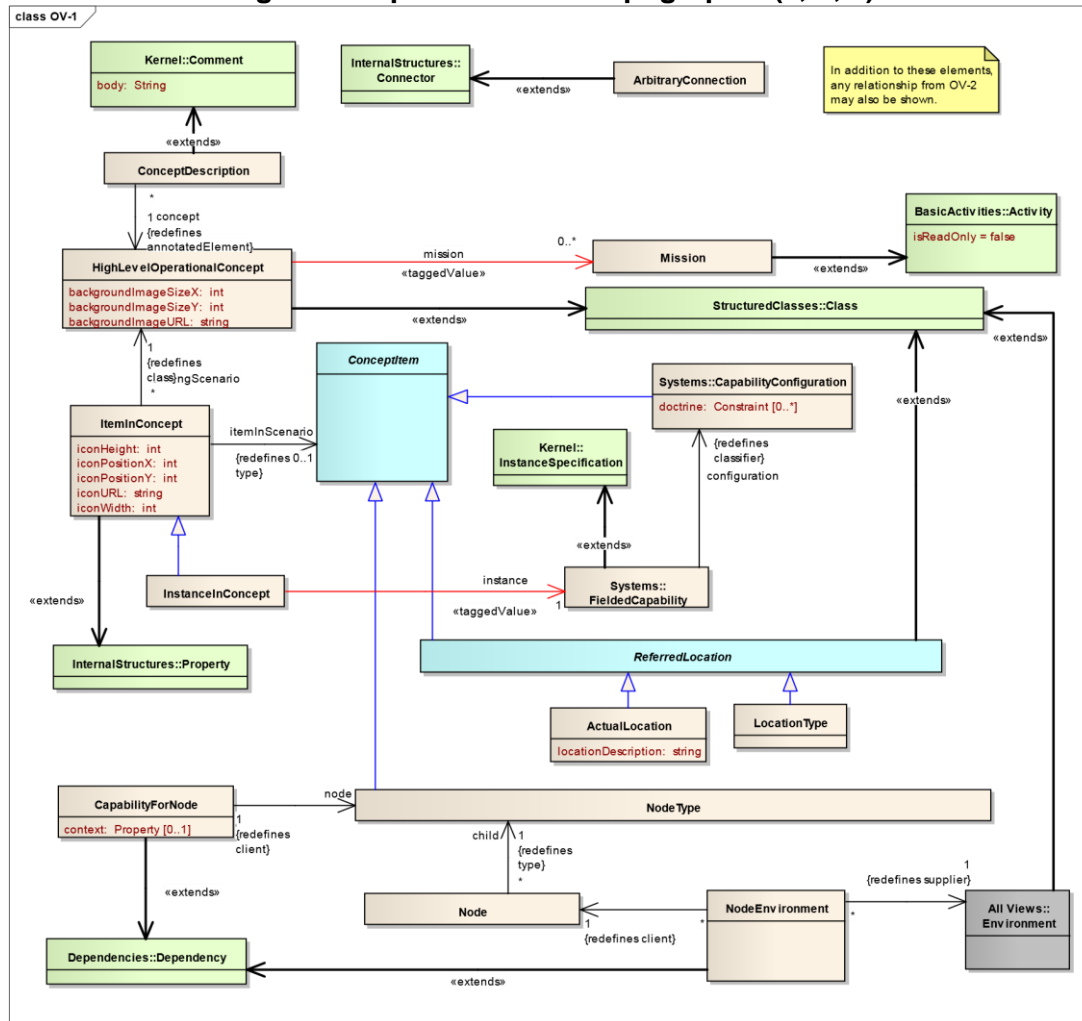


Figure 16: OV-1 in M3

OV-

1.4.2 2: Operational node relationship description

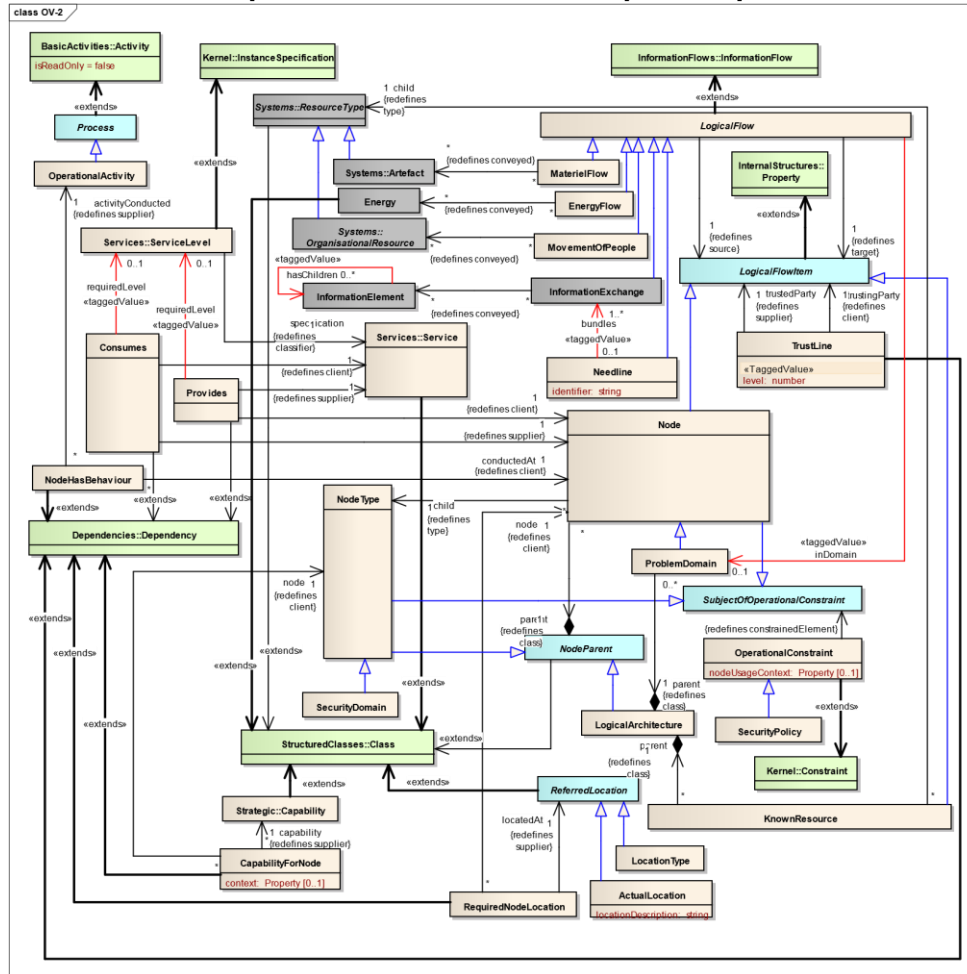


Figure 17: OV-2 in M3

1.4.3 OV-3: Operational information exchange matrix

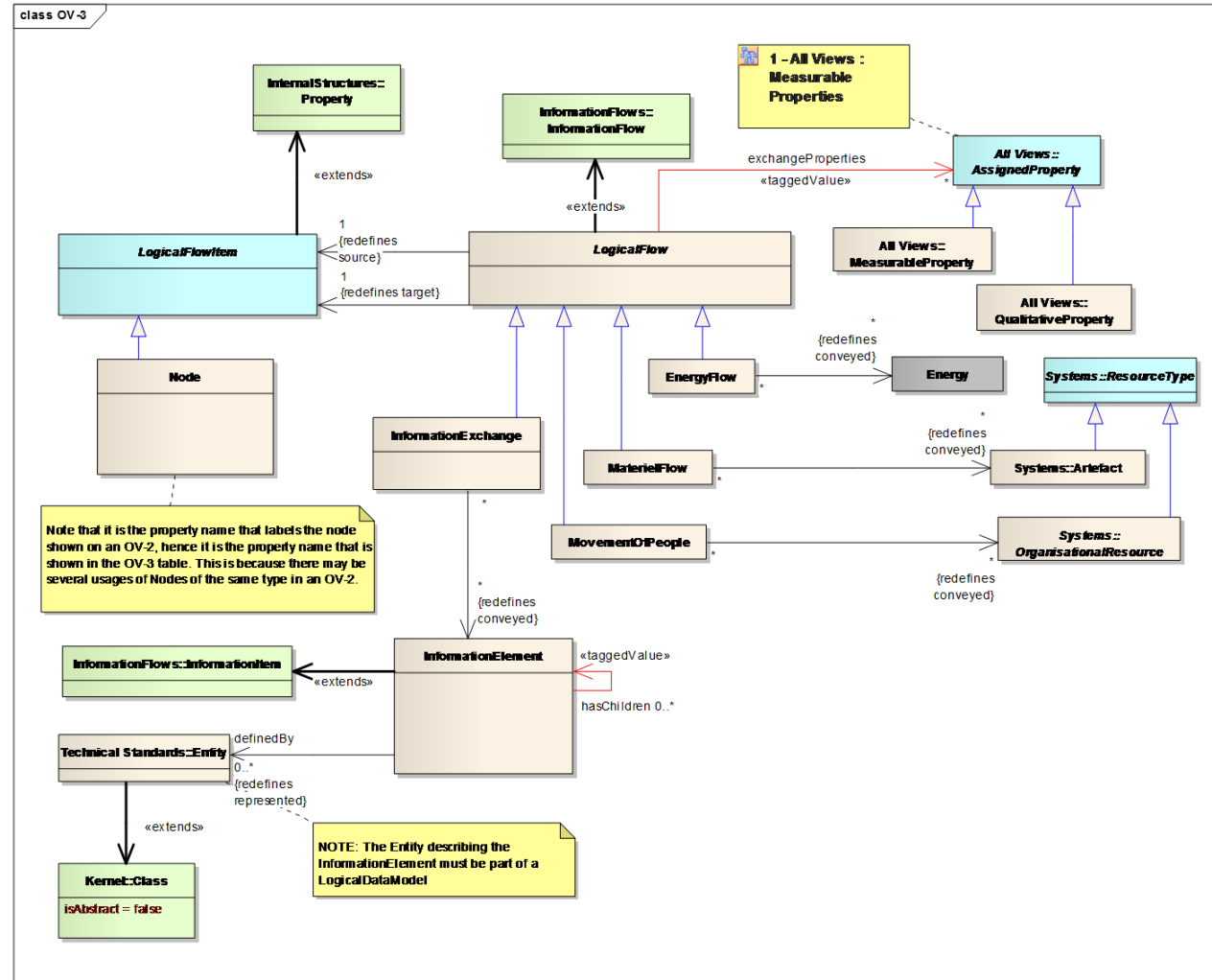


Figure 18: OV-3 in M3



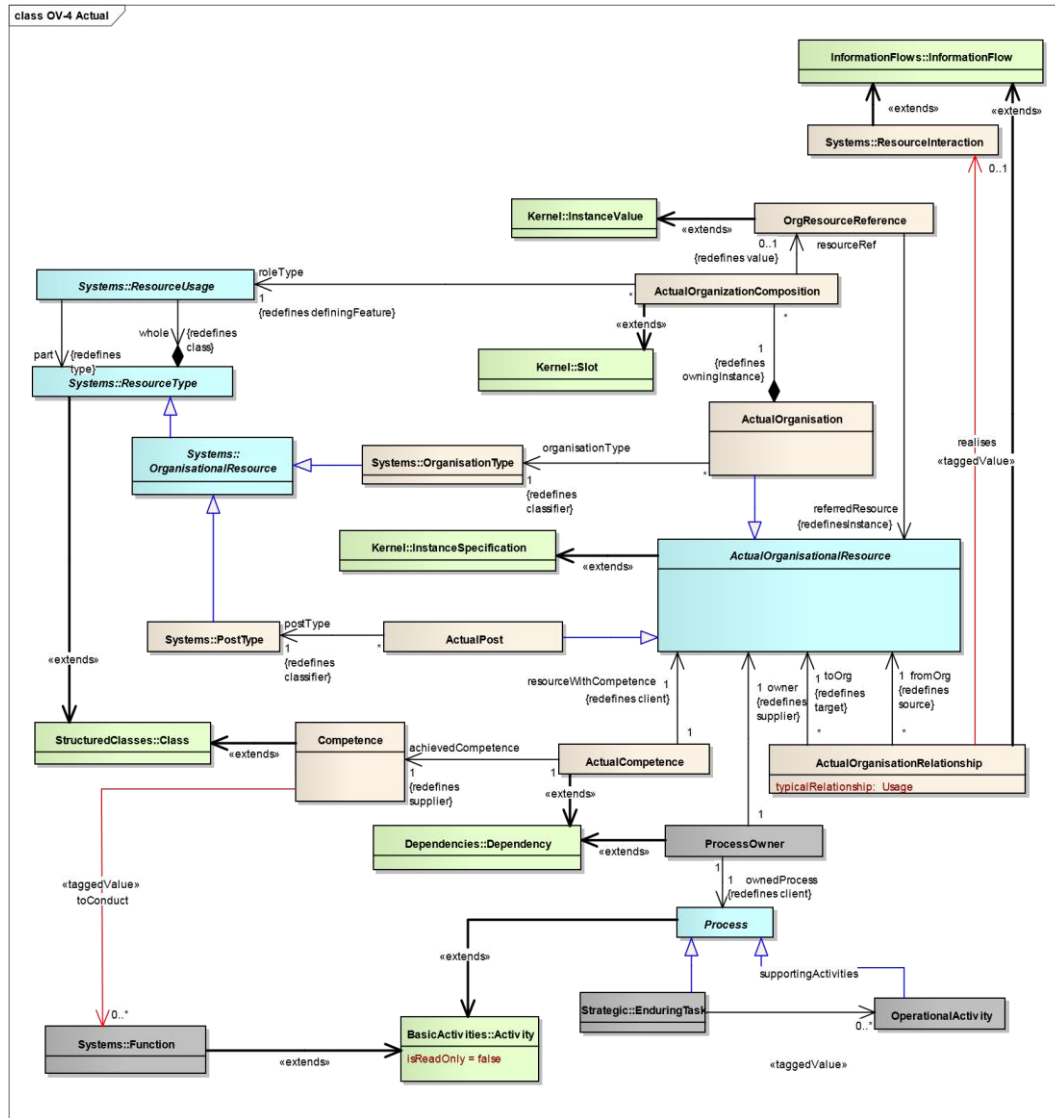


Figure 20: OV-4 actual in M3



OV-

1.4.6 6: Operational rules, state descriptions and event-trace description

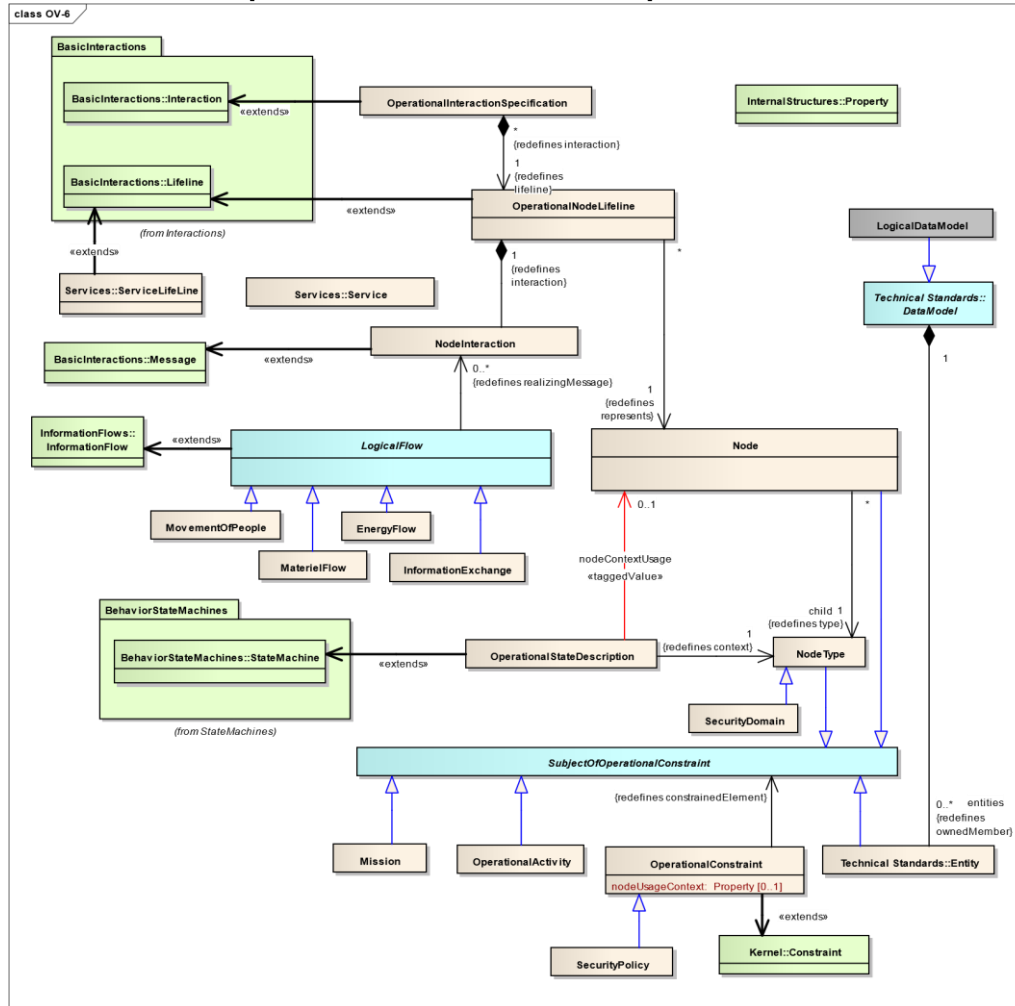


Figure 22: OV-6 in M3



OV-  
1.4.7 7: Information model

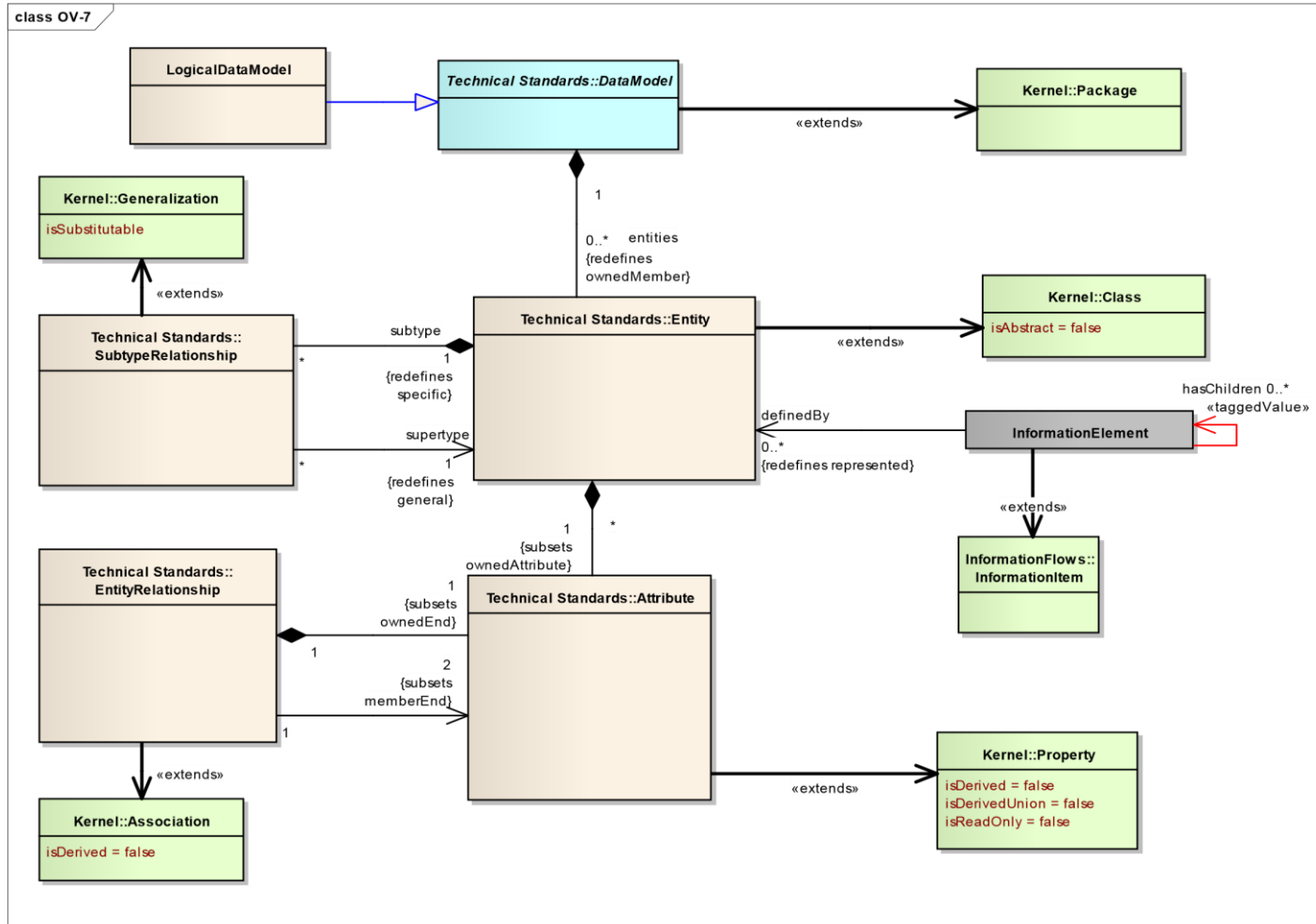


Figure 23: OV-7 in M3

### 1.4.8 Operational Views elements table

MODAF 1.2.004 Operational Views
<p><b>ActivityComposition</b> «stereotype» <u>Associations:</u> ActivityComposition – OperationalActivity ActivityComposition - OperationalActivity ActivityComposition «taggedValue» OperationalActivityAction <u>Extension:</u> ActivityComposition «extends» Property <u>Attributes:</u> -</p> <p>An assertion that the parent activity has the child as a part - i.e. the child activity is conducted as part of conducting the parent activity. Note: Unfortunately, UML offers two ways to do this; by composite class properties (i.e. this stereotype) and by UML::CallBehaviourAction. To prevent ambiguity, this meta-model forces both approaches to be used in parallel (SysML takes the same approach). Any ActivityComposition must be accompanied by a corresponding OperationalActivityAction. Hopefully, a future version of UML may be more coherent in this department, and this duplication can be removed.</p>
<p><b>ActivitySubject</b> «stereotype» <u>Associations:</u> -</p> <p><u>Extension:</u> ActivitySubject «extends» Classifier <u>Attributes:</u> -</p> <p>Anything that is acted upon by an OperationalActivity.</p>

**ActsUpon** «stereotype»

Associations:

ActsUpon - OperationalActivity

ActsUpon - ActivitySubject Extension:

ActsUpon «extends» Association

Attributes:

-

Asserts that something (subject) is acted upon by an OperationalActivity (activity).

**ActualCompetence** «stereotype» Associations:

-

Extension:

ActualCompetence «extends» Dependency Attributes:

-

Asserts that an ActualOrganisationalResource actually has a Competence.

**ActualLocation** «stereotype»

Associations:

-

Generalization:

ActualLocation -

ReferredLocation Attributes:

locationDescription

A location anywhere on the earth. The means of describing the location is a string (locationDescription). The information contained in that string is governed by the taxonomy reference - e.g. if the ActualLocation is a “GPS reference”, the string will contain the GPS coordinates.

**ActualOrganisation** «stereotype»

Associations:

ActualOrganisation «taggedValue» EnterprisePhase

Generalization:

ActualOrganisation - ActualOrganisationalResource Attributes:

-

An actual specific organisation, an instance of an OrganisationType. Example: "The US Department of Defense".

**ActualOrganisationRelationship** «stereotype» Associations:

ActualOrganisationRelationship «taggedValue» ResourceInteraction Extension:

ActualOrganisationRelationship «extends»

InformationFlow Attributes: typicalRelationship

A relationship between two actual specific organisations or parts of an organisation. Note1: the TypicalOrganisationRelationship which is realised by the ActualOrganisationRelationship is referred to via the typicalRelationship attribute.

**ActualOrganisationalResource** «stereotype» Associations:

ActualOrganisationalResource - ProcessOwner

ActualOrganisationalResource - ActualCompetence

ActualOrganisationalResource - OrganisationProjectRelationship

ActualOrganisationalResource - ActualOrganisationRelationship

ActualOrganisationalResource - ActualOrganisationRelationship Extension:

ActualOrganisationalResource «extends» InstanceSpecification Attributes:

-

An instance of either an actual organisation or an actual post. [ABSTRACT]

**ActualOrganizationComposition** «stereotype»

Associations:

ActualOrganizationComposition - ActualOrganisation

ActualOrganizationComposition - OrgResourceReference Extension:

ActualOrganizationComposition «extends» Slot Attributes:

-

Relates an actual specific organisation to an actual specific organisational resource that fulfills a role in that organisation.

**ActualPost** «stereotype» Associations:

PostType - ActualPost

Generalization:

ActualPost - ActualOrganisationalResource Attributes:

-

An actual, specific post, an instance of a PostType. Example: "President of the United States of America"

**ArbitraryConnection** «stereotype» Associations:

-

Extension:

ArbitraryConnection «extends» Connector Attributes:

-

Represents a visual indication of connection used in high level operational concept diagrams. The connections are purely indicative and cannot be related to any architectural semantics.

