CAMEO ENTERPRISE ARCHITECTURE™

UPDM / DoDAF / MODAF / SysML / BPMN / SoaML

USER GUIDE

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1 GETTING STARTED

Cameo Enterprise Architecture™ software includes UPDM, SysML, BPMN, SoaML, and UML for building integrated enterprise architectures meeting DoDAF and MODAF requirements. The product supports all DoDAF 1.5, DoDAF 2.0, and MODAF 1.2 viewpoints and views dependent on the selected user environment. Each user environment provides architecture framework specific concepts, artifacts, new project templates, samples, and architecture framework specific usability features. A user environment can be changed any time by fully converting model to meet requirements of the selected architecture framework.

Users of Cameo Enterprise Architecture Architect and Enterprise editions can use the information engineering notation for conceptual, logical, and physical data modeling.

This chapter contains the following sections:

- Installing Cameo Enterprise Architecture
- Licensing Information
- Introducing Main Concepts

1.1 Installing Cameo Enterprise Architecture

NOTE	If you use an operating system other than Windows, Unix, or Mac OS X, we recommend to run Cameo Enterprise Architecture from the no-install package (see section Using No-install Package).

To install Cameo Enterprise Architecture you can use:

- Installer
- No-install package

1.1.1 Using Installer

To install on Windows 95/ 98/ NT/ 2000/ XP/ Vista/ 7:

1. Download the installer *Cameo_Enterprise_Architecture_<version number>_win.exe*.
2. Double-click the installer and the installation process will start. Follow provided instructions to finish the installation.

To install on Unix

1. Download the *Cameo_Enterprise_Architecture_<version number>_unix.sh* installation file.
2. Using the command-line prompt go to the directory wherein you have downloaded the installer.
3. Type the command:
```
sh ./Cameo_Enterprise_Architecture_<version number>_unix.sh
```

IMPORTANT!	Be sure you have JVM installed.

To install on MAC OS X

1. Download the *Cameo_Enterprise_Architecture_<version number>_mac.dmg* installer file.

2. Double-click the installer.
3. Drag the Cameo Enterprise Architecture folder to the **Applications** or some other folder after the installation is finished.

1.1.2 Using No-install Package

Download the no-install package to run Cameo Enterprise Architecture on any operating system.

To run on Windows 95/ 98/ NT/ 2000/ XP/ Vista/ 7:

1. Download the *Cameo_Enterprise_Architecture_<version number>_no_install.zip* file.
2. Extract the file.
3. Go to the **bin** directory and run *cameoea.exe* to start Cameo Enterprise Architecture.

To run on Unix:

1. Download the *Cameo_Enterprise_Architecture_<version number>_no_install.zip* file.
2. Extract the file.
3. Using the command-line prompt go to the **bin** directory and type the command:
```
sh ./cameoea
```

IMPORTANT!	Be sure you have JVM installed.

To run on Mac OS X

1. Download the *Cameo_Enterprise_Architecture_<version number>_no_install_mac.zip* file.
2. Extract the file.
3. Using the command-line prompt go to the **bin** directory and type the command:
```
./cameoea
```

IMPORTANT!	Be sure you have JVM installed.

1.2 Licensing Information

The detailed information on the licensing mechanism description is provided in sections “Licensing Information” and “Activating the commercial license after the purchase” in “MagicDraw UserManual.pdf”.

1.3 Introducing Main Concepts

This section introduces:

- Architecture Viewpoints
- Architecture Views
- Supported DoDAF Viewpoints and Views
- Supported MODAF Viewpoints and Views

1.3.1 Architecture Viewpoints

“The scope of UPDM includes the language extensions to enable the extraction of specified and custom viewpoints from an integrated architecture description. These viewpoints include a system's viewpoint (DoDAF Systems View) along with associated systems implementation standards (DoDAF/ MODAF Technical View) within the context of the business or enterprise viewpoint (DoDAF/ MODAF Operational View). The DoDAF/MODAF All Views is also included. In addition, UPDM allows the architecture model to include representation of an enterprise capability and strategic intent (MODAF Strategic Viewpoint) and the process steps associated with the procurement of conformant systems (MODAF Acquisition Viewpoint). Finally, the MODAF Services Viewpoint is included to model Service Oriented Architectures. UPDM also includes mechanisms for designing ad hoc custom viewpoints and more formal extensions of new viewpoints of the model.” [*UPDM beta 1specification*]

1.3.2 Architecture Views

Cameo Enterprise Architecture fully supports all UPDM views allowing you to create integrated UPDM views and maintain their inter-relationships easily. Cameo Enterprise Architecture creates **integrated architectures** that support all types of relationships between elements in separate views or viewpoints. Modification of the model will result in the automatic updates of the referenced elements.

There are 4 major view types distinguished in Cameo Enterprise Architecture:

1. UML-based **diagrams.** Cameo Enterprise Architecture provides a set of UML and SysML diagrams extended to be compatible with UPDM views. Diagrams will be equipped with the UPDM specific diagram toolbar for the usability sake.
   Any regular UML, SysML, or BPMN diagram can also be added to the UPDM project as any UPDM views.
2. Dependency **matrixes**. Dependency matrixes are either read-only or editable tables with model elements as columns and rows showing the relationships between them. A dependency matrix is a view showing existing models information.
3. **Tables**. Table is a writable table made specifically to meet some UPDM views, e.g., TV-1. Modifying the table will change the related model element so that model integrity can be maintained.
4. Generated **reports**. The following reports can be generated:
   - Rich Text Format (.rtf) document
   - OpenDocument (.ods) spreadsheet
   - Microsoft Excel 2007 (.xslx) spreadsheet, beginning with version 16.8 SP1

   Go to **Tools** > **Report Wizard** and select the report templates for the UPDM views. You can link any external document to the UPDM view.

1.3.3 Supported DoDAF Viewpoints and Views

Viewpoint	Representation in Cameo Enterprise Architecture					
	Structural Diagram	**Behavioral Diagram**	**Matrix**	**Table Diagram**	**Report**	**Time Chart**
All Views					AV-1 AV-2	
Capability	CV-1 CV-2 CV-4		CV-6 CV-7	CV-5		CV-3
Data and Information	DIV-1 DIV-2 DIV-3					
Operational	OV-1 OV-2 OV-4	OV-5 OV-6b OV-6c		OV-3 OV-6a		
Systems	SV-1 SV-2 SV-8	SV-4 SV-10b SV-10c	SV-3 SV-5a SV-5b	SV-6 SV-7 SV-9 SV-10a		
Standards				TV-1 TV-2		
Project			PV-1 PV-3			PV-2
Services	SvcV-1 SvcV-2 SvcV-8	SvcV-4 SvcV-10b SvcV-10c	SvcV-3a SvcV-3b SvcV-5	SvcV-6 SvcV-7 SvcV-9 SvcV-10a		

1.3.4 Supported MODAF Viewpoints and Views

Viewpoint	Representation in UPDM 2 pluginCameo Enterprise Architecture					
	Structural Diagram	**Behavioral Diagram**	**Matrix**	**Table Diagram**	**Report**	**Time Chart**
All Views					AV-1 AV-2	
Strategy	StV-1 StV-2 StV-4		StV-6	StV-5		StV-3
Operational	OV-1 OV-2 OV-4 OV-7	OV-5 OV-6b OV-6c		OV-3 OV-6a		
Systems	SV-1 SV-2 SV-8 SV-11	SV-4 SV-10b SV-10c	SV-3 SV-5 SV-12	SV-6 SV-7 SV-9 SV-10a		
Technical Standards				TV-1 TV-2		
Acquisition			AcV-1			AcV-2
Service Oriented	SOV-1 SOV-2	SOV-4b SOV-4c SOV-5	SOV-3	SOV-4a		

2 DoDAF 2.0 VIEWPOINTS AND VIEWS

All DoDAF views are described in the following sections:

- All Views Viewpoint
- Capability Viewpoint
- Project Viewpoint
- Operational Viewpoint
- Data and Information Viewpoint
- Services Viewpoint
- Systems Viewpoint
- Standards Viewpoint

2.1 All Views Viewpoint

"There are some overarching aspects of an Architectural Description that are captured in the AV DoDAF-described Models. The AV DoDAF-described Models provide information pertinent to the entire Architectural Description rather than representing a distinct viewpoint. AV DoDAF described Models provide an overview of the architectural effort including such things as the scope, context, rules, constraints, assumptions, and the derived vocabulary that pertains to the Architectural Description. It captures the intent of the Architectural Description to help ensure its continuity in the face of leadership, organizational, and other changes that can occur over a long development effort." *[DoDAF V2.0 Volume II]*

The views of this viewpoint are described in the following sections:

- AV-1 Overview and Summary Information
- AV-2 Integrated Dictionary

2.1.1 AV-1 Overview and Summary Information

Description

The overview and summary information contained within the AV-1 provides executive-level summary information in a consistent form that allows quick reference and comparison between Architectural Descriptions. The written content of the AV-1 content describes the concepts contained in the pictorial representation of the OV-1.

The AV-1 frames the context for the Architectural Description. The AV-1 includes assumptions, constraints, and limitations that may affect high-level decisions relating to an architecture-based work program. It should contain sufficient information to enable a reader to select a single Architectural Description from among many to read in more detail. The AV-1 serves two additional purposes:

- In the initial phases of architecture development, it serves as a planning guide.
- When the architecture is built, the AV-1 provides summary information concerning *who*, *what*, *when*, *why*, and *how* of the plan as well as a navigation aid to the models that have been created.

The usage of the AV-1 is to:

- Scope the architecture effort.

- Provide context to the architecture effort.
- Define the architecture effort.
- Summarize the findings from the architecture effort.
- Assist search within an architecture repository.

Implementation

AV-1 can be represented:

- Using an AV-1 diagram which is based on the UML Class diagram.
- Using the following Rich Text Format (.rtf) reports:
    - AV-1 Overview & Summary Information.
    - **NEW!** AV-1 DARS.

The AV-1 Overview & Summary Information report includes summarizing information about all developed viewpoints and views.

NEW! The AV-1 DARS report includes the same information as in the AV-1 Overview & Summary Information report and also some additional data that are required particularly by DoD Architecture Registry System (DARS). The AV-1 DARS report has the DARS compatible structure. Before generating the report you must load the DARS template in AV-1 and provide the template with relevant data.

Related procedures

Generating reports
NEW! Loading DARS template

Related elements

Architectural Description
Defines Architecture
Architecture Metadata

2.1.2 AV-2 Integrated Dictionary

Description

The AV-2 presents all the metadata used in an architecture. An AV-2 presents all the data as a hierarchy, provides a text definition for each one and references the source of the element (e.g., DoDAF Meta-model, a published document or policy).

An AV-2 shows elements from the DoDAF Meta-model that have been described in the Architectural Description and new elements that have been introduced by the Architectural Description.

It is essential that organizations within the DoD use the same terms to refer to a thing. Because of the interrelationship among models and across architecture efforts, it is useful to define common terminology with common definitions (referred to as taxonomies) in the development of the models within the Architectural Description. These taxonomies can be used as building blocks for DoDAF-described Models and Fit-for-Purpose Views within the Architectural Description. The need for standard taxonomies derives from lessons learned from early DoD Architectural Description development issues as well as from federation pilots conducted within the Department. Federation of Architectural Descriptions were made much more difficult because of the use of different terminology to represent the same architectural data. Use of taxonomies to build models for the architecture has the following benefits over free-text labeling:

- Provides consistency across populated views, based on DoDAF-described Models.
- Provides consistency across Architectural Descriptions.

- Facilitates Architectural Description development, validation, maintenance, and re-use.
- Traces architectural data to authoritative data sources.

Implementation

AV-2 can be represented:

- Using a report, which is automatically generated from all data. Since only a partial AV-2 report can be generated, the rest of data must be filled in manually.
- Using a AV-2 diagram which is based on the UML Class diagram.

Related procedures

Generating reports

Related elements

Definition

Alias

Same As

2.2 Capability Viewpoint

“The Capability Viewpoint and the DoDAF-described Models within the viewpoint are introduced into DoDAF V2.0 to address the concerns of Capability Portfolio Managers. In particular, the Capability Models describe capability taxonomy and capability evolution.” *[DoDAF V2.0 Volume II]*

“The DoD increasingly employs incremental acquisition to help manage the risks of complex procurements. Consequently, there is a need to provide visualizations of the evolving capabilities so that Portfolio Managers can synchronize the introduction of capability increments across a portfolio of projects. The Capability Models included within DoDAF are based on the program and capability information used by Portfolio Managers to capture the increasingly complex relationships between interdependent projects and capabilities.” *[DoDAF V2.0 Volume II]*

The views of this viewpoint are described in the following sections:

- CV-1 Vision
- CV-2 Capability Taxonomy
- CV-3 Capability Phasing
- CV-4 Capability Dependencies
- CV-5 Capability to Organizational Development Mapping
- CV-6 Capability to Operational Activities Mapping
- CV-7 Capability to Services Mapping

2.2.1 CV-1 Vision

Description

The CV-1 addresses the enterprise concerns associated with the overall vision for transformational endeavors and thus defines the strategic context for a group of capabilities. The purpose of a CV-1 is to provide a strategic context for the capabilities described in the Architectural Description. It also provides a high-level scope for the Architectural Description which is more general than the scenario-based scope defined in an OV-1.

CV-1 purpose is identical to MODAF StV-1 product usage. The difference between CV-1 model and StV-1 product lies in different concepts and relationships between them.

Implementation

CV-1 can be represented using a CV-1 diagram which is based on the UML Class diagram.

Sample

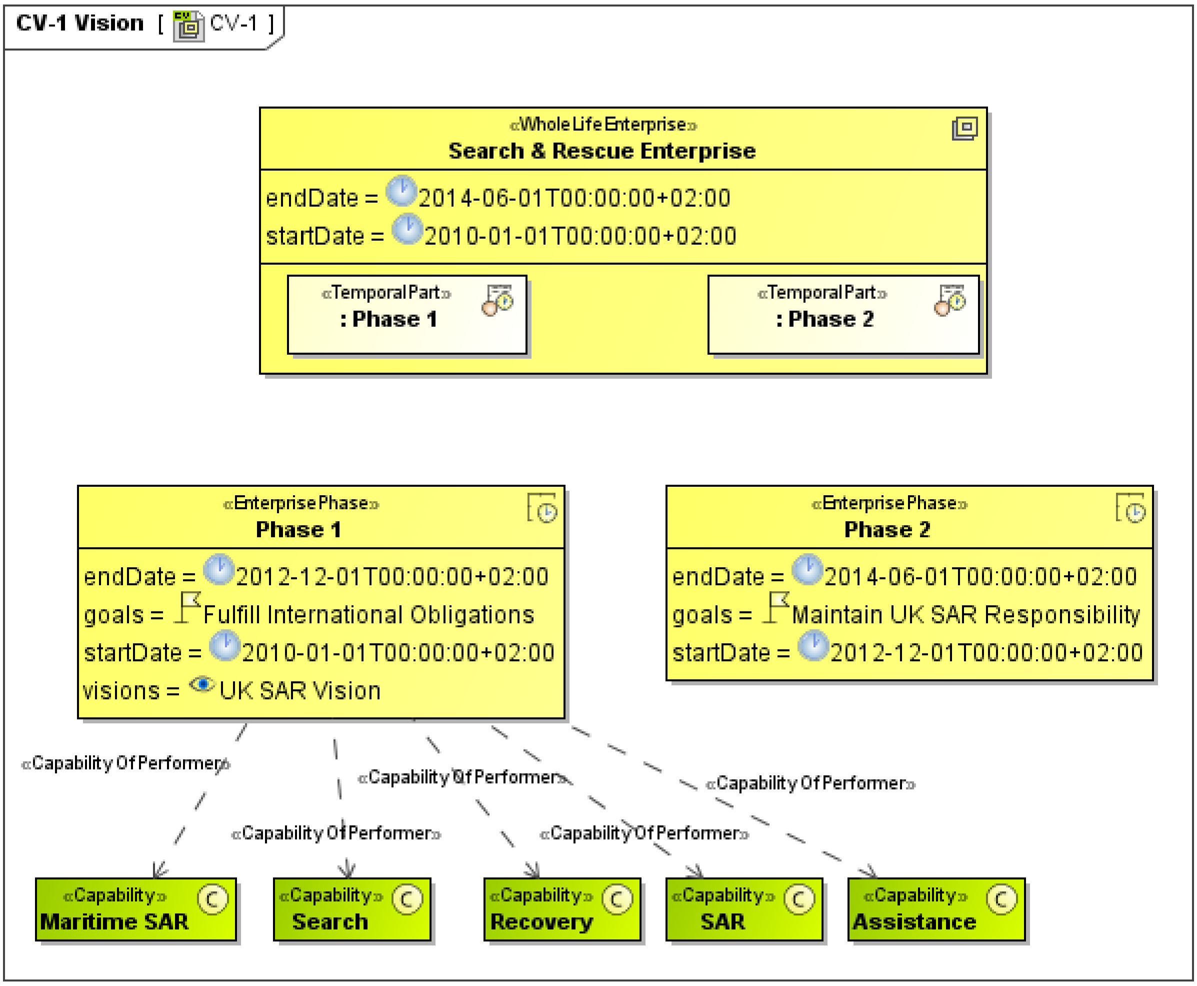


Figure 1 -- CV-1 Vision

Related elements

[Desired Effect](#)
[Vision](#)
[Vision Statement](#)
[Capability](#)
[Enterprise Phase](#)

Related procedures

[Creating CV-1 diagram](#)

Related views

CV-1 provides a high-level scope for the Architectural Description which is more general than the scenario-based scope defined in an OV-1.

2.2.2 CV-2 Capability Taxonomy

Description

The CV-2 captures capability taxonomies. The model presents a hierarchy of capabilities. These capabilities may be presented in context of a timeline – i.e., it can show the required capabilities for current and future capabilities. The CV-2 specifies all the capabilities that are referenced throughout one or more architectures. In addition, it can be used as a source document for the development of high-level use cases and user requirements.

The intended usage of the CV-2 includes:

- Identification of capability requirements.
- Capability planning (capability taxonomy).
- Codifying required capability elements.
- Capability audit.
- Capability gap analysis.
- Source for the derivation of cohesive sets of user requirements.
- Providing reference capabilities for architectures.

Implementation

CV-2 can be represented using a CV-2 diagram which is based on the UML Class diagram.

NEW! NOTE	If your project has migrated from any earlier than 17.0.1 version, the old CV-5 View representation based on the UML Class diagram is loaded as the CV-2 Capability Taxonomy diagram.

Sample

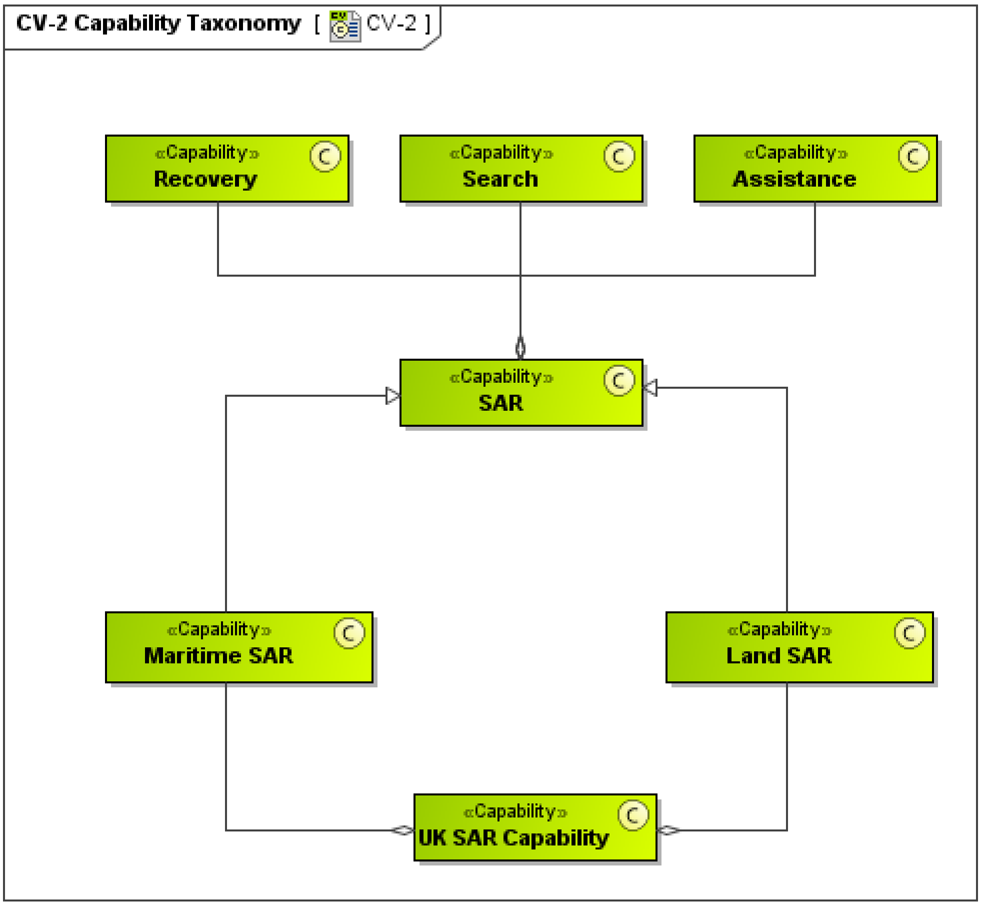


Figure 2 -- CV-2 Capability Taxonomy

Related elements

- Capability
- Capability Of Performer
- NEW! Activity Part Of Capability

Related procedures

- Creating CV-2 diagram

Related views

The CV-2 is used to capture and organize the capability functions – required for the vision set out in the CV-1 Vision.

2.2.3 CV-3 Capability Phasing

Description

The CV-3 addresses the planned achievement of capability at different points in time or during specific periods of time, i.e., capability phasing. The CV-3 supports the capability audit processes and similar processes used across the different COIs by providing a method to identify gaps or duplication in capability provision. The CV-3 indicates capability increments, which should be associated with delivery milestones within acquisition projects (when the increments are associated with capability deliveries).

The intended usage of the CV-3 includes:

- Capability planning (capability phasing).
- Capability integration planning.
- Capability gap analysis.

Implementation

CV-3 can be represented using a CV-3 diagram which is realized as a time based diagram.

Sample

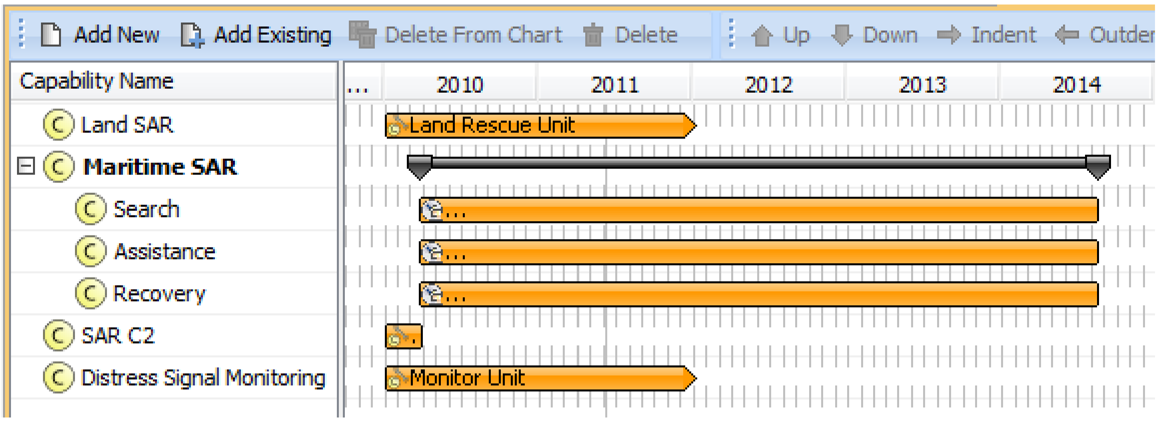


Figure 3 -- CV-3 Capability Phasing

Related elements

Capability
Capability Configuration
Capability Of Performer
Increment Milestone
Out Of Service Milestone
Actual Project

Related views

The CV-3 can be presented as a table consisting of rows representing Capabilities (derived from the CV-2 Capability Taxonomy model) and columns representing phases (from CV-1 Vision model).

2.2.4 CV-4 Capability Dependencies

Description

The CV-4 describes the dependencies between planned capabilities. It also defines logical groupings of capabilities.

The CV-4 is intended to provide a means of analyzing the dependencies between capabilities. The groupings of capabilities are logical, and the purpose of the groupings is to guide enterprise management. In particular, the dependencies and groupings may suggest specific interactions between acquisition projects to achieve the overall capability.

The intended usage of the CV-4 includes:

- Identification of capability dependencies.
- Capability management (impact analysis for options, disposal etc.).

Implementation

CV-4 can be represented using a CV-4 diagram which is based on the UML Class diagram.

Sample

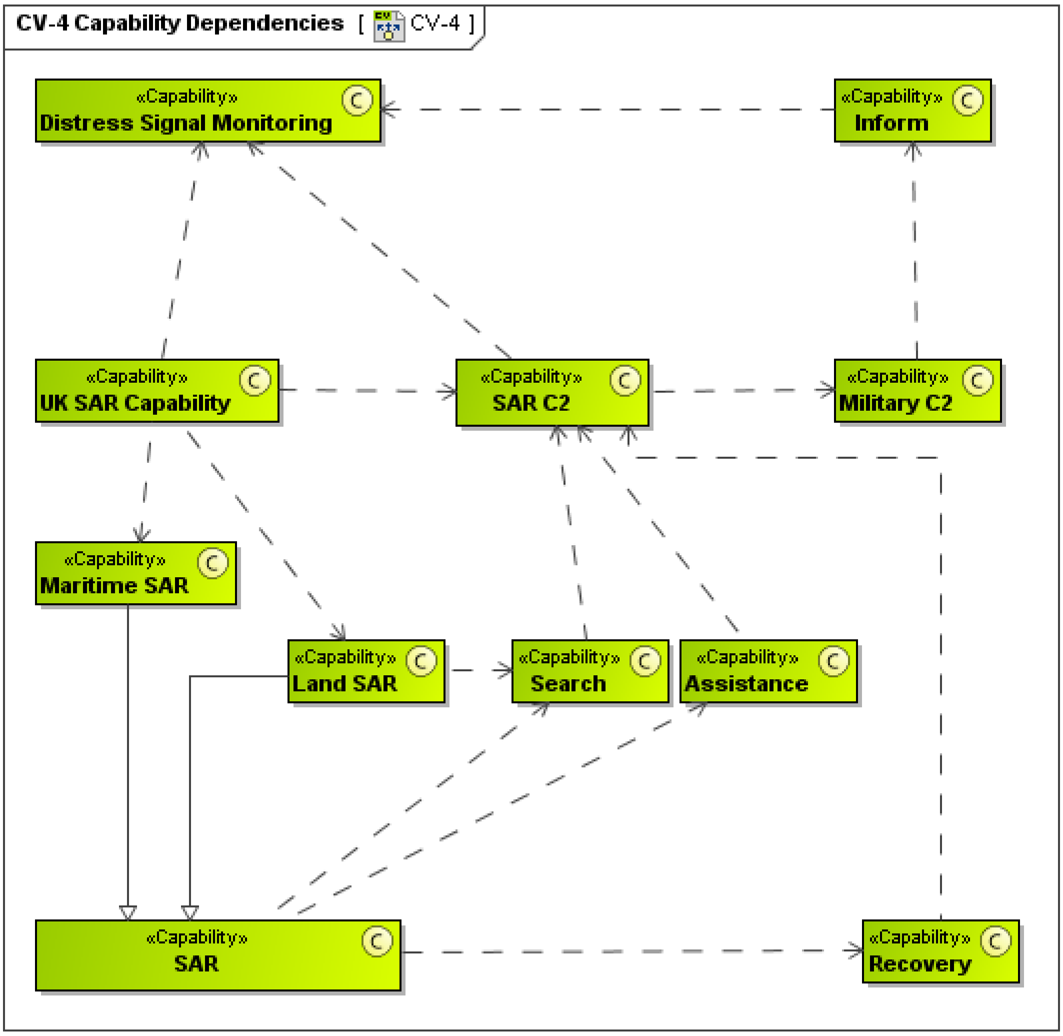


Figure 4 -- CV-4 Capability Dependencies

Related elements

[Capability]

[NEW! Capability Property]

Related procedures

[Creating CV-4 diagram]

Related views

This contrasts with CV-2 Capability Taxonomy model which also deals with relationships between Capabilities; but CV-2 only addresses specialization-generalization relationship (i.e., capability taxonomy). However Capabilities used in CV-4 are usually created in CV-2 Capability Taxonomy model.

2.2.5 CV-5 Capability to Organizational Development Mapping

Description

The CV-5 addresses the fulfillment of capability requirements.

This model shows the planned capability deployment and interconnection for a particular Capability Phase. The CV-5 can also be used to support the capability management process and, in particular, assist the planning of fielding.

The intended usage of the CV-5 includes:

- Fielding planning.
- Capability integration planning.
- Capability options analysis.
- Capability redundancy/overlap/gap analysis.
- Identification of deployment level shortfalls.

Implementation

CV-5 can be represented using:

- **NEW!** A CV-5 table.

NOTE	If your project has migrated from any earlier than 17.0.1 version, the old CV-5 View representation based on the UML Class diagram is loaded as the CV-2 Capability Taxonomy diagram.

- A CV-5 spreadsheet report.

Sample

Maritime Rescue Team expansion (From 2011-01-01 To 2011-03-31)	Hire new MRT Drivers	Hire new MRT Pilots	Plan training tasks for new employees	Perform training tasks
HR Manager	ERP	ERP	ERP PM Software	
Jr HR Manager	ERP	ERP	ERP	
Qualified Helo Pilot				MRT Pilot Helicopter
Qualified Lifeboat Driver				MRT Driver Boat

Figure 5 -- CV-5 Capability to Organizational Development Mapping

Related elements

- Capability
- Capability Configuration
- Capability Of Performer
- NEW! Organization
- NEW! Individual Person Role
- No Longer Used Milestone
- Project
- Enterprise Phase

Related procedures

Creating CV-5 table
Modifying CV-5 table
Generating reports

Related GUI

NEW! Deployment Milestones Creation Wizard

Related views

Icon	View	Relationship
CV-1	CV-1 Vision	To conduct a comprehensive analysis, several CV-5 can be created to represent the different Enterprise Phases. Each CV-5 represents different Enterprise Phases defined in CV-1 Vision.
CV-2	CV-2 Capability Taxonomy	The CV-5 shows deployment of Capabilities defined in CV-5 Capability Taxonomy to specific organizations.
SV-1	SV-1 Systems Interface Description	Deployed or No Longer Used Resources are taken from SV-1 Systems Interface Description or…
SvcV-1	SvcV-1 Services Context Description	…SvcV-1 Services Context Description.
OV-4	OV-4 Organizational Relationships Chart	Actual Organizational Resources are taken from OV-4.
PV-2	PV-2 Project Timelines	the timing is based on PV-2 Project Timelines indicating delivery of Capabilities to actual organizational resources, and also the point at which those organizational resources cease to use a particular Capability.

2.2.6 CV-6 Capability to Operational Activities Mapping

Description

The CV-6 describes the mapping between the capabilities required and the activities that enable those capabilities.

It is important to ensure that the operational activity matches the required capability. The CV-6 DoDAF-described Model provides a bridge between capability analyzed using CVs and operational activities analyzed using OVs. Specifically, it identifies how operational activities can be performed using various available capability elements. It is similar in function to the SV-5a Operational Activity to Systems Function Traceability Matrix. The capability to activity mappings may include both situations where activities fully satisfy the desired capability and those where the activity only partially meets the capability requirement.

The intended usage of the CV-6 includes:

- Tracing capability requirements to operational activities.
- Capability audit.

Implementation

CV-6 can be represented using a CV-6 diagram which is an editable Dependency Matrix. The Capabilities will be used as row elements and the Operational Activities will be used as column elements.

Sample

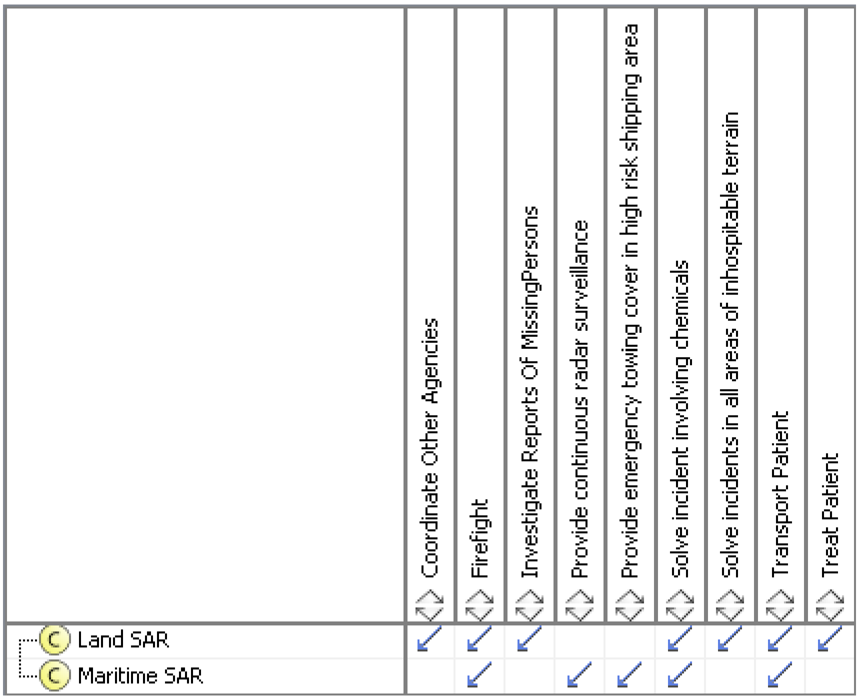


Figure 6 -- CV-6 Capability to Operational Activities Mapping

Related elements

[Capability]
[Operational Activity]
[NEW! Activity Part Of Capability]

Related procedures

[Building CV-6 matrix]

Related views

This model is analogous to the SV-5a Operational Activity to System Function Traceability Matrix – but provides the interface between Capability and Operational Models rather than Operational to System Models.

2.2.7 CV-7 Capability to Services Mapping

Description

The CV-7 describes the mapping between the capabilities required and the services that enable those capabilities. It is important to ensure that the services match the required capability. The CV-7 provides a bridge between capability analyzed using CVs and services analyzed using SvcVs. Specifically, it identifies how services can be performed using various available capability elements. It is similar in function to the SV-5a which maps system functions to operational activities. The capability to service mappings may include both situations where a service fully satisfies the desired capability and those where the service only partially meets the capability requirement.

The intended usage of the CV-7 includes:

- Tracing capability requirements to services.
- Capability audit.

Implementation

CV-7 can be represented using a CV-7 diagram which is an editable Dependency Matrix. Service Interfaces will be used as row elements and Capabilities will be used as column elements.

Sample

	Assistance	Land SAR	Maritime SAR	Recovery	SAR	Search	UK SAR Capability	Inform	Military C2	SAR C2
SvcV-1										
Ambulance Service										
Channel Navigation Information Service										
Emergency Towing Cover Service										
Fire and Rescue Service										
Land Search & Rescue Service		↗								
Maritime Search & Rescue Service			↗							
Mountain Rescue Team Service										
Police Service										
Search & Rescue Service										
UK Radio Medical Advice Service										
UK Radio Weather Forecast Information Service										

Figure 7 -- CV-7 Capability to Services Mapping

Related elements

NEW! Service Access
Capability Of Performer
NEW! Activity Part Of Capability
Capability

Related procedures

Building CV-7 matrix

Related views

This model is analogous to the SV-5a Operational Activity to System Function Traceability Matrix – but provides the interface between Capability and Service Models rather than Operational to System Models.

2.3 Project Viewpoint

"The DoDAF-described Models within the Project Viewpoint describe how programs, projects, portfolios, or initiatives deliver capabilities, the organizations contributing to them, and dependencies between them. Previous versions of DoDAF took a traditional model of architecture in which descriptions of programs and projects were considered outside scope. To compensate for this, various DoDAF models represented the evolution of systems, technologies and standards (e.g., Systems and Services Evolution Description, Systems Technology Forecast, and Technical Standards Forecast)." *[DoDAF V2.0 Volume II]*

The views of this viewpoint are described in the following sections:

- PV-1 Project Portfolio Relationships
- PV-2 Project Timelines
- PV-3 Project to Capability Mapping

2.3.1 PV-1 Project Portfolio Relationships

Description

The PV-1 represents an organizational perspective on programs, projects, portfolios, or initiatives.

The PV-1 enables the user to model the organizational structures needed to manage programs, projects, portfolios, or initiatives. It shows dependency relationships between the actual organizations that own the programs, projects, portfolios, or initiatives. This model could be used to represent organizational relationships associated with transformation initiatives along with those who are responsible for managing programs, projects, and portfolios. The PV-1 provides a means of analyzing the main dependencies between acquisition elements or transformation elements.

The intended usage of the PV-1 includes, but is not limited to:

- Program management (specified acquisition program structure).
- Project organization.
- Cross-cutting initiatives to be tracked across portfolios.

Implementation

PV-1 can be represented using:

- A PV-1 Project Portfolio Relationships diagram which is based on the UML Class diagram.
- A PV-1 Responsibility Matrix which is an editable Dependency Matrix.

Sample

	Ambulance Service Association	Department Of Transport	DoT SAR Lead	Lifeboat Driver	Maritime and Coastguard Agency	Ministry Of Defence	MoD SAR Lead	Radio Operator	Rescue Swimmer	
SAR-H					↙	↙				
Training Paramedics to work alongside Fire Rescue Service	↙				↙					
Emergency Response Enhancement	↙									
Flood Response					↙					
SAR Project						↙				

Figure 8 -- PV-1 Responsibility Matrix

Related elements

- Actual Organization
- NEW! Individual Person Role
- NEW! Organizational Project Relationship
- Project
- NEW! Project Type
- Project Milestone
- NEW! Project Milestone Role
- NEW! Actual Project Milestone Role
- NEW! Status Indicators
- NEW! Project Activity
- NEW! Activity Part Of Project

Related procedures

- Creating PV-1 diagram
- Building PV-1 matrix

Related views

The model is strongly linked with the CV-4 Capability Dependencies model which shows capability groupings and dependencies.

2.3.2 PV-2 Project Timelines

Description

The PV-2 provides a timeline perspective on programs. The PV-2 is intended primarily to support the acquisition and fielding processes including the management of dependencies between projects and the integration of DoDD 5000.1 Defense Acquisition System policies to achieve a successfully integrated capability. The PV-2 is not limited to the acquisition and fielding processes.

The intended usage of the PV-2 includes:

- Project management and control (including delivery timescales).
- Project dependency risk identification.
- Management of dependencies.
- Portfolio management.

Implementation

PV-2 can be represented using a PV-2 diagram which is realized as a Gantt Chart.

Sample

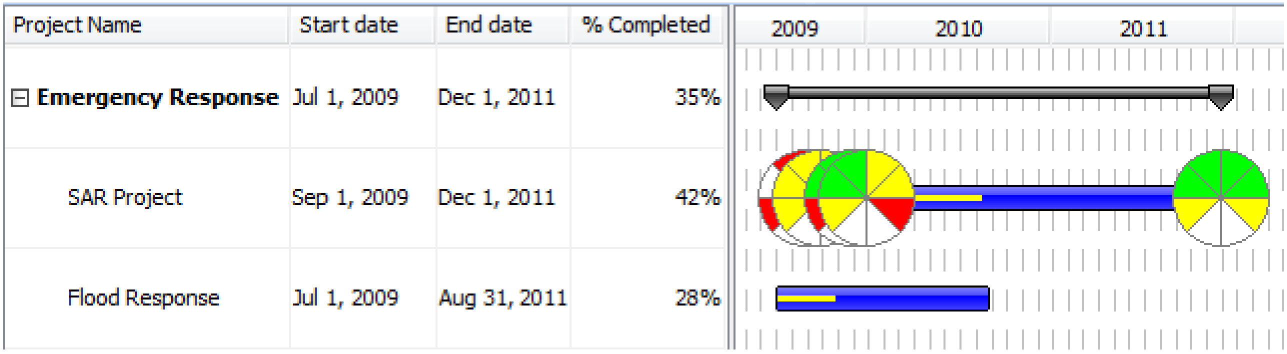


Figure 9 -- PV-2 Project Timelines

Related elements

- Project
- Project Status
- Project Sequence
- Project Theme
- Actual Project Milestone
- Increment Milestone
- Out Of Service Milestone
- Milestone Sequence
- Project Milestone
- NEW! Project Type

Related procedures

- Creating PV-2 diagram

Related views

Use of PV-2 should support the management of capability delivery and be aligned with the CV-3 Capability Phasing model, if one exists.

2.3.3 PV-3 Project to Capability Mapping

Description

The PV-3 supports the acquisition and deployment processes, including the management of dependencies between projects and the integration of all relevant project and program elements to achieve a capability.

The PV-3 maps programs, projects, portfolios, or initiatives to capabilities to show how the specific elements help to achieve a capability. Programs, projects, portfolios, or initiatives are mapped to the capability for a particular timeframe. Programs, projects, portfolios, or initiatives may contribute to multiple capabilities and may mature across time. The analysis can be used to identify capability redundancies and shortfalls, highlight phasing issues, expose organizational or system interoperability problems, and support program decisions, such as when to phase out a legacy system.

The intended usage of the PV-3 includes:

- Tracing capability requirements to projects.
- Capability audit.

Implementation

PV-3 can be represented using a PV-3 diagram which is a non-editable Dependency Matrix. Capabilities will be used as row elements and Actual Projects will be used as column elements.

Sample

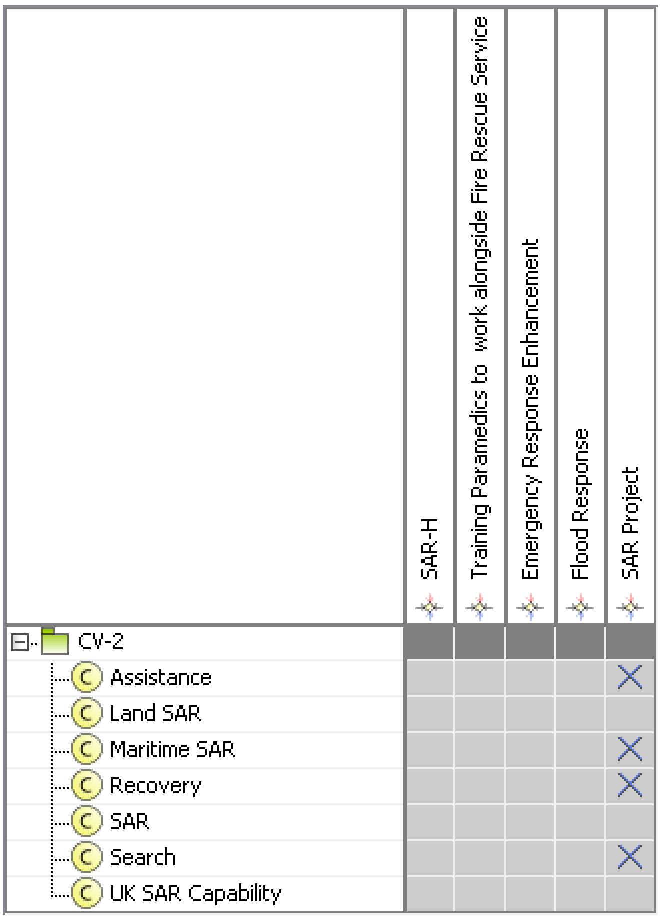


Figure 10 -- PV-3 Project to Capability Mapping

Related elements

- Capability
- Project
- NEW! Activity Part Of Capability
- NEW! Activity Part Of Project

Related procedures

- Building PV-3 matrix

Related views

This model is analogous to the SV-5a Operational Activity to System Function Traceability Matrix, but provides the interface between Capability and Project Models rather than Operational to System Models.

2.4 Operational Viewpoint

"DoDAF-described Models in the Operational Viewpoint describe the tasks and activities, operational elements, and resource flow exchanges required to conduct operations. A pure operational model is materiel independent. However, operations and their relationships may be influenced by new technologies, such as collaboration technology, where process improvements are in practice before policy can reflect the new procedures. There may be some cases, as well, in which it is necessary to document the way activities are performed, given the restrictions of current systems, to examine ways in which new systems could facilitate streamlining the activities. In such cases, operational models may have materiel constraints and requirements that need to be addressed. For this reason, it may be necessary to include some high-level system architectural data to augment information onto the operational models." *[DoDAF V2.0 Volume II]*

View Online Demo	UPDM: Operational Viewpoint

The views of this viewpoint are described in the following sections:

- OV-1 High-Level Operational Concept Graphic
- OV-2 Operational Resource Flow Description
- OV-3 Operational Resource Flow Matrix
- OV-4 Organizational Relationships Chart
- OV-5 Operational Activity Model
- OV-6a Operational Rules Model
- OV-6b Operational State Transition Description
- OV-6c Operational Event-Trace Description

2.4.1 OV-1 High-Level Operational Concept Graphic

Description

The OV-1 describes a mission, class of mission, or scenario. It shows the main operational concepts and interesting or unique aspects of operations. It describes the interactions between the subject architecture and its environment, and between the architecture and external systems. The OV-1 is the pictorial representation of the written content of the AV-1 Overview and Summary Information. Graphics alone are not sufficient for capturing the necessary architectural data.