**CapabilityForNode** «stereotype» Associations:

CapabilityForNode - NodeType CapabilityForNode - Capability Extension:

CapabilityForNode «extends» Dependency Attributes: context

An assertion that a Node is required to have a Capability.

**Competence** «stereotype» Associations:

Competence - ActualCompetence Competence «taggedValue» unction Extension:

Competence «extends» Class Generalization:

Competence - SubjectOfforecast Attributes:

-

A specific set of abilities defined by knowledge, skills and attitude.

**CompetenceForRole** «stereotype» Associations:

CompetenceForRole - RoleType CompetenceForRole - Competence Extension:

CompetenceForRole «extends» Dependency Attributes:

-

Asserts that an Role requires a Competence.

**ConceptDescription** «stereotype» Associations:

-

Extension:

ConceptDescription «extends» Comment Attributes:

-

A textual representation of a HighLevelOperationalConcept.

**ConceptItem**

Associations:

-

Attributes:

-

An item which may feature in a high level operational concept. [ABSTRACT]



**Consumes** «stereotype»

Associations:

Consumes - Service

Consumes - Node

Consumes «taggedValue» ServiceLevel Extension:

Consumes «extends» Dependency Attributes:

-

Asserts that a node consumes a service. It is not required to know what provides the service.

**Energy** «stereotype» Associations:

-

Extension:

Energy «extends» Class Generalization:

Energy - FunctionSubject Attributes:

-

A unit of energy that flows along an EnergyFlow or OperationalActivityEnergyFlow.

**EnergyFlow** «stereotype» Associations:

EnergyFlow - Energy

EnergyFlow - ResourceEnergyFlow *Generalization:*

EnergyFlow - LogicalFlow Attributes:

-

A LogicalFlow where energy is flowed from one node to another.

**HighLevelOperationalConcept** «stereotype» Associations:

HighLevelOperationalConcept - ConceptDescription

HighLevelOperationalConcept - ItemInConcept HighLevelOperationalConcept «taggedValue» Mission

Extension:

HighLevelOperationalConcept «extends» Class Attributes:

backgroundImageSizeX backgroundImageSizeY backgroundImageURL

A generalized model for operations. Note: a background image may be associated with the HLOC, which is referred to by the backgroundImageURL attribute. Scaling information is also provided about the image, so that when an ItemInConcept is shown in the diagram, it can be properly located and scaled. No units are specified, but the same length unit shall be used throughout a single product.

**InformationElement** «stereotype»

Associations:

InformationElement - InformationExchange

InformationElement - Entity

InformationElement «taggedValue» InformationElement Generalization:

InformationElement - ActivitySubject

Extension:

InformationElement «extends» InformationItem Attributes:

-

An item of information that flows between Operational Activities and Nodes. The structure of an InformationElement may be defined using a LogicalDataModel.

**InformationExchange** «stereotype» Associations:

InformationExchange - ResourceCommunication Generalization:

InformationExchange - LogicalFlow Attributes:

-

A LogicalFlow that carries InformationElements between Nodes.

**InstanceInConcept** «stereotype» Associations:

InstanceInConcept «taggedValue» FieldedCapability Generalization:

InstanceInConcept - ItemInConcept Attributes:

-

Asserts that a FieldedCapability is in a HighLevelOperationalConcept. Note: the position and URL tagged values are inherited. Note: the relationship to ConceptItem should not be set.

**ItemInConcept** «stereotype» Associations:

ItemInConcept - ConceptItem Extension:

ItemInConcept «extends» Property

Attributes: iconHeight

iconPositionX iconURL

iconWidth

iconPositionY

A relationship which asserts that a ConceptItem forms part of the high level operational concept.

**KnownResource** «stereotype» Associations:

KnownResource - LogicalArchitecture

KnownResource - ResourceType Generalization:

KnownResource - LogicalFlowItem Attributes:

-

Asserts that a known Resource plays a part in a LogicalArchitecture. Note: An OV-2 is meant to show logical interactions between nodes. However, sometimes it is known.

**LocationType** «stereotype»

Associations:

-

Generalization:

LocationType - ReferredLocation

LocationType - ElementOfEnvironment

Attributes:

-

A general specification of the surroundings / scenario in which an operation may take place. Examples would be: "desert", "arctic", "at sea", etc.

**LogicalArchitecture** «stereotype»

Associations:

-

Generalization:

LogicalArchitecture - NodeParent

LogicalArchitecture - ArchitecturalProduct Attributes:

-

A CompositeStructureModel whose parts are either Nodes, KnownResources or ProblemDomains.

**LogicalDataModel** «stereotype» Associations:

-

Generalization:

LogicalDataModel - DataModel

Attributes:

-

A LogicalDataModel is a specification of business information requirements as a formal data structure, where relationships and classes (entities) are used to specify the logic which underpins the information.

**LogicalFlow** «stereotype» Associations:

LogicalFlow – NodeInteraction

LogicalFlow - LogicalFlowItem

LogicalFlow - LogicalFlowItem

LogicalFlow «taggedValue» AssignedProperty

LogicalFlow «taggedValue» ProblemDomain

Extension:

LogicalFlow «extends» InformationFlow Attributes:

-

Asserts that a flow exists or is required between Nodes (e.g. flows of information, people, materiel, or energy). A LogicalFlow itself may be part of a ProblemDomain - i.e. there may be options for implementing the LogicalFlow which could be outlined in alternative SV suites. If so, this is asserted using the inDomain tagged value.

**LogicalFlowItem** «stereotype»

Associations:

-

Extension:

LogicalFlowItem «extends» Property Attributes:

-

An element in a LogicalArchitecture which may be either the source or target of a LogicalFlow.

**MatérielFlow** «stereotype»

Associations:

MatérielFlow - Artefact

MatérielFlow - ResourceMatérielFlow Generalization:

MatérielFlow - LogicalFlow Association:

Attributes:

-

A LogicalFlow where matériel (Artefacts) flows between Nodes.

**Mission** «stereotype» Associations:

-

Extension:

Mission «extends» Activity Generalization:

Mission - SubjectOfOperationalConstraint Attributes:

-

A purpose to which a person, organisation or autonomous system is tasked.



**MovementOfPeople** «stereotype» Associations:

MovementOfPeople - OrganisationalResource

MovementOfPeople - ResourcePersonFlow Generalization:

MovementOfPeople - LogicalFlow Attributes:

-

A LogicalFlow where human resources (PostTypes, RoleTypes) flow between Nodes.

**Needline** «stereotype» Associations:

Needline «taggedValue» InformationExchange Generalization:

Needline - LogicalFlow

Attributes: identifier

A relationship between Nodes representing a bundle of InformationExchanges.

**Node** «stereotype»

Associations:

Node - NodeRealisation

Node - NodeHasBehaviour

Node - OperationalNodeLifeline

Generalization:

Node - SubjectOfOperationalConstraint

Node - LogicalFlowItem Attributes:

-

The usage of a NodeType in another NodeType or LogicalArchitecture.

**NodeEnvironment** «stereotype» Associations:

NodeEnvironment – Node

NodeEnvironment - Environment

Extension:

NodeEnvironment «extends» Dependency Attributes:

-

A specification of the Environment in which the node operates or is required to operate.

**NodeHasBehaviour** «stereotype» Associations:

-

Extension:

NodeHasBehaviour «extends» Dependency Attributes:

-

Asserts that an OperationalActivity is conducted by a Node.

**NodeInteraction** «stereotype» Associations:

NodeInteraction - OperationalNodeLifeline

Extension:

NodeInteraction «extends» Message Attributes:

-

An interaction representing the exchange of information, energy, materiel or people, defined by a LogicalFlow.

**NodeParent**

«stereotype»

Associations: NodeParent

- Node Extension:

NodeParent «extends» Class Attributes:

-

The abstract supertype of all elements that can have child Nodes (LogicalArchitecture, ProblemDomain & NodeType).

**NodeType** «stereotype»

Associations:

NodeType - Node

Generalization:

NodeType - ActivitySubject

NodeType - SubjectOfOperationalConstraint

NodeType - ConceptItem

NodeType - NodeParent Attributes:

-

A logical agent that performs operational activities.

**OpActivityInputPin** «stereotype»

Associations:

OpActivityInputPin - OperationalActivityFlow

OpActivityInputPin - OperationalActivityAction Extension:

OpActivityInputPin «extends»

InputPin Attributes: isControl

isMechanism

A port for flows that feed into an activity.

**OpActivityOutputPin** «stereotype» Associations:

OpActivityOutputPin - OperationalActivityFlow

OpActivityOutputPin - OperationalActivityAction Extension:

OpActivityOutputPin «extends» OutputPin Attributes:

-

A port for flows that leave an activity.

**OperationalActivity** «stereotype»

Associations:

OperationalActivity - NodeHasBehaviour

OperationalActivity - ActivityToFunctionMapping

OperationalActivity - OperationalActivityAction Generalization:

OperationalActivity -

SubjectOfOperationalConstraint OperationalActivity

- Process Attributes:

-

A logical process, specified independently of how the process is carried out. Note: an OperationalActivity may only be carried out by a Node.

**OperationalActivityAction** «stereotype»

Associations:

-

Extension:

OperationalActivityAction «extends» CallBehaviorAction

Attributes:

-

Used to relate an OperationalActivity to its sub-activities. Note1: An OperationalActivityAction will be created for every OperationalActivity to provide a way to manage sub-activities, and to allow flows between activities. Note2: See also ActivityComposition. Note3: Also provides a means for attaching information (properties) to an activity.

**OperationalActivityEnergyFlow** «stereotype»

Associations:

OperationalActivityEnergyFlow «taggedValue» Energy Generalization:

OperationalActivityEnergyFlow - OperationalActivityFlow Attributes:

-

A flow of energy between OperationalActivities.

**OperationalActivityFlow** «stereotype»

Associations:

OperationalActivityFlow - InformationExchange

Extension:

OperationalActivityFlow «extends» ObjectFlow Attributes:

-

A flow of information, people, energy or materiel from one activity to another.

**OperationalActivityInformationFlow** «stereotype»

Associations:

OperationalActivityInformationFlow «taggedValue» InformationElement Generalization:

OperationalActivityInformationFlow - OperationalActivityFlow Attributes:

-

An OperationalActivityFlow where InformationElements are conveyed.

**OperationalActivityMaterielFlow** «stereotype» Associations:

OperationalActivityMaterielFlow «taggedValue» Artefact Generalization:

OperationalActivityMaterielFlow - OperationalActivityFlow Attributes:

-

An OperationalActivityFlow where materiel (Artefacts) are conveyed.

**OperationalActivityPeopleFlow** «stereotype» Associations:

OperationalActivityPeopleFlow «taggedValue» OrganisationalResource Generalization:

OperationalActivityPeopleFlow - OperationalActivityFlow Attributes:

-

An OperationalActivityFlow where OrganisationalResources are conveyed. Note: this was added on request from the Swedish Armed Forces.

**OperationalConstraint** «stereotype» Associations:  
OperationalConstraint - SubjectOfOperationalConstraint  
Extension:  
OperationalConstraint «extends»  
Constraint Attributes: nodeUsageContext  
A rule governing an operational behaviour or property.

**OperationalInteractionSpecification** «stereotype» Associations:  
-  
Extension:  
OperationalInteractionSpecification «extends» Interaction Attributes:  
-  
A specification of the interactions between nodes in an operational architecture.

**OperationalNodeLifeline** «stereotype»  
Associations:  
OperationalNodeLifeline - OperationalInteractionSpecification Extension:  
OperationalNodeLifeline «extends» Lifeline Attributes:  
-  
A lifeline which represents a usage of a node in an operational architecture.



**OperationalStateDescription** «stereotype»

Associations:

OperationalStateDescription - NodeType

OperationalStateDescription «taggedValue» Node Extension:

OperationalStateDescription «extends» StateMachine Attributes:

-

A state machine that describes the possible state transitions a Node may have.

**OperationalSwimlane** «stereotype»

Associations:

OperationalSwimlane - Node

Extension:

OperationalSwimlane «extends» ActivityPartition

Attributes:

-

A visual representation of nodes which conduct activities, shown as "swimlanes".

**OrgResourceReference** «stereotype» Associations:

OrgResourceReference - ActualOrganisationalResource

Extension:

OrgResourceReference «extends» InstanceValue Attributes:

-

A reference to an ActualPost or ActualOrganisation.

**ProblemDomain** «stereotype»

Associations:

ProblemDomain -

LogicalArchitecture Generalization:

ProblemDomain - Node

Attributes:

-

The boundary containing those Nodes which may be realised by physical resources specified in SV-1. There may be more than one alternative solution for a given ProblemDomain specified as a set of SV suites. There may be only one ProblemDomain in a LogicalArchitecture.

**Process** «stereotype» Associations:

Process - ProcessOwner Extension:

Process «extends» Activity Attributes:

-

The abstract supertype of OperationalActivity and EnduringTask.

**ProcessOwner** «stereotype»

Associations:

-

Extension:

ProcessOwner «extends» Dependency Attributes:

-

Asserts that an OrganisationalResource has responsibility for an OperationalActivity or EnduringTask. Note this does not imply the resource conducts the activity, merely that it has managerial responsibility for it.

**Provides** «stereotype»

Associations:

Provides - Service

Provides - Node

Provides «taggedValue» ServiceLevel

Extension:

Provides «extends» Dependency Attributes:

-

Asserts that a node provides a service.

**ReferredLocation** «stereotype» Associations:

ReferredLocation - RequiredNodeLocation Extension:

ReferredLocation «extends» Class Generalization:

ReferredLocation - ConceptItem Attributes:

-

Either an actual location, or a type of location at/in which operations may be conducted. [ABSTRACT]

**RequiredNodeLocation** «stereotype» Associations:

RequiredNodeLocation - Node Extension:

RequiredNodeLocation «extends» Dependency Attributes:

-

Relates a node to a location to assert that the operational node is required to be situated at that location.

**SecurityDomain** «stereotype»

Associations:

-

Generalization:

SecurityDomain - NodeType

Attributes:

-

A NodeType whose members (other Nodes, KnownResources) all share a common security policy.

**SecurityPolicy** «stereotype»

Associations:

-

Generalization:

SecurityPolicy - OperationalConstraint Attributes:

-

An OperationalConstraint that specifies policy for information handling, physical security, encryption, etc.

**SubjectOfOperationalConstraint** *Associations:*

-

*Attributes:*

-

An element of the architecture that may be subject to an OperationalConstraint. [ABSTRACT]

**TrustLine** «stereotype»

*Associations:*

TrustLine - LogicalFlowItem

TrustLine - LogicalFlowItem

*Extension:*

TrustLine «extends»

Dependency *Attributes:* level

Asserts that the trustingParty (either a Node or a KnownResource) trusts the trustedParty to a given level (indicated by the level attribute).

Note: No unit of measure is associated with the level - security architects must define their own scale of trust levels for a given architecture or set of architectures.

1.5 Service views

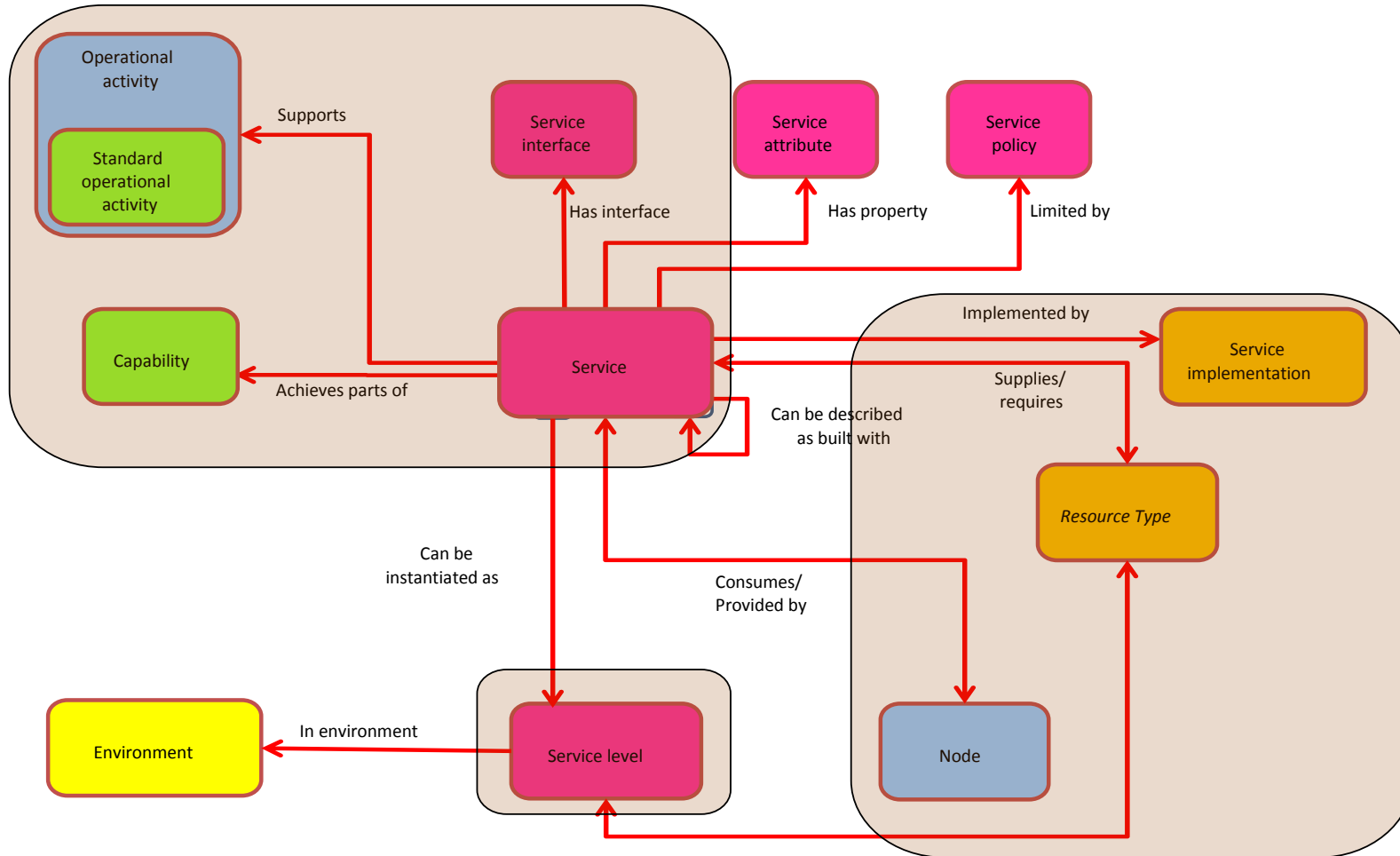


Figure 24: Service Views MODAF M3 elements summary

1.5.1 SOV-1 Service taxonomy

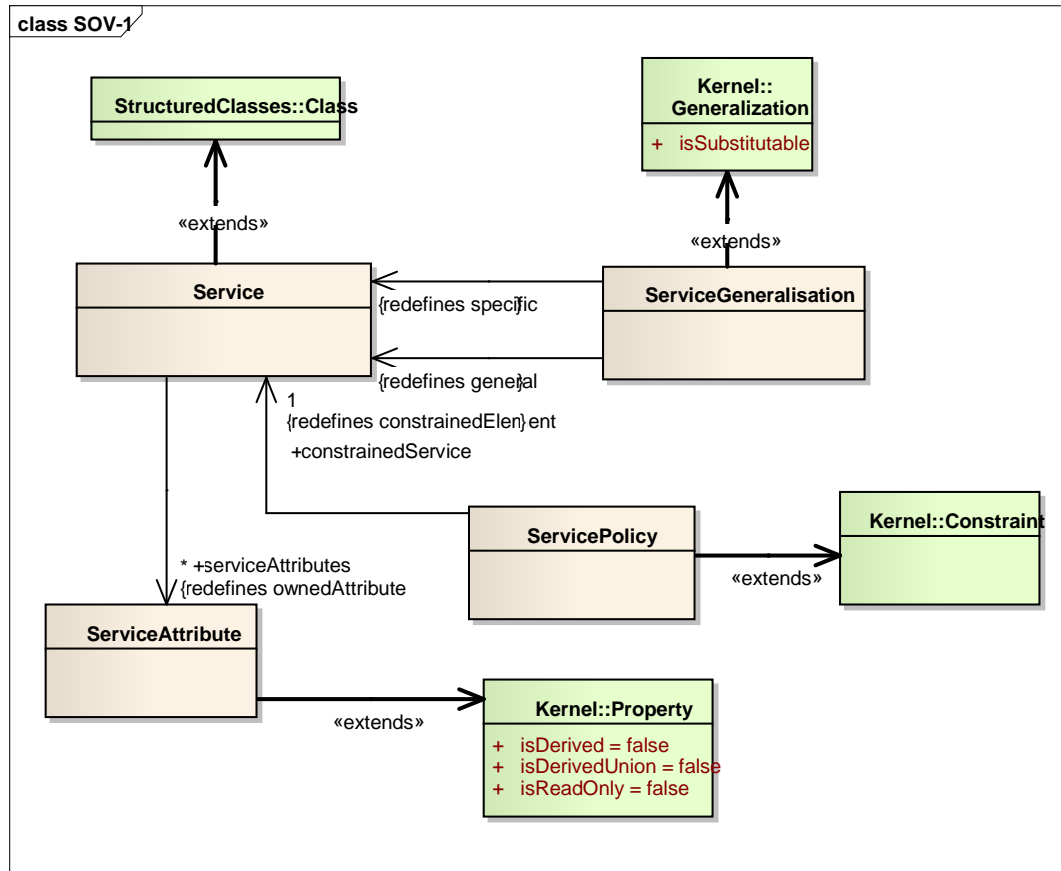
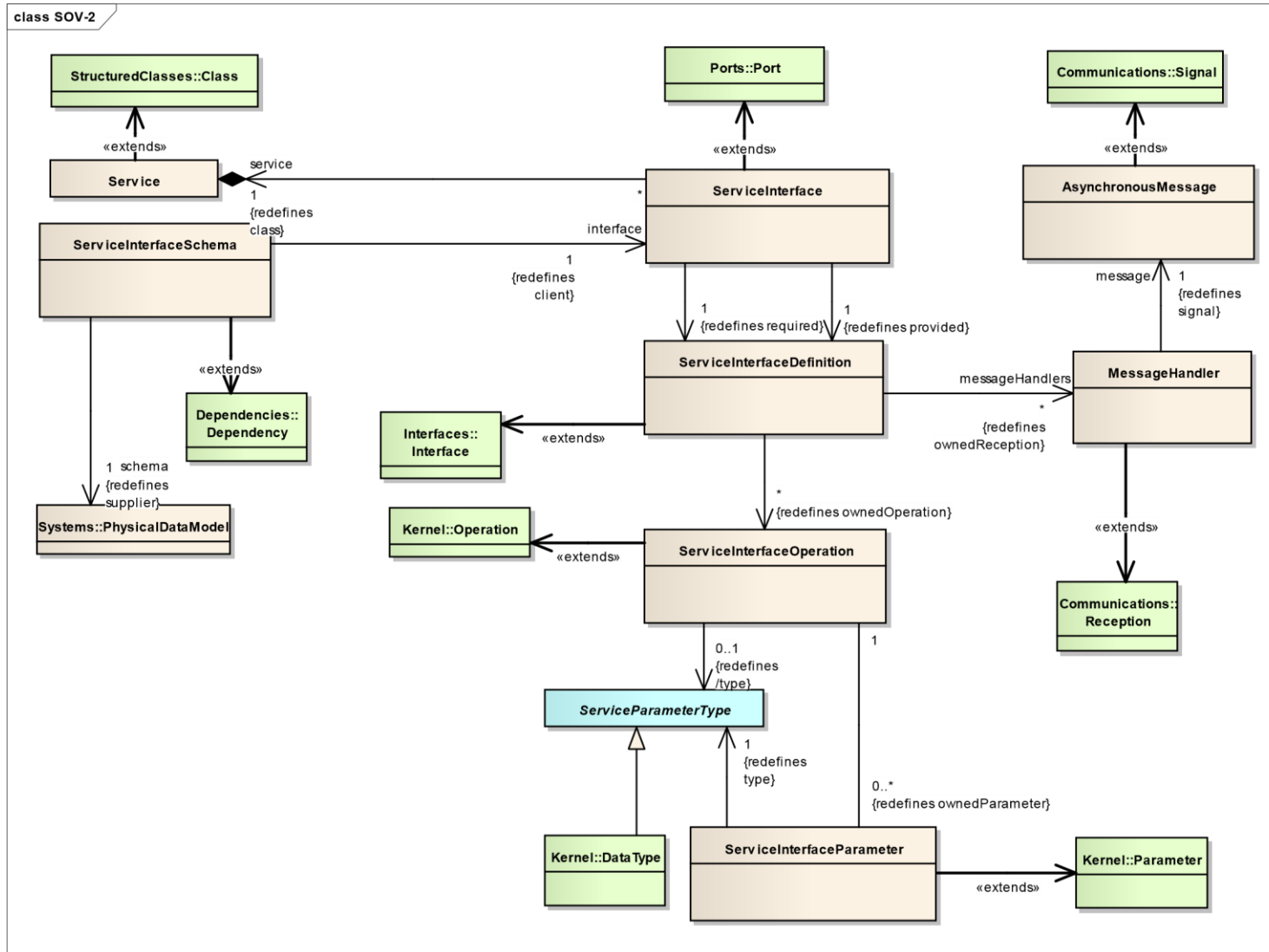


Figure 25: SOV-1 in M3

1.5.2 :  
**SOV-2 Service interface specification**





:  
**Figure 26: SOV-2 in M3**  
**1.5.3 SOV-3 Capability to service mapping**

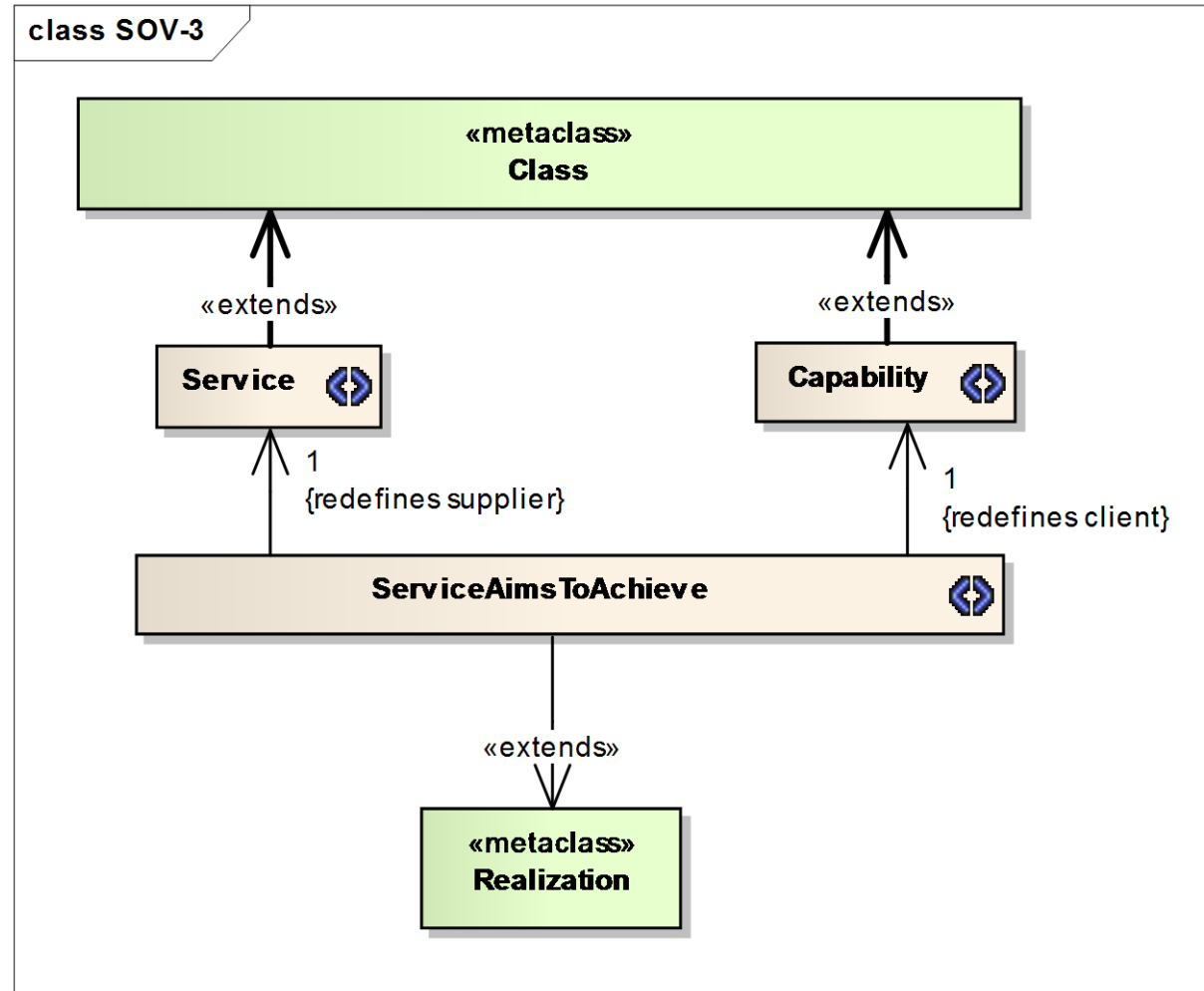


Figure 27: SOV-3 in M3  
1.5.4 SOV-4 Service constraints, state model and interaction specification

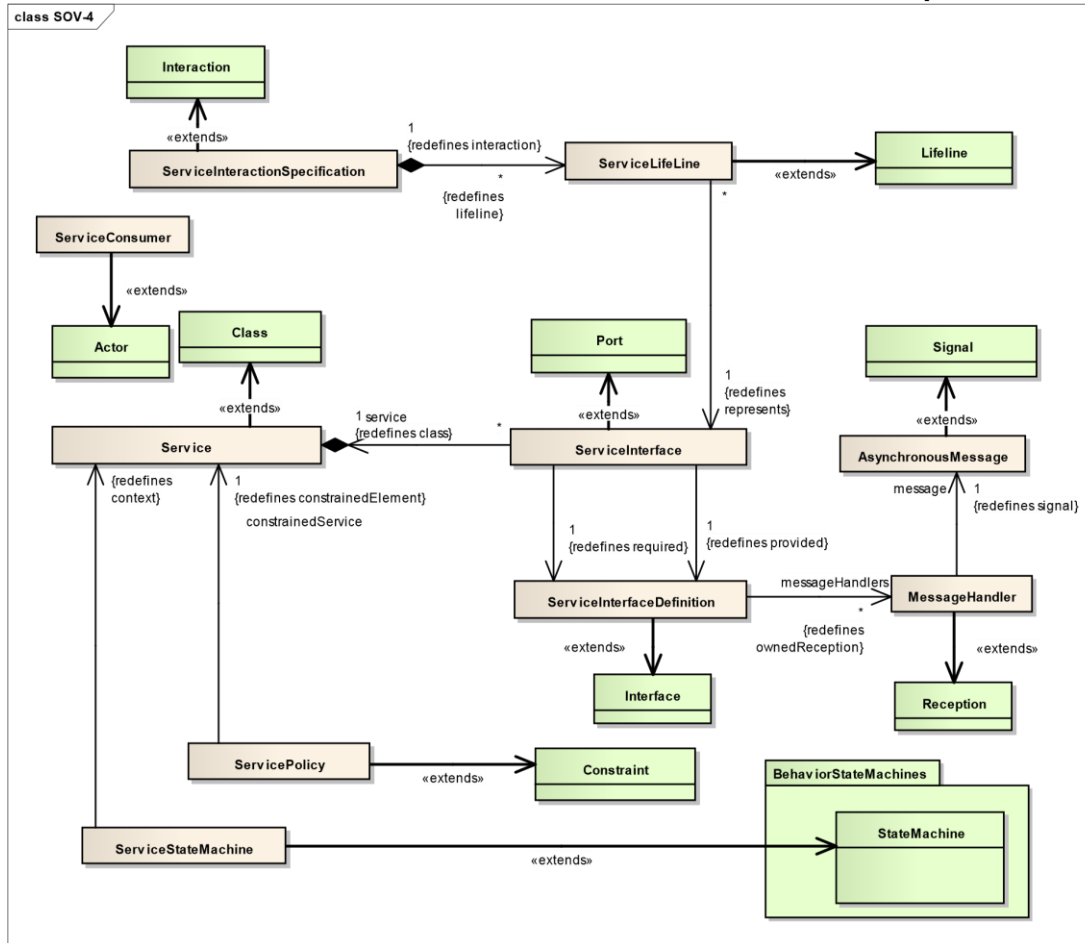


Figure 28: SOV-4 in M3

1.5.5 : SOV-5 Service functionality

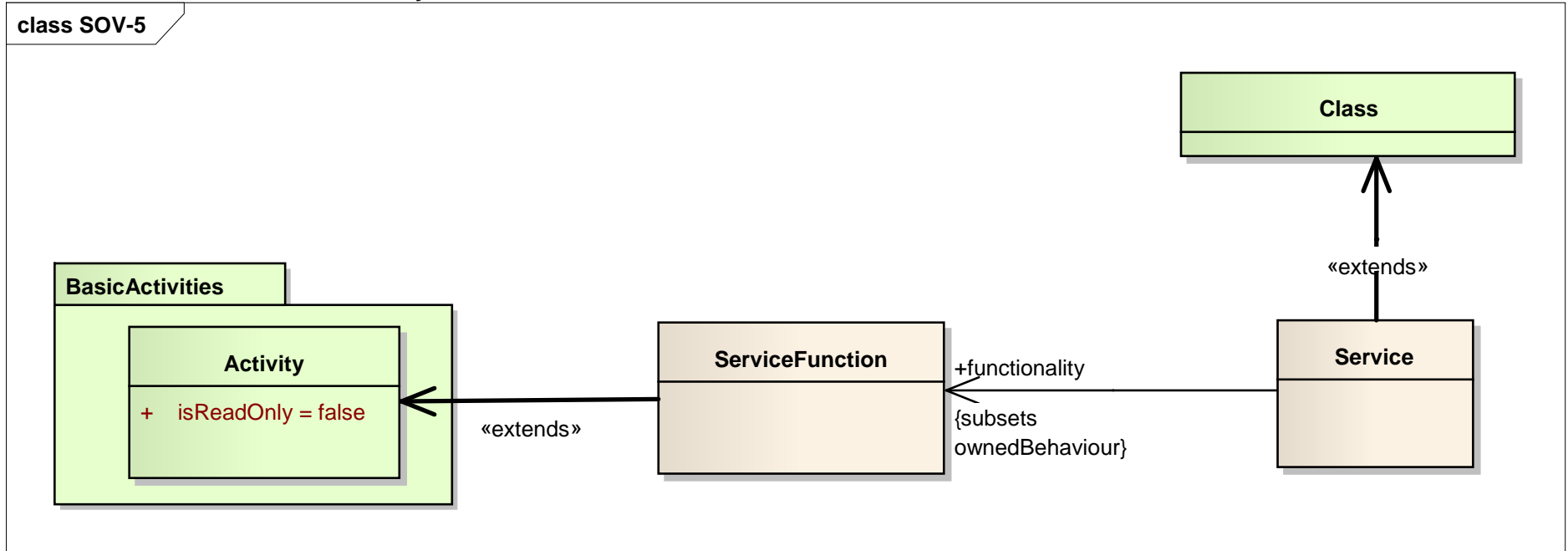


Figure 29: SOV-5 in M3

### 1.5.6 Service Views elements table

MODAF 1.2.004 Service Views
<p><b>AsynchronousMessage</b> «stereotype» <u>Associations:</u> -</p> <p><u>Extension:</u> AsynchronousMessage «extends» Signal <u>Attributes:</u> -</p> <p>A signal which is transmitted irregularly with respect to time. Note: An asynchronous message is not guaranteed to arrive in a specific time following a request.</p>
<p><b>MessageHandler</b> «stereotype» <u>Associations:</u> MessageHandler - AsynchronousMessage <u>Extension:</u> MessageHandler «extends» Reception <u>Attributes:</u> -</p> <p>An aspect of a ServiceInterfaceDefinition which receives incoming AsynchronousMessages.</p>

**ProvidedService** «stereotype» Associations:

ProvidedService - ResourceType

ProvidedService - Service

ProvidedService «taggedValue» ServiceLevel Extension:

ProvidedService «extends» Realization

Attributes: concurrentServices

An assertion that a Resource delivers a Service to a specified ServiceLevel.

**RequiredService** «stereotype»

Associations:

RequiredService - ResourceType

RequiredService – Service

RequiredService «taggedValue» ServiceLevel

Extension:

RequiredService «extends» Usage

Attributes:

-

Asserts that a Resource requires a Service to be provided in order to function correctly.

**Service** «stereotype»

Associations:

Service - ServiceComposition

Service - ServiceComposition

Service - ServiceInterface

Service – ServiceAttribute

Service - ServiceFunction

Extension:

Service «extends» Class

Attributes:

-

A type of delivered functionality, specified independently of the resources that provide it. Note: A service may or may not have a physical effect on its environment OASIS Definition: A service is a mechanism to enable access to a set of one or more capabilities, where the access is provided using a prescribed interface and is exercised consistent with constraints and policies as specified by the service description.

**ServiceAimsToAchieve** «stereotype» Associations:

ServiceAimsToAchieve - Capability

ServiceAimsToAchieve - Service

Extension:

ServiceAimsToAchieve «extends» Realization Attributes:

-

Asserts that a Service is intended to deliver a Capability. Note: multiple instantiations of this element may be required, as it is likely that more than one service is required to achieve a capability.

**ServiceAttribute** «stereotype» Associations:

-

Extension:

ServiceAttribute «extends» Property Attributes:

-

A property of Service. Example: availability.

**ServiceConnectorEnd** «stereotype» Associations:

ServiceConnectorEnd -ServiceComposition

ServiceConnectorEnd - ServiceInterface Generalization:

ServiceConnectorEnd - NestedConnectorEnd Association:

Attributes:

serviceInterfaceDefinition

One of two ends of a ServiceNeedline.

**ServiceConsumer** «stereotype»

Associations:

-

Extension:

ServiceConsumer «extends» Actor Attributes:

-

A UML::Actor representing an unknown service user.



**ServiceFunction** «stereotype»

Associations:

-

Extension:

ServiceFunction «extends» Activity Attributes:

-

A type of activity describing the functionality of a service.

**ServiceGeneralisation** «stereotype» Associations:

ServiceGeneralisation - Service

ServiceGeneralisation - Service

Extension:

ServiceGeneralisation «extends» Generalization Attributes:

-

An assertion that one Service class is a specialisation of another.

**ServiceInteractionSpecification** «stereotype»

Associations:

ServiceInteractionSpecification - ServiceLifeLine

Extension:

ServiceInteractionSpecification «extends» Interaction Attributes:

-

A model representing how a set of Service classes interacts with one another.

**ServiceInterface** «stereotype»

Associations:

-

Extension:

ServiceInterface «extends» Port Attributes:

-

The mechanism by which a Service communicates. Note: a ServiceInterface specifies the ServiceInterfaceDefinition provided and required by the Service.

**ServiceInterfaceDefinition** «stereotype» Associations:

ServiceInterfaceDefinition - ServiceInterface

ServiceInterfaceDefinition - ServiceInterface

ServiceInterfaceDefinition - ServiceInterfaceOperation

ServiceInterfaceDefinition - MessageHandler

Extension:

ServiceInterfaceDefinition «extends» Interface Attributes:

-

The type of provided or required communication method exposed by a ServiceInterface.

**ServiceInterfaceOperation** «stereotype»

Associations:

ServiceInterfaceOperation - ServiceInterfaceParameter

ServiceInterfaceOperation - ServiceParameterType

Extension:

ServiceInterfaceOperation «extends» Operation Attributes:

-

A function or procedure which enables programmatic communication with a Service via a ServiceInterface.

**ServiceInterfaceParameter** «stereotype»

Associations:

ServiceInterfaceParameter - ServiceParameterType

Extension:

ServiceInterfaceParameter «extends» Parameter Attributes:

-

A constant or variable passed into or out of a ServiceInterface as part of the execution of a ServiceInterfaceOperation.

**ServiceInterfaceSchema** «stereotype» Associations:

ServiceInterfaceSchema - PhysicalDataModel

ServiceInterfaceSchema - ServiceInterface

Extension:

ServiceInterfaceSchema «extends» Dependency Attributes:

-

An assertion that a PhysicalDataModel defines the data structure used by a ServiceInterface when communicating with a Service or client.

**ServiceLevel** «stereotype»

Associations:

ServiceLevel - Service

ServiceLevel «taggedValue» Environment Extension:

ServiceLevel «extends» InstanceSpecification Attributes:

-

A value specification for a set of ServiceAttributes indicating the level to which a Resource delivers a Service, in a particular environment. Example: A ServiceAttribute "availability" may be defined against a Service. A given Resource could have a corresponding ServiceLevel - e.g. "90%".

**ServiceLifeLine** «stereotype»

Associations:

ServiceLifeLine - ServiceInterface Extension:

ServiceLifeLine «extends» Lifeline

Attributes:

-

A part of a ServiceInteractionSpecification denoting the role of a ServiceInterface.

**ServiceNeedline** «stereotype» Associations:

ServiceNeedline - ServiceConnectorEnd

Extension:

ServiceNeedline «extends» Connector Attributes:

-

An assertion that two Services need to communicate when assembled together under another Service.

**ServiceParameterType**

Associations:

-

Attributes:

-

Either a UML::DataType or a ServiceInterfaceParameter. [ABSTRACT]

**ServicePolicy** «stereotype»

Associations:

ServicePolicy – Service

Extension:

ServicePolicy «extends» Constraint Attributes:

-

A constraint governing one or more Services.

**ServiceStateMachine** «stereotype» Associations:

ServiceStateMachine - Service

Extension:

ServiceStateMachine «extends» StateMachine Attributes:

-

A model representing the changes of state which are possible for a Service.

**ServiceSupportsActivity** «stereotype» Associations:

ServiceSupportsActivity - OperationalActivity

ServiceSupportsActivity - Service Extension:

ServiceSupportsActivity «extends» Dependency Attributes:

-

An assertion that a Service in some way contributes or assists in the execution of an OperationalActivity.

1.6 System views

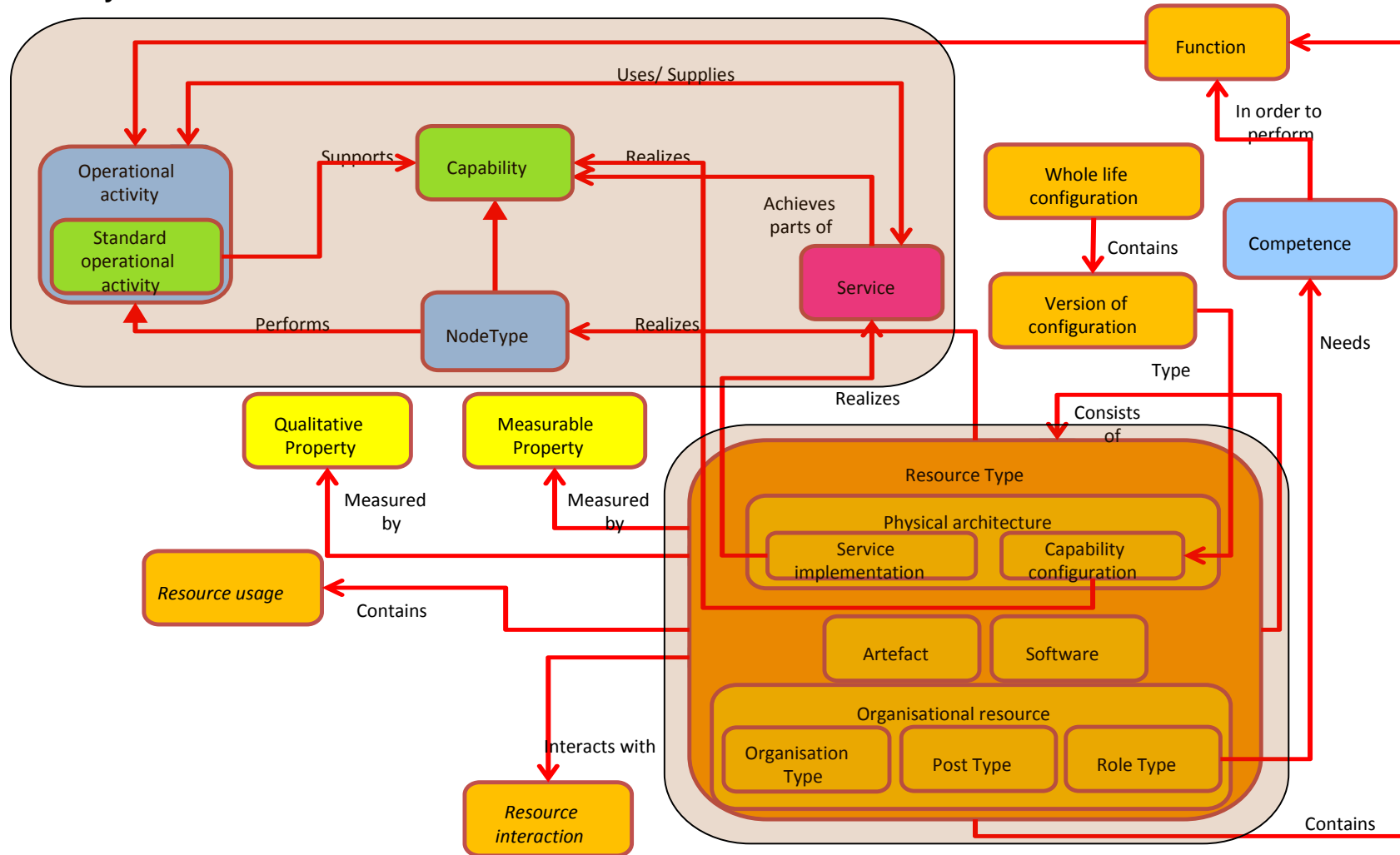


Figure 30: System Views MODAF M3 elements summary

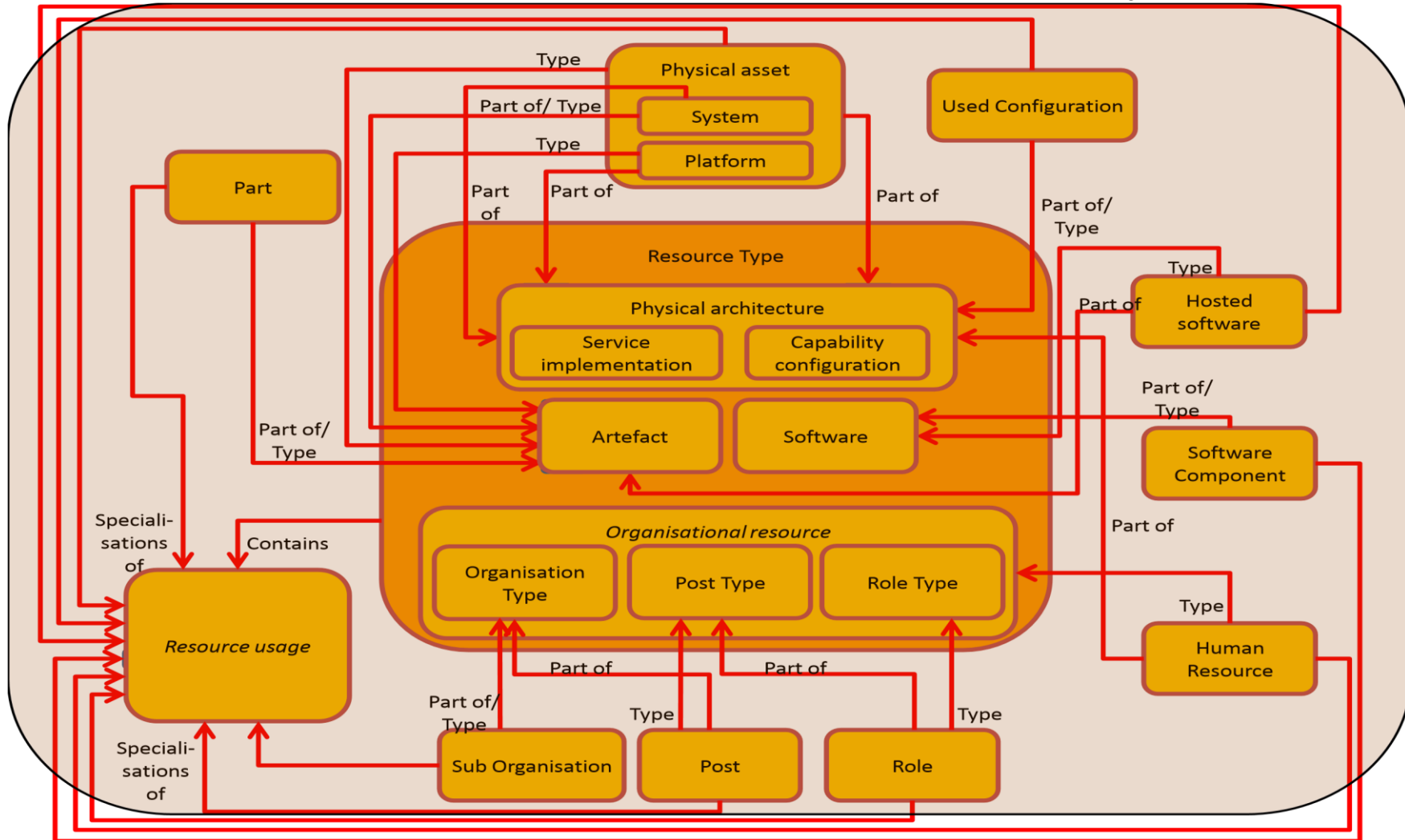


Figure 31: System Views MODAF M3 elements summary: resource usage



This document is no longer extant and has been withdrawn.