The OV-1 provides a graphical depiction of what the architecture is about and an idea of the players and operations involved. An OV-1 can be used to orient and focus detailed discussions. Its main use is to aid human communication, and it is intended for presentation to high-level decision-makers.

The intended usage of the OV-1 includes:

- Putting an operational situation or scenario into context.
- Providing a tool for discussion and presentation; for example, aids industry engagement in acquisition.

- Providing an aggregate illustration of the details within the published high-level organization of more detailed information in published architectures.

Implementation

OV-1 can be represented using:

- An OV-1 diagram which is based on the UML Composite Structure diagram.
- An OV-1 Free Form diagram which is based on the UML Class diagram.
- A link to an external document.
- A UML Composite Structure Diagram.

Sample

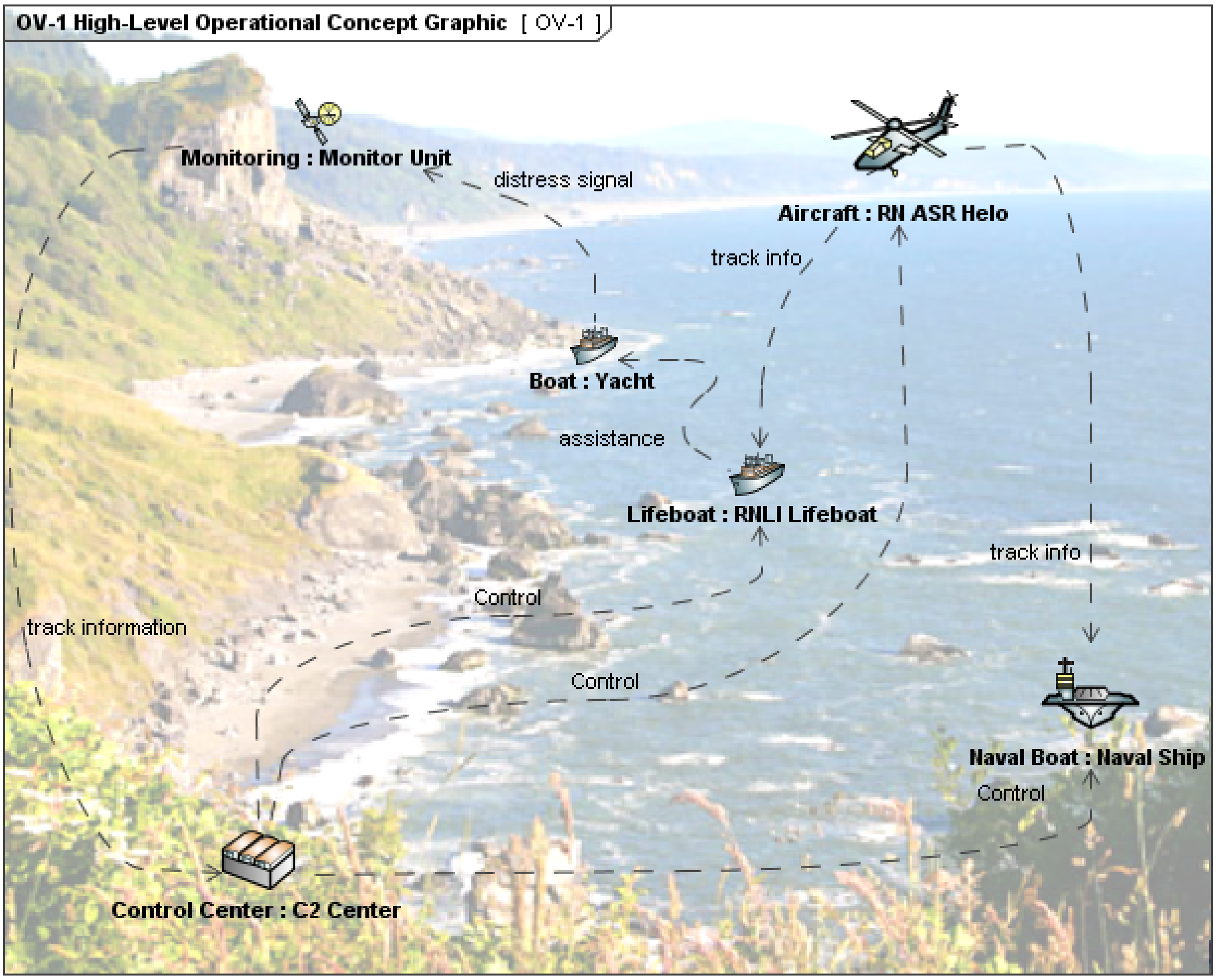


Figure 11 -- OV-1 High-Level Operational Concept Graphic

Related elements

[High-Level Operational Concept]
[Concept Role]
[Arbitrary Relationship]

Related procedures

[Creating OV-1 diagram]

2.4.2 OV-2 Operational Resource Flow Description

Description

The OV-2 DoDAF-described Model applies the context of the operational capability to a community of anticipated users. The primary purpose of the OV-2 is to define capability requirements within an operational context. The OV-2 may also be used to express a capability boundary.

New to DoDAF V2.0, the OV-2 can be used to show flows of funding, personnel and materiel in addition to information. A specific application of the OV-2 is to describe a logical pattern of resource (information, funding, personnel, or materiel) flows. The logical pattern need not correspond to specific organizations, systems or locations, allowing Resource Flows to be established without prescribing the way that the Resource Flows are handled and without prescribing solutions.

The intended usage of the OV-2 includes:

- Definition of operational concepts.
- Elaboration of capability requirements.
- Definition of collaboration needs.
- Applying a local context to a capability.
- Problem space definition.
- Operational planning.
- Supply chain analysis.
- Allocation of activities to resources.

Implementation

OV-2 can be represented using:

- An OV-2 diagram which is based on the UML Class diagram.
- An OV-2 diagram which is based on the UML Composite Structure diagram.
- A UML Class diagram.
- A UML Composite Structure diagram.
- A SysML Block Definition diagram.
- A SysML Internal Block diagram.

Sample

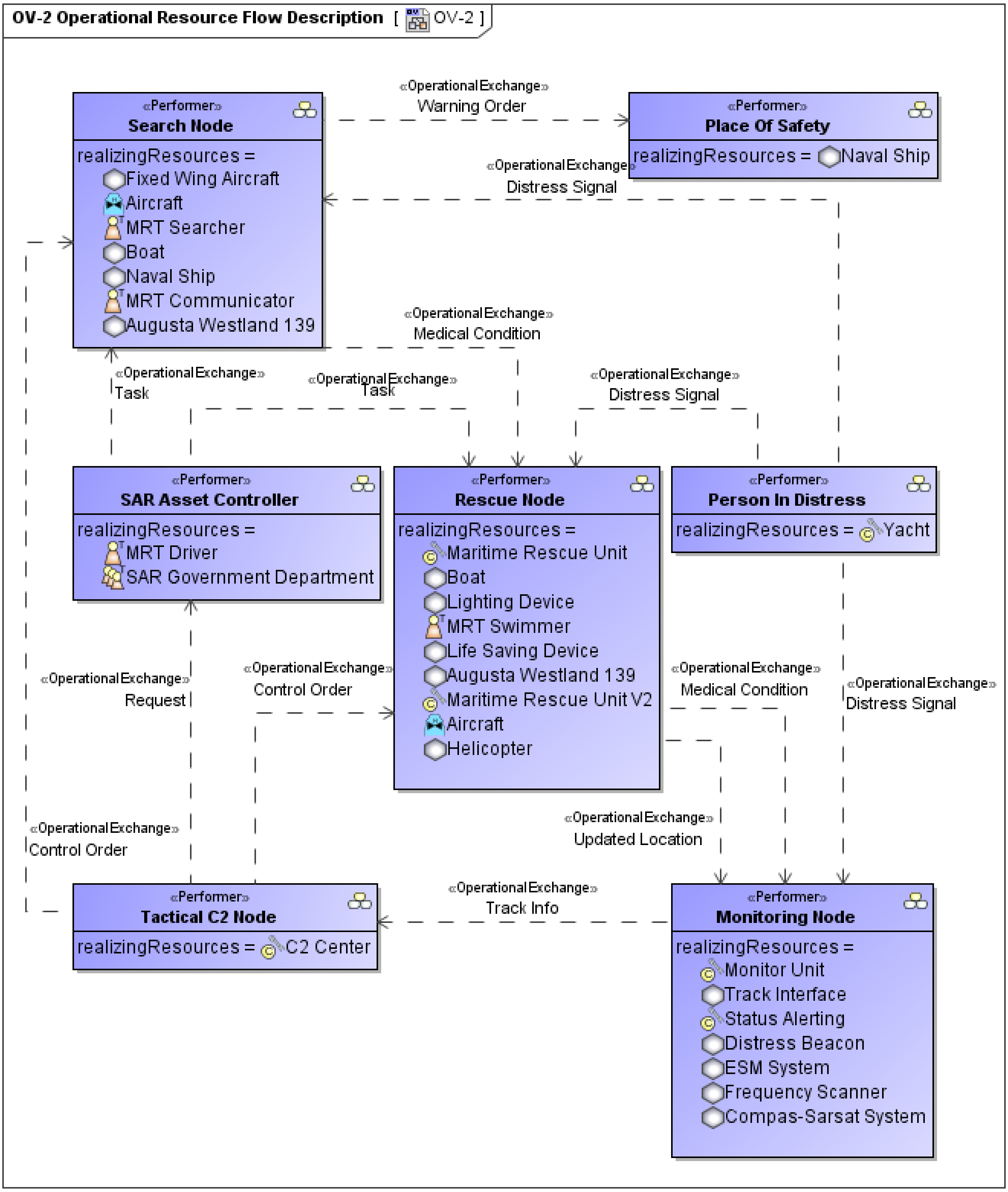


Figure 12 -- OV-2 Operational Resource Flow Description

Related elements

- Performer
- NEW! Exchange Element
- Node Port
- Node Role

- Capability
- Capability Of Performer
- NEW! Actual Location
- Location Type
- Operational Activity
- NEW! Activity Performed By Performer
- Mission
- NEW! Operational Exchange
- Needline
- System
- Software
- Capability Configuration
- NEW! Organization Type
- NEW! Person Type
- NEW! Geo Political Extent Type

Related procedures

- Creating OV-2 diagram
- Creating Operational Exchanges in OV-2 diagram

Related GUI

- Operational Exchange Creation Wizard
- Operational Exchange Manager Dialog

Related views

The Needlines established in an OV-2 can be realized by resources and their interactions in a SV-1 Systems Interface Description model or SvcV-1 Services Context Description model.

In developing an Architectural Description, OV-2 and OV-5b Operational Activity Model are often the starting points and these may be developed iteratively. OV-2 focuses on the Operational Resource Flows, with the activities being a secondary adornment. The OV-5b, on the other hand, places first-order attention on operational activities and only second-order attention on Resource Flows, which can be shown as annotations or swim lanes on the activities.

2.4.3 OV-2 Operational Resource Flow Internal Description

Description

A specific application of the Operational Resource Flow Internal Description is to describe a logical pattern of resource (information, funding, personnel, or materiel) internal flows.

Implementation

OV-2 can be represented using:

- An OV-2 diagram which is based on the UML Class diagram.
- An OV-2 diagram which is based on the UML Composite Structure diagram.
- A UML Class diagram.
- A UML Composite Structure diagram.
- A SysML Block Definition diagram.

- A SysML Internal Block diagram.

Sample

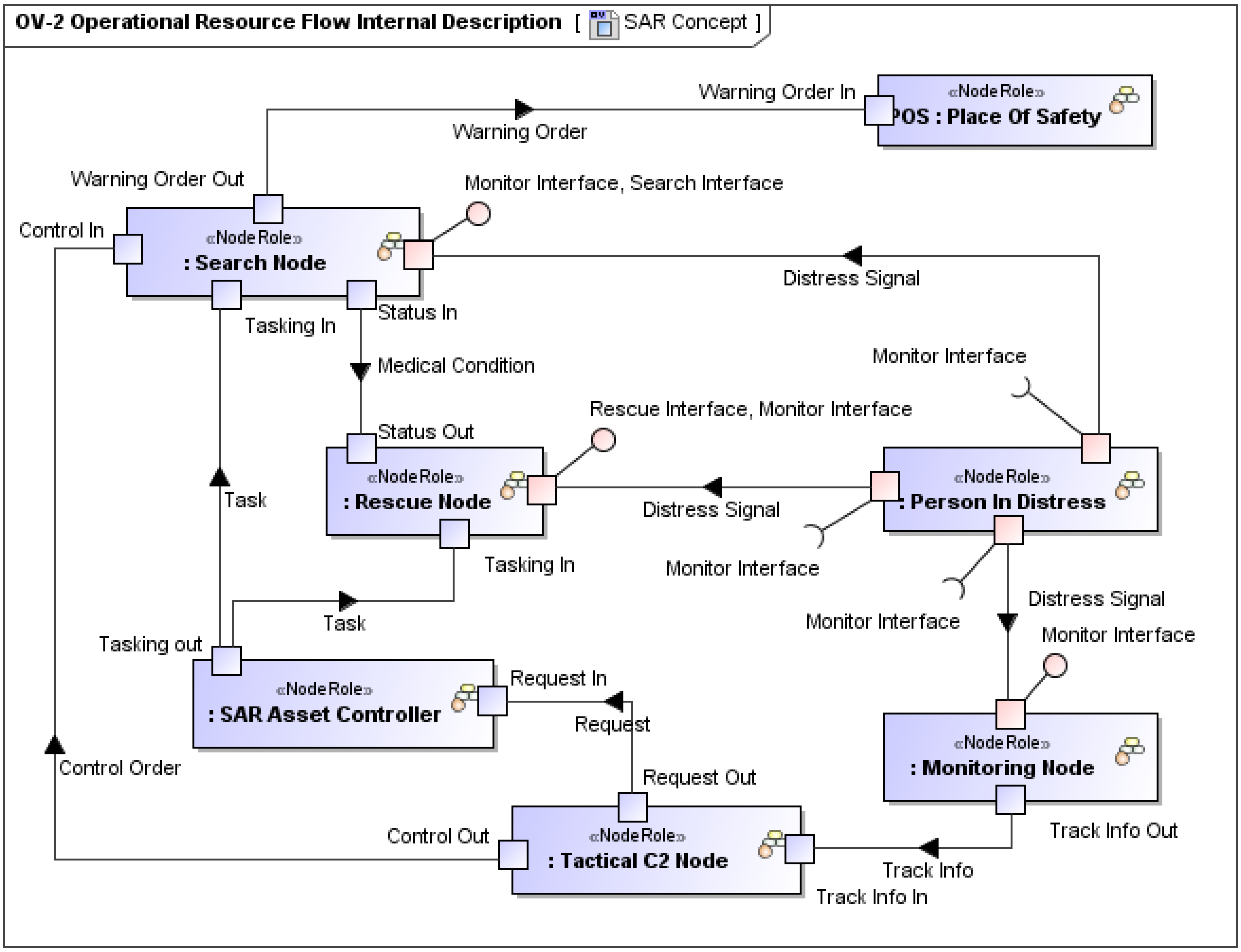


Figure 13 -- OV-2 Operational Resource Flow Internal Description

Related elements

Node Role

Needline

Related procedures

Creating OV-2 diagram

Creating Operational Exchanges in OV-2 diagram

Related views

The Needlines established in an OV-2 can be realized by resources and their interactions in a SV-1 Systems Interface Description model or SvcV-1 Services Context Description model.

In developing an Architectural Description, OV-2 and OV-5b Operational Activity Model are often the starting points and these may be developed iteratively. OV-2 focuses on the Operational Resource Flows, with the activities being a secondary adornment. The OV-5b, on the other hand, places first-order attention on operational activities and only second-order attention on Resource Flows, which can be shown as annotations or swim lanes on the activities.

2.4.4 OV-3 Operational Resource Flow Matrix

Description

The OV-3 addresses operational Resource Flows exchanged between Operational Activities and locations.

Resource Flows provide further detail of the interoperability requirements associated with the operational capability of interest. The focus is on Resource Flows that cross the capability boundary.

The intended usage of the OV-3 includes definition of interoperability requirements.

Implementation

OV-3 can be represented using:

- An OV-3 table.
- An OV-3 spreadsheet report.

Sample

#	Exchange ID	Operational Exchange Item	Sending Performer	Receiving Performer	Producing Operational Activity	Consuming Operational Activity
1	IE1	Warning Order	Search Node	Place Of Safety	Send Warning Order	Process Warning
2	IE10	Task	SAR Asset Controller	Search Node		
3	IE11	Distress Signal	Person In Distress	Search Node	Send Distress Signal	Receive Distress
4	IE2	Medical Condition	Search Node	Rescue Node	Monitor Health	Provide Medical
5	IE3	Distress Signal	Person In Distress	Rescue Node	Send Distress Signal	Receive Distress
6	IE4	Distress Signal	Person In Distress	Monitoring Node		
7	IE5	Control Order	Tactical C2 Node	Rescue Node		
8	IE6	Track Info	Monitoring Node	Tactical C2 Node		
9	IE7	Control Order	Tactical C2 Node	Search Node		
10	IE8	Request	Tactical C2 Node	SAR Asset Controller		
11	IE9	Task	SAR Asset Controller	Rescue Node		

Figure 14 -- OV-3 Operational Resource Flow Matrix

Related elements

Performer
NEW! Exchange Element
System
Software
Capability Configuration
NEW! Organization Type
NEW! Person Type
NEW! Geo Political Extent Type
Operational Activity

Related procedures

Creating OV-3 table

Related views

This model is initially constructed from the information contained in the OV-2 Operational Resource Flow Description model. But the OV-3 provides a more detailed definition of the Resource Flows for operations within a community of anticipated users.

OV-3 is one of a suite of operational models that address the resource content of the operational architecture (the others being OV-2 Operational Resource Flow Description, OV-5b Operational Activity Model, and DIV-2 Logical Data Model).

2.4.5 OV-4 Organizational Relationships Chart

Description

The OV-4 shows organizational structures and interactions. The organizations shown may be civil or military. The OV-4 exists in two forms; role-based (e.g., a typical brigade command structure) and actual (e.g., an organization chart for a department or agency).

A role-based OV-4 shows the possible relationships between organizational resources. The key relationship is composition, i.e., one organizational resource being part of a parent organization. In addition to this, the architect may show the roles each organizational resource has, and the interactions between those roles, i.e., the roles represent the functional aspects of organizational resources. There are no prescribed resource interactions in DoDAF V2.0: the architect should select an appropriate interaction type from the DM2 or add a new one. Interactions illustrate the fundamental roles and management responsibilities, such as supervisory reporting, Command and Control (C2) relationships, collaboration and so on.

An actual OV-4 shows the structure of a real organization at a particular point in time, and is used to provide context to other parts of the architecture such as AV-1 and the CVs.

The intended usage of the role-based OV-4 includes:

- Organizational analysis.
- Definition of human roles.
- Operational analysis.

The intended usage of the actual OV-4 includes:

- Identify architecture stakeholders.
- Identify process owners.
- Illustrate current or future organization structures.

Implementation

OV-4 can be represented using:

- An OV-4 diagram which is based on the UML Class diagram.
- A UML Class diagram.
- A SysML Block Definition diagram.

Sample

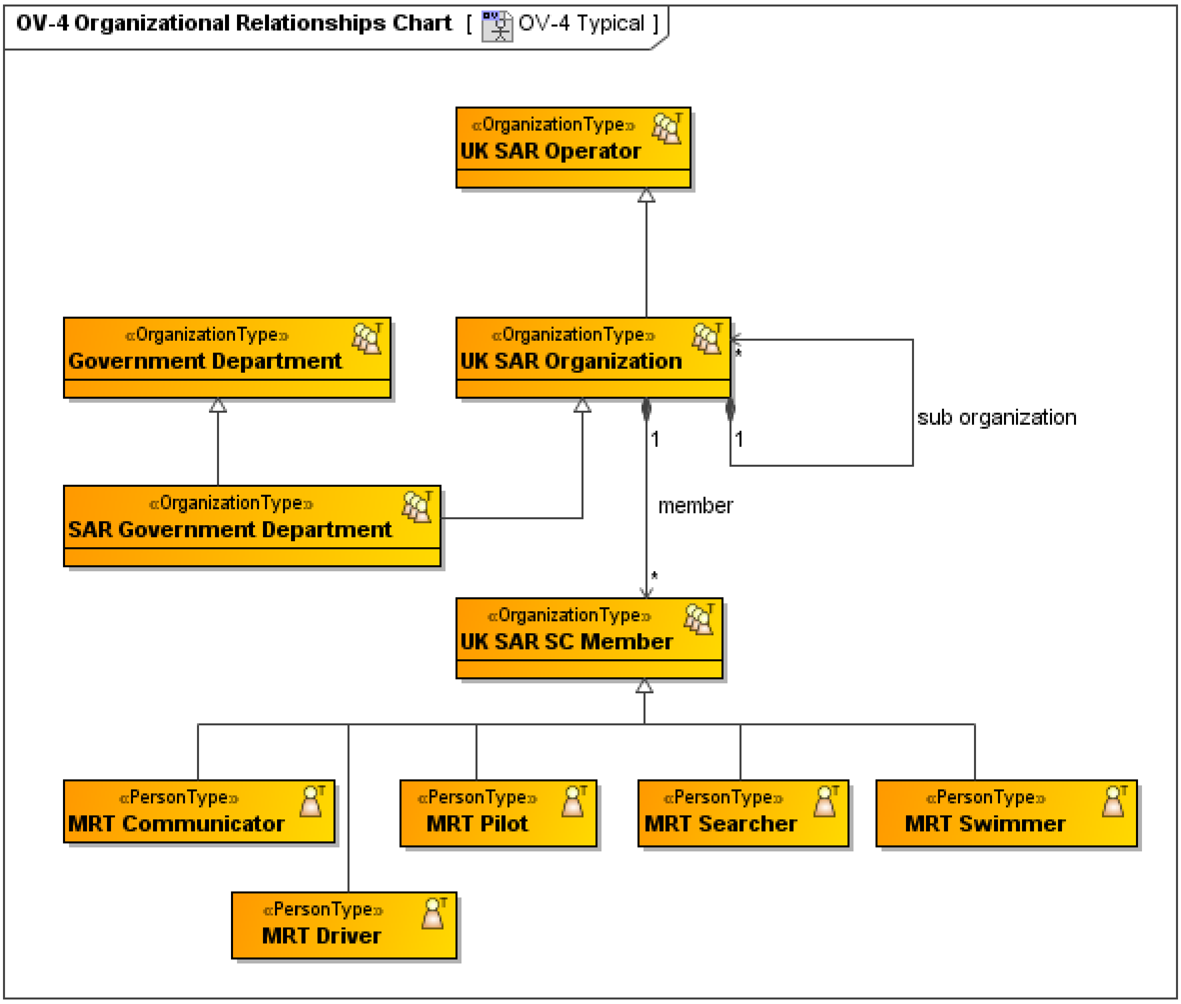


Figure 15 -- OV-4 Organizational Relationships Chart typical diagram

Related elements

- NEW! Organization Type
- NEW! Person Type
- Command
- Skill
- Skill Of Person Type
- NEW! Organization
- NEW! Individual Person Role
- Actual Organization Relationship
- Actual Organization Role
- Operational Activity

Related procedures

- Creating OV-4 diagram
- Instantiating Structures

Related views

The organizations that are modeled using OV-4 may also appear in other models, for example in the SV-1 Systems Interface Description as organizational constituents of a capability or a resource and PV-1 Project

Portfolio Relationships where organizations own projects. In a SV-1 Systems Interface Description, for instance, the organizational resources defined in a typical OV-4 may be part of a capability or resources. Also, actual organizations may form elements of a fielded capability which realizes the requirements at the system-level (again, this may be depicted on a SV-1 Systems Interface Description).