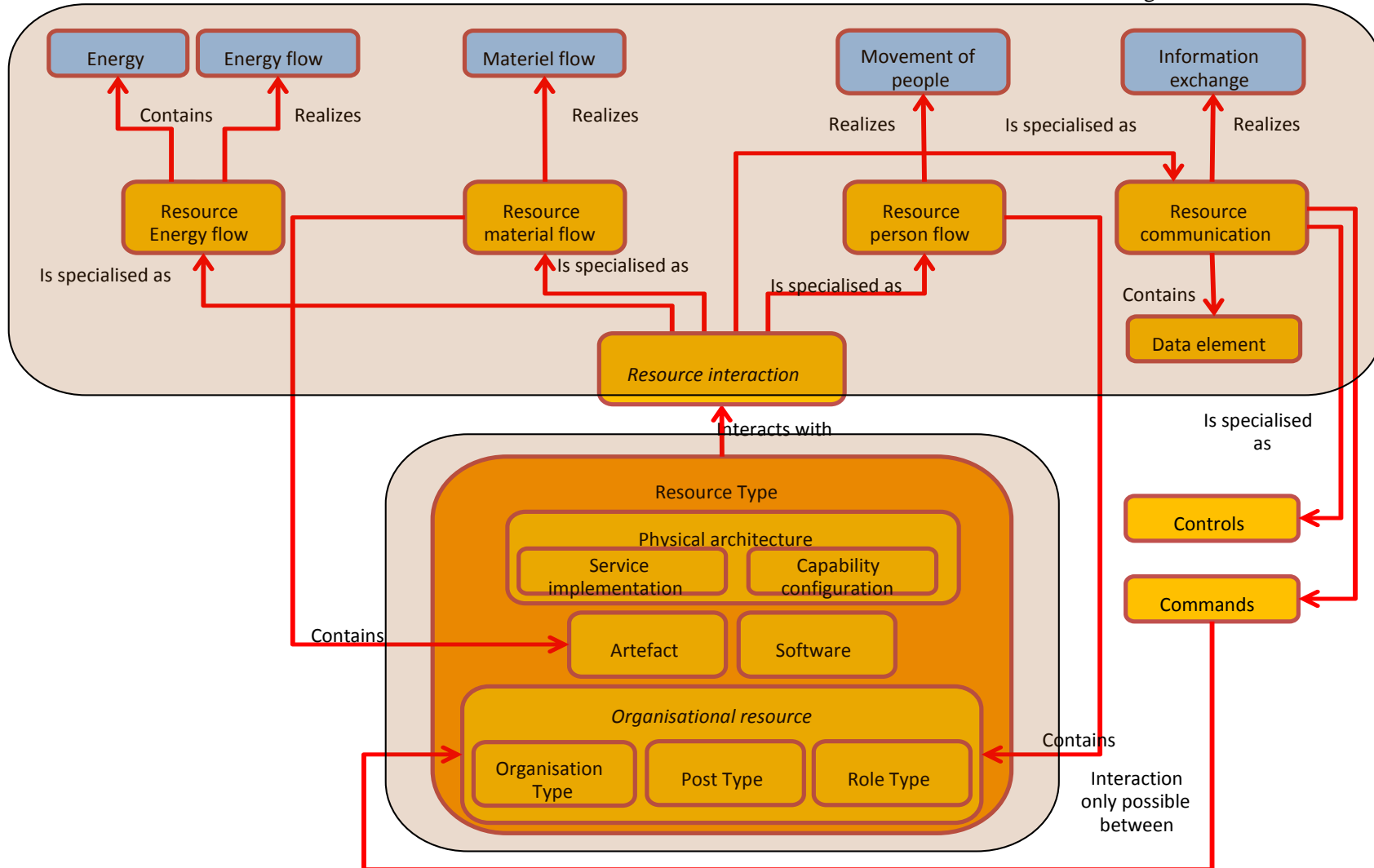
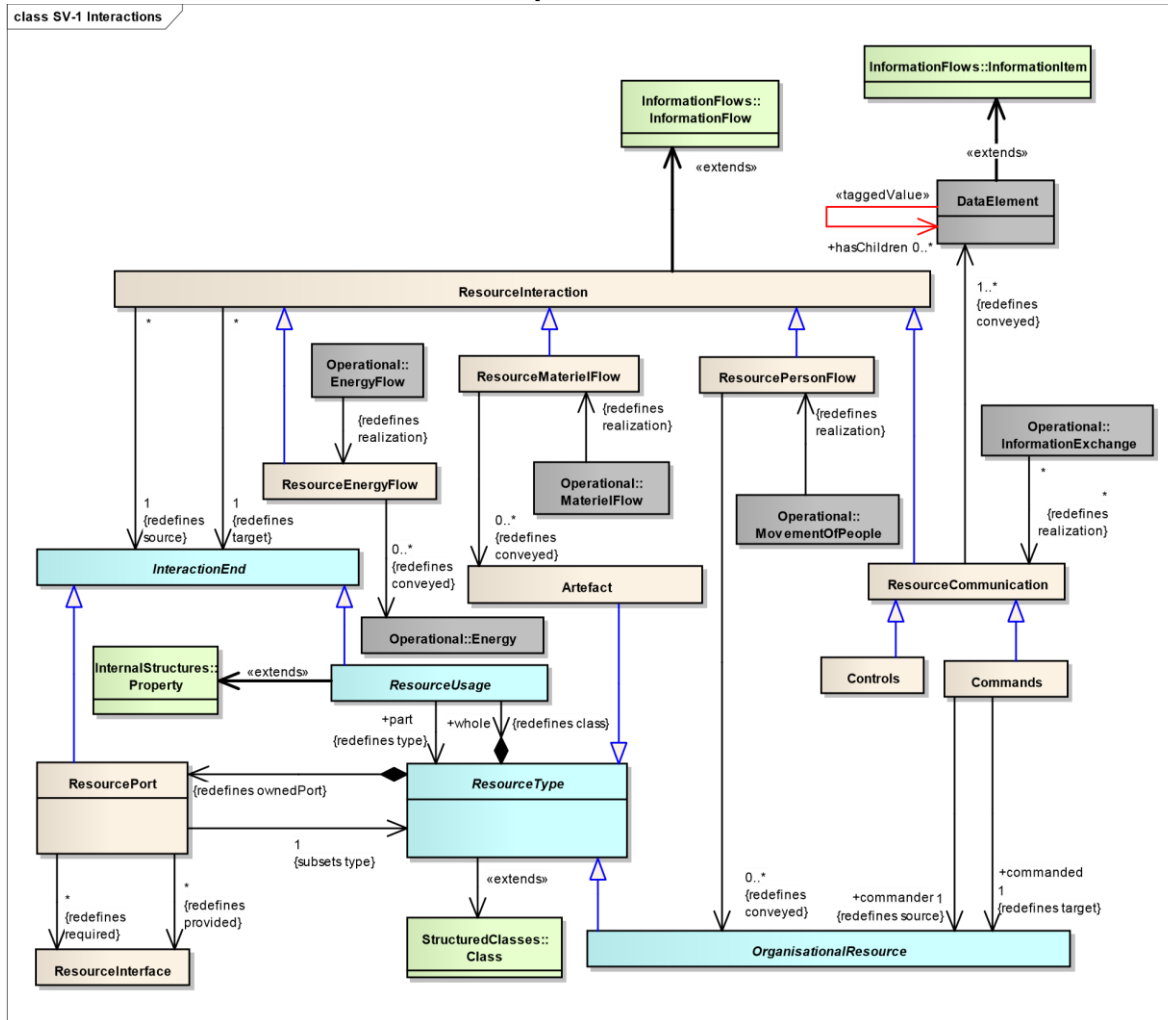


Figure 32: System Views MODAF M3 elements summary: resource interaction

### 1.6.1 SV-1: Resource interaction specification



33: : resource interaction

Figure SV-1 in M3

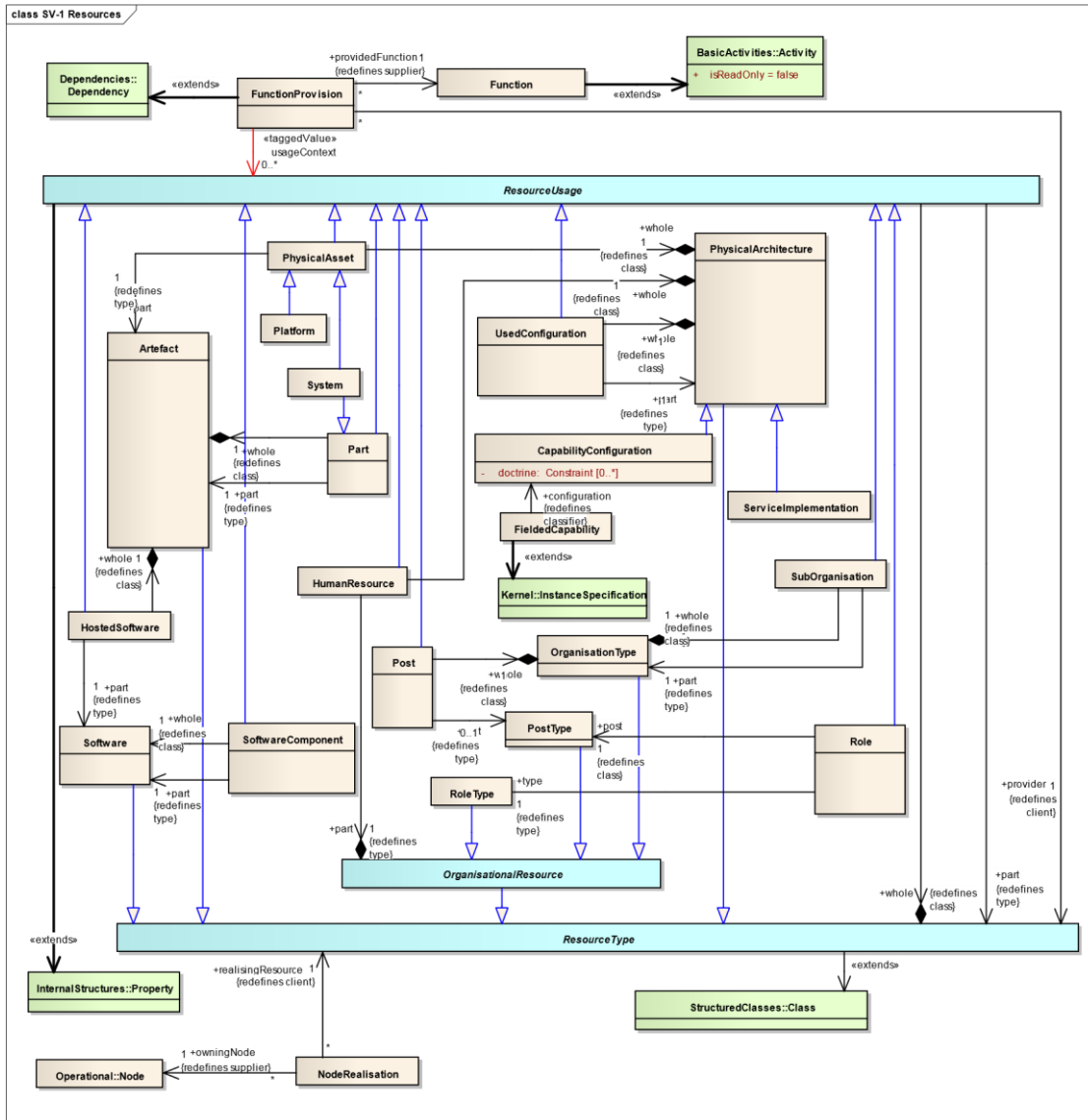
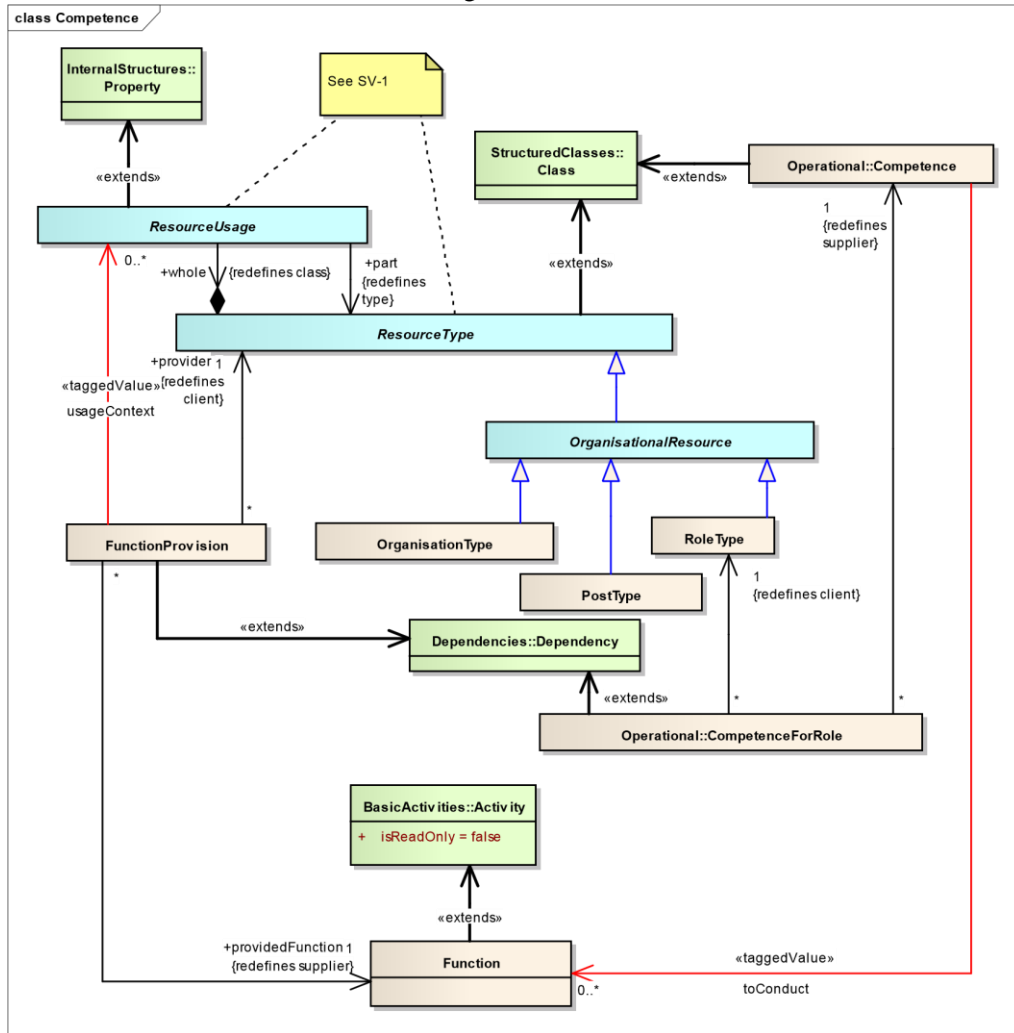


Figure SV-1 in M3

34:

: resource configuration



35:

: Competence

Figure SV-1 in M3

1.6.2 SV-2: System port specification, connectivity description and clusters

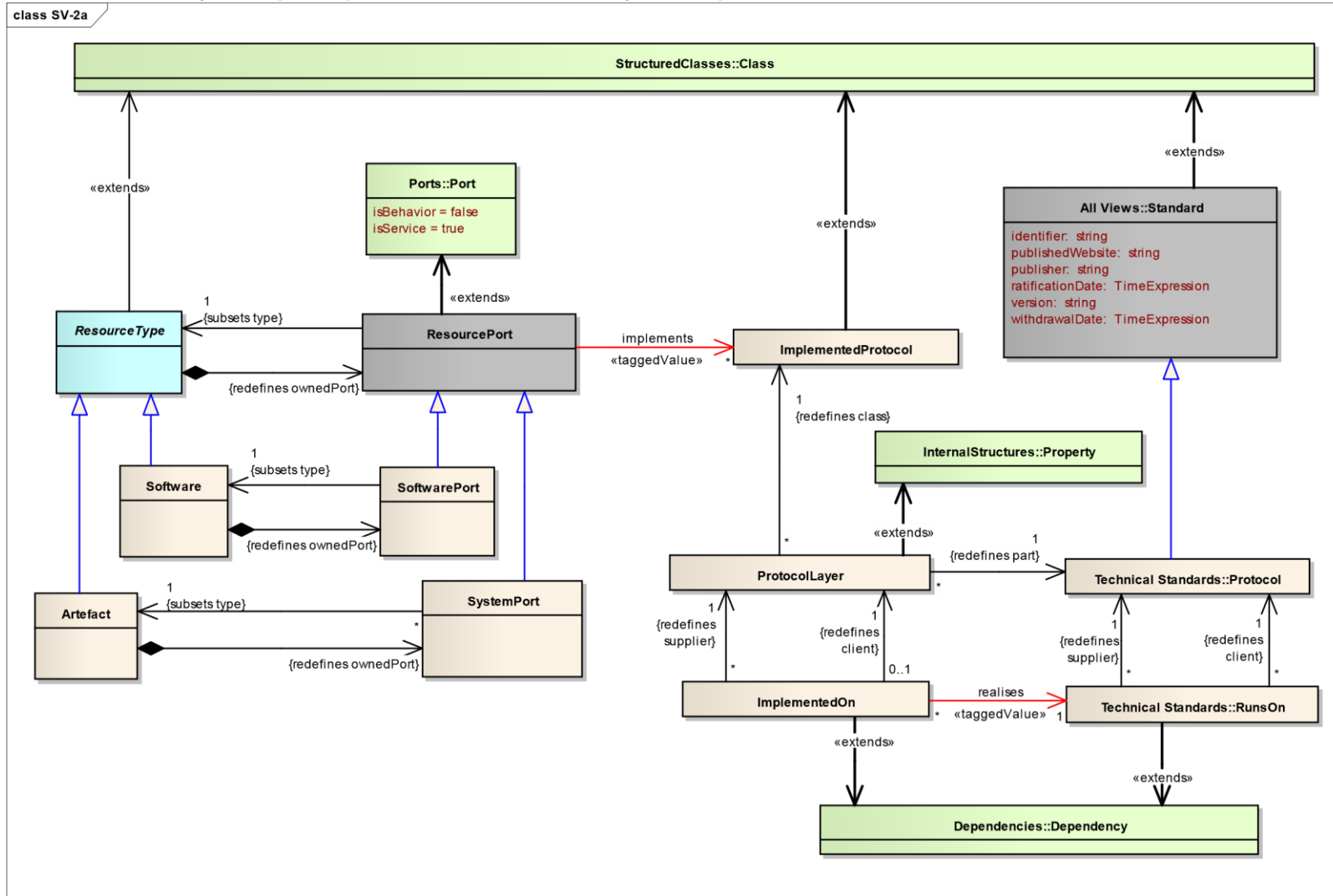


Figure 36: SV-2a in M3: Port specification

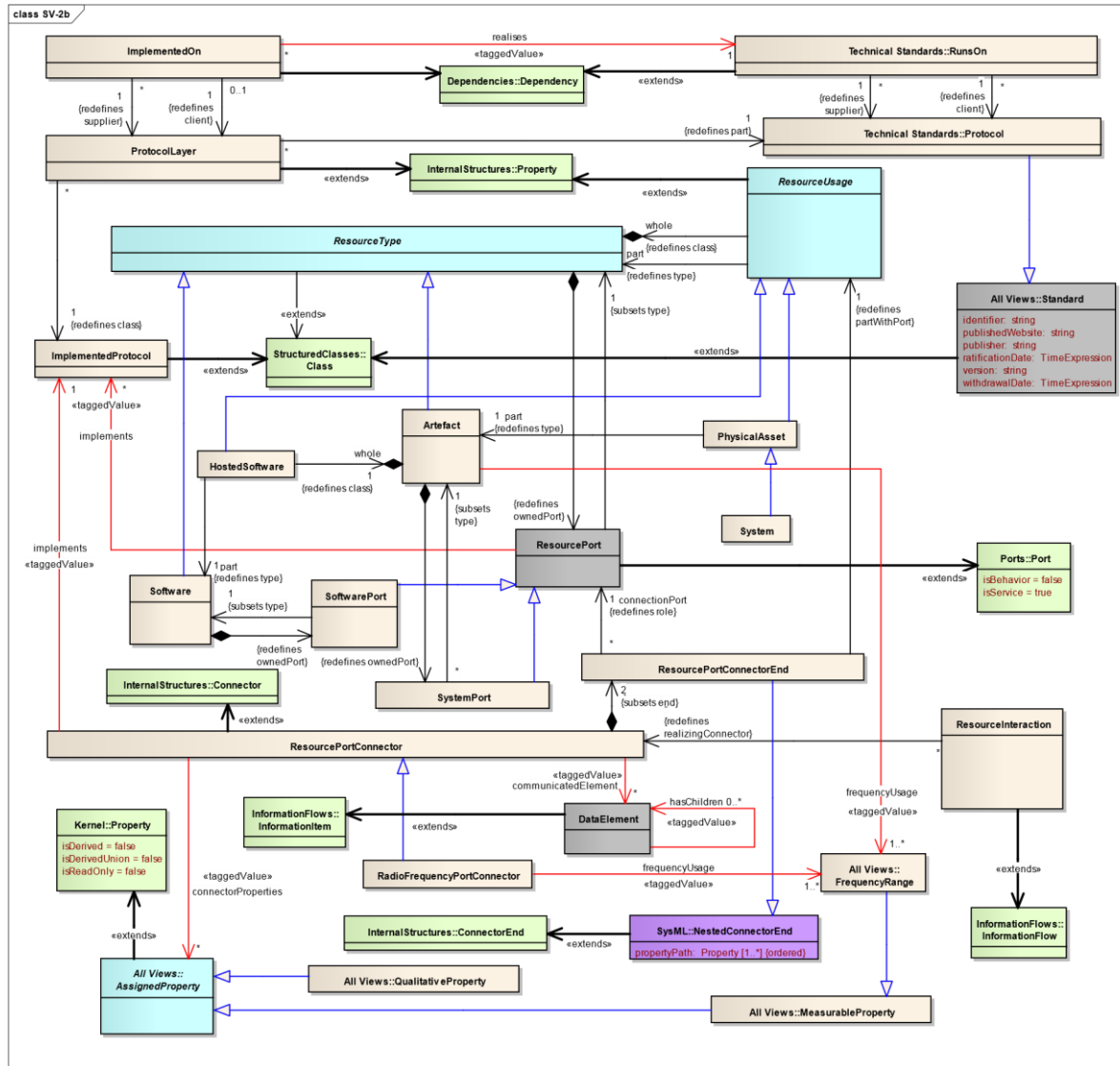
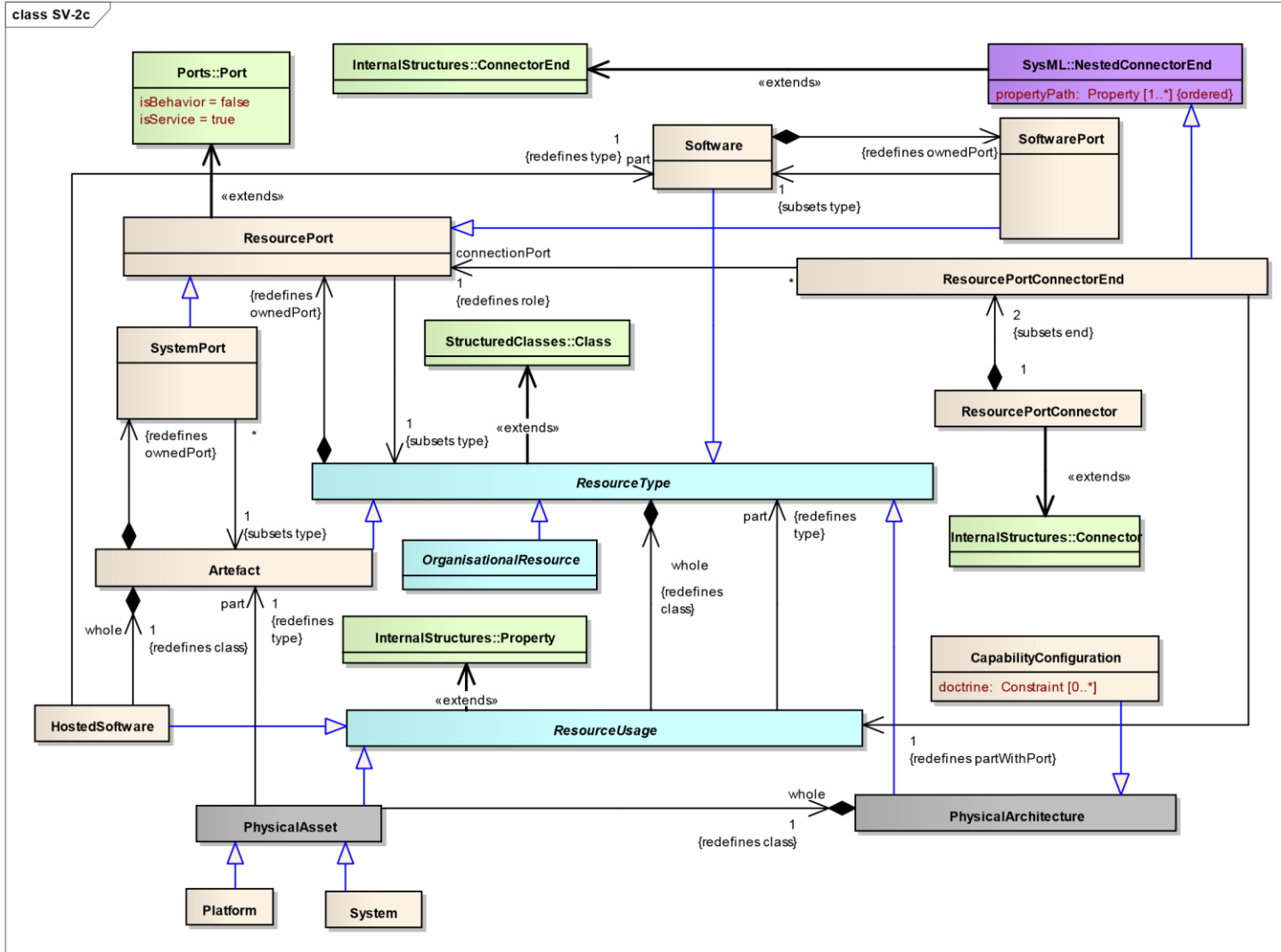


Figure 37: SV-2b in M3: Connectivity description



38: 2c in M3: Connectivity clusters

1.6.3 SV-3: Resource interaction matrix

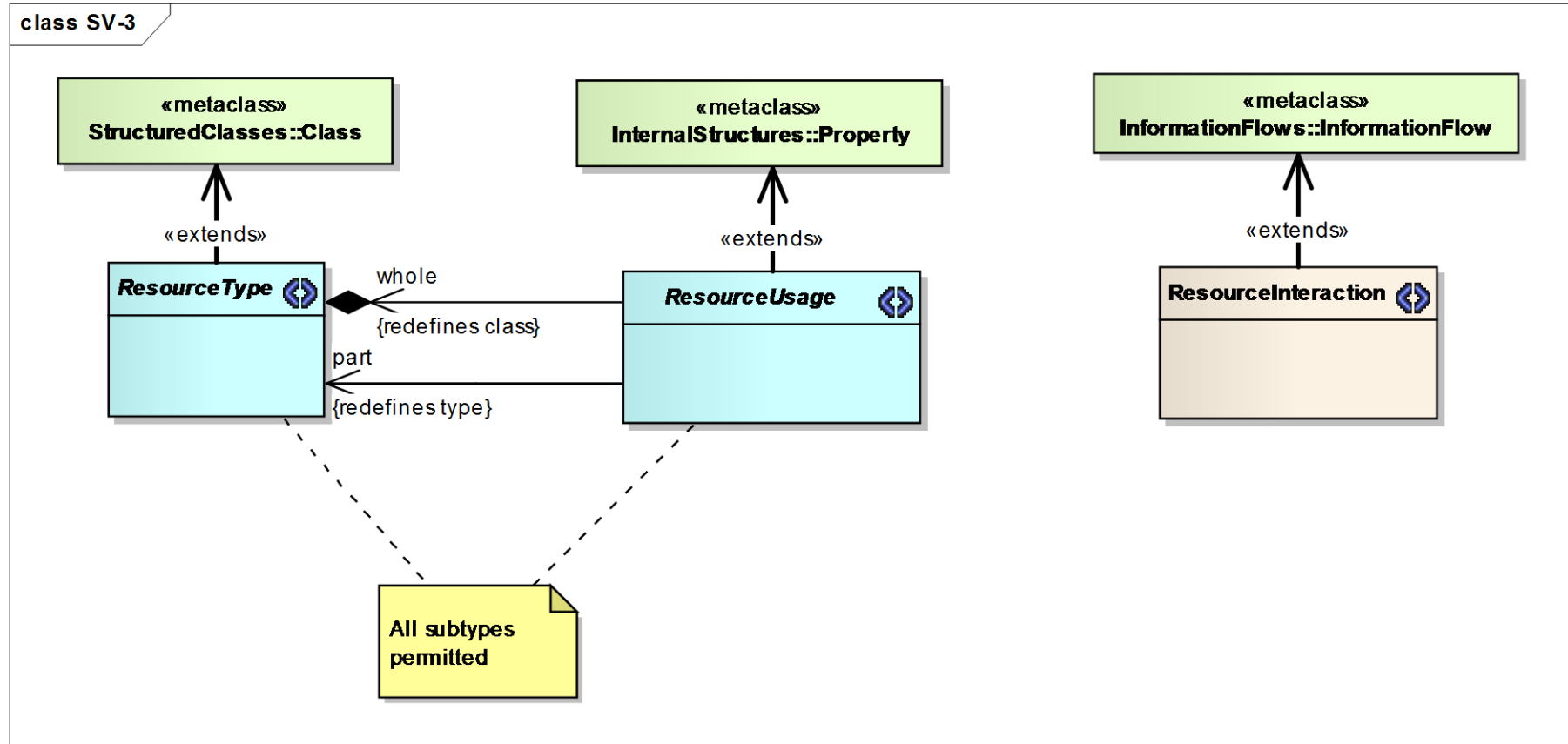
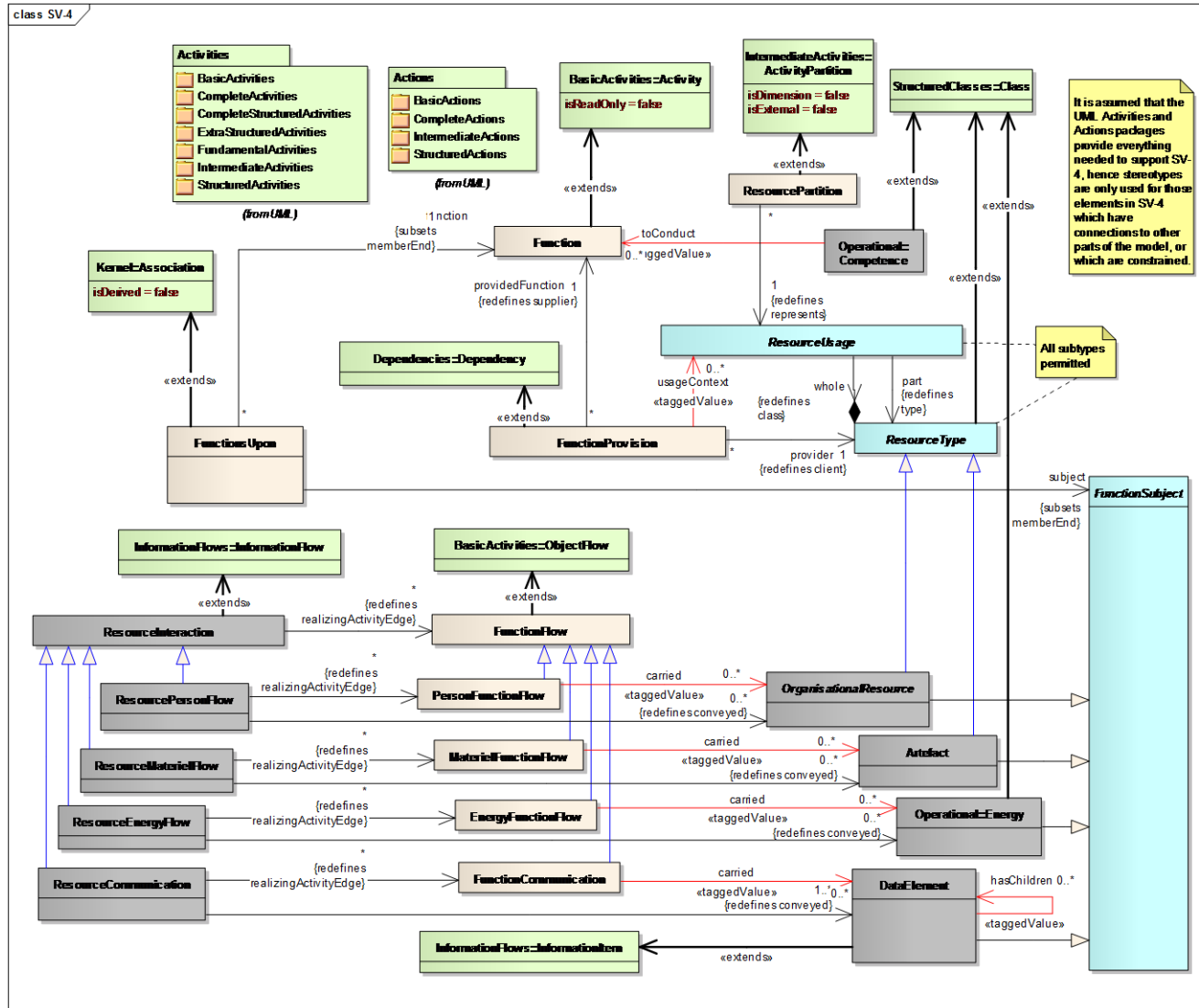


Figure 39: SV-3 in M3



1.6.4 SV-4: Functionality description



40: 4 in M3

1.6.5 SV-5: Function operational activity/ service function traceability matrix

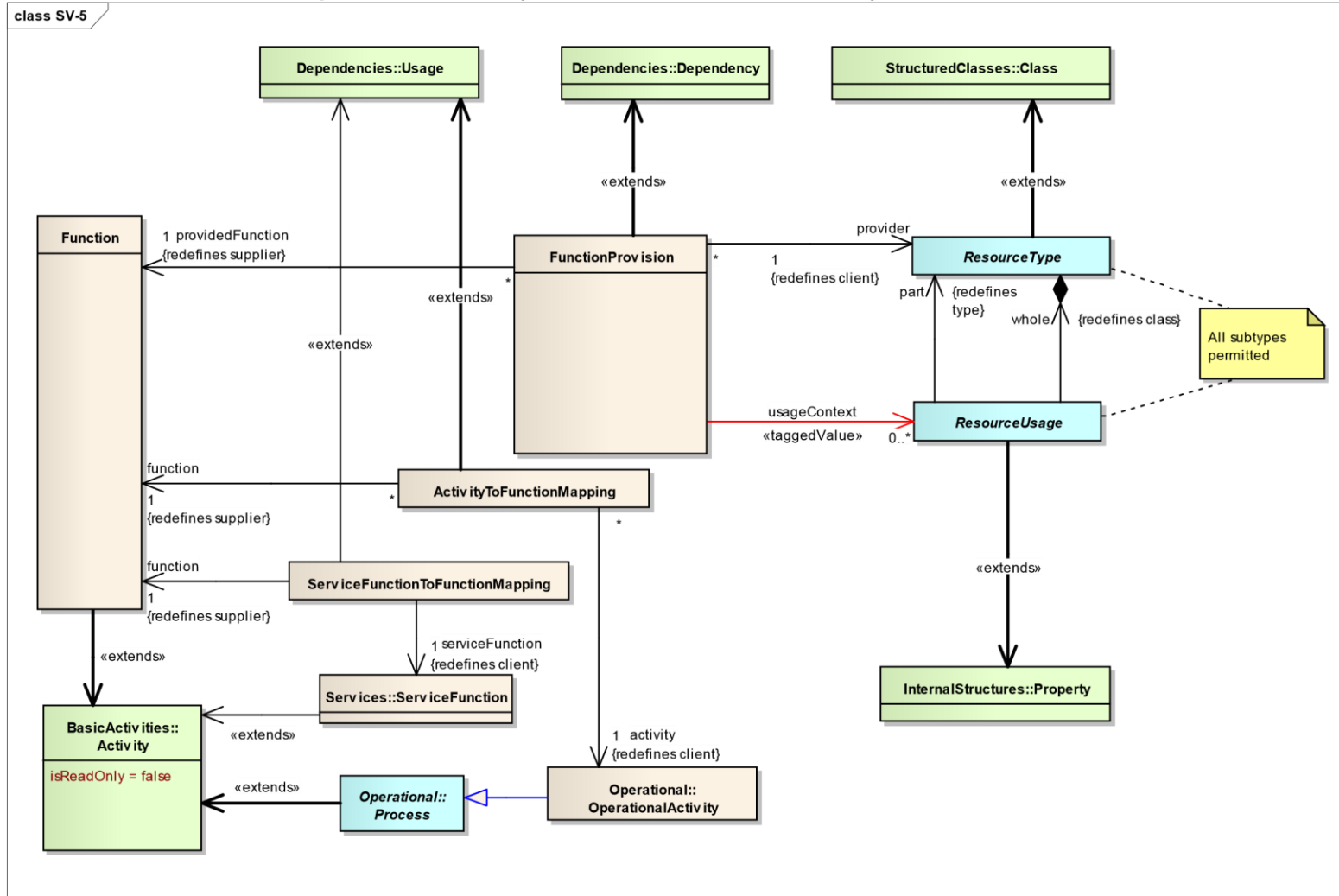
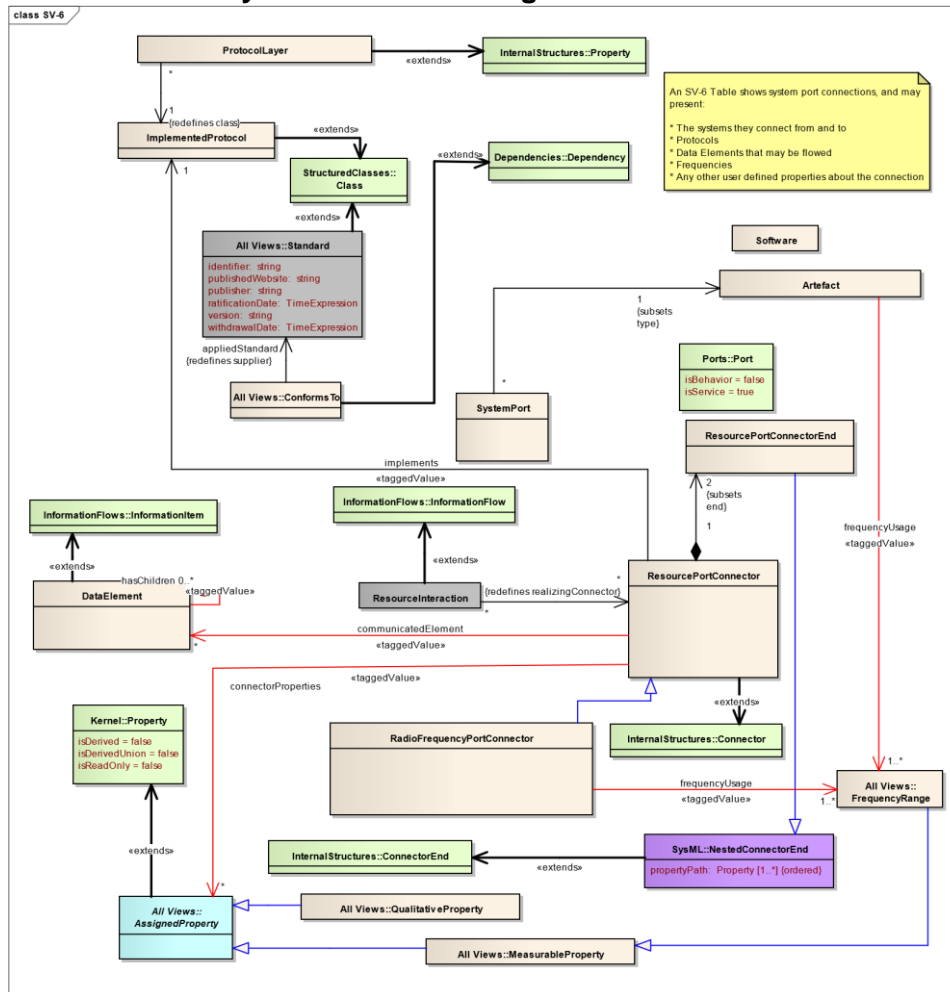


Figure 41: SV-5 in M3

Figure SV-

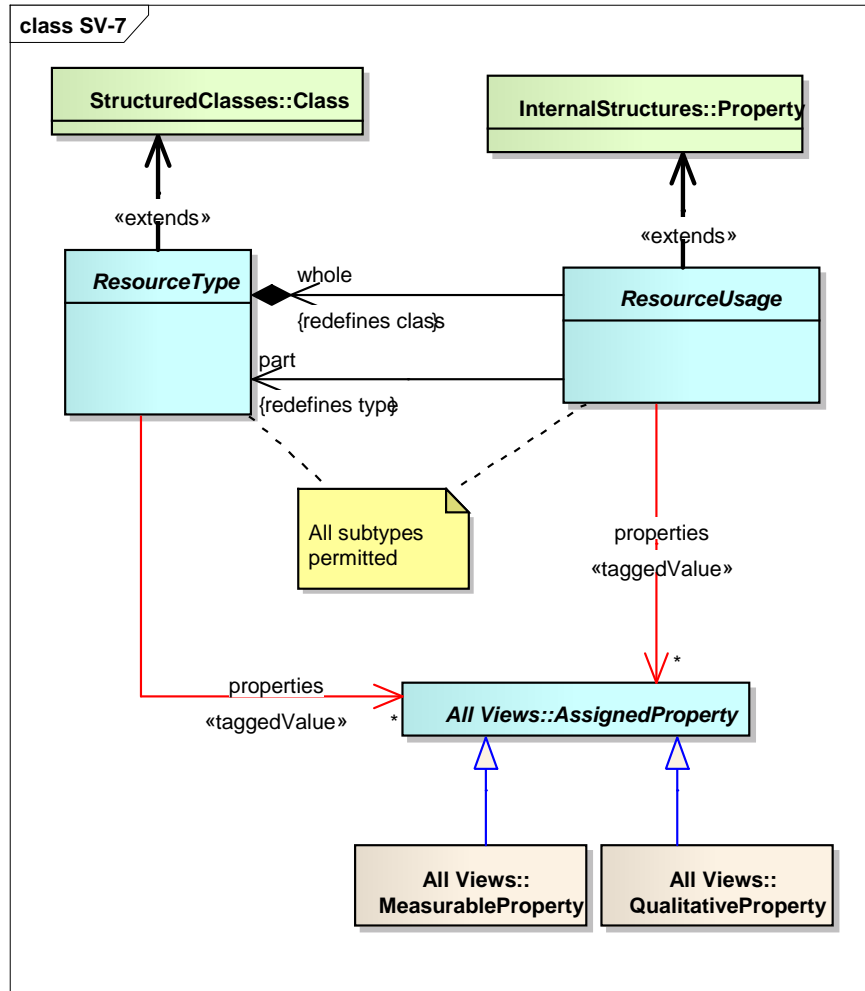
### 1.6.6 SV-6: Systems data exchange matrix



42: 6 in M3

Figure SV-

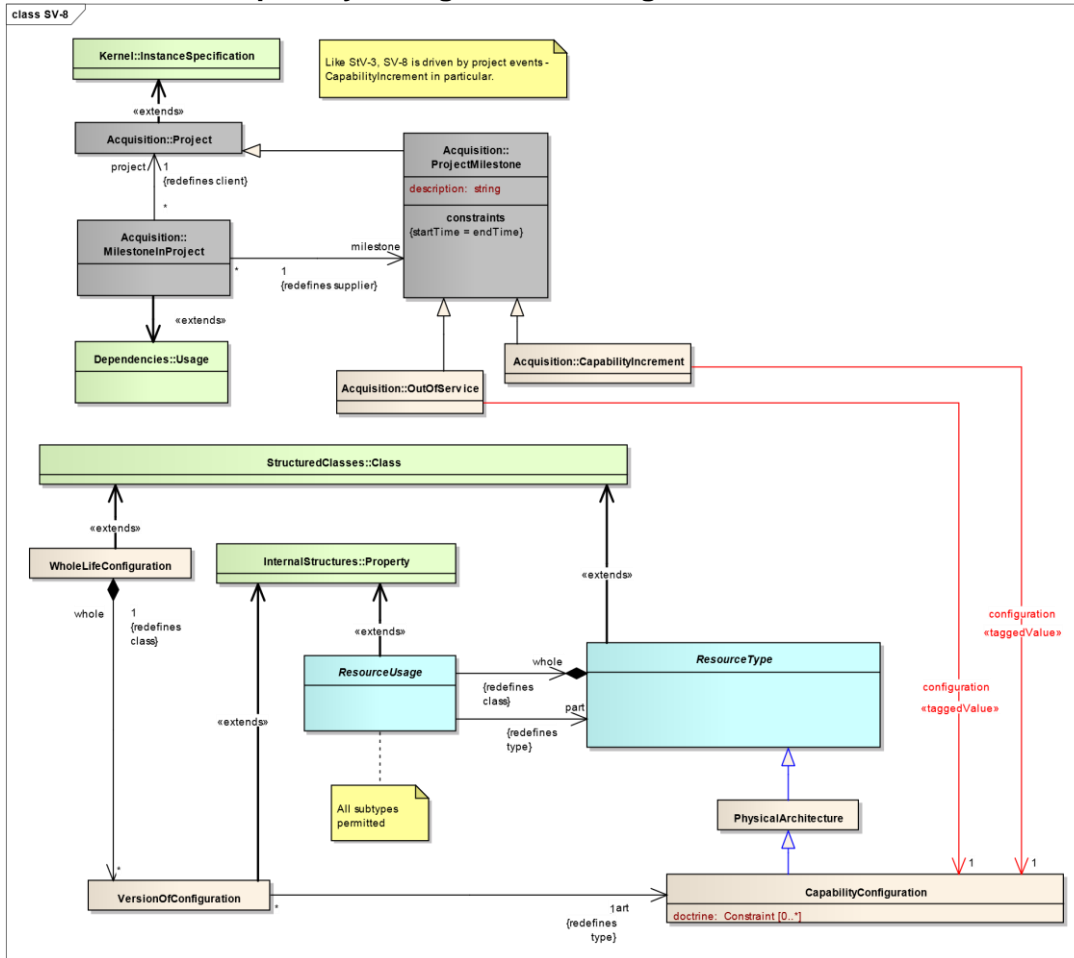
1.6.7 SV-7: Resource performance parameters matrix