2.4.6 OV-5 Operational Activity Model

Description

The OV-5a and the OV-5b describe the operations that are normally conducted in the course of achieving a mission or a business goal. It describes operational activities (or tasks); Input/Output flows between activities, and to/from activities that are outside the scope of the Architectural Description.

The OV-5a and OV-5b describes the operational activities that are being conducted within the mission or scenario. The OV-5a and OV-5b can be used to:

- Clearly delineate lines of responsibility for activities when coupled with OV-2.
- Uncover unnecessary Operational Activity redundancy.
- Make decisions about streamlining, combining, or omitting activities.
- Define or flag issues, opportunities, or operational activities and their interactions (information flows among the activities) that need to be scrutinized further.
- Provide a necessary foundation for depicting activity sequencing and timing in the OV-6a Operational Rules Model, the OV-6b State Transition Description, and the OV-6c Event-Trace Description.

The OV-5b describes the operational, business, and defense portion of the intelligence community activities associated with the Architectural Description, as well as the:

- Relationships or dependencies among the activities.
- Resources exchanged between activities.
- External interchanges (from/to business activities that are outside the scope of the model).

An Operational Activity is what work is required, specified independently of how it is carried out. To maintain this independence from implementation, logical activities and locations in OV-2 Operational Resource Flow Description are used to represent the structure which carries out the Operational Activities. Operational Activities are realized as System Functions (described in SV-4 Systems Functionality Description) or Service Functions (described in SvcV-4 Services Functionality Description) which are the how to the Operational Activities what, i.e., they are specified in terms of the resources that carry them out.

The intended usage of the OV-5a and OV-5b includes:

- Description of activities and workflows.
- Requirements capture.
- Definition of roles and responsibilities.
- Support task analysis to determine training needs.
- Problem space definition.
- Operational planning.
- Logistic support analysis.
- Information flow analysis.

Implementation

OV-5 can be represented using:

- An OV-5a diagram for Operational Activity hierarchies. This diagram is based on the UML Class diagram.
- An OV-5b diagram for Operational Activity flows. This diagram is based on the UML Activity diagram.
- A UML Class diagram.
- A UML Activity diagram.
- A SysML Block diagram.
- A SysML Activity diagram.

Sample

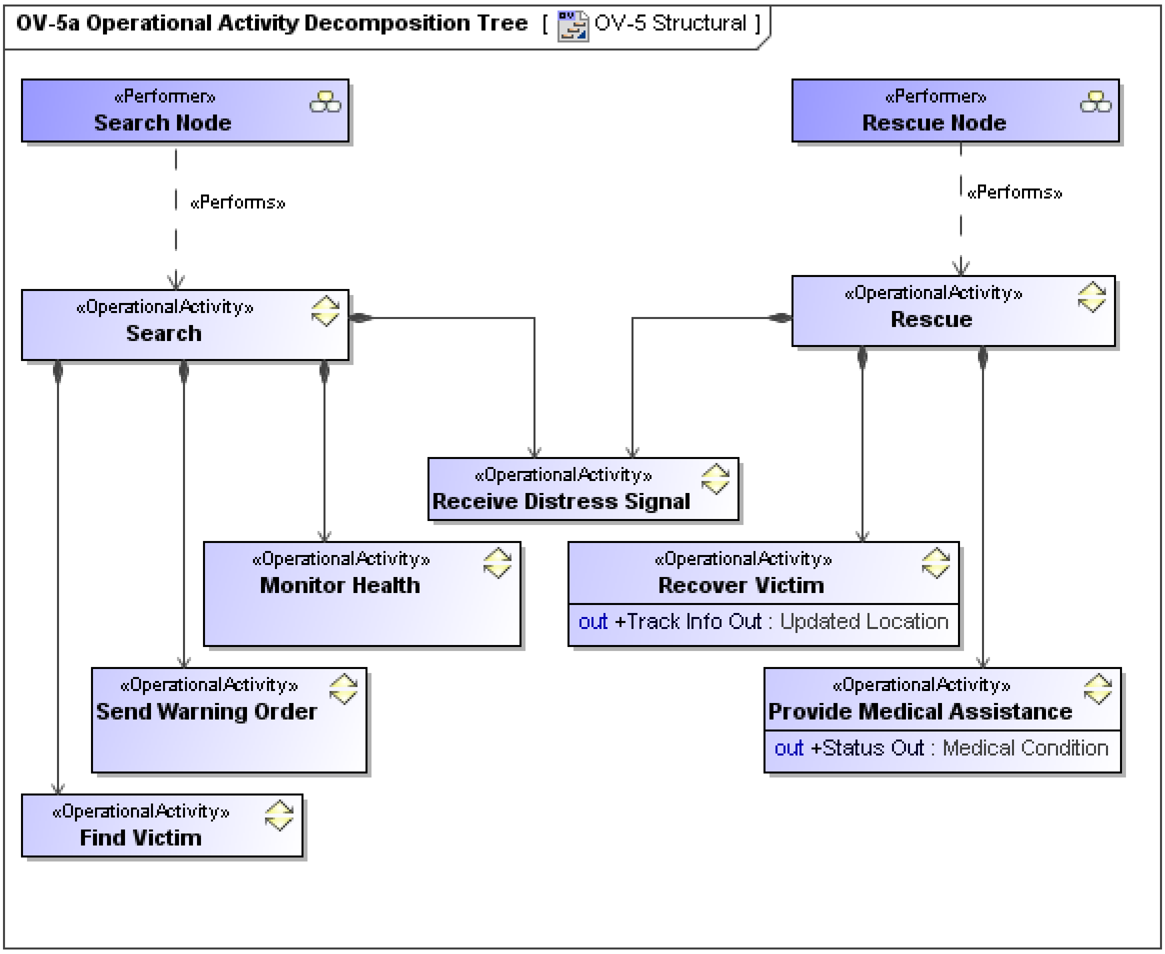


Figure 16 -- OV-5a Operational Activity Decomposition Tree

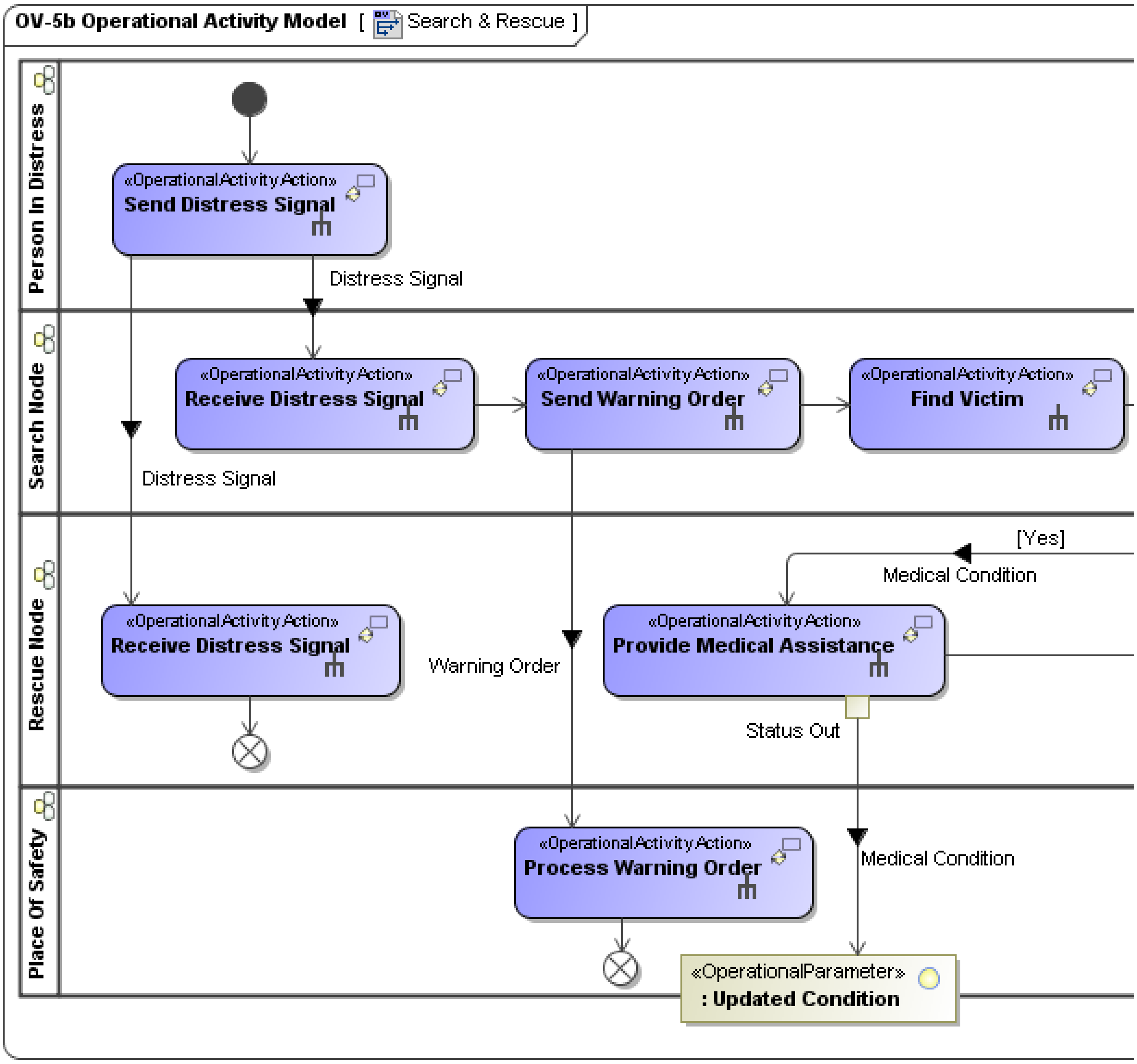


Figure 17 -- Fragment of OV-5b Operational Activity Model

NOTE	You can also create OV-5 Business Process Diagram (BPD). In order to do that, use the Cameo Business Modeler plugin. For more information on how to model the business process diagram, see “BPMN Process Diagram” in CameoBusinessModelerUserGuide.pdf

Related elements

- Operational Activity
- Operational Parameter
- Performer
- NEW! Activity Performed By Performer
- Capability
- NEW! Activity Part Of Capability
- NEW! Exchange Element
- System

- Software
- Capability Configuration
- NEW! Organization Type
- NEW! Person Type
- NEW! Geo Political Extent Type
- Operational Activity Action
- Operational Activity Edge
- Operational Exchange

Related procedures

- Creating OV-5 Operational Activity Model diagram
- Creating OV-5 Operational Activity Flow Model diagram
- Displaying possible Operational Exchanges on the selected Operational Activity Edge

Related GUI

- Operational Exchange Creation Wizard
- Operational Exchange Manager Dialog

Related views

The OV-5s and OV-2 Operational Resource Flow Description model are, to a degree, complements of each other. The OV-5s focuses on the operational activities whereas OV-2 Operational Resource Flow Description model focuses on the operational activities in relation to locations. Due to the relationship between locations and operational activities, these types of models should normally be developed together.

2.4.7 OV-6a Operational Rules Model

Description

An OV-6a specifies operational or business rules that are constraints on the way that business is done in the enterprise. At a top-level, rules should at least embody the concepts of operations defined in OV-1 High Level Operational Concept Graphic and provide guidelines for the development and definition of more detailed rules and behavioral definitions that should occur later in the Architectural definition process.

The intended usage of the OV-6a includes:

- Definition of doctrinally correct operational procedures.
- Definition of business rules.
- Identification of operational constraints.

Implementation

OV-6a can be represented using:

- An OV-6a table.
- An OV-6a spreadsheet report.

Sample

#	Applies To	Rule Specification	Rule Kind
1	Search Node Rescue Node Monitoring Node	Respond to emergencies 24 hours a day	Constraint
2	Rescue Node	Minimize the risk of pollution of the marine environment from ships	Constraint
3	Rescue Node Search Node	Where the coverage provided by military SAR assets meets the civil SAR requirement, they will be made available for civil aeronautical, maritime and land based SAR operations.	Constraint
4	Monitoring Node Search Node	The organization is based upon a continuous communications watch on VHF, VHFDSC, MF and MFDSC radio at 19 MRCC/MRSCs, which provide radio coverage of UK coastal and offshore waters out to 150 nautical miles.	Constraint
5	Monitoring Node	Satellite communications extend coverage throughout the UKSRR and worldwide.	Constraint
6	SAR Asset Controll	SAR Operations are supported by a computerized command & control system, which provides incident management and recording; resource selection and alerting; logging and databases. A computerized system provides the facility to predict the movement of drifting targets at sea; produce search areas and optimum search coverage plans for search units.	Constraint

Figure 18 -- OV-6a Operational Rules Model

Related elements

- Operational Constraint
- NEW! Entity Item
- NEW! Exchange Element
- Performer
- Mission
- Operational Activity
- NEW! Operational Exchange

Related procedures

- Creating OV-6a table

Related views

Rules defined in an OV-6a may optionally be presented in any other OV. For example, a rule "battle damage assessment shall be carried out under fair weather conditions" may be linked to the Conduct BDA activity in OV-5b. Any natural language rule presented (e.g., in a diagram note) should also be listed in OV-6a.

2.4.8 OV-6b Operational State Transition Description

Description

The OV-6b is a graphical method of describing how an Operational Activity responds to various events by changing its state. The diagram represents the sets of events to which the Activities respond (by taking an action to move to a new state) as a function of its current state. Each transition specifies an event and an action.

An OV-6b can be used to describe the detailed sequencing of activities or work flow in the business process. The OV-6b is particularly useful for describing critical sequencing of behaviors and timing of operational activities that cannot be adequately described in the OV-5b Operational Activity Model. The OV-6b relates events and states. A change of state is called a transition. Actions may be associated with a given state or with the transition between states in response to stimuli (e.g., triggers and events).

The intended usage of the OV-6b includes:

- Analysis of business events.
- Behavioral analysis.
- Identification of constraints.

Implementation

OV-6b can be represented using a UML State Machine diagram.

Sample

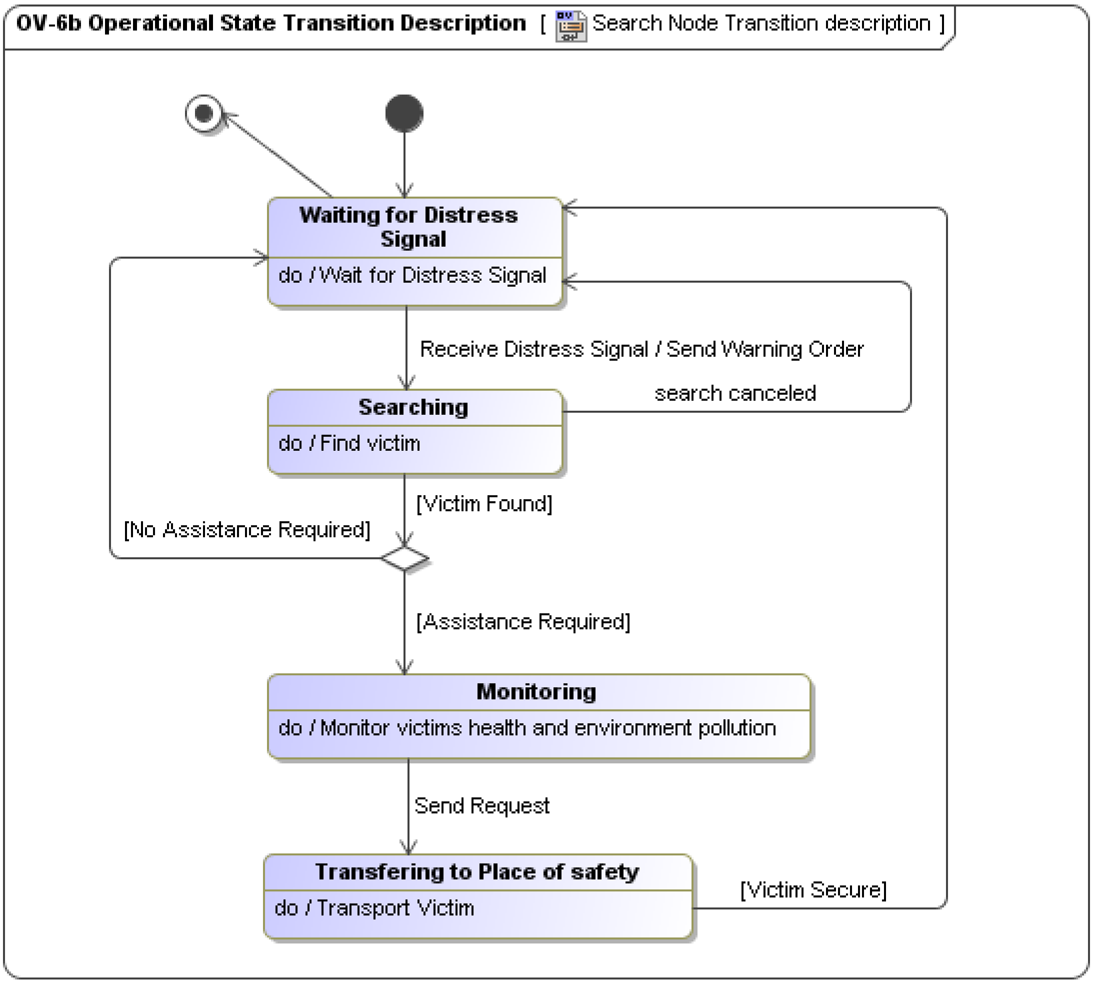


Figure 19 -- OV-6b Operational State Transition Description

Related elements

- Operational State Description
- NEW! Operational State
- Performer

Related views

The OV-6b reflects the fact that the explicit sequencing of activities in response to external and internal events is not fully expressed in OV-5a Operational Activity Decomposition Tree or OV-5b Operational Activity Model.

2.4.9 OV-6c Operational Event-Trace Description

Description

The OV-6c provides a time-ordered examination of the Resource Flows as a result of a particular scenario. Each event-trace diagram should have an accompanying description that defines the particular scenario or situation. Operational Event/Trace Descriptions, sometimes called sequence diagrams, event scenarios, or timing diagrams, allow the tracing of actions in a scenario or critical sequence of events. The OV-6c can be used by itself or in conjunction with an OV-6b State Transition Description to describe the dynamic behavior of activities.

The intended usage of the OV-6c includes:

- Analysis of operational events.
- Behavioral analysis.
- Identification of non-functional user requirements.
- Operational test scenarios.

Implementation

OV-6c can be represented using a UML Sequence diagram.

Sample

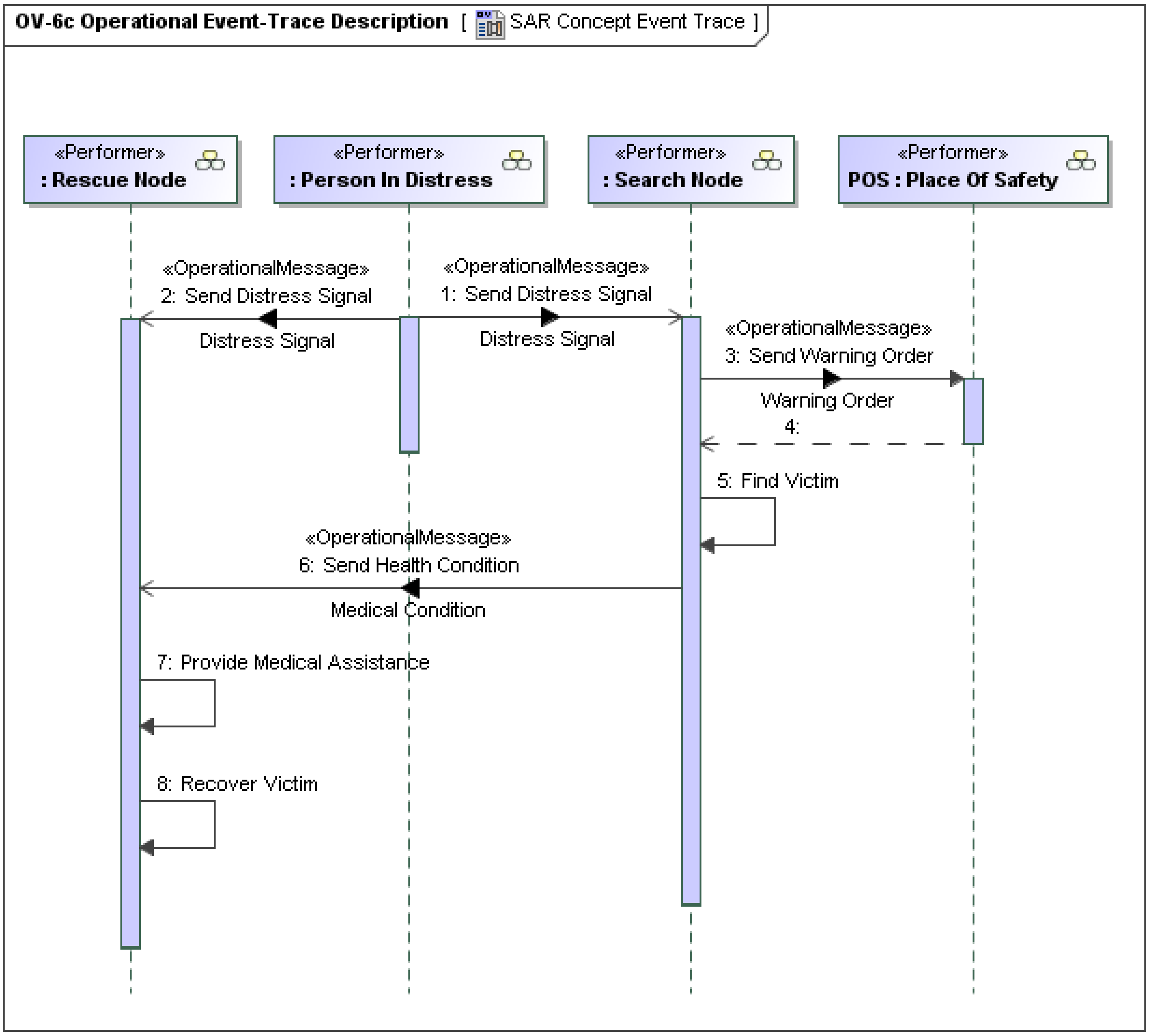


Figure 20 -- OV-6c Operational Event-Trace Description

NOTE	You can also create OV-6c Business Process Diagram (BPD). In order to do that, use the Cameo Business Modeler plugin. For more information on how to model the business process diagram, see “BPMN Process Diagram” in CameoBusinessModelerUserGuide.pdf

Related elements

- Operational Event Trace
- Operational Message
- NEW! Operational Exchange
- Performer
- Node Role

Related GUI

- Operational Exchange Creation Wizard
- Operational Exchange Manager Dialog

Related views

The information content of messages in an OV-6c may be related with the Resource Flows in the OV-3 Operational Resource Flow Matrix and OV-5b Operational Activity Model and information entities in the DIV-2 Logical Data Model.

2.5 Data and Information Viewpoint

"DoDAF-described Models within the Data and Information Viewpoint provide a means of portraying the operational and business information requirements and rules that are managed within and used as constraints on the organizations business activities. Experience gained from many enterprise architecture efforts within the DoD led to the identification of several levels of abstraction necessary to accurately communicate the information needs of an organization or enterprise. The appropriate level or levels of abstraction for a given architecture are dependent on the use and the intended users of the architecture. Where appropriate, the data captured in this viewpoint needs to be considered by COIs." *[DoDAF V2.0 Volume II]*

The views of this viewpoint are described in the following sections:

- You can use the Entity Relationship diagram for DIV-1 Conceptual Data Model
- DIV-2 Logical Data Model
- DIV-3 Physical Data Model

Cameo Data Modeler plugin integration

2.5.1 You can use the Entity Relationship diagram for DIV-1 Conceptual Data Model

Description

The DIV-1, a new DoDAF-described Model in DoDAF V2.0, addresses the information concepts at a high-level on an operational architecture.

The DIV-1 is used to document the business information requirements and structural business process rules of the architecture. It describes the information that is associated with the information of the architecture. Included are information items, their attributes or characteristics, and their inter-relationships.

The intended usage of the DIV-1 includes:

- Information requirements.
- Information hierarchy.

Implementation

DIV-1 can be represented using a DIV-1 diagram which is based in the UML Class diagram.

Sample

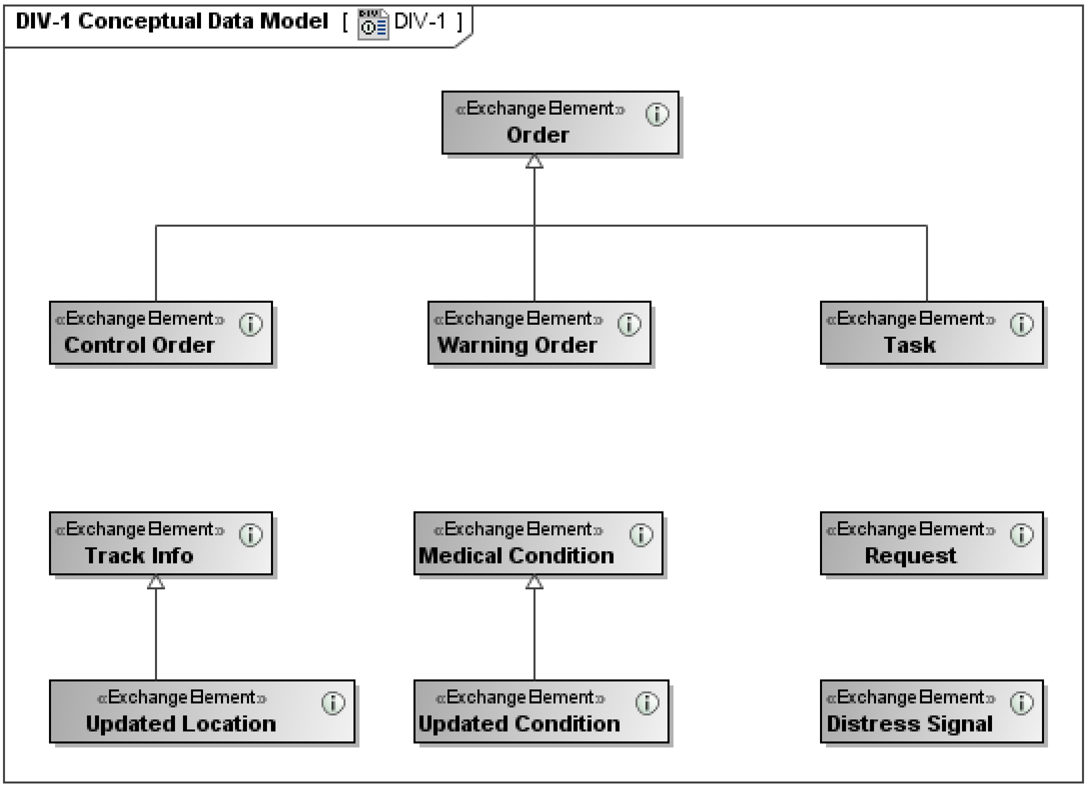


Figure 21 -- DIV-1 Conceptual Data Model diagram

Related elements

NEW! Exchange Element

NEW! Details

NEW! Entity Item

NEW! Entity Attribute

Logical Data Model

Related procedures

Creating DIV-1 diagram

Related views

The DIV-1 defines each kind of information classes associated with the Architectural Description scope, mission, or business as its own Entity, with its associated attributes and relationships. These Entity definitions correlate to OV-2 Operational Resource Flow Description information elements and OV-5b Operational Activity Model inputs, outputs, and controls.

2.5.2 DIV-2 Logical Data Model

Description

The DIV-2 allows analysis of an architecture’s data definition aspect, without consideration of implementation specific or product specific issues. Another purpose is to provide a common dictionary of data definitions to consistently express models wherever logical-level data elements are included in the descriptions.

Implementation

DIV-2 can be represented using:

- A DIV-2 diagram which is based on the UML Class diagram.
- A UML Class diagram.
- A SysML Block Definition diagram.

Sample

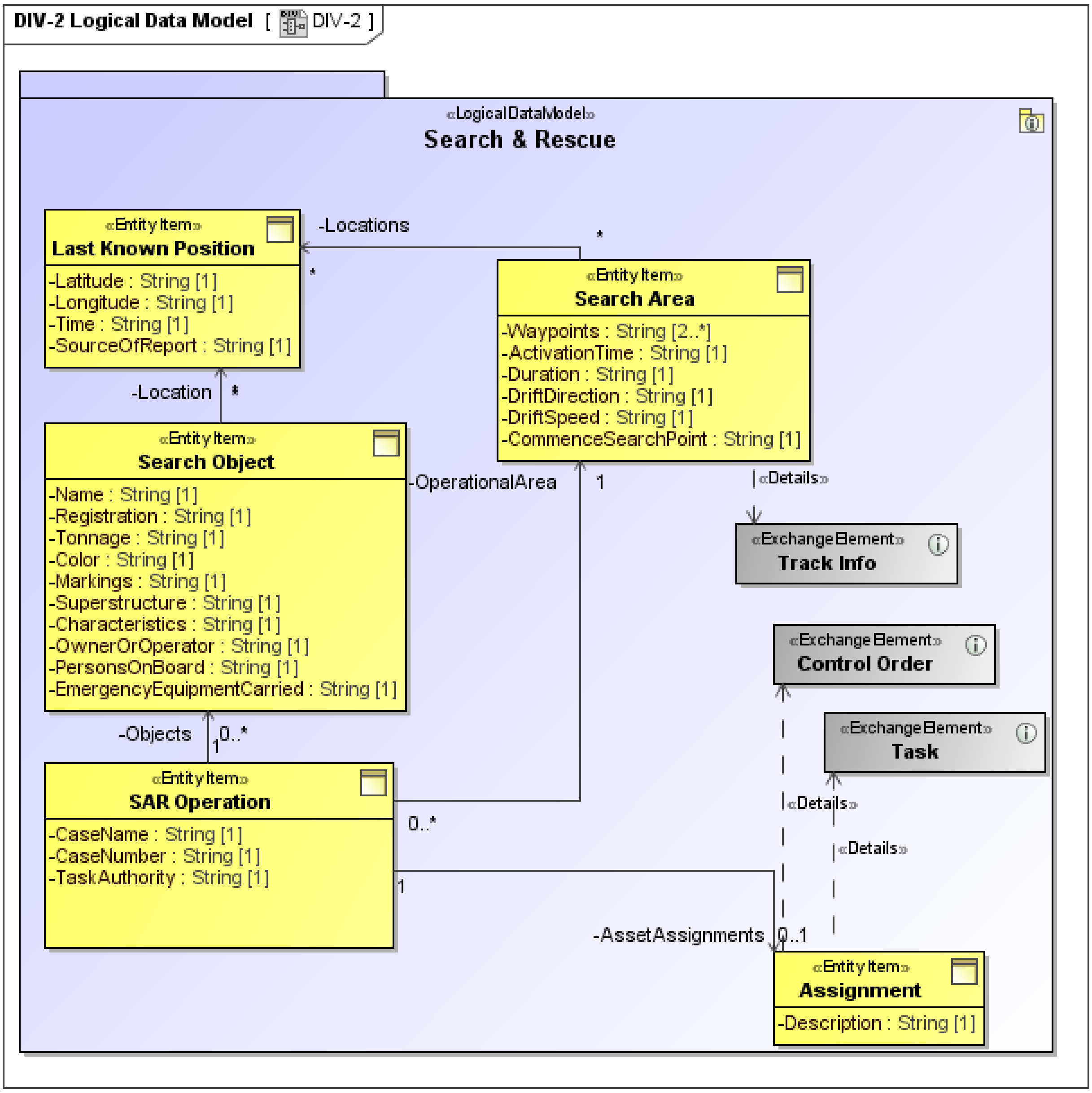


Figure 22 -- DIV-2 Logical Data Model diagram

Related elements

[NEW! Entity Item]
[NEW! Entity Attribute]
[NEW! Entity Relationship]
[NEW! Details]
[NEW! Exchange Element]
[Logical Data Model]

Related procedures

[Creating DIV-2 diagram]

Related views

Data described in a DIV-2 may be related to Information in an OV-1 High Level Operational Concept Graphic or and Activity Resource (where the Resource is Data) flow object in an OV-5b Operational Activity Model. This relation may be a simple subtype, where the Data is a proceduralized (structured) way of describing something. Recall that Information describes something. Alternatively, the relation may be complex using Information and Data wholepart (and overlap) relationships.

The DIV-2 information entities and elements can be constrained and validated by the capture of business requirements in the OV-6a Operational Rules Model.

The information entities and elements modeled in the DIV-2 also capture the information content of messages that connect life-lines in an OV-6c Event-Trace Description.

The DIV-2 may capture elements required due to Standards in the StdV-1 Standards Profile or StdV-2 Standards Forecast.

2.5.3 DIV-3 Physical Data Model

Description

The DIV-3 defines the structure of the various kinds of system or service data that are utilized by the systems or services in the Architectural Description. The Physical Schema is one of the models closest to actual system design in DoDAF. DIV-3 is used to describe how the information represented in the DIV-2 Logical Data Model is actually implemented.

While the mapping between the logical and physical data models is relatively straightforward, the relationship between the components of each model (e.g., entity types in the logical model versus relational tables in the physical model) is frequently one-to-many or many-to-many.

Implementation

DIV-3 can be represented using:

- A DIV-3 diagram which is based on the UML Class diagram.
- A UML Class diagram.
- A SysML Block Definition Diagram.

Sample

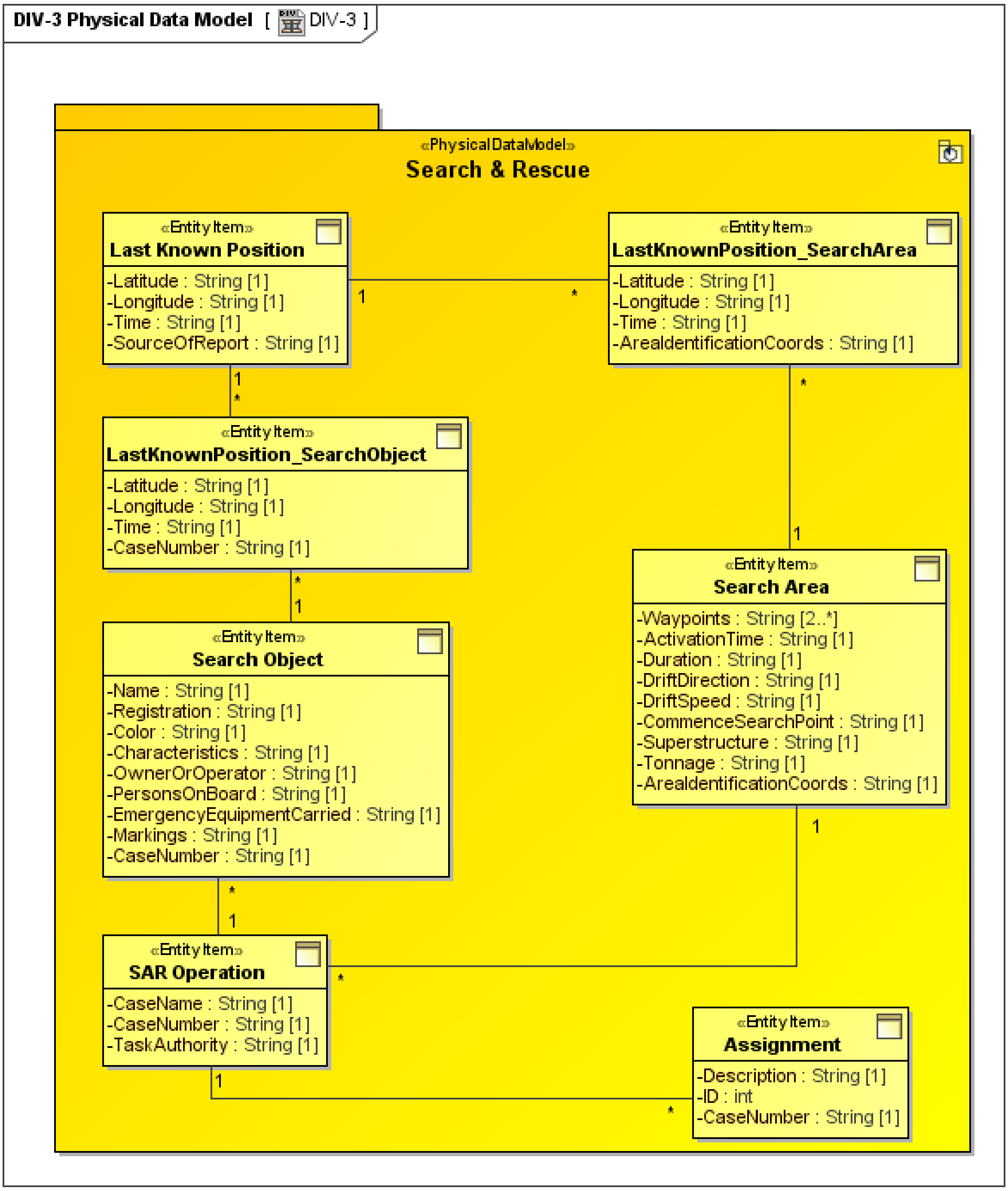


Figure 23 -- DIV-3 Physical Data Model diagram

Related elements

- NEW! Entity Item
- NEW! Entity Attribute
- NEW! Entity Relationship
- NEW! Exchange Element
- Physical Data Model

Related procedures

- Creating DIV-3 diagram

Related views

The Physical Data Model is one of the Architectural Products closest to actual system design in the Framework. DIV-3 is used to describe how the information represented in the Information Model (DIV-2) is actually implemented.

2.6 Services Viewpoint

"The DoDAF-described Models within the Services Viewpoint describes services and their interconnections providing or supporting, DoD functions. DoD functions include both warfighting and business functions. The Service Models associate service resources to the operational and capability requirements. These resources support the operational activities and facilitate the exchange of information. The relationship between architectural data elements across the Services Viewpoint to the Operational Viewpoint and Capability Viewpoint can be exemplified as services are procured and fielded to support the operations and capabilities of organizations. The structural and behavioral models in the OVs and SvcVs allow architects and stakeholders to quickly ascertain which functions are carried out by humans and which by Services for each alternative specification and so carry out trade analysis based on risk, cost, reliability, etc." *[DoDAF V2.0 Volume II]*

The views of this viewpoint are described in the following sections:

- SvcV-1 Services Context Description
- SvcV-2 Services Resource Flow Description
- SvcV-3a Systems-Services Matrix
- SvcV-3b Services-Services Matrix
- SvcV-4 Services Functionality Description
- SvcV-5 Operational Activity to Services Traceability Matrix
- SvcV-6 Services Resource Flow Matrix
- SvcV-7 Services Measures Matrix
- SvcV-8 Services Evolution Description
- SvcV-9 Services Technology and Skills Forecast
- SvcV-10a Services Rules Model
- SvcV-10b Services State Transition Description
- SvcV-10c Services Event-Trace Description

2.6.1 SvcV-1 Services Context Description

Description

The SvcV-1 addresses the composition and interaction of Services. For DoDAF V2.0, SvcV-1 incorporates human elements as types of Performers - Organizations and Personnel Types.

The SvcV-1 links together the operational and services architecture models by depicting how resources are structured and interact to realize the logical architecture specified in an OV-2 Operational Resource Flow Description. A SvcV-1 may represent the realization of a requirement specified in an OV-2 Operational Resource Flow Description (i.e., in a "To-Be" Architectural Description), and so there may be many alternative SvcV models that could realize the operational requirement. Alternatively, in an "As-Is" Architectural Description, the OV-2 Operational Resource Flow Description may simply be a simplified, logical representation of the SvcV-1 to allow communication of key Resource Flows to non-technical stakeholders.

The intended usage of the SvcV-1 includes:

- Definition of service concepts.
- Definition of service options.
- Service Resource Flow requirements capture.
- Capability integration planning.
- Service integration management.
- Operational planning (capability and performer definition).

The SvcV-1 is used in two complementary ways:

- Describe the Resource Flows exchanged between resources in the architecture.
- Describe a solution, or solution option, in terms of the components of capability and their physical integration on platforms and other facilities.

Implementation

SvcV-1 can be represented using a SvcV-1 diagram which is based on the UML class diagram.

Sample

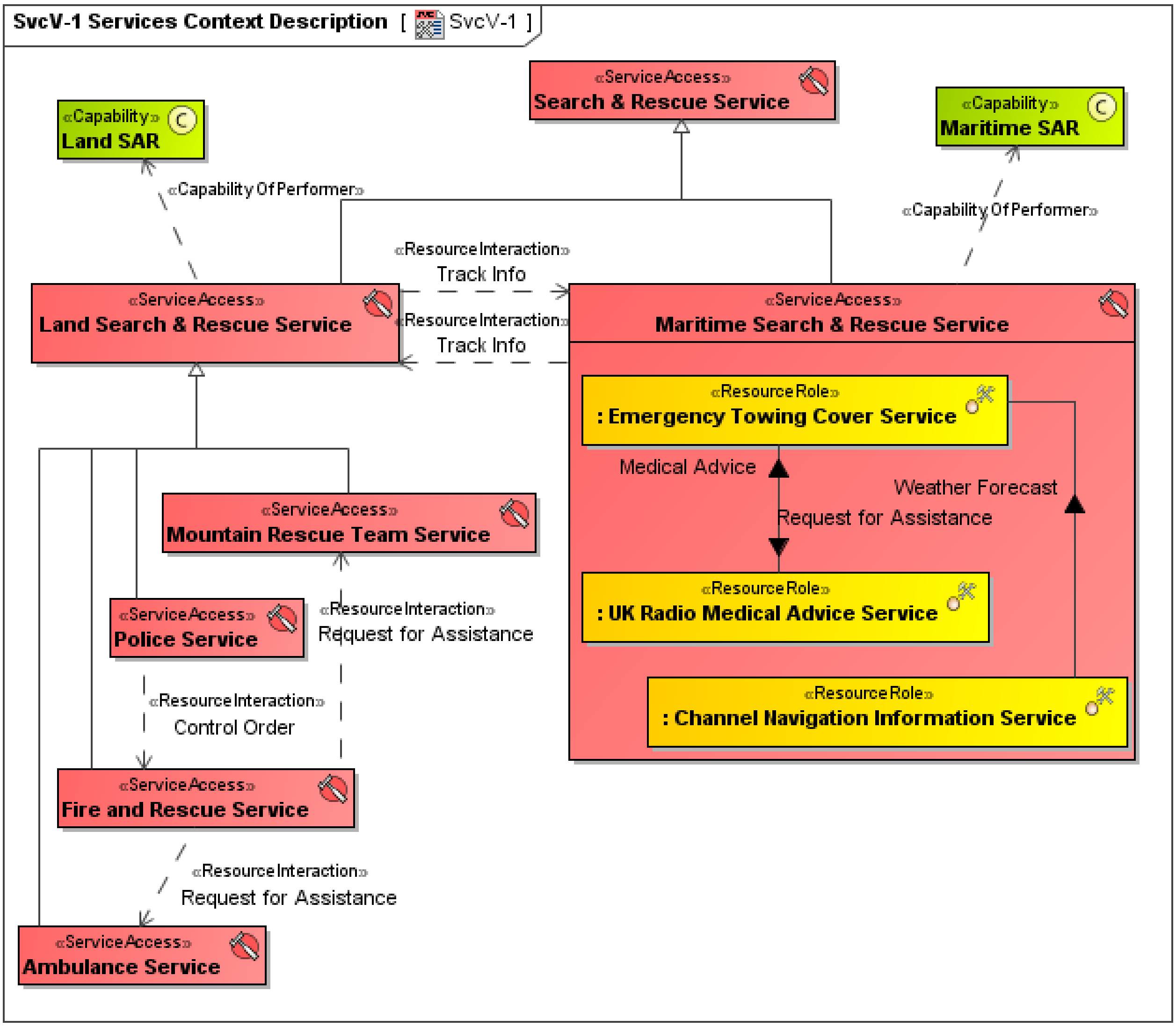


Figure 24 -- SvcV-1 Services Context Description

Related elements

- NEW! Service Access
- Capability
- Capability Of Performer
- Function
- NEW! Activity Performed By Performer
- Resource Interaction
- Resource Port
- NEW! Resource Role
- System
- Software
- Capability Configuration
- Service
- Request
- NEW! Person Type
- NEW! Organization Type
- NEW! Resource Operation

Related procedures

- Creating SvcV-1 diagram

Related views

The SvcV-1 links together the operational and services architecture models by depicting how resources are structured and interact to realize the logical architecture specified in an OV-2 Operational Resource Flow Description. A SvcV-1 may represent the realization of a requirement specified in an OV-2 Operational Resource Flow Description (i.e., in a “To-Be” Architectural Description), and so there may be many alternative SvcV models that could realize the operational requirement. Alternatively, in annus-Is” Architectural Description, the OV-2 Operational Resource Flow Description may simply be a simplified, logical representation of the SvcV-1 to allow communication of key Resource Flows to non-technical stakeholders.