43: 7 in M3

Figure SV-

### 1.6.8 SV-8: Capability configuration management



44: 8 in M3

Figure SV-

### 1.6.9 SV-9: Technology and skills forecast

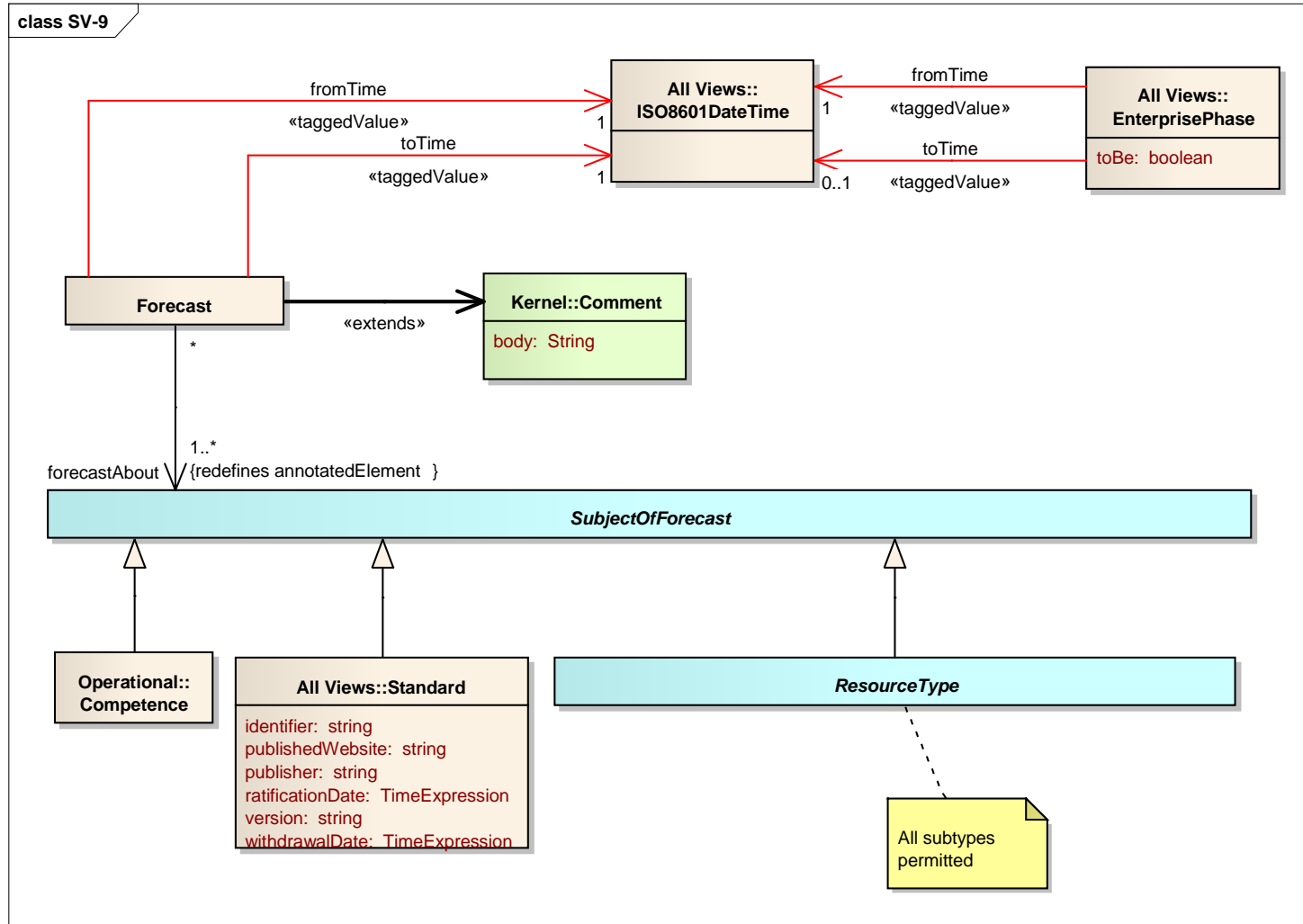


Figure 45: SV-9 in M3

1.6.10 SV-10: Resource constraints, state transition and event-trace description

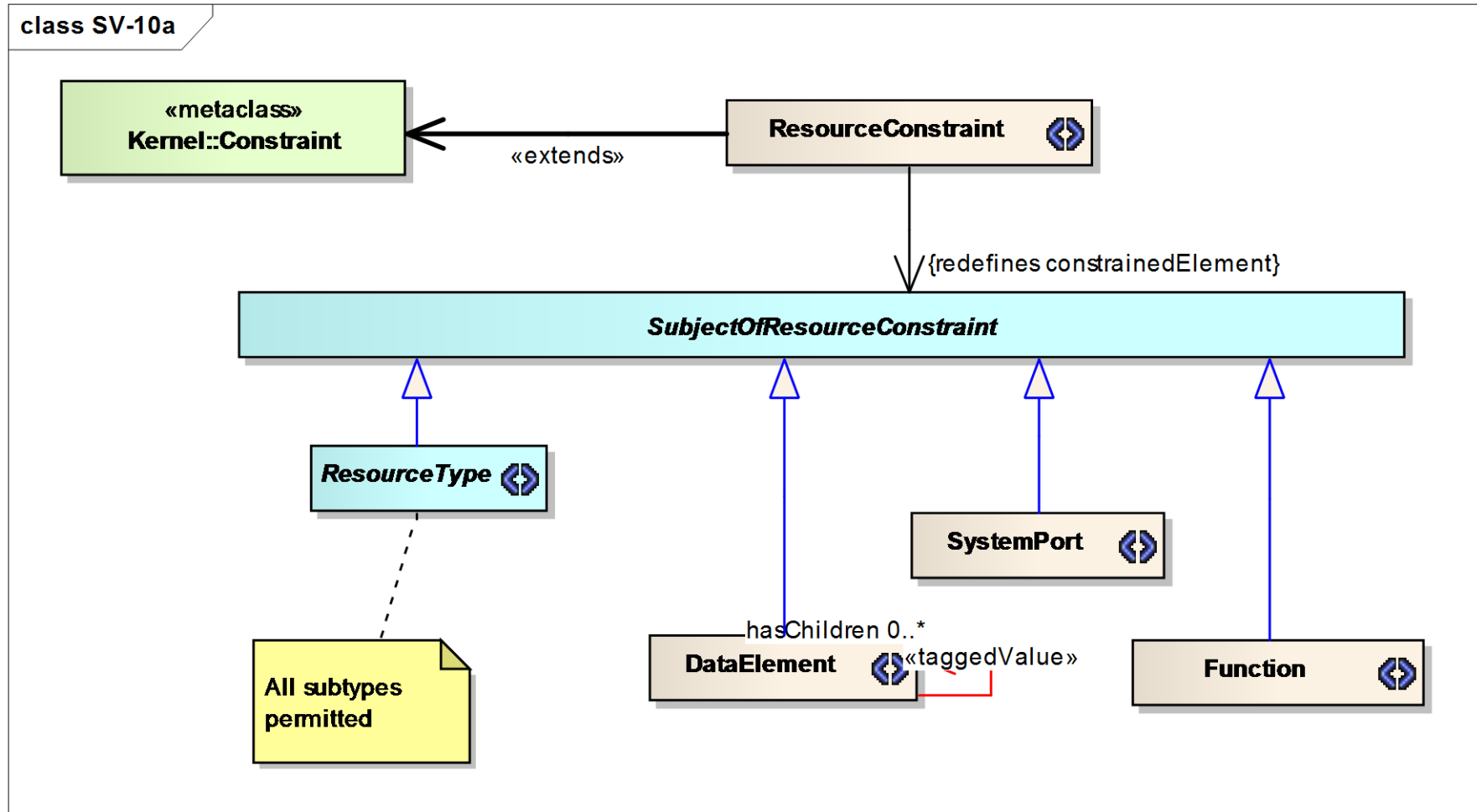


Figure 46: SV-10a in M3

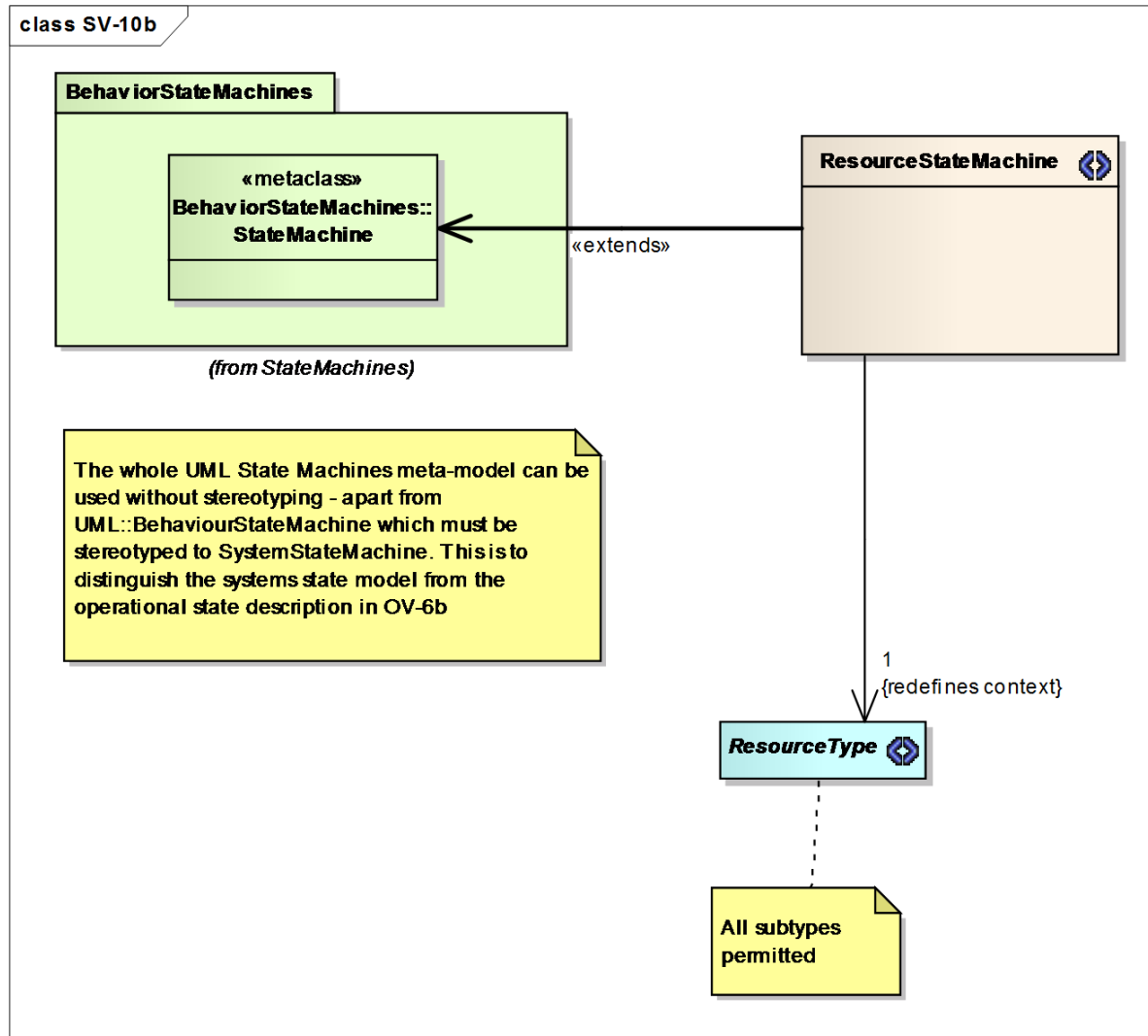


Figure 47: SV-10b in M3



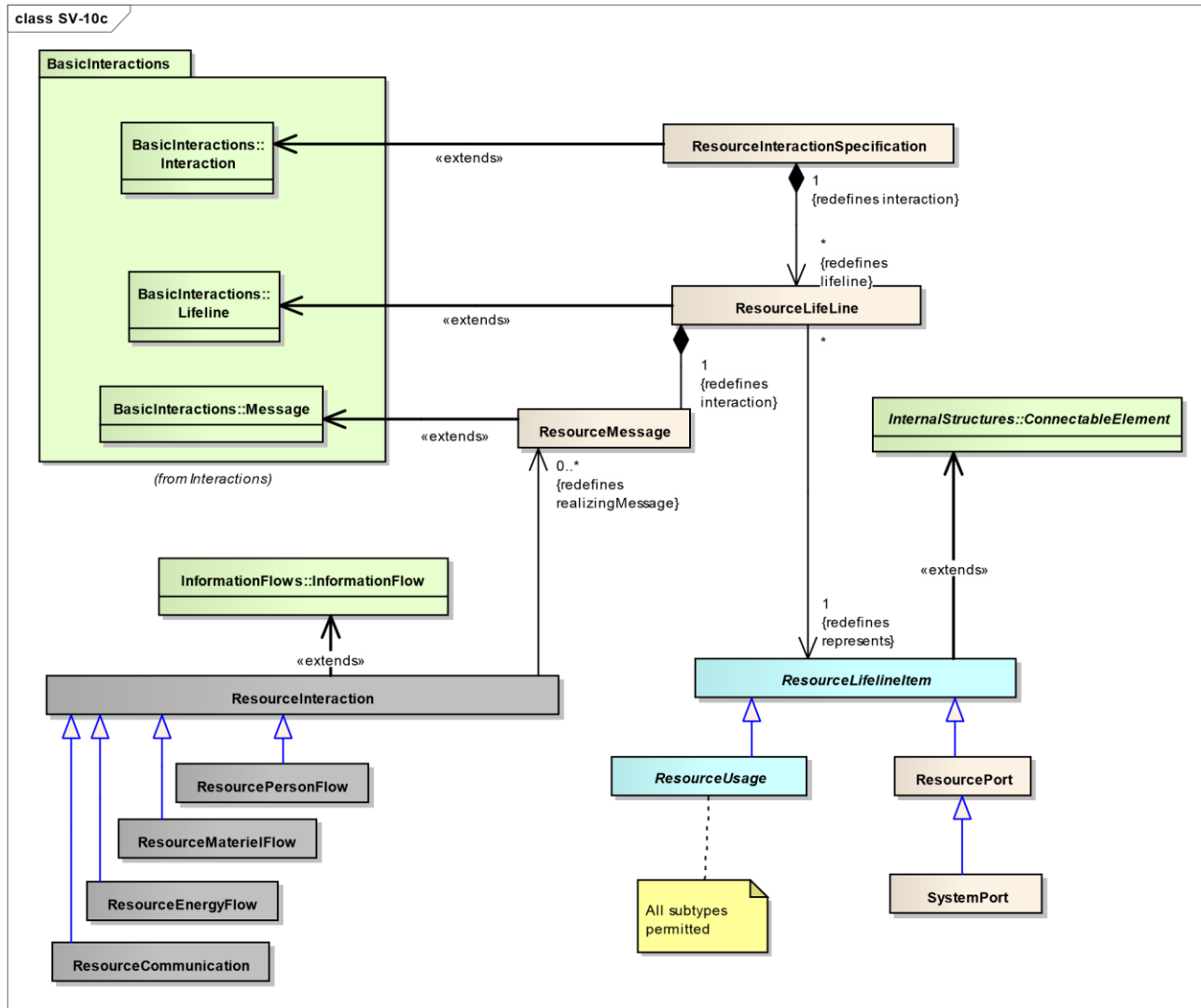


Figure 48: SV-10c in M3

### 1.6.11 SV-11: Physical schema

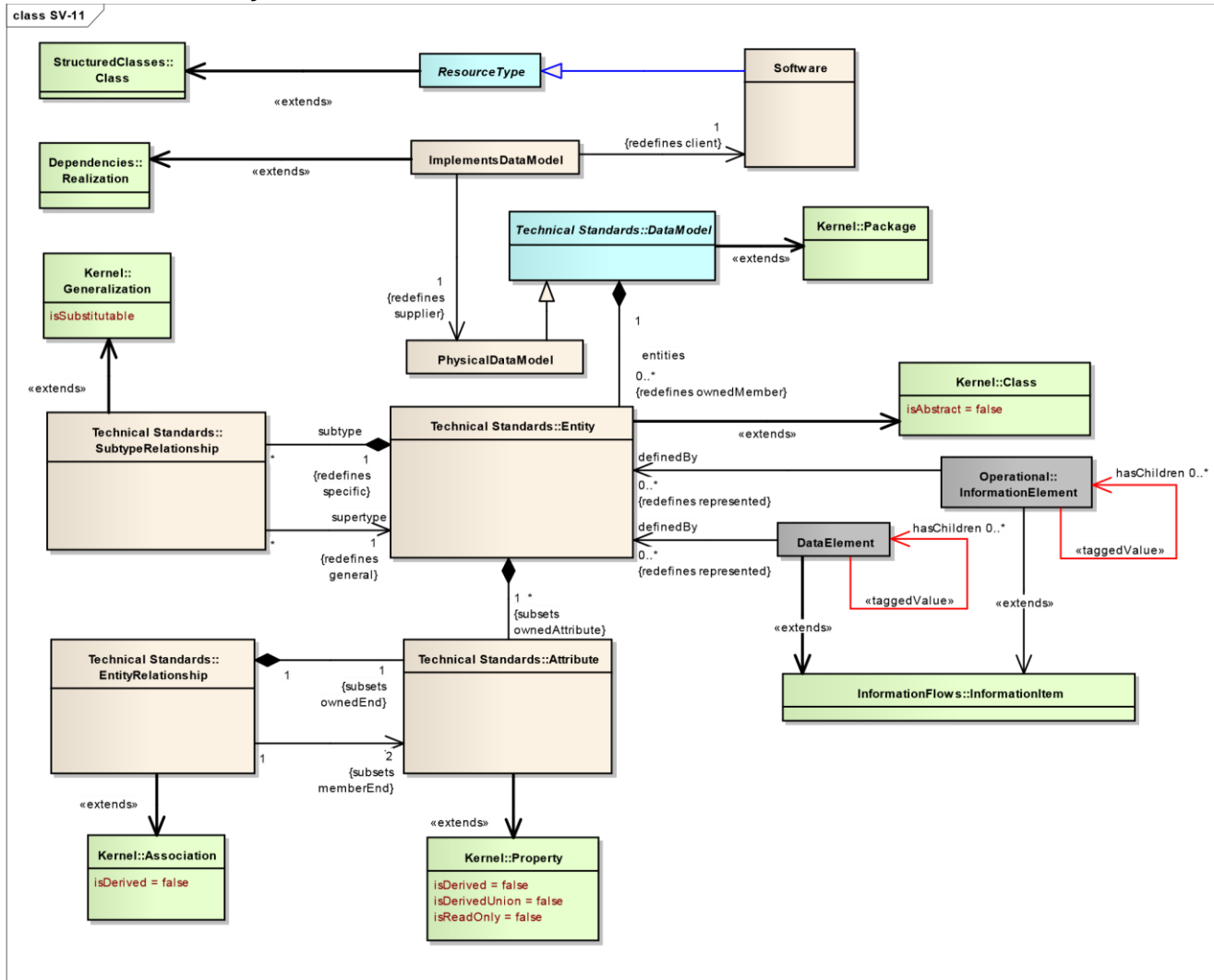


Figure 49: SV-11 in M3

1.6.12 SV-12: Service provision and service composition

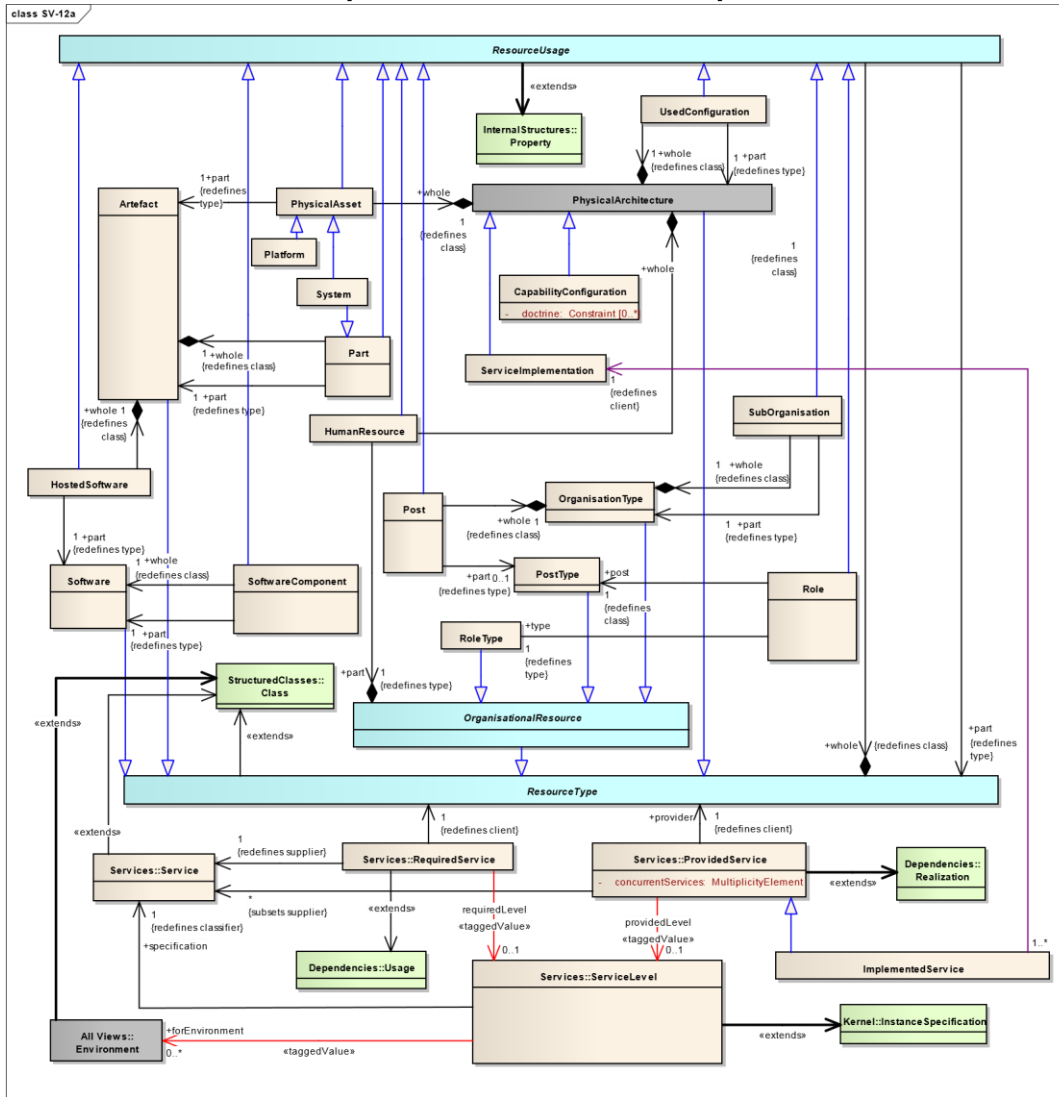


Figure 50: SV-12a in M3

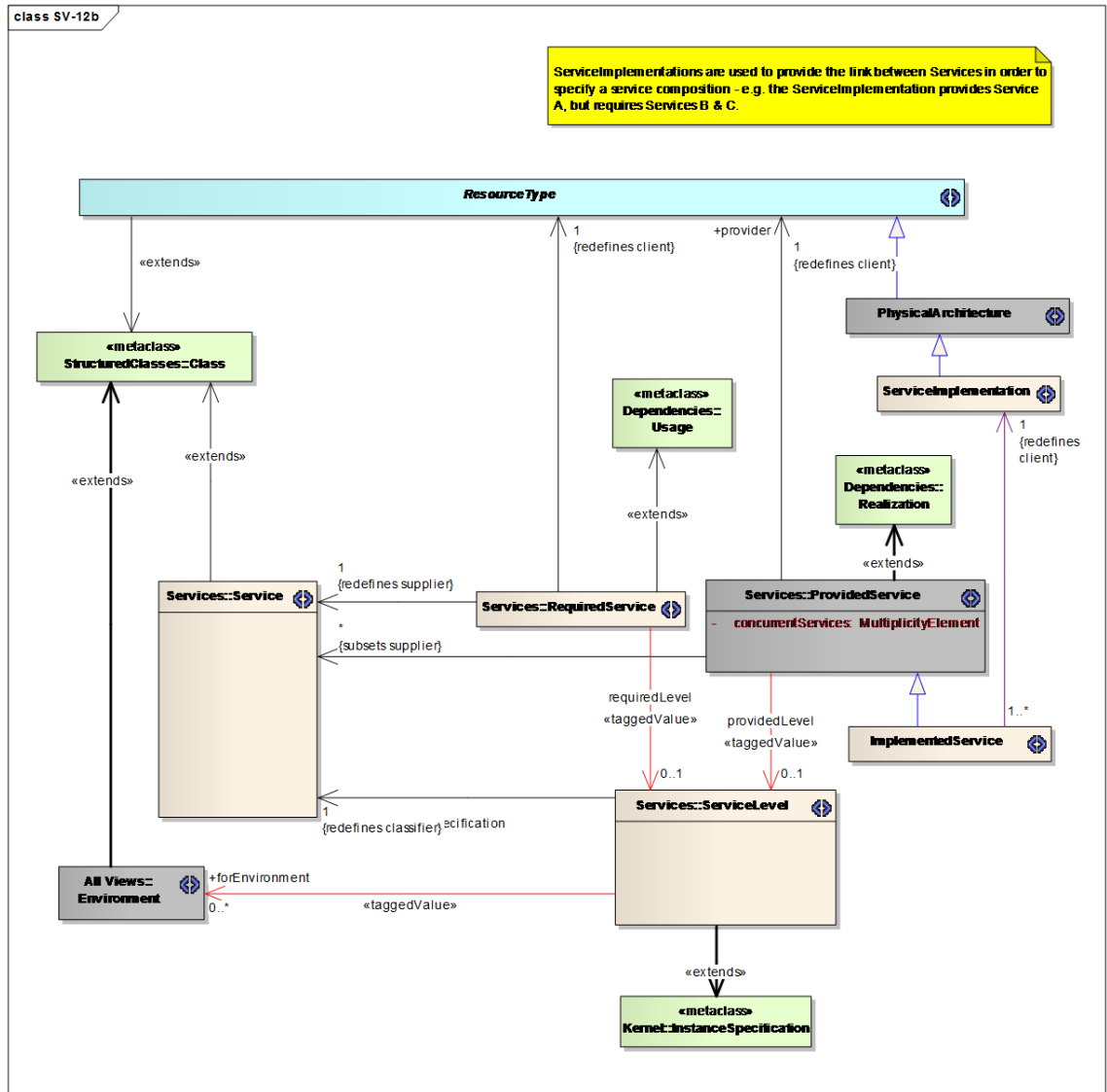


Figure 51: SV-12b in M3

1.6.13 System Views elements table

MODAF 1.2.004 System Views

**ActivityToFunctionMapping** «stereotype» Associations:

ActivityToFunctionMapping – unction Extension:

ActivityToFunctionMapping «extends» Usage Attributes:

-

Asserts that a Function (at least in part) performs or assists in the conducting of an OperationalActivity.

**Artefact** «stereotype»

Associations:

Artefact - SystemPort

Artefact – FunctionSubject

Artefact «taggedValue» FrequencyRange Generalization:

Artefact - ResourceType

Attributes:

-

A type of man-made object. Examples are "car", "radio", "diesel", etc.

**CapabilityConfiguration** «stereotype» Associations:

-

Generalization:

CapabilityConfiguration - ConceptItem

CapabilityConfiguration -

PhysicalArchitecture Attributes: doctrine

A composite structure representing the physical and human resources (and their interactions) that when brought together provide one or

more Capabilities.

A CapabilityConfiguration is a set of Resources configured to provide a capability, and should be guided by [doctrine] which may take the form of Standard or OperationalConstraint stereotypes.

**CapabilityRealisation** «stereotype» Associations:

CapabilityRealisation - Capability

CapabilityRealisation - CapabilityConfiguration Extension:

CapabilityRealisation «extends» Realization Attributes:

-

Asserts that a CapabilityConfiguration is capable of achieving a Capability.

**Commands** «stereotype» Associations:

Commands - OrganisationalResource

Commands – OrganisationalResource

Generalization:

Commands - ResourceCommunication

Attributes:

-

Asserts that one OrganisationalResource (source) commands another (target).

**Controls** «stereotype»

Associations:

-

Generalization:

Controls - ResourceCommunication Attributes:

-

A type of ResourceInteraction where one Resource (source) controls another (target). Examples - the driver of a tank, one organisation

having operational control of another, a fire control system controlling a weapons system.

**DataElement** «stereotype» Associations:

DataElement - Entity

DataElement «taggedValue» DataElement

Generalization:

DataElement -

SubjectOfResourceConstraint DataElement

- FunctionSubject Extension:

DataElement «extends» InformationItem Attributes:

-

A formalised representation of data which is managed by or exchanged between resources.

**EnergyFunctionFlow** «stereotype» Associations:

EnergyFunctionFlow «taggedValue» Energy

Generalization:

EnergyFunctionFlow - FunctionFlow Attributes:

-

A flow of Energy between Functions.

**FieldedCapability** «stereotype» Associations:

FieldedCapability - CapabilityConfiguration

Extension:

FieldedCapability «extends» InstanceSpecification Attributes:

-

An actual, fully-realised capability. A FieldedCapability must indicate its configuration CapabilityConfiguration. Example: "HMS Iron



Duke, configured and crewed, operating under the appropriate doctrine". Note - the CapabilityConfiguration that this realises would specify a UK Type 23 rigate, the crew, the weapons systems, etc.