Some Resources can carry out service functions (activities) as described in SvcV-4 Services Functionality Description models and these functions can optionally be overlaid on a SvcV-1.

The SvcV-1 depicts all Resource Flows between resources that are of interest. Note that Resource Flows between resources may be further specified in detail in the SvcV-2 Services Resource Flow Description model and the SvcV-6 Services Resource Flow Matrix.

2.6.2 SvcV-2 Services Resource Flow Description

Description

A SvcV-2 specifies the Resource Flows between Services and may also list the protocol stacks used in connections.

A SvcV-2 DoDAF-described Model is used to give a precise specification of a connection between Services. This may be an existing connection or a specification of a connection that is to be made for a future connection.

The intended usage of the SvcV-2 includes:

- Resource Flow specification.

Implementation

SvcV-2 can be represented using:

- A SvcV-2 diagram which is based on the UML Class diagram.
- A SvcV-2 Internal Block diagram which is based on the UML Composite Structure diagram.

Sample

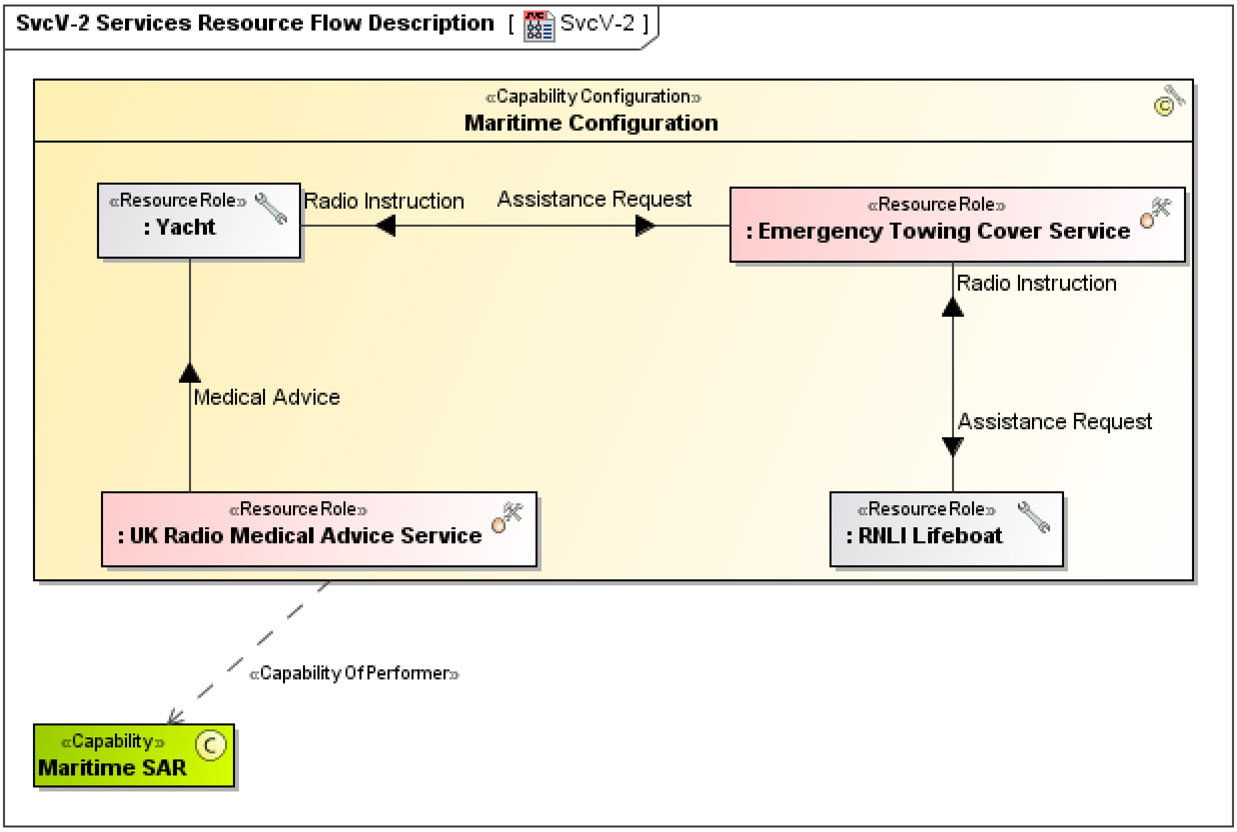


Figure 25 -- SvcV-2 Services Resource Flow Description

Related elements

- NEW! Service Access
- Capability Of Performer
- Function
- NEW! Activity Performed By Performer
- Resource Interaction
- Protocol
- Standard
- Resource Port
- Service
- Request
- NEW! Resource Role
- NEW! Resource Operation
- System
- Software
- Capability Configuration
- NEW! Organization Type

NEW! Person Type

Related views

Any protocol referred to in a SvcV-2 diagram needs be defined in the StdV-1 Standards Profile.

2.6.3 SvcV-3a Systems-Services Matrix

Description

A SvcV-3a enables a quick overview of all the system-to-service resource interactions specified in one or more SvcV-1 Services Context Description models. The SvcV-3a provides a tabular summary of the system and services interactions specified in the SvcV-1 Services Context Description for the Architectural Description. This model can be useful in support existing systems that are transitioning to provide services. The matrix format supports a rapid assessment of potential commonalities and redundancies (or, if fault-tolerance is desired, the lack of redundancies).

The SvcV-3a can be organized in a number of ways to emphasize the association of system-to-service interactions in context with the architecture's purpose.

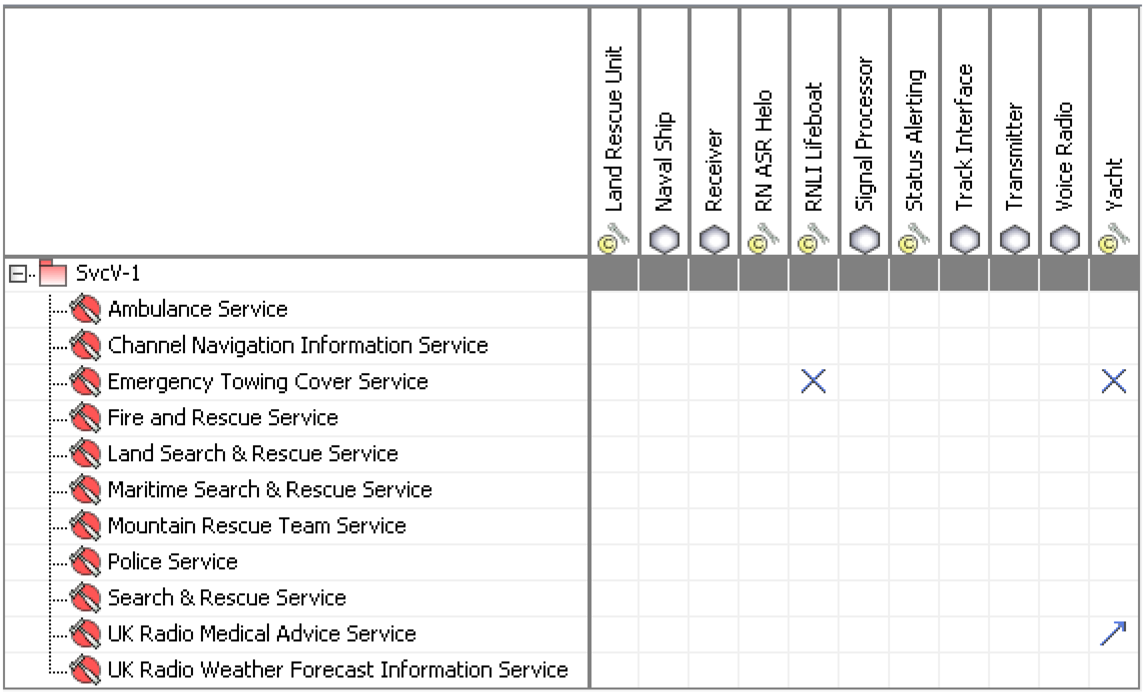
The intended usage of the SvcV-3a includes:

- Summarizing system and service resource interactions.
- Interface management.
- Comparing interoperability characteristics of solution options.

Implementation

SvcV-3a can be represented using a SvcV-3a diagram which is an editable Dependency Matrix.

Sample



	Land Rescue Unit	Naval Ship	Receiver	RN ASR Helo	RNLI Lifeboat	Signal Processor	Status Alerting	Track Interface	Transmitter	Voice Radio	Yacht
SvcV-1											
Ambulance Service											
Channel Navigation Information Service											
Emergency Towing Cover Service					X						X
Fire and Rescue Service											
Land Search & Rescue Service											
Maritime Search & Rescue Service											
Mountain Rescue Team Service											
Police Service											
Search & Rescue Service											
UK Radio Medical Advice Service											↗
UK Radio Weather Forecast Information Service											

Figure 26 -- SvcV-3a Systems-Services Matrix

Related elements

- NEW! Service Access
- System
- Software
- Capability Configuration
- NEW! Organization Type
- NEW! Person Type
- Resource Interaction
- NEW! Exchange Element

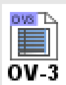
Related procedures

- Building SvcV-3a matrix

Related GUI

- Service Channel Creation Wizard

Related products

Icon	Product	Relationship
	SV-1 Systems Interface Description	The SvcV-3a provides a tabular summary of the system and services interactions specified in the SvcV-1 Services Context Description.
	OV-3 Operational Resource Flow Matrix	Each Resource Interaction listed in the SvcV-3a table should be traceable to Operational Exchange listed in the corresponding OV-3 Operational Resource Flow Matrix.
	SvcV-4 Services Functionality Description	Each Resource Interaction may relate to a known Function (from SvcV-4) that produces or consumes it.
 	DIV-2 Logical Data Model DIV-3 Physical Data Model	Exchange Elements as well as the other type of Resource Interaction Items are exchanged by Service Providers and Service Requesters represented in SvcV-6 table.

2.6.4 SvcV-3b Services-Services Matrix

Description

A SvcV-3b enables a quick overview of all the services resource interactions specified in one or more SvcV-1 Services Context Description models. The SvcV-3b provides a tabular summary of the services interactions specified in the SvcV-1 Services Context Description for the Architectural Description. The matrix format supports a rapid assessment of potential commonalities and redundancies (or, if fault-tolerance is desired, the lack of redundancies). In addition, this model is useful in support of net-centric (service-oriented) implementation of services as an input to the SvcV-10a Services Rules Model, SvcV-10b Services State Transition Description, and SvcV-10c Services Event-Trace Description, implemented as orchestrations of services.

The SvcV-3b can be organized in a number of ways to emphasize the association of service pairs in context with the architecture's purpose. One type of organization is a Service Hierarchy or Taxonomy of Services.

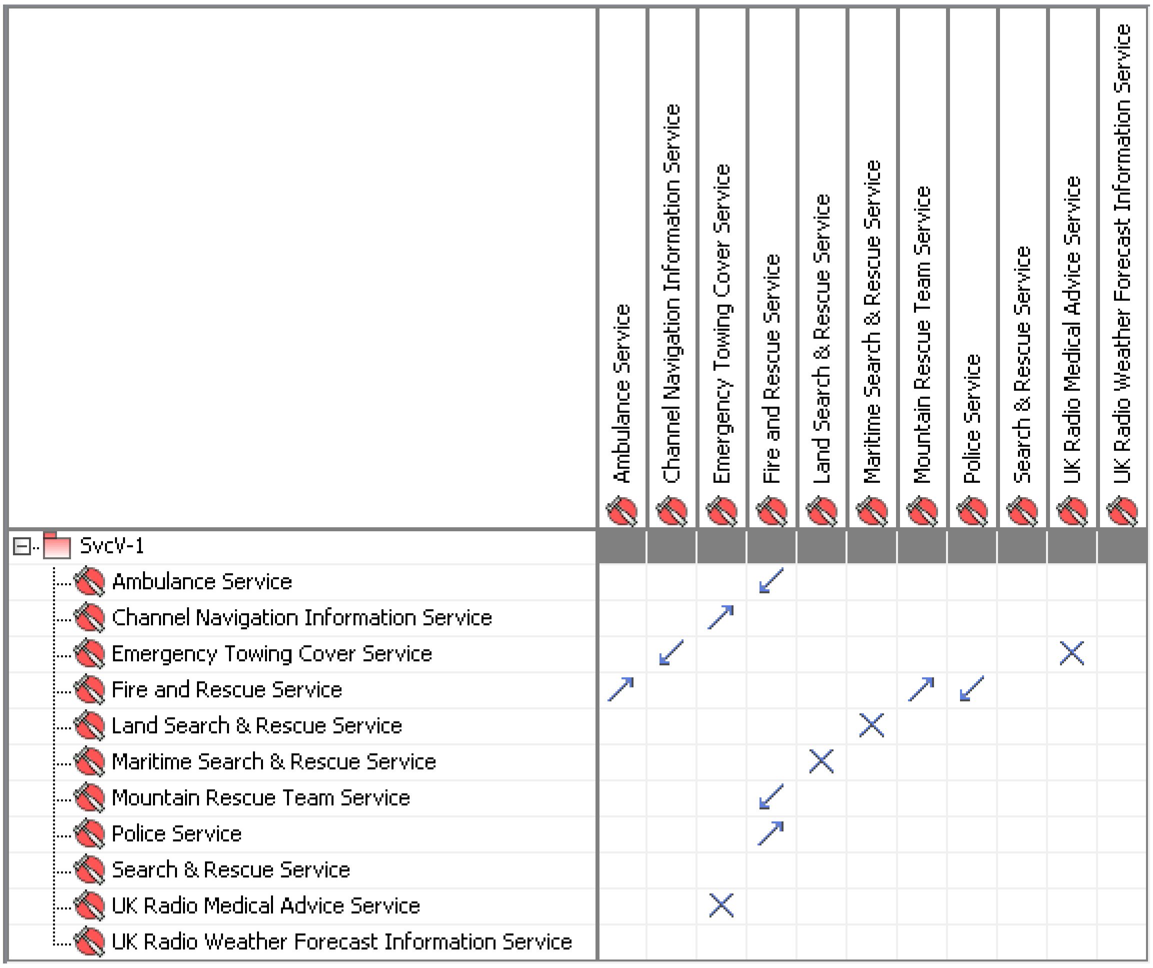
The intended usage of the SvcV-3b includes:

- Summarizing service resource interactions.
- Interface management.
- Comparing interoperability characteristics of solution options.

Implementation

SvcV-3b can be represented using a SvcV-3b diagram which is an editable Dependency Matrix.

Sample



SvcV-1	Ambulance Service	Channel Navigation Information Service	Emergency Towing Cover Service	Fire and Rescue Service	Land Search & Rescue Service	Maritime Search & Rescue Service	Mountain Rescue Team Service	Police Service	Search & Rescue Service	UK Radio Medical Advice Service	UK Radio Weather Forecast Information Service
Ambulance Service				↙							
Channel Navigation Information Service			↗								
Emergency Towing Cover Service		↙								×	
Fire and Rescue Service	↗						↗	↙			
Land Search & Rescue Service						×					
Maritime Search & Rescue Service					×						
Mountain Rescue Team Service				↙							
Police Service				↗							
Search & Rescue Service											
UK Radio Medical Advice Service			×								
UK Radio Weather Forecast Information Service											

Figure 27 -- SvcV-3b Services-Services Matrix

Related elements

- NEW! Service Access
- Resource Interaction
- NEW! Exchange Element

Related procedures

Building SvcV-3b matrix

Related GUI

Resource Interaction Creation Wizard

Related views

This model is useful in support of net-centric (service-oriented) implementation of services as an input to the SvcV-10a Services Rules Model, SvcV-10b Services State Transition Description, and SvcV-10c Services Event-Trace Description, implemented as orchestrations of services.

2.6.5 SvcV-4 Services Functionality Description

Description

The SvcV-4 DoDAF-described Model addresses human and service functionality.

The primary purpose of SvcV-4 is to:

- Develop a clear description of the necessary data flows that are input (consumed) by and output (produced) by each resource.
- Ensure that the service functional connectivity is complete (i.e., that a resource's required inputs are all satisfied).
- Ensure that the functional decomposition reaches an appropriate level of detail.

The Services Functionality Description provides detailed information regarding the:

- Allocation of service functions to resources.
- Flow of resources between service functions.

The SvcV-4 is the Services Viewpoint counterpart to the OV-5b Operational Activity Model of the Operational Viewpoint.

The intended usage of the SvcV-4 includes:

- Description of task workflow.
- Identification of functional service requirements.
- Functional decomposition of Services.
- Relate human and service functions.

Implementation

SvcV-4 can be represented using:

- A SvcV-4 diagram which is based on the UML Class diagram.
- A SvcV-4 diagram which is based on the UML Activity diagram.

Sample

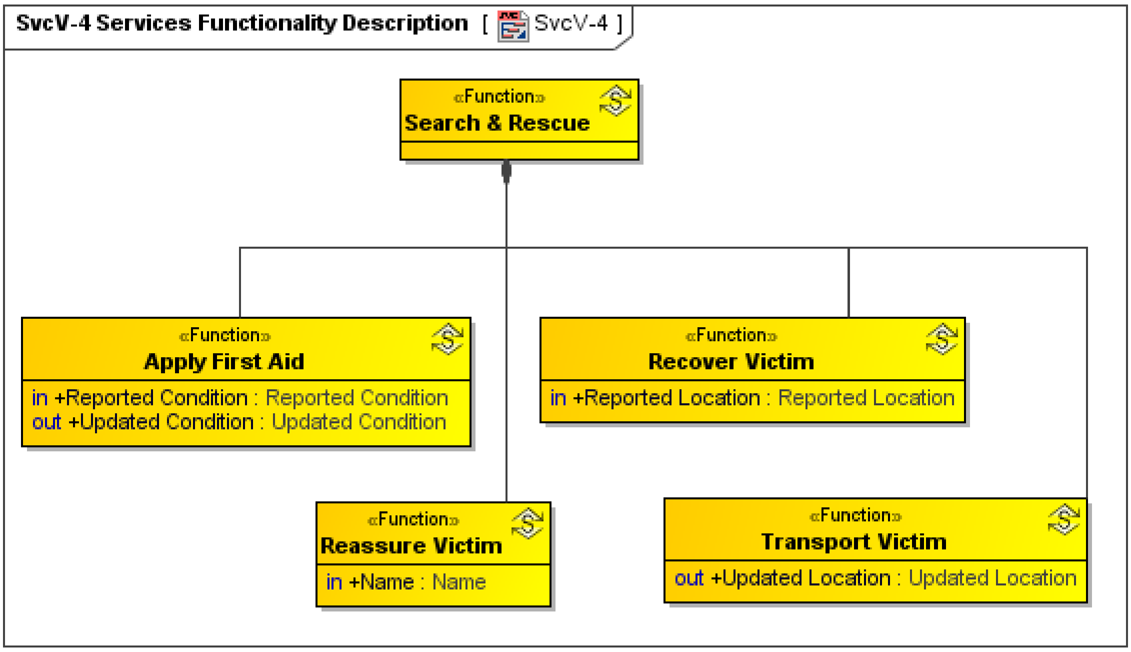


Figure 28 -- SvcV-4 Services Functionality Description for Service Function hierarchy

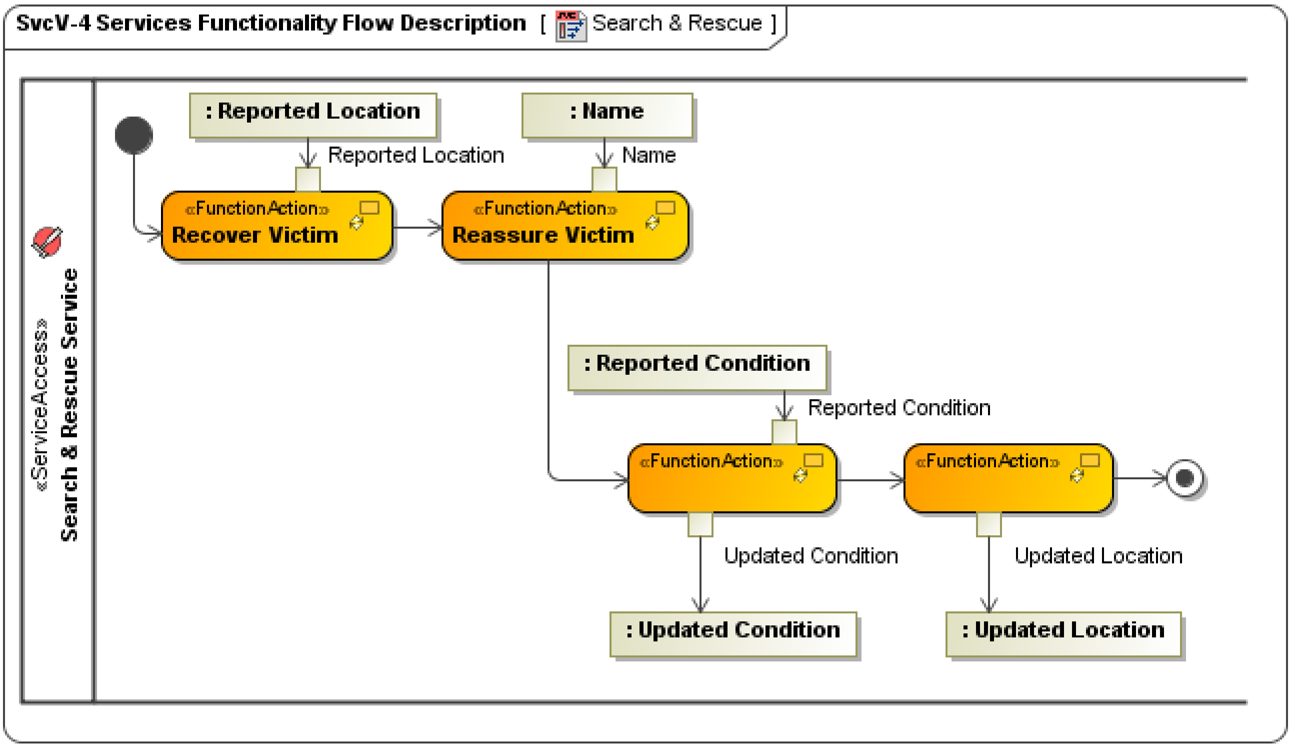


Figure 29 -- SvcV-4 Services Functionality Description for Service Function flows

NOTE	You can also create SvcV-4 Business Process Diagram (BPD). In order to do that, use the Cameo Business Modeler plugin. For more information on how to model the business process diagram, see “BPMN Process Diagram” in CameoBusinessModelerUserGuide.pdf

Related elements

- Function
- NEW! Service Access
- Function Action
- Function Edge
- NEW! Resource Parameter

Related views

The SvcV-4 is the behavioral counterpart to the SvcV-1 Services Context Description (in the same way that OV-5b Operational Activity Model is the behavioral counterpart to OV-2 Operational Resource Flow Description).

2.6.6 SvcV-5 Operational Activity to Services Traceability Matrix

Description

The SvcV-5 addresses the linkage between service functions described in SvcV-4 and Operational Activities specified in OV-5a Operational Activity Decomposition Tree or OV-5b Operational Activity Model. The SvcV-5 depicts the mapping of service functions (and, optionally, the capabilities and performers that provide them) to operational activities and thus identifies the transformation of an operational need into a purposeful action performed by a service solution. During requirements definition, the SvcV-5 plays a particularly important role in tracing the architectural elements associated with system function requirements to those associated with user requirements.

The intended usage of the SvcV-5 includes:

- Tracing service functional requirements to user requirements.
- Tracing solution options to requirements.
- Identification of overlaps or gaps.

Implementation

SvcV-5 can be represented using a SvcV-5 diagram which is an editable Dependency Matrix. Service Accesses will be used as row elements and Operational Activities will be used as column elements.

Sample

SvcV-1	Find Victim	Monitor Health	Process Warning Order	Provide Medical Assistance(Status Out : Medical Condition)	Receive Distress Signal	Recover Victim(Track Info Out : Updated Location)	Rescue	Search	Search & Rescue(: Updated Condition, : Updated Location)	Send Distress Signal	Send Warning Order	Transit To SAR Operation
Ambulance Service		X		X								
Channel Navigation Information Service												
Emergency Towing Cover Service												
Fire and Rescue Service												
Land Search & Rescue Service												
Maritime Search & Rescue Service												
Mountain Rescue Team Service												
Police Service												
Search & Rescue Service						X						X
UK Radio Medical Advice Service												
UK Radio Weather Forecast Information Service												

Figure 30 -- SvcV-5 Operational Activity to Services Traceability Matrix

Related elements

- NEW! Service Access
- NEW! Activity Performed By Performer
- Function
- Operational Activity

Related procedures

- Building SvcV-5 matrix

Related views

DoDAF uses the term Operational Activity in the OVs and the term Service Function in the SVs to refer to essentially the same kind of thing—both activities and service functions are tasks that are performed, accept inputs, and develop outputs. The distinction between an Operational Activity and a Service Function is a question of what and how. The Operational Activity is a specification of what is to be done, regardless of the mechanism used. A Service Function specifies how a resource carries it out. For this reason, the SvcV-5 is a significant model, as it ties together the logical specification in the OV-5a Operational Activity Decomposition Tree or OV-5b Operational Activity Model with the physical specification of the SvcV-4 Services Functionality Description. Service Functions can be carried out by Resources.

2.6.7 SvcV-6 Services Resource Flow Matrix

Description

The SvcV-6 specifies the characteristics of Service Resource Flow exchanges between Services. The SvcV- is the physical equivalent of the logical OV-3 Operational Resource Flow Matrix and provides detailed information on the service connections which implement the Resource Flow exchanges specified in OV-3 Operational Resource Flow Matrix.

In addition, this model is useful in support of net-centric (service-oriented) implementation of services. According to the Net-Centric Data Strategy, a net-centric implementation needs to focus in on the data in the Service Resource Flow, as well as the services that produce or consume the data of the Service Resource Flow. In a net-centric implementation, not all the consumers are known and this model emphasizes the focus on the producer and Service Resource Flow.

Implementation

SvcV-6 can be represented using:

- A SvcV-6 table.
- A SvcV-6 spreadsheet report.

Sample

#	Resource Interaction Item	Sending Service	Receiving Service
1	Control Order	Police Service	Fire and Rescue Service
2	Track Info	Maritime Search & Rescue Service	Land Search & Rescue Service
3	Track Info	Land Search & Rescue Service	Maritime Search & Rescue Service
4	Request for Assistance	Fire and Rescue Service	Mountain Rescue Team Service
5	Request for Assistance	Fire and Rescue Service	Ambulance Service
6	Weather Forecast	Channel Navigation Information Service	Emergency Towing Cover Service
7	Request for Assistance	Emergency Towing Cover Service	UK Radio Medical Advice Service
8	Medical Advice	UK Radio Medical Advice Service	Emergency Towing Cover Service

Figure 31 -- SvcV-6 Services Resource Flow Matrix

Related elements

NEW! Service Access
Resource Interaction
NEW! Exchange Element
Function
System
Software
Capability Configuration
NEW! Organization Type
NEW! Person Type

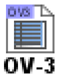
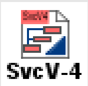
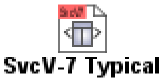
Related procedures

Adding Existing Resource Interaction to SvcV-6 table

Related GUI

Resource Interaction Creation Wizard

Related views

Icon	Product	Relationship
	OV-3 Operational Resource Flow Matrix	Each Resource Interaction listed in the SvcV-6 table should be traceable to Operational Ex-change listed in the corresponding OV-3 Op-erational Resource Flow Matrix.
	SvcV-4 Services Functionality Description	Each Resource Interaction may relate to a known Function (from SvcV-4) that produces or consumes it.
 	SvcV-7 Services Measures Matrix	SvcV-7 Services Measures Matrix builds on the SvcV-6 and should be developed at the same time.
 	DIV-2 Logical Data Model DIV-3 Physical Data Model	Exchange Elements as well as the other type of Resource Interaction Items are exchanged by Service Providers and Service Requesters represented in SvcV-6 table.

2.6.8 SvcV-7 Services Measures Matrix

Description

The SvcV-7 depicts the measures (metrics) of resources. The Services Measures Matrix expands on the information presented in a SvcV-1 Services Context Description by depicting the characteristics of the resources in the SvcV-1 Services Context Description.

In addition, this model is useful in support of net-centric (service-oriented) implementation of services. Service measures for Service Level Agreements for each service and may include number of service consumers, service usage by consumers, and the minimum, average and maximum response times, allowed down time, etc. Measures of interest for a Chief Information Office or Program manager may include measures that assess service reuse, process efficiency, and business agility.

The intended usage of the SvcV-7 includes:

- Definition of performance characteristics and measures (metrics).
- Identification of non-functional requirements.

Implementation

SvcV-7 can be represented using:

- A SvcV-7 typical measures table.
- A SvcV-7 actual measures table.
- **NEW!** A SvcV-7 actual measures spreadsheet report.

Sample

#	Measure Type	Measurement	Service Access
1	Standard SAR Measurements	findTime : hour persistence : hour searchCoverage : m weatherConditions : String	Search & Rescue Service
2	Maritime SAR Measurements	seaConditions : String	Maritime Search & Rescue Service
3	Land SAR Measurements	terrainType : String	Land Search & Rescue Service

Figure 32 -- SvcV-7 Services Typical Measures Matrix

#	Service Access	Performance Requirement	Measure	Metric	Intention
1	Maritime Search & Rescue Service	seaConditions	popple	String	Actual
2	Search & Rescue Service	weatherConditions	cloudy	String	Actual
3	Search & Rescue Service	searchCoverage	140000	m	Estimate
4	Search & Rescue Service	persistence	48	hour	Required
5	Search & Rescue Service	findTime	24	hour	Required
6	Land Search & Rescue Service	terrainType	land	String	Required

Figure 33 -- SvcV-7 Services Actual Measures Matrix

Related elements

NEW! Service Access
Measure Type
NEW! Actual Property
NEW! Measure
Measurement

Related procedures

Creating SvcV-7 Typical table
Creating SvcV-7 Actual table
Generating reports

Related views

Icon	Product	Relationship
	SvcV-1 Services Context Description	The Services Measures Matrix expands on the information presented in a SvcV-1 Services Context Description by depicting the characteristics of the resources in the SvcV-1 Services Context Description.

2.6.9 SvcV-8 Services Evolution Description

Description

The SvcV-8 presents a whole lifecycle view of resources (services), describing how it changes over time. It shows the structure of several resources mapped against a timeline.

In addition, this model is useful in support of net-centric (service-oriented) implementation of services. This model can present a timeline of services evolve or are replaced over time, including services that are internal and external to the scope of the architecture.

The intended usage of the SvcV-8 includes:

- Development of incremental acquisition strategy.
- Planning technology insertion.

Implementation

NEW! SvcV-8 can be represented using a SvcV-8 diagram which is based on the UML Composite structure diagram.

Related views

Icon	Product	Relationship
	SvcV-1 Services Context Description	A SvcV-8 can describe historical (legacy), current, and future capabilities against a timeline. The model shows the structure of each resource, using similar modeling elements as those used in SvcV-1. Interactions which take place within the resource may also be shown.
	PV-2 Project Timelines	The changes depicted in the SvcV-8 DoDAF-described Model are derived from the project milestones that are shown in a PV-2 Project Timelines model. When the PV-2 Project Timelines model is used for capability acquisition projects, there is likely to be a close relationship between these two models.

2.6.10 SvcV-9 Services Technology and Skills Forecast

Description

The SvcV-9 defines the underlying current and expected supporting technologies and skills. Expected supporting technologies and skills are those that can be reasonably forecast given the current state of technology and skills, and expected improvements or trends. New technologies and skills are tied to specific time periods, which can correlate against the time periods used in SvcV-8 Services Evolution Description model milestones and linked to Capability Phases.

The SvcV-9 provides a summary of emerging technologies and skills that impact the architecture. The SvcV-9 provides descriptions of relevant:

- Emerging capabilities.
- Industry trends.
- Predictions (with associated confidence factors) of the availability and readiness of specific hardware and software services.
- Current and possible future skills.

In addition to providing an inventory of trends, capabilities and services, the SvcV-9 also includes an assessment of the potential impact of these items on the architecture. Given the future-oriented nature of this model, forecasts are typically made in short, mid and long-term timeframes, such as 6, 12 and 18-month intervals. In addition, this model is useful in support of net-centric (service-oriented) implementation of services. As technologies change, like incorporation of Representational State Transfer (REST) services in the Web Services Description Language, this model can present a timeline of technologies related services over time.

The intended usage of the SvcV-9 includes:

- Forecasting technology readiness against time.
- HR Trends Analysis.
- Recruitment Planning.
- Planning technology insertion.
- Input to options analysis.

Implementation

SvcV-9 can be represented using a SvcV-9 table.

Sample

#	Technology area	From: 2008-04-16 To: 2009-04-16	From: 2009-04-16 To: 2010-04-16
1	Channel Navigation Information Service	UK Radio Weather Forecast Information Service	UK Radio Medical Advice Service UK Radio Weather Forecast Information Service

Figure 34 -- SvcV-9 Services Technology and Skills Forecast

Related elements

[Forecast]
[NEW! Service Access]

Related procedures

[Creating SvcV-9 table]

Related GUI

[Time Periods Dialog]

Related views

The specific time periods selected (and the trends being tracked) can be coordinated with architecture transition plans (which the SvcV-8 Services Evolution Description can support). That is, insertion of new capabilities and upgrading or re-training of existing resources may depend on or be driven by the availability of new technology and associated skills.

If standards are an integral part of the technologies important to the evolution of a given architecture, then it may be convenient to combine SvcV-9 with the StdV-2 Standards Forecast into a composite Fit-for-Purpose View.

2.6.11 SvcV-10a Services Rules Model

Description

The SvcV-10a is to specify functional and nonfunctional constraints on the implementation aspects of the architecture (that is, the structural and behavioral elements of the Services Model).

The SvcV-10a describes constraints on the resources, functions, data and ports that make up the Service Model . The constraints are specified in text and may be functional or structural (that is, non-functional).

The intended usage of the SvcV-10a includes:

- Definition of implementation logic.
- Identification of resource constraints.

Implementation

SvcV-10a can be represented using:

- A SvcV-10a table.
- A SvcV-10a spreadsheet report.

Sample

#	Rule Specification	Rule Kind	Applies To
1	In addition to fire fighting within the area of responsibility Fire Authority may use resources for other purposes which currently can include those incidents involving chemicals, road	Constraint	Fire and Rescue Service
2	Vessels making calls on either VHF or MF radio, or telephone call requiring medical advice or assistance should be provided with a radio/telephone link to the appropriate medical authorities.	Constraint	UK Radio Medical Advice Service
3	Makes regular safety broadcasts, which include weather conditions and other occurrences within the traffic separation scheme to assist vessels in their passage planning through this	Constraint	Channel Navigation Information Service
4	Fire Brigades should have the ability to mobilize personnel and equipment quickly to almost any part of the UK mainland and generally receive calls for assistance through the public service	Constraint	Fire and Rescue Service
5	Each Fire Authority is required to make provision for firefighting within its area.	Constraint	Fire and Rescue Service
6	If medical advice requires the casualty to be taken off the vessel then the MRCC/MRSC providing the link will arrange for the	Guidance	UK Radio Medical Advice Service
7	Provides continuous radar surveillance of the Straits of Dover to ensure vessels transiting the Straits do so in accordance with the International Regulations for Preventing Collisions at	Constraint	Channel Navigation Information Service
8	Vessels over 300 Gross Registered Tonnes (GRT) should be required to report	Constraint	Channel Navigation Information Service
9	MCA charters four Emergency Towing Vessels (ETVs) to provide emergency towing cover in high risk shipping areas 24 hours a day.	Constraint	Emergency Towing Cover Service

Figure 35 -- SvcV-10a Services Rules Model

Related elements

Resource Constraint

NEW! Service Access

Related views

In contrast to the OV-6a Operational Rules Model, the SvcV-10a focuses physical and data constraints rather than business rules.

2.6.12 SvcV-10b Services State Transition Description

Description

The SvcV-10b is a graphical method of describing a resource (or function) response to various events by changing its state. The diagram basically represents the sets of events to which the resources in the Activities respond (by taking an action to move to a new state) as a function of its current state. Each transition specifies an event and an action.

The explicit time sequencing of service functions in response to external and internal events is not fully expressed in SvcV-4 Services Functionality Description. SvcV-10b can be used to describe the explicit sequencing of the service functions. Alternatively, SvcV-10b can be used to reflect explicit sequencing of the actions internal to a single service function, or the sequencing of service functions with respect to a specific resource.

The intended usage of the SvcV-10b includes:

- Definition of states, events, and state transitions (behavioral modeling).
- Identification of constraints.

Implementation

SvcV-10b can be represented using a UML State Machine diagram.

Sample

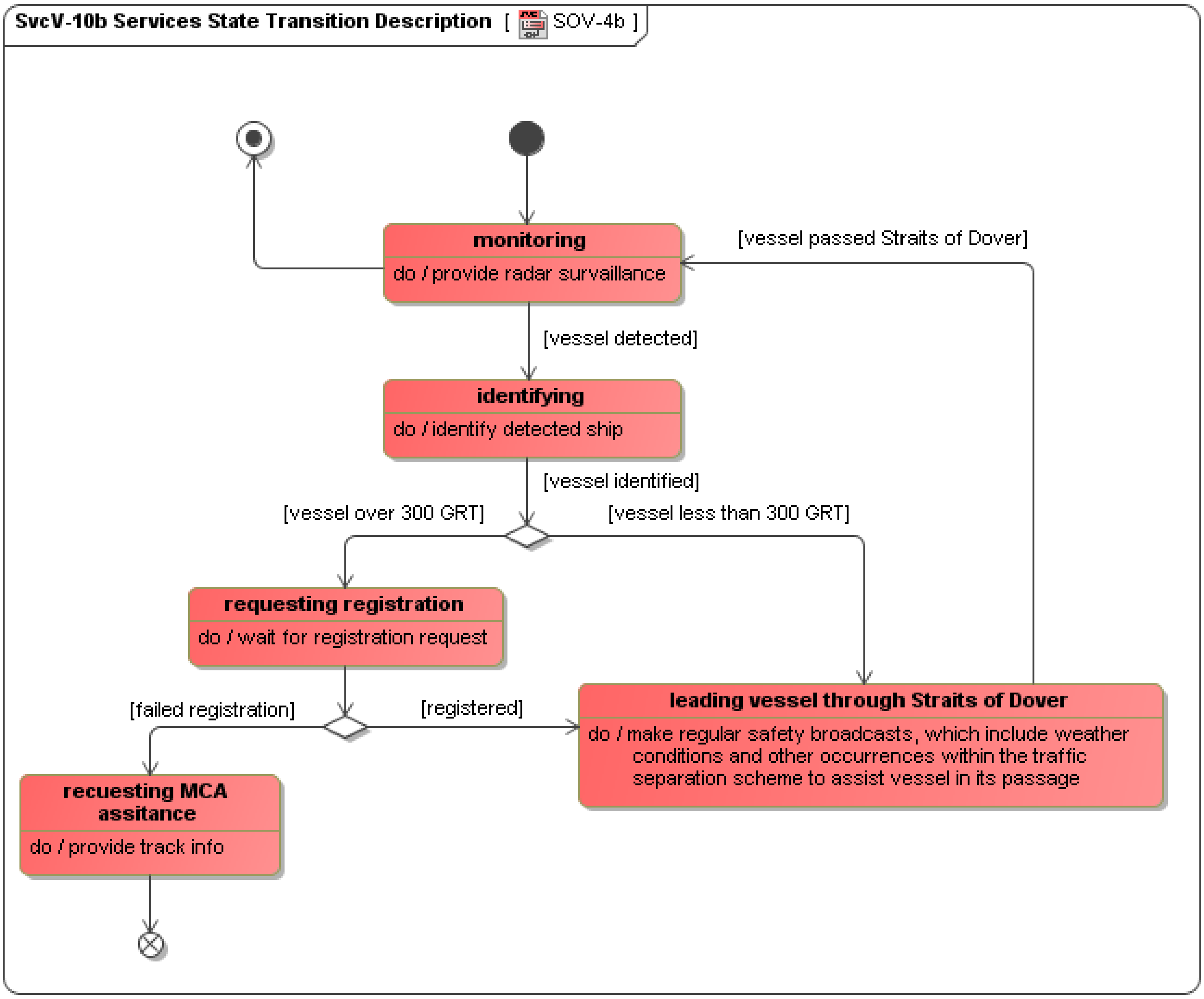


Figure 36 -- SvcV-10b Services State Transition Description

Related elements

- Resources State Machine
- NEW! Resource State
- NEW! Service Access

Related views

The SvcV-10b can be used to describe the detailed sequencing of service functions described in SvcV-4 Services Functionality Description. However, the relationship between the actions included in SvcV-10b and the functions in SvcV-4 depends on the purposes of the Architectural Description and the level of abstraction used in the models. The explicit sequencing of functions in response to external and internal events is not fully expressed in SvcV-4 Services Functionality Description. SvcV-10b can be used to reflect explicit sequencing of the functions, the sequencing of actions internal to a single function, or the sequencing of functions with respect to a specific resource.

2.6.13 SvcV-10c Services Event-Trace Description

Description

The SvcV-10c provides a time ordered examination of the interactions between services functional resources. Each event-trace diagram should have an accompanying description that defines the particular scenario or situation.

The SvcV-10c is valuable for moving to the next level of detail from the initial solution design, to help define a sequence of service functions and service data interfaces, and to ensure that each participating resource or Service Port role has the necessary information it needs, at the right time, to perform its assigned functionality.

The intended usage of the SvcV-10c includes:

- Analysis of resource events impacting operation.
- Behavioral analysis.
- Identification of non-functional system requirements.

Implementation

SvcV-10c can be represented using a UML Sequence diagram.

Sample

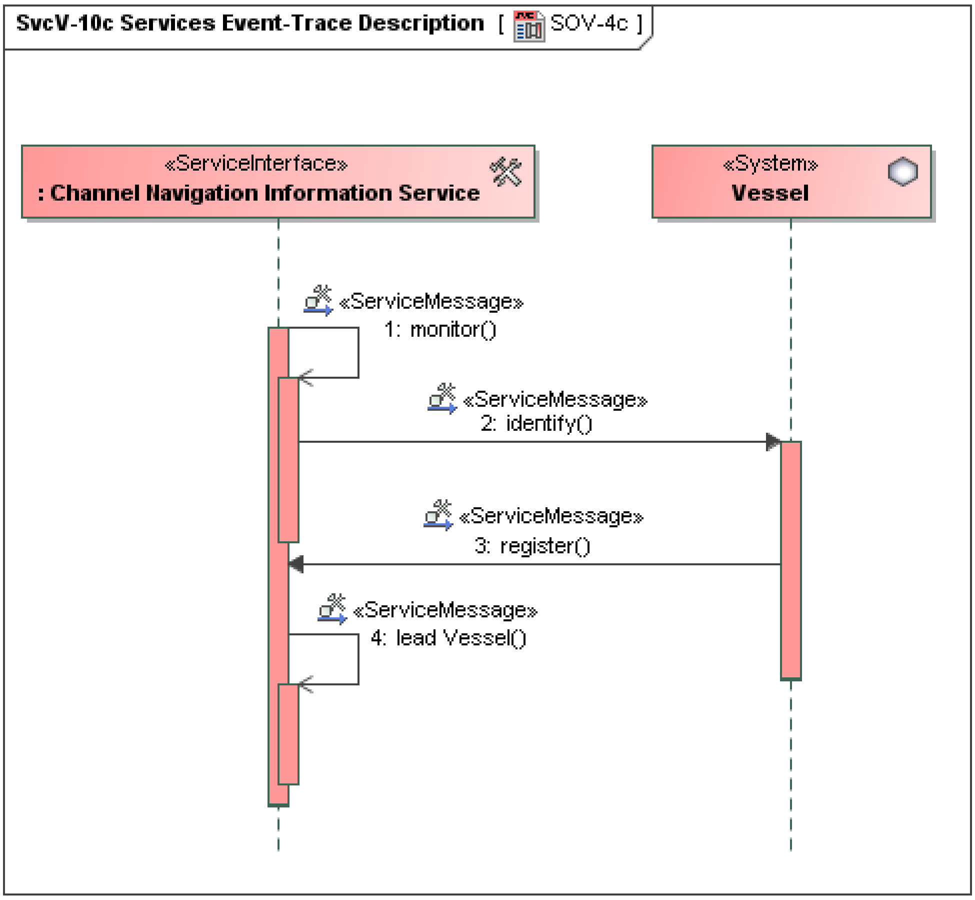


Figure 37 -- SvcV-10c Services Event-Trace Description

NOTE	You can also create SvcV-10c Business Process Diagram (BPD). In order to do that, use the Cameo Business Modeler plugin. For more information on how to model the business process diagram, see “BPMN Process Diagram” in CameoBusinessModelerUserGuide.pdf

Related elements

Resource Event Trace
NEW! Service Access
NEW! Resource Role
Resource Message
NEW! Resource Operation

Related views

The SvcV-10c is typically used in conjunction with the SvcV-10b Services State Transition Description to describe the dynamic behavior of resources. The data content of messages that connect Resource Flows in a SvcV-10c model may be related, in modeling terms, with Resource Flows (interactions, in SvcV-1 Services Context Description, SvcV-3a Systems-Services Matrix, and SvcV-3b Services-Services Matrix), Resource Flows (data, in SvcV-4 Services Functionality Description and SvcV-6 Services Resource Flow Matrix) and entities (in DIV-3 Physical Data Model) modeled in other models.