**Forecast** «stereotype»

Associations:

Forecast – SubjectOfForecast

Forecast «taggedValue» ISO8601DateTime

Forecast «taggedValue» ISO8601DateTime

Extension:

Forecast «extends» Comment Attributes:

-

A statement about the future state of one or more types of system or standard. Note, this is an EffectivityConstrainedItem - i.e. the forecast is effective for a given period.

**Function** «stereotype»

Associations:

-

Extension:

Function «extends» Activity Generalization:

Function - SubjectOfResourceConstraint Attributes:

-

A process performed by a Resource. Note1: Contrast with OperationalActivity, where the actor performing the activity is not known (i.e. it is just a logical node). A Function is implementation-specific. Note2: Should the Function be specific to one usage of a type of system, then the usageContext is specified by a reference to the composite structure property ResourceComposition typed by the system.

**FunctionCommunication** «stereotype» Associations:

FunctionCommunication «taggedValue» DataElement

Generalization:

FunctionCommunication - FunctionFlow Attributes:

-

A flow of information between Functions.

**FunctionFlow** «stereotype»

Associations:

-

Extension:

FunctionFlow «extends» ObjectFlow Attributes:

-

A UML::ObjectFlow between Functions.

**FunctionProvision** «stereotype»

Associations:

FunctionProvision - Function

FunctionProvision - ResourceType

FunctionProvision «taggedValue» ResourceUsage

Extension:

FunctionProvision «extends» Dependency Attributes:

-

Asserts that a Resource performs a Function.

**FunctionSubject** Associations:

-

Attributes:

-

An element that can be the subject of a Function.

**FunctionsUpon** «stereotype»

Associations:

FunctionsUpon - FunctionSubject

FunctionsUpon - Function Extension:

FunctionsUpon «extends» Association Attributes:

-

Asserts that a Function has some effect on an DataElement.

**HostedSoftware** «stereotype»

Associations:

HostedSoftware - Artefact

HostedSoftware - Software

Generalization:

HostedSoftware - ResourceUsage Attributes:

-

Asserts that Software is hosted on an Artefact (which means the artefact is some kind of computer system).

**HumanResource** «stereotype»

Associations:

HumanResource - PhysicalArchitecture HumanResource

- OrganisationalResource Generalization:

HumanResource - ResourceUsage Attributes:

-

The role of an OrganisationalResource in a PhysicalArchitecture.

**ImplementedOn** «stereotype»

Associations:

ImplementedOn - ProtocolLayer

ImplementedOn - ProtocolLayer

ImplementedOn «taggedValue» RunsOn

Extension:

ImplementedOn «extends» Dependency Attributes:

-

Asserts that one Protocol (client) may be implemented on another (supplier).

**ImplementedProtocol** «stereotype» Associations:

-

Extension:

ImplementedProtocol «extends» Class Attributes:

-

A specific protocol or set of protocols (ordered into a stack) that may be implemented by a SystemPort or SystemPortConnector.

**ImplementedService** «stereotype»

Associations:

ImplementedService - ServiceImplementation Generalization:

ImplementedService - ProvidedService Attributes:

-

A ProvidedService Realization relationship that asserts the mandatory link from a ServiceImplementation to the Service it implements.

**ImplementsDataModel** «stereotype»

Associations:

ImplementsDataModel – PhysicalDataModel

ImplementsDataModel - Software

Extension:

ImplementsDataModel «extends» Realization Attributes:

-

An assertion that Software implements a PhysicalDataModel.

**InteractionEnd** Associations:

-

Attributes:

-

An element that can be at either end of a ResourceInteraction. (ABSTRACT)

**MaterialFunctionFlow** «stereotype» Associations:

MaterialFunctionFlow «taggedValue» Artefact Generalization:

MaterialFunctionFlow - FunctionFlow

Attributes:

-

A flow of materiel (artefacts) between Functions.

**NodeRealisation** «stereotype» Associations:

NodeRealisation – ResourceType Extension:

NodeRealisation «extends» Realization

Attributes:

-

An assertion that a ResourceType provides the functionality specified by an operational node.

**OrganisationType** «stereotype» Associations:

OrganisationType - ActualOrganisation Generalization:

OrganisationType - OrganisationalResource Attributes:

-

A type of ActualOrganisation. Examples: Government Department, Commercial Company, Accounting Department.

**OrganisationalResource** «stereotype»

Associations:

-

Generalization:

OrganisationalResource - ResourceType

OrganisationalResource - unctionSubject Attributes:

-

A ResourceType that is human (i.e. a PostType, OrganisationType or RoleType). [ABSTRACT]

**Part** «stereotype» Associations:

Part - Artefact

Part - Artefact

Generalization: Part

- ResourceUsage

Attributes:

-

Usage of an Artefact as a part of another Artefact.

**PersonFunctionFlow** «stereotype» Associations:

PersonFunctionFlow «taggedValue» OrganisationalResource Generalization:

PersonFunctionFlow - FunctionFlow Attributes:

-

A flow of human resources between Functions.

**PhysicalArchitecture** «stereotype» Associations:

-

Generalization:

PhysicalArchitecture - ResourceType

PhysicalArchitecture - ArchitecturalProduct Attributes:

-

A configuration of Resources for a purpose.

**PhysicalAsset** «stereotype»

Associations:

PhysicalAsset - PhysicalArchitecture

PhysicalAsset - Artefact

Generalization:

PhysicalAsset - ResourceUsage Attributes:

-

Usage of an Artefact as a component of a PhysicalArchitecture.

**PhysicalDataModel** «stereotype»

Associations:

-

Generalization:

PhysicalDataModel - DataModel

Attributes:

-

A PhysicalDataModel is an implementable specification of a data structure. A PhysicalDataModel realises a LogicalDataModel, taking into account implementation restrictions and performance issues whilst still enforcing the constraints, relationships and typing of the logical model.



**Platform** «stereotype»

Associations:

-

Generalization:

Platform - PhysicalAsset

Attributes:

-

Usage of an Artefact as a platform (e.g. vessel, aircraft, etc.) in a particular PhysicalArchitecture.

**Post** «stereotype»

Associations:

Post - OrganisationType

Post - PostType

Generalization: Post

- ResourceUsage

Attributes:

-

Asserts that a post exists in an OrganisationType of the type specified by the related PostType. Note: posts in organisations may or may not be filled.

**PostType** «stereotype»

Associations:

PostType - ActualPost

Generalization:

PostType - OrganisationalResource Attributes:

-

A type of point of contact or responsible person. Note that this is the type of post - e.g. Desk Officer, Commander Land Component, etc.

**ProtocolLayer** «stereotype»

Associations:

ProtocolLayer –

ImplementedProtocol ProtocolLayer -

Protocol Extension:

ProtocolLayer «extends» Property Attributes:

-

Asserts that an ImplementedProtocol uses a protocol.

**RadioFrequencyPortConnector** «stereotype» Associations:

RadioFrequencyPortConnector «taggedValue» FrequencyRange Generalization:

RadioFrequencyPortConnector - ResourcePortConnector Attributes:

-

A SystemPortConnector that connects two ports which are typed as RadioFrequencyPort.

**ResourceCommunication** «stereotype» Associations:

ResourceCommunication - DataElement

ResourceCommunication - FunctionCommunication Generalization:

ResourceCommunication - ResourceInteraction Attributes:

-

A ResourceInteraction where data is exchanged.

**ResourceConstraint** «stereotype»

Associations:

ResourceConstraint - SubjectOfResourceConstraint Extension:

ResourceConstraint «extends» Constraint Attributes:

-

A rule governing the structural or functional aspects of an implementation - this may also include constraints on OrganisationalResources that are part of an implementation.

**ResourceEnergyFlow** «stereotype» Associations:

ResourceEnergyFlow - Energy

ResourceEnergyFlow - EnergyFunctionFlow

Generalization:

ResourceEnergyFlow - ResourceInteraction Attributes:

-

A ResourceInteraction where energy flows between the Resources.

**ResourceInteraction** «stereotype»

Associations:

ResourceInteraction - InteractionEnd

ResourceInteraction - InteractionEnd

ResourceInteraction - ResourcePortConnector

ResourceInteraction - FunctionFlow

ResourceInteraction - ResourceMessage Extension:

ResourceInteraction «extends» InformationFlow Attributes:

-

An assertion that two FunctionalResources interact. Examples: data exchange between systems, conversations between people, people using

systems, flows of materiel from one resource to another, etc.

**ResourceInteractionSpecification** «stereotype» Associations:

-

Extension:

ResourceInteractionSpecification «extends» Interaction Attributes:

-

A specification of the interactions between aspects of a Resources architecture.

**ResourceInterface** «stereotype» Associations:

-

Attributes:

-

A specification of an interface provided or required by a ResourcePort. Note: ResourceInterface should only be used in the case of tightcoupled architectures. In Service-Oriented Architectures, resources should provide or require services, but there should be no coupling of those resources through their services.

**ResourceLifeLine** «stereotype» Associations:

ResourceLifeLine - ResourceInteractionSpecification

ResourceLifeLine - ResourceLifelineItem Extension:

ResourceLifeLine «extends» Lifeline Attributes:

-

A UML::Lifeline that represents a ResourceLifelineItem that interacts with another ResourceLifelineItem.

**ResourceLifelineItem** Associations:

-

Extension:

ResourceLifelineItem «extends» ConnectableElement Attributes:

-

An element that may be represented as a ResourceLifeLine in a ResourceInteractionSpecification. [ABSTRACT]

**ResourceMaterielFlow** «stereotype» Associations:

ResourceMaterielFlow - Artefact

ResourceMaterielFlow - MaterielFunctionFlow Generalization:

ResourceMaterielFlow - ResourceInteraction Attributes:

-

A ResourceInteraction where materiel (Artefacts) flow between resources.

**ResourceMessage** «stereotype»

Associations:

ResourceMessage - ResourceLifeLine

Extension:

ResourceMessage «extends» Message Attributes:

-

An element that passes between one resource and another in a ResourceInteractionSpecification.

**ResourcePartition** «stereotype» Associations:

ResourcePartition - ResourceUsage

Extension:

ResourcePartition «extends» ActivityPartition Attributes:

-

A swimlane representing a usage of a Resource.

**ResourcePersonFlow** «stereotype» Associations:

ResourcePersonFlow - OrganisationalResource

ResourcePersonFlow - PersonFunctionFlow Generalization:

ResourcePersonFlow - ResourceInteraction Attributes:

-

A ResourceInteraction where HumanResources are flowed from one resource to another.

**ResourcePort** «stereotype» Associations:

ResourcePort - ResourcePortConnectorEnd

ResourcePort - ResourceType

ResourcePort - ResourceInterface

ResourcePort - ResourceInterface

ResourcePort «taggedValue» ImplementedProtocol Extension:

ResourcePort «extends» Port

Generalization:

ResourcePort - ResourceLifelineItem

ResourcePort - InteractionEnd

Attributes:

-

A port or interface provided by a Resource.

**ResourcePortConnector** «stereotype» Associations:  
ResourcePortConnector - ResourcePortConnectorEnd  
ResourcePortConnector «taggedValue» DataElement  
ResourcePortConnector «taggedValue» AssignedProperty  
ResourcePortConnector «taggedValue» ImplementedProtocol Extension:  
ResourcePortConnector «extends» Connector Attributes:

-  
Asserts that a connection exists between two resource ports.

**ResourcePortConnectorEnd** «stereotype» Associations:  
ResourcePortConnectorEnd - ResourceUsage Generalization:  
ResourcePortConnectorEnd - NestedConnectorEnd Attributes:

-  
The end of a connector between resource ports.

**ResourceStateMachine** «stereotype» Associations:  
ResourceStateMachine - ResourceType Extension:  
ResourceStateMachine «extends» StateMachine Attributes:

-  
A state transition model which represents the behaviour of a Resource.



**ResourceType** «stereotype» Associations:

ResourceType «taggedValue» AssignedProperty

Generalization:

ResourceType - ActivitySubject

ResourceType -

SubjectOfResourceConstraint ResourceType

- SubjectOfforecast Extension:

ResourceType «extends» Class Attributes:

-

A physical item, man-made or otherwise, which may also include types of human resource and software. [ABSTRACT]

**ResourceUsage** «stereotype»

Associations:

ResourceUsage - ActualOrganizationComposition

ResourceUsage - ResourceType

ResourceUsage «taggedValue» AssignedProperty

Extension:

ResourceUsage «extends» Property Generalization:

ResourceUsage - ResourceLifelineItem

ResourceUsage - InteractionEnd

Attributes:

-

A relationship between ResourceTypes that asserts one ResourceType is part of the other (i.e. composition). The relationship is abstract, and one of its subtypes should be used to describe \*how\* one ResourceType is part of another.

**Role** «stereotype»

Associations:

Role - PostType

Role - RoleType

Generalization: Role

- ResourceUsage

Attributes:

-

A ResourceUsage that asserts a given PostType has a RoleType.

**RoleType** «stereotype»

Associations:

-

Generalization:

RoleType - OrganisationalResource Attributes:

-

An aspect of a person or organization that enables them to fulfil a particular function.

**ServiceFunctionToFunctionMapping** «stereotype»

Associations:

ServiceFunctionToFunctionMapping - ServiceFunction

ServiceFunctionToFunctionMapping - Function

Extension:

ServiceFunctionToFunctionMapping «extends» Usage Attributes:

-

Asserts that a ServiceFunction is implemented by a Function.

**ServiceImplementation** «stereotype» Associations:

-

Generalization:

ServiceImplementation - PhysicalArchitecture Attributes:

-

A PhysicalArchitecture that implements one or more Services.

**Software** «stereotype»

Associations:

Software - SoftwarePort

Generalization:

Software - ResourceType Attributes:

-

An executable computer programme, or fragment of an executable programme (e.g. a subroutine, class, etc.).

**SoftwareComponent** «stereotype» Associations:

SoftwareComponent - Software

SoftwareComponent - Software

Generalization:

SoftwareComponent - ResourceUsage Attributes:

-

Asserts that Software is a component of another Software. Example - Java classes forming part of a Java applet. Example - multiple Pascal units in a Pascal programme.

**SoftwarePort** «stereotype»

Associations:

SoftwarePort - Software

Generalization:

SoftwarePort - ResourcePort Attributes:

-

A ResourcePort that is provided by Software.

**SubOrganisation** «stereotype» Associations:

SubOrganisation - OrganisationType

SubOrganisation - OrganisationType

Generalization:

SubOrganisation - ResourceUsage Attributes:

-

Asserts that one OrganisationType is typically the parent of another - e.g. a squadron may be part of a batallion.

**SubjectOfForecast** Associations:

-

Attributes:

-

Any element that may be subject to a Forecast.

**SubjectOfResourceConstraint**

Associations:

-

Attributes:

-

Anything that may be constrained by a ResourceConstraint.

**System** «stereotype» Associations:

-

Generalization:

System - PhysicalAsset

System - Part Attributes:

-

The usage of an artefact as a System in a PhysicalArchitecture.

**SystemPort** «stereotype»

Associations:

-

Generalization:

SystemPort -

SubjectOfResourceConstraint SystemPort

- ResourcePort Attributes:

-

An interface provided by an Artefact that is used as a System. A SystemPort may implement a PortType, though there is no requirement for SystemPorts to be typed.

**UsedConfiguration** «stereotype» Associations:

UsedConfiguration - PhysicalArchitecture

UsedConfiguration - PhysicalArchitecture Generalization:

UsedConfiguration - ResourceUsage Attributes:

-

The usage of a PhysicalArchitecture in another PhysicalArchitecture.

**VersionOfConfiguration** «stereotype» Associations:

Generalization:

VersionOfConfiguration - ResourceLifelineItem

VersionOfConfiguration - WholeLifeConfiguration

VersionOfConfiguration - CapabilityConfiguration

Extension:

VersionOfConfiguration «extends» Property Attributes:

-

Asserts that a CapabilityConfiguration is a version of a WholeLifeConfiguration.

**WholeLifeConfiguration** «stereotype» Associations:

-

Extension:

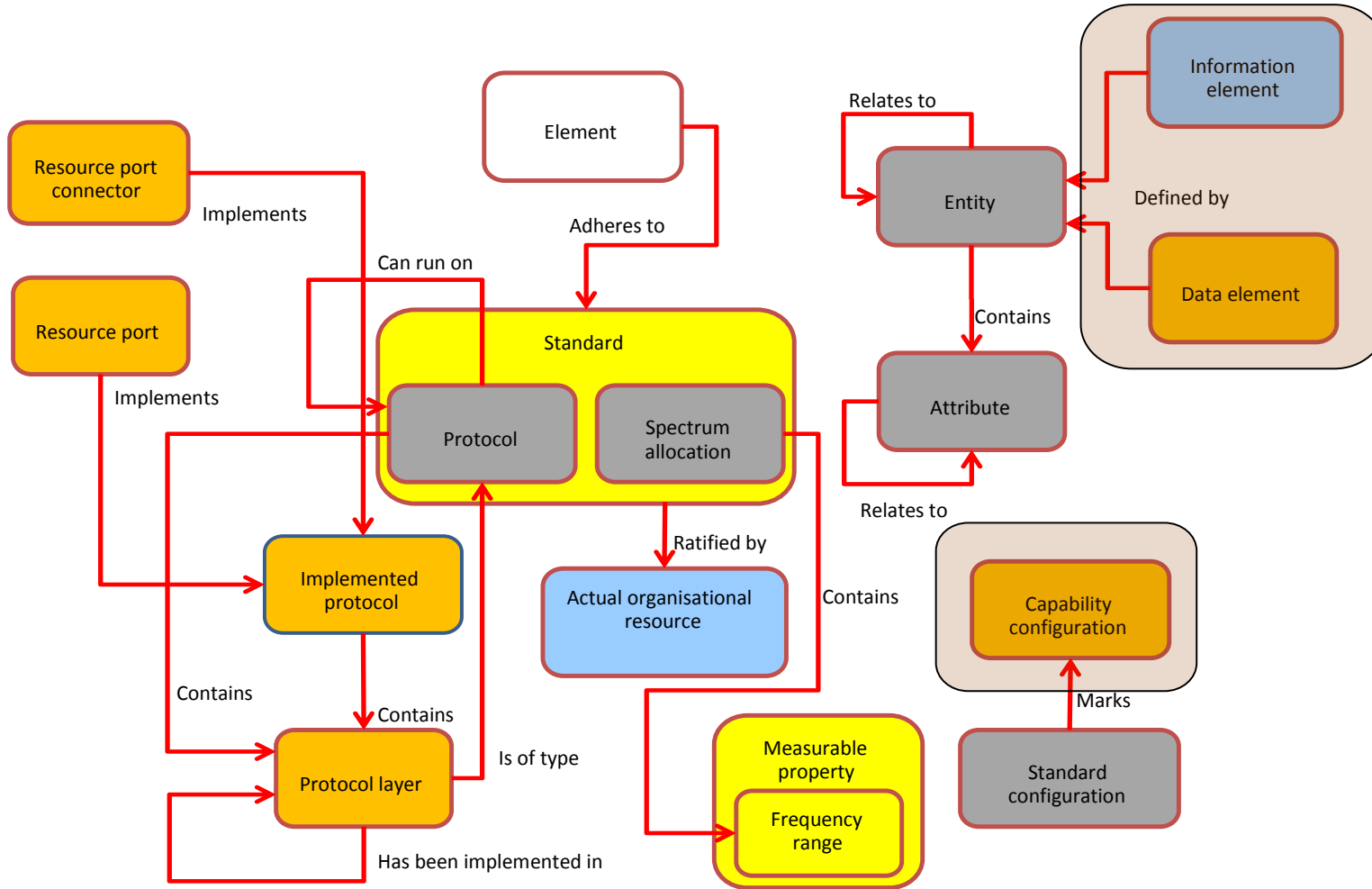
WholeLifeConfiguration «extends» Class Attributes:

-

A set of versions of a CapabilityConfiguration over time.

WholeLifeConfiguration is used to collect together successive versions of CapabilityConfigurations from the first design to the last.

### 1.7 Technical standards views

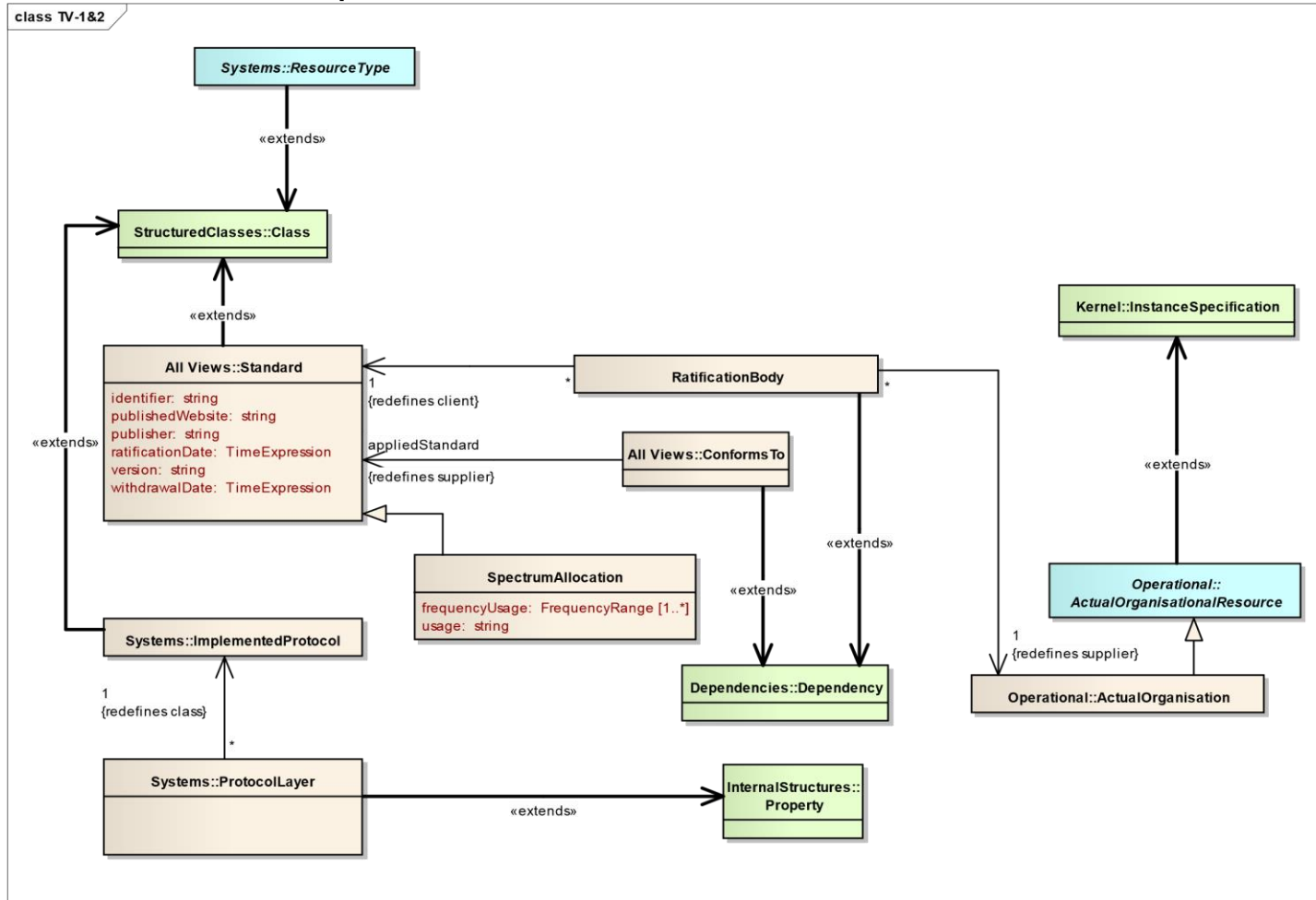


52: Technical Standards Views MODAF M3 elements summary

Figure



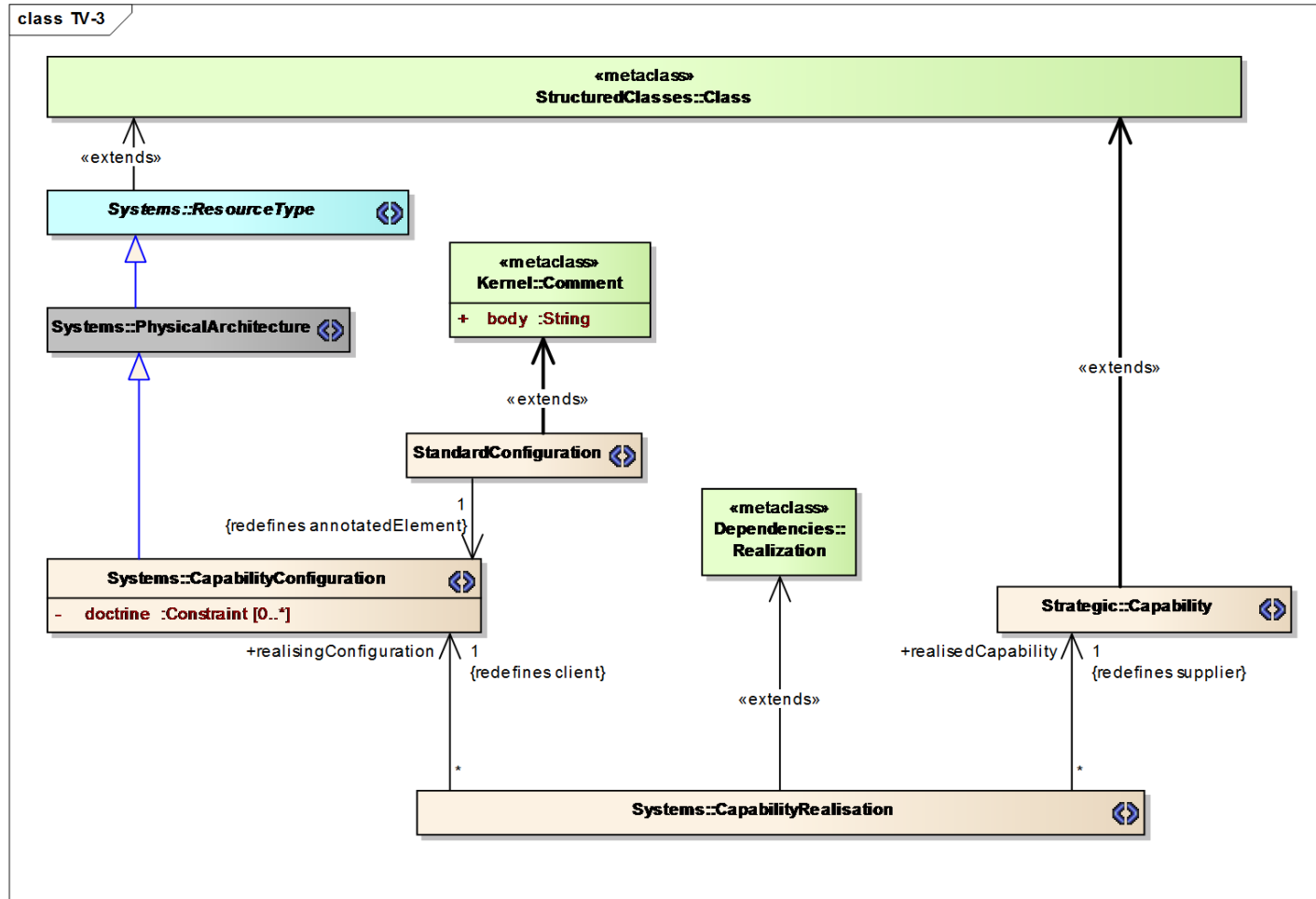
1.7.1 TV-1: Standards profile, TV-2: Standards forecast



53: TV-1&2 in M3

Figure

1.7.2 TV-3: Standard configuration



54: TV-3 in M3

Figure

### 1.7.3 Protocols

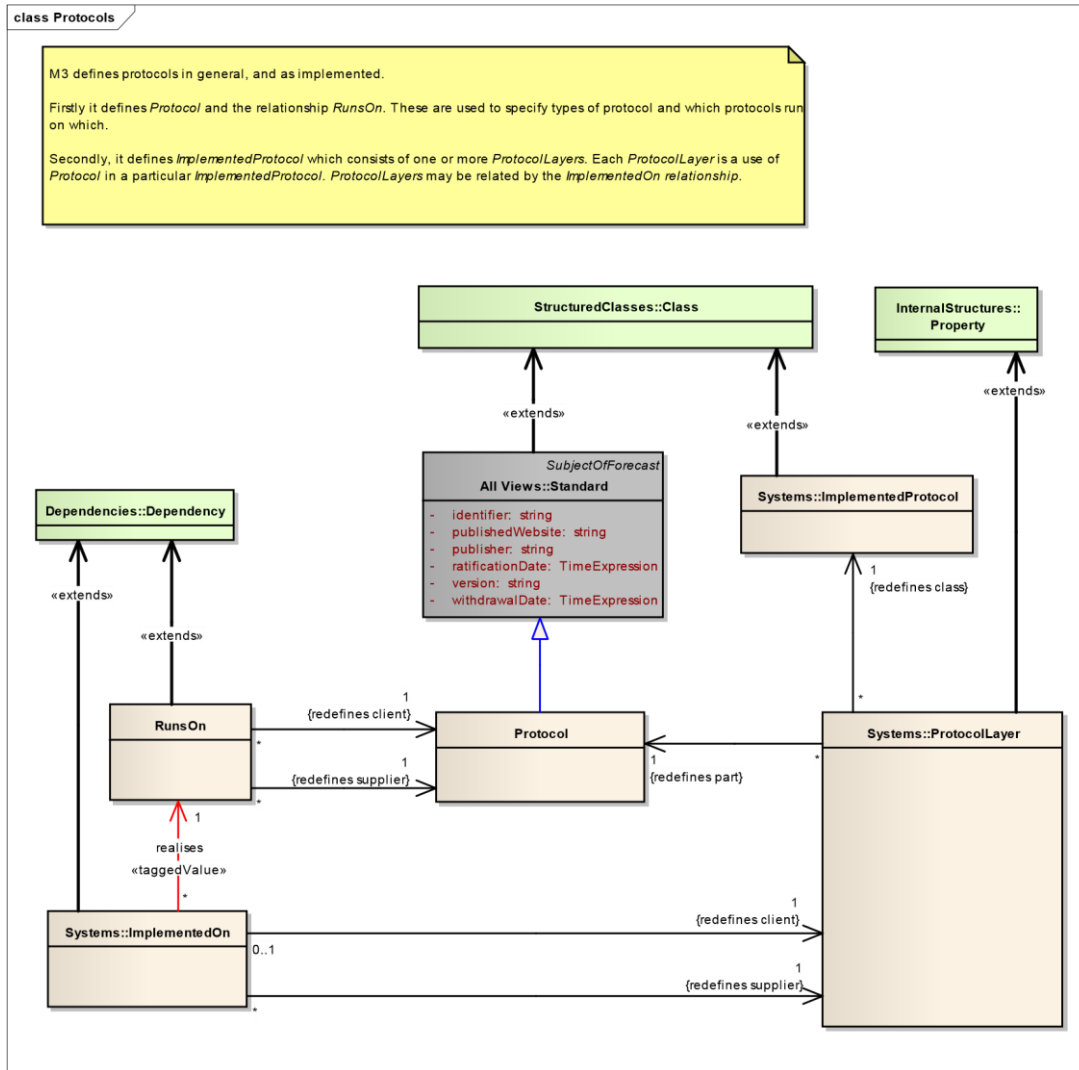


Figure 55: Protocols in M3

#### 1.7.4 Technical standards Views elements table

MODAF 1.2.004 Technical Standard Views
<p><b>Attribute</b> «stereotype» <u>Associations:</u> Attribute - EntityRelationship Attribute - EntityRelationship Attribute - Entity <u>Extension:</u> Attribute «extends» Property <u>Attributes:</u> - A defined property of an Entity.</p>
<p><b>DataModel</b> <u>Associations:</u> - <u>Extension:</u> DataModel «extends» Package <u>Attributes:</u> - A structural specification of data, showing classifications of data elements and relationships between them. [ABSTRACT]</p>

**Entity** «stereotype» Associations:

Entity - DataModel

Entity - SubtypeRelationship

Extension:

Entity «extends» Class Generalization:

Entity - ServiceParameterType

Entity - SubjectOfOperationalConstraint

Attributes:

-

A definition (type) of an item of interest.

**EntityRelationship** «stereotype» Associations:

-

Extension:

EntityRelationship «extends» Association Attributes:

-

Asserts that there is a relationship between two entities.

**Protocol** «stereotype» Associations:

-

Generalization:

Protocol - Standard

Attributes:

-

A Standard for communication.

**RatificationBody** «stereotype» Associations:

RatificationBody - ActualOrganisation

RatificationBody - Standard

Extension:

RatificationBody «extends» Dependency Attributes:

-

Asserts than an ActualOrganisation is responsible for the ratification of a standard.

**RunsOn** «stereotype» Associations:

RunsOn - Protocol

RunsOn - Protocol

Extension:

RunsOn «extends» Dependency Attributes:

-

Asserts that one Protocol (client) may be implemented on another (supplier).

**SpectrumAllocation** «stereotype»

Associations:

-

Generalization:

SpectrumAllocation - Standard Attributes:

usage

frequencyUsage

A Standard specifying a particular frequency range of the electromagnetic spectrum that is allotted to a particular usage.

**StandardConfiguration** «stereotype» Associations:

StandardConfiguration - CapabilityConfiguration Extension:

StandardConfiguration «extends» Comment Attributes:

-

A UML::Comment that when attached to a CapabilityConfiguration indicates that it is a standard pattern for re-use in the architecture.

**SubtypeRelationship** «stereotype» Associations:

SubtypeRelationship - Entity

Extension:

SubtypeRelationship «extends» Generalization Attributes:

-

Asserts that one Entity (subtype) is a specialization of the other (supertype).

### 1.8 Acquisition views

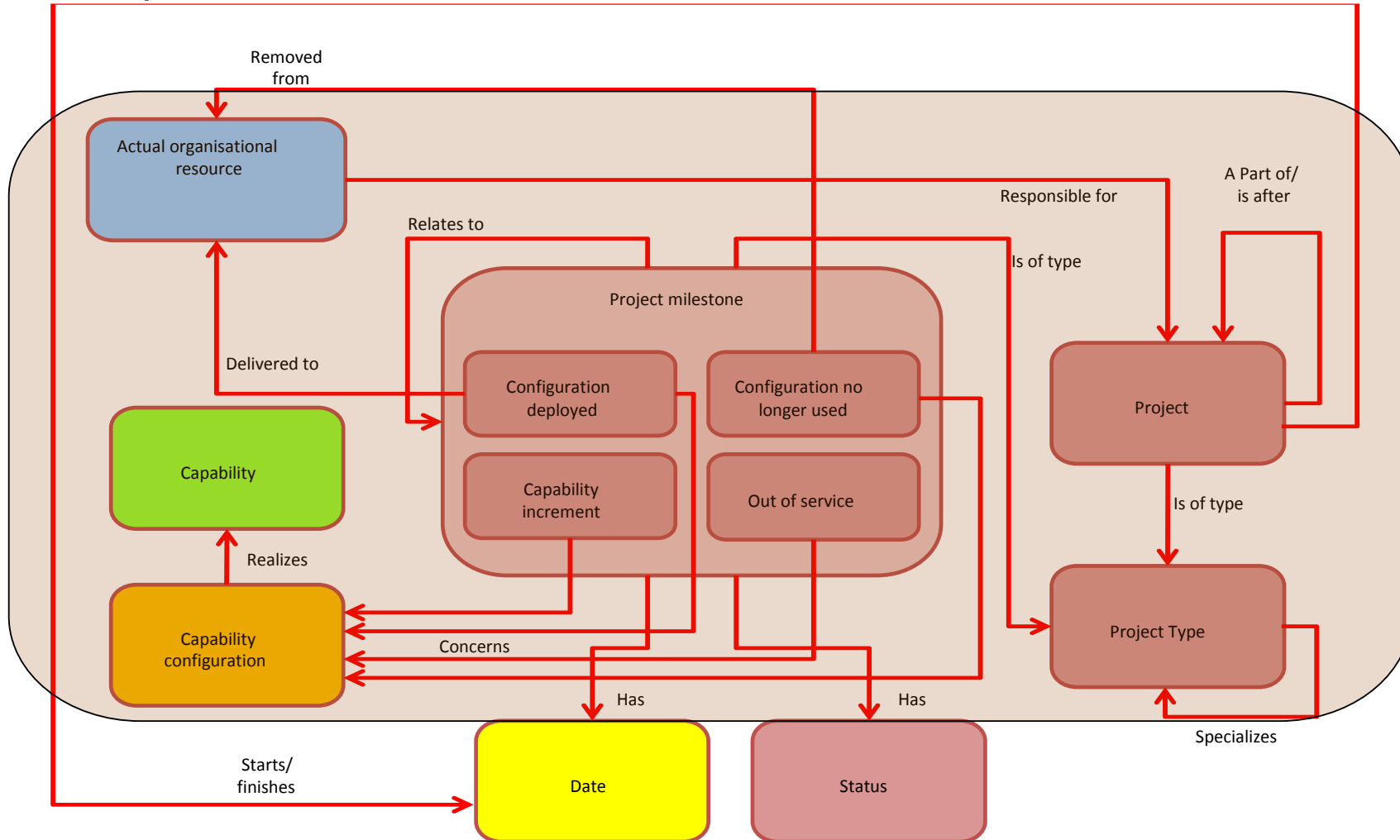


Figure 56: Acquisition Views MODAF M3 elements summary



1.8.1 AcV-1: Acquisition clusters

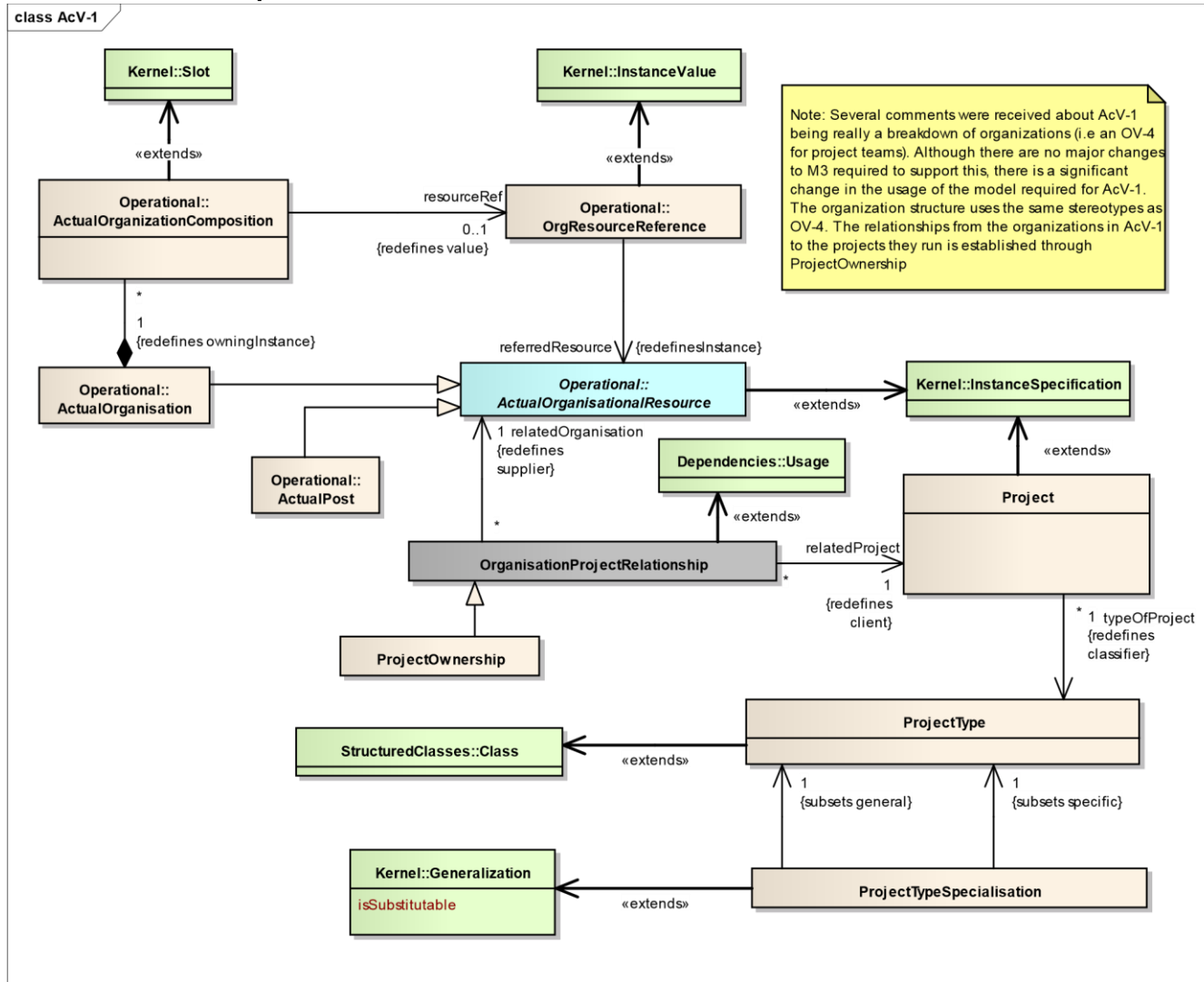


Figure 57: AcV-1 in M3

### 1.8.2 AcV-2: Programme timelines

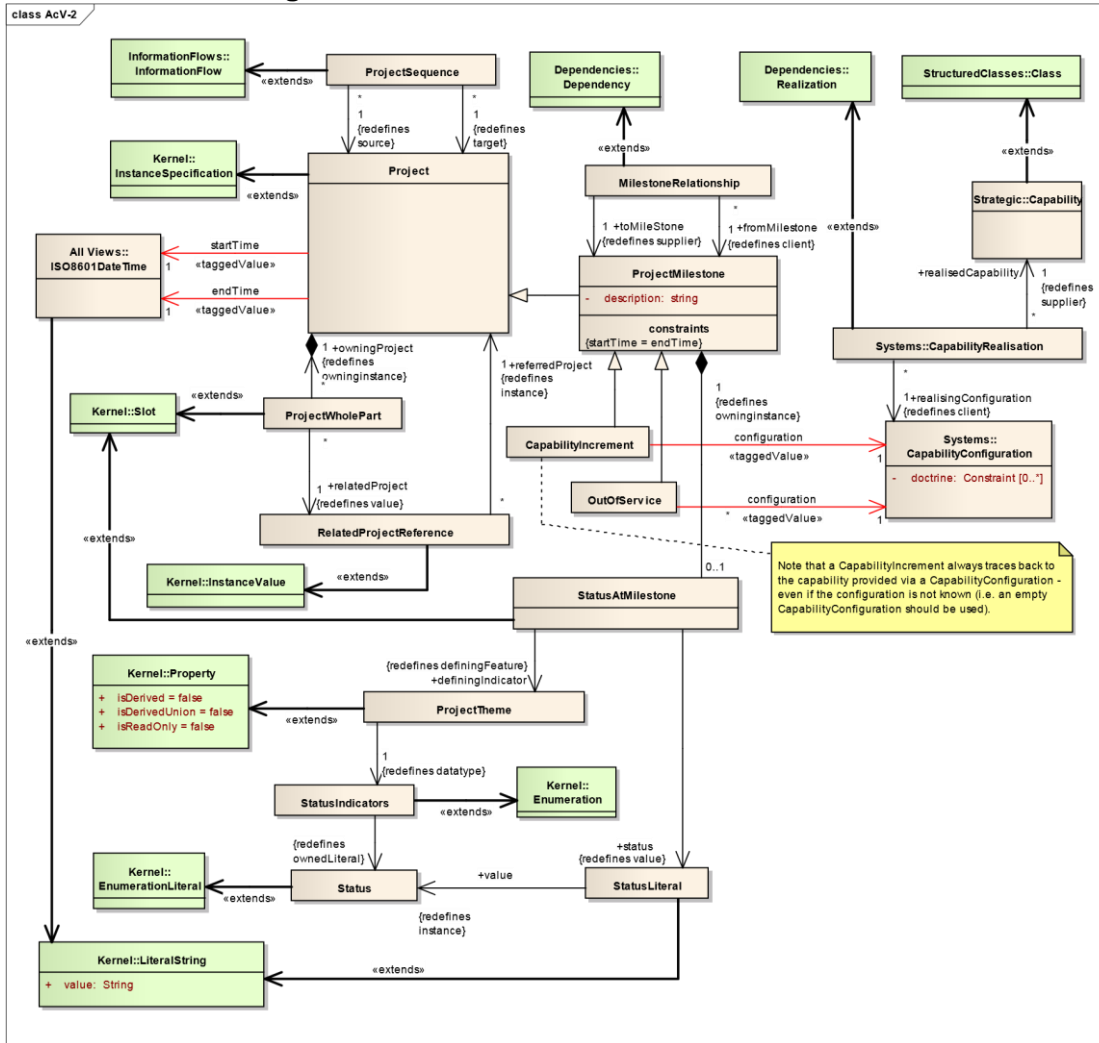


Figure 58 : AcV-2 in M3

1.8.3 Acquisition Views elements table

MODAF 1.2.004 Acquisition Views

**CapabilityIncrement** «stereotype»

Associations:

CapabilityIncrement «taggedValue» CapabilityConfiguration Generalization:

CapabilityIncrement - ProjectMilestone Attributes:

-

A ProjectMilestone that indicates the point in time at which a project is predicted to deliver or has delivered a Capability. Example: When a project reaches Initial Operating Capability (IOC) it may deliver a Capability with a given set of metrics then deliver a second Capability corresponding to the same Capability when it reaches ull Operational Capability (OC). Both the IOC and OC milestones would be instances of CapabilityIncrement.

**MilestoneInProject** «stereotype» Associations:

-

Extension:

MilestoneInProject «extends» Usage Attributes:

-

Asserts that a ProjectMilestone belongs to a project. A milestone shall not belong to more than one project.

**MilestoneRelationship** «stereotype» Associations:

-

Extension:

MilestoneRelationship «extends» Dependency Attributes:

-

A relationship between two milestones signifying that one milestone must be reached before the other one can be reached (dependency).

**OrganisationProjectRelationship** «stereotype» Associations:

-

Extension:

OrganisationProjectRelationship «extends» Usage Attributes:

-

A relationship between an ActualOrganisation and a Project. Example: ownership.

Example: supplier.

**OutOfService** «stereotype»

Associations:

OutOfService «taggedValue» CapabilityConfiguration Generalization:

OutOfService - ProjectMilestone Attributes:

-

A ProjectMilestone that indicates a project's deliverable is to go out of service.

**Project** «stereotype» Associations:  
Project - MilestoneInProject  
Project - OrganisationProjectRelationship  
Project - ProjectType  
Project - RelatedProjectReference  
Project - ProjectWholePart  
Project «taggedValue» ISO8601DateTime  
Project «taggedValue» ISO8601DateTime Extension:  
Project «extends» InstanceSpecification  
Attributes:

-  
A time-limited endeavour to create a specific set of products or services.

**ProjectMilestone** «stereotype»  
Associations:  
ProjectMilestone - MilestoneInProject  
ProjectMilestone - MilestoneRelationship  
ProjectMilestone - MilestoneRelationship Generalization:  
ProjectMilestone -  
Project Attributes:  
description  
An event in a Project by which progress is measured - modelled as a Project of zero duration. Note: in the case of an acquisition project, there are two key types of milestone which shall be represented using subtypes - CapabilityIncrement and OutOfService.

**ProjectOwnership** «stereotype» Associations:

-

Generalization:

ProjectOwnership - OrganisationProjectRelationship Attributes:

-

A type of OrganisationProjectRelationship where the organisation is the party responsible for the project.

**ProjectSequence** «stereotype» Associations:

ProjectSequence - Project

ProjectSequence - Project

Extension:

ProjectSequence «extends» InformationFlow Attributes:

-

Asserts that one Project follows from another - i.e. the target Project cannot start until the source Project has ended.

**ProjectTheme** «stereotype»

Associations:

ProjectTheme - StatusIndicators Extension:

ProjectTheme «extends» Property

Attributes:

-

An aspect by which the progress of various Projects may be measured. In UK MOD, this could be one of the defence lines of development, or DOTMLP in the US.

**ProjectType** «stereotype» Associations:

-

Extension:

ProjectType «extends» Class Attributes:

-

A category of Project. Example: "Programme". Example: "Acquisition Project". Example: "Training Programme".

**ProjectTypeSpecialisation** «stereotype» Associations:

ProjectTypeSpecialisation - ProjectType

ProjectTypeSpecialisation - ProjectType

Extension:

ProjectTypeSpecialisation «extends» Generalization Attributes:

-

An assertion that one ProjectType is a special type of another.

**ProjectWholePart** «stereotype» Associations:

-

Extension:

ProjectWholePart «extends» Slot Attributes:

-

Relates a parent project (owningProject) to a sub-project (relatedProject).

**RelatedProjectReference** «stereotype» Associations:

RelatedProjectReference - ProjectWholePart

Extension:

RelatedProjectReference «extends» InstanceValue Attributes:

-

A reference to a sub-project from a ProjectWholePart relationship.

**Status** «stereotype» Associations:

-

Extension:

Status «extends» EnumerationLiteral Attributes:

-

An allowable value for a StatusIndicator. Example – 3. Example – amber.



**StatusAtMilestone** «stereotype» Associations:

StatusAtMilestone - StatusLiteral

StatusAtMilestone - ProjectTheme

StatusAtMilestone - ProjectMilestone Extension:

StatusAtMilestone «extends» Slot

Attributes:

-

A relationship between a Status and a milestone which asserts the status (i.e. level of progress) of a ProjectTheme for the project at the time of the milestone. or example, a procurement project may have workstreams corresponding to lines of development. The status of each of workstream is summarised on the milestone.

**StatusIndicators** «stereotype» Associations:

StatusIndicators - Status

Extension:

StatusIndicators «extends» Enumeration Attributes:

-

An enumeration of the possible statuses for one or more ProjectThemes. Example - 1 to 5, Example - red, amber, green.

**StatusLiteral** «stereotype»

Associations:

StatusLiteral - Status

Extension:

StatusLiteral «extends» LiteralString Attributes:

-

A literal value corresponding to a Status.

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