2.7 Systems Viewpoint

“The DoDAF-described Models within the Systems Viewpoint describes systems and interconnections providing for, or supporting, DoD functions. DoD functions include both warfighting and business functions. The Systems Models associate systems resources to the operational and capability requirements. These systems resources support the operational activities and facilitate the exchange of information. The Systems DoDAF-described Models are available for support of legacy systems. As architectures are updated, they should transition from Systems to Services and utilize the models within the Services Viewpoint.” *[DoDAF V2.0 Volume II]*

View Online Demo	**NEW!** UPDM: Systems Viewpoint

The views of this viewpoint are described in the following sections:

- SV-1 Systems Interface Description
- SV-1 Systems Interface Internal Description
- SV-2 Systems Communication Description
- SV-2 Systems Communication Internal Description
- SV-3 Systems-Systems Matrix
- SV-4 Systems Functionality Description
- SV-5a Operational Activity to Systems Function Traceability Matrix
- SV-5b Operational Activity to Systems Traceability Matrix
- SV-6 Systems Resource Flow Matrix
- SV-7 Systems Measures Matrix
- SV-8 Systems Evolution Description
- SV-9 Systems Technology & Skills Forecast

- SV-10a Systems Rules Model
- SV-10b Systems State Transition Description
- SV-10c Systems Event-Trace Description

2.7.1 SV-1 Systems Interface Description

Description

The SV-1 addresses the composition and interaction of Systems. For DoDAF V2.0, the SV-1 incorporates the human elements as types of Performers - Organizations and Personnel Types.

The SV-1 links together the operational and systems architecture models by depicting how Resources are structured and interact to realize the logical architecture specified in an OV-2 Operational Resource Flow Description. A SV-1 may represent the realization of a requirement specified in an OV-2 Operational Resource Flow Description (i.e., in a "To-Be" architecture), and so there may be many alternative SV models that could realize the operational requirement. Alternatively, in an "As-Is" architecture, the OV-2 Operational Resource Flow Description may simply be a simplified, logical representation of the SV-1 to allow communication of key Resource Flows to non-technical stakeholders.

A System Resource Flow is a simplified representation of a pathway or network pattern, usually depicted graphically as a connector (i.e., a line with possible amplifying information). The SV-1 depicts all System Resource Flows between Systems that are of interest. Note that Resource Flows between Systems may be further specified in detail in SV-2 Systems Resource Flow Description and SV-6 Systems Resource Flow Matrix.

Sub-System assemblies may be identified in SV-1 to any level (i.e., depth) of decomposition the architect sees fit. SV-1 may also identify the Physical Assets (e.g., Platforms) at which Resources are deployed, and optionally overlay Operational Activities and Locations that utilize those Resources. In many cases, an operational activity and locations depicted in an OV-2 Operational Resource Flow Description model may well be the logical representation of the resource that is shown in SV-1.

The intended usage of the SV-1 includes:

- Definition of System concepts.
- Definition of System options.
- System Resource Flow requirements capture.
- Capability integration planning.
- System integration management.
- Operational planning (capability and performer definition).

The SV-1 is used in two complementary ways:

- Describe the Resource Flows exchanged between resources in the architecture.
- Describe a solution, or solution option, in terms of the components of capability and their physical integration on platforms and other facilities.

Implementation

SV-1 can be represented using:

- A SV-1 diagram which is based on the UML Class diagram.
- A SV-1 diagram which is based on the UML Composite Structure diagram.
- A UML Class diagram.
- A UML Composite Structure diagram.
- A SysML Block Definition diagram.

- A SysML Internal Block diagram.

Sample

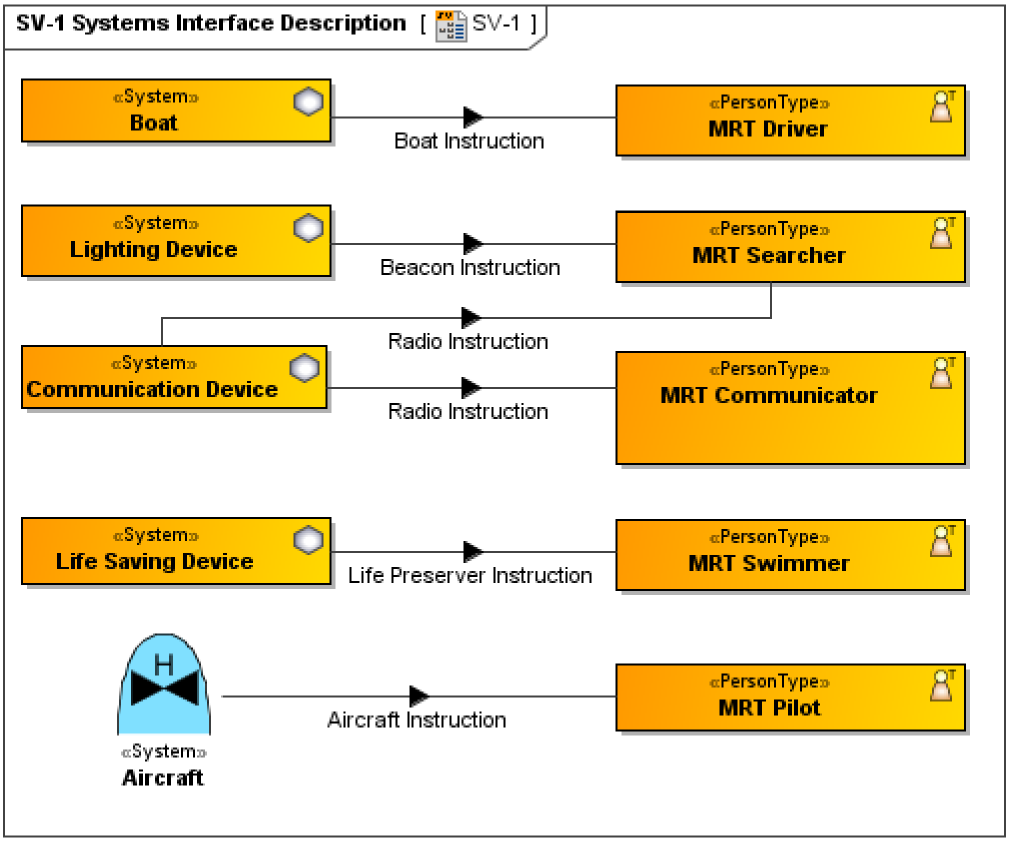


Figure 38 -- SV-1 Systems Interface Description

Related elements

- System
- Software
- Capability Configuration
- NEW! Organization Type
- NEW! Person Type
- Resource Port
- NEW! Resource Role
- Resource Interface
- Capability
- Capability Of Performer
- Resource Interaction
- NEW! Exchange Element
- Energy
- NEW! Geo Political Extent Type
- Performer
- Fielded Capability
- Service
- Request

Related procedures

Creating SV-1 diagram
Creating Resource Interaction in SV-1 diagram
Applying Military symbols

Related GUI

Resource Interaction Creation Wizard
Resource Interaction Manager Dialog
Select Symbol Dialog

Related views

An SV-1 can optionally be adorned with performers originally specified in an OV-2. In this way, traceability can be established from the logical OV structure to the physical SV structure.

An interaction, as depicted in the SV-1, is an indicator that information passes from one performer to another. In the case of systems, this can be expanded into further detail in an SV-2. Resource Flows are summarized in a Systems-Systems Matrix (SV-3).

The System Functions performed by the Performers are specified in an SV-4 System Functionality Description, but may optionally be overlaid in the SV-1.

An Operational View (OV) suite may specify a set of requirements – either as a specific operational plan, or a scenario for procurement. As OV-2 and OV-5 specify the logical structure and behavior, SV-1 and SV-4 specify the physical structure and behavior (to the level of detail required by the architectural stakeholders).

2.7.2 SV-1 Systems Interface Internal Description

Description

The SV-1 addresses the internal composition and interaction of Systems.

Implementation

SV-1 can be represented using:

- A SV-1 diagram which is based on the UML Class diagram.
- A SV-1 diagram which is based on the UML Composite Structure diagram.
- A UML Class diagram.
- A UML Composite Structure diagram.
- A SysML Block Definition diagram.
- A SysML Internal Block diagram.

Sample

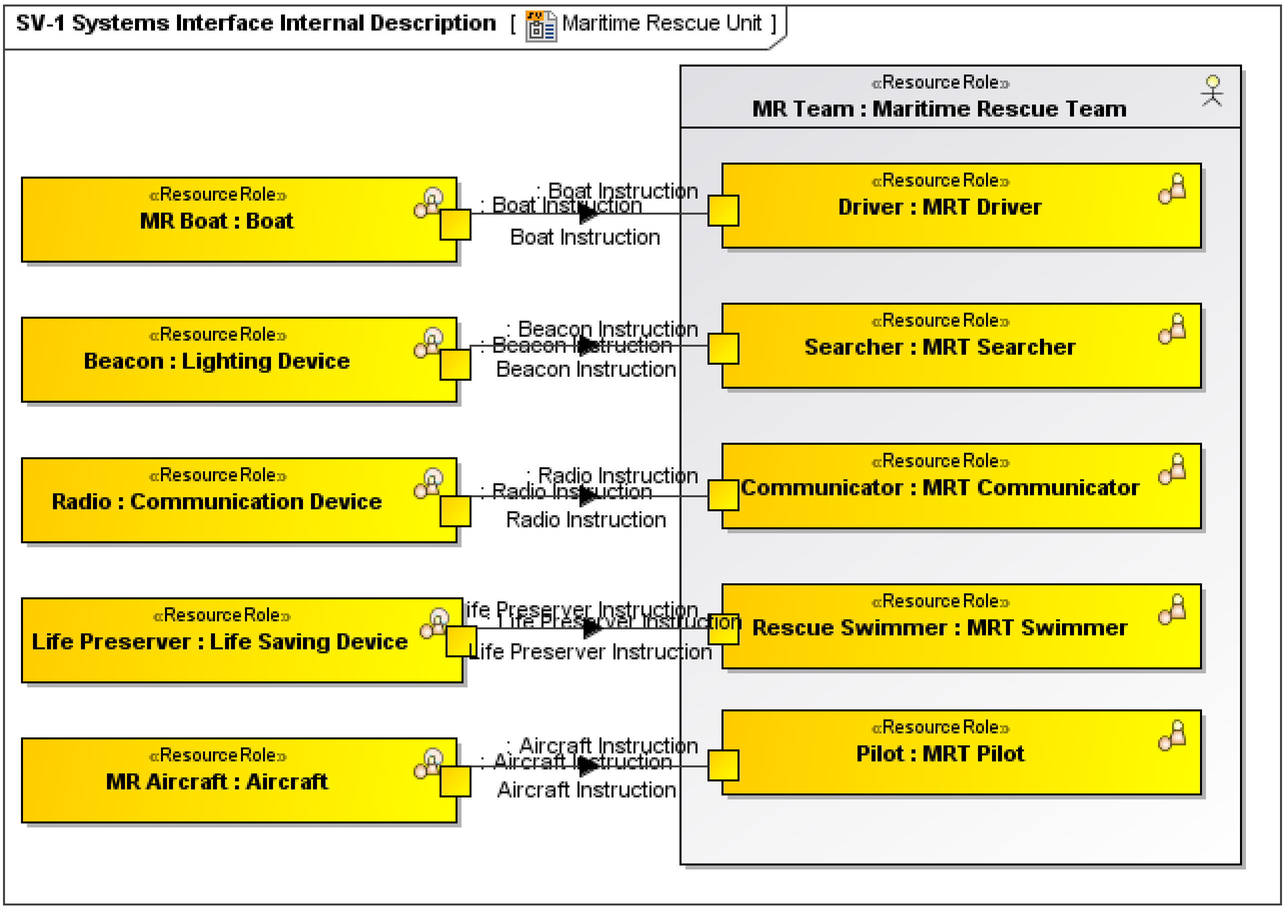


Figure 39 -- SV-1 System Interface Internal Description

Related elements

- NEW! Resource Role
- Resource Interface
- Resource Connector
- Resource Port
- NEW! Property

Related procedures

- Creating SV-1 diagram
- Creating Resource Interaction in SV-1 diagram

Related views

An SV-1 can optionally be adorned with performers originally specified in an OV-2. In this way, traceability can be established from the logical OV structure to the physical SV structure.

An interaction, as depicted in the SV-1, is an indicator that information passes from one performer to another. In the case of systems, this can be expanded into further detail in an SV-2. Resource Flows are summarized in a Systems-Systems Matrix (SV-3).

The System Functions performed by the Performers are specified in an SV-4 System Functionality Description, but may optionally be overlaid in the SV-1.

An Operational View (OV) suite may specify a set of requirements – either as a specific operational plan, or a scenario for procurement. As OV-2 and OV-5 specify the logical structure and behavior, SV-1 and SV-4 specify the physical structure and behavior (to the level of detail required by the architectural stakeholders).

2.7.3 SV-2 Systems Communication Description

Description

A SV-2 specifies the System Resource Flows between Systems and may also list the protocol stacks used in connections.

A SV-2 DoDAF-described Model is used to give a precise specification of a connection between Systems. This may be an existing connection, or a specification for a connection that is to be made.

The intended usage of the SV-2 includes:

- Resource Flow specification.

Implementation

SV-2 can be represented using:

- A SV-2 diagram which is based on the UML Class diagram.
- A SV-2 diagram which is based on the UML Composite Structure diagram.
- A UM L Class diagram.
- A UML Composite Structure diagram.
- A SysML Block Definition diagram.
- A SysML Internal Block diagram.

Related elements

System
Software
Capability Configuration
NEW! Organization Type
NEW! Person Type
Resource Port
Resource Connector
NEW! Resource Role
Resource Interface
Protocol
NEW! Functional Standard
NEW! Technical Standard
Service
Request
Energy
Resource Interaction
NEW! Exchange Element
NEW! Geo Political Extent Type

Related procedures

Creating SV-2 diagram
Creating Resource Interaction in SV-2 diagram
Applying Military symbols

Related GUI

Resource Interaction Creation Wizard
Resource Interaction Manager Dialog
Select Symbol Dialog

Related views

Any protocol referred to in a SV-2 diagram needs to be defined in the StdV-1 Standards Profile.

2.7.4 SV-2 Systems Communication Internal Description

Description

A SV-2 specifies the internal System Resource Flows between Systems and may also list the protocol stacks used in connections.

Implementation

SV-2 can be represented using:

- A SV-2 diagram which is based on the UML Class diagram.
- A SV-2 diagram which is based on the UML Composite Structure diagram.
- A UM L Class diagram.
- A UML Composite Structure diagram.
- A SysML Block Definition diagram.
- A SysML Internal Block diagram.

Sample

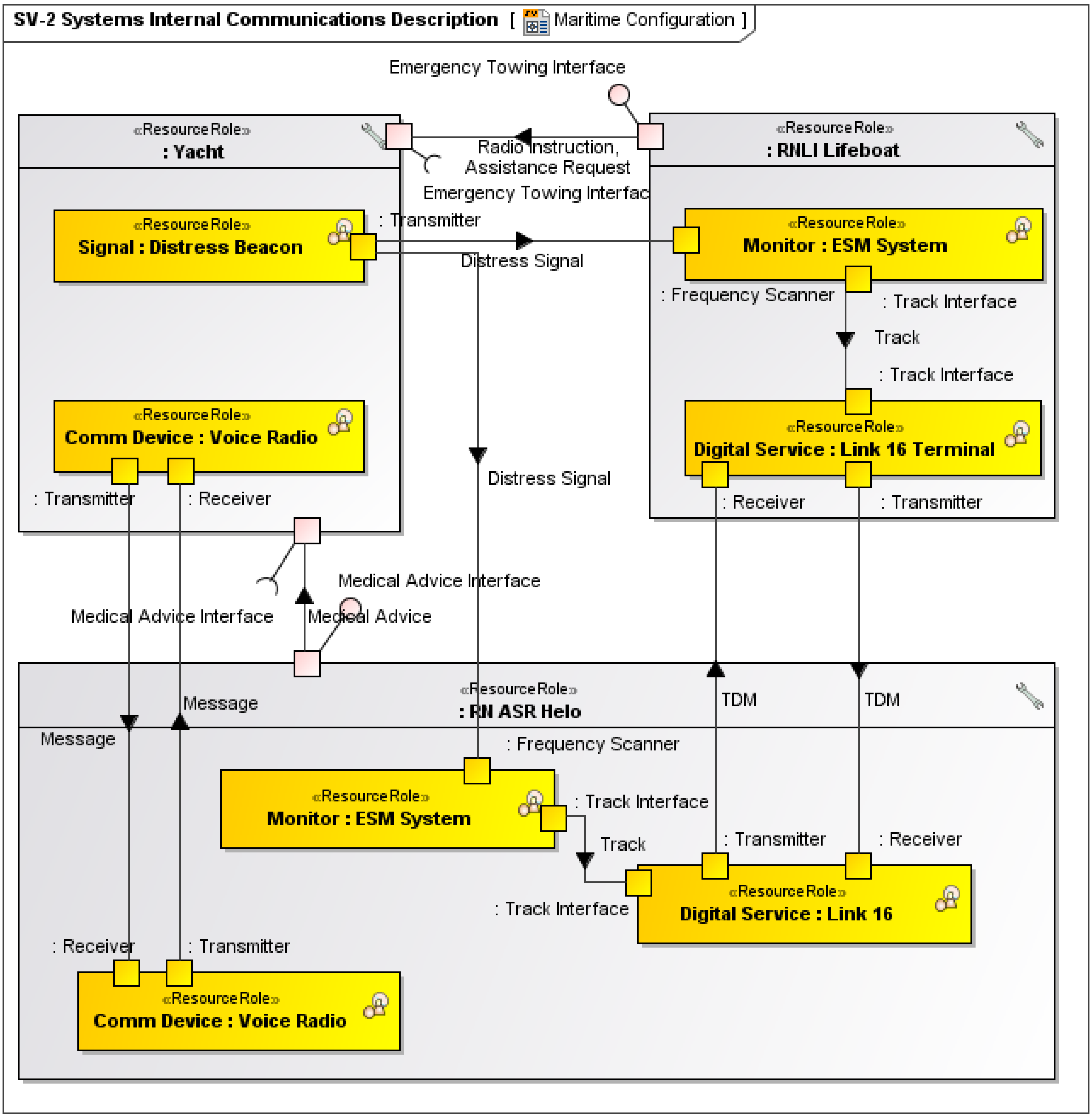


Figure 40 -- SV-2 Systems Internal Communications Description

Related elements

[NEW! Resource Role]
[Resource Interface]
[Resource Connector]
[Resource Port]
[NEW! Property]

Related procedures

[Creating SV-2 diagram]
[Creating Resource Interaction in SV-2 diagram]

Related views

Any protocol referred to in a SV-2 diagram needs to be defined in the StdV-1 Standards Profile.

2.7.5 SV-3 Systems-Systems Matrix

Description

A SV-3 enables a quick overview of all the system resource interactions specified in one or more SV-1 Systems Interface Description models. The SV-3 provides a tabular summary of the system interactions specified in the SV-1 Systems Interface Description model for the Architectural Description. The matrix format supports a rapid assessment of potential commonalities and redundancies (or, if fault-tolerance is desired, the lack of redundancies).

The SV-3 can be organized in a number of ways to emphasize the association of groups of system pairs in context with the architecture's purpose.

The intended usage of the SV-3 includes:

- Summarizing system resource interactions.
- Interface management.
- Comparing interoperability characteristics of solution options.

Implementation

SV-3 can be represented using a SV-3 diagram which is an editable Dependency Matrix. The SV-3 matrix consists of as much rows and columns as there are Systems in the matrix data source.

Sample

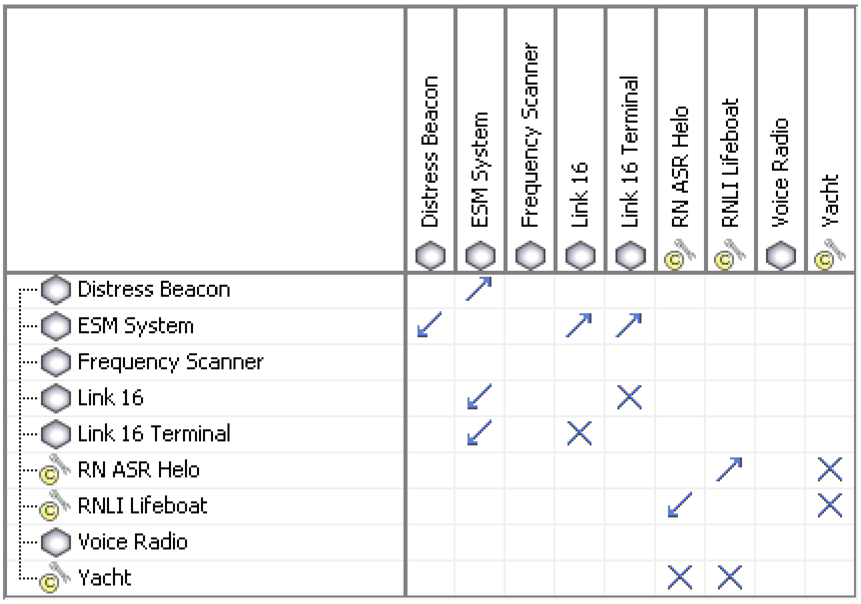


Figure 41 -- SV-3 Systems-Systems Matrix

Related elements

[System]()
[Software]()
[Capability Configuration]()
[NEW! Organization Type]()

NEW! Person Type
Resource Interaction
NEW! Exchange Element
Energy
NEW! Geo Political Extent Type

Related procedures

Building SV-3 matrix

Related views

The SV-1 concentrates on System resources and their interactions, and these are summarized in a SV-3.

2.7.6 SV-4 Systems Functionality Description

Description

The SV-4 addresses human and system functionality.

The primary purposes of SV-4 are to:

- Develop a clear description of the necessary data flows that are input (consumed) by and output (produced) by each resource.
- Ensure that the functional connectivity is complete (i.e., that a resource's required inputs are all satisfied).
- Ensure that the functional decomposition reaches an appropriate level of detail.

The Systems Functionality Description provides detailed information regarding the:

- Allocation of functions to resources.
- Flow of resources between functions.

The SV-4 is the Systems Viewpoint model counterpart to the OV-5b Activity Model of the Operational Viewpoint.

The intended usage of the SV-4 includes:

- Description of task workflow.
- Identification of functional system requirements.
- Functional decomposition of systems.
- Relate human and system functions.

Implementation

SV-4 can be represented using:

- A SV-4 diagram for System Function hierarchies. This diagram is based on the UML Class diagram.
- An SV-4 diagram for System Function flows. This diagram is based on the UML Activity diagram.
- A UML Class diagram.
- A UML Activity diagram.
- A SysML Block diagram.
- A SysML Activity diagram.

Sample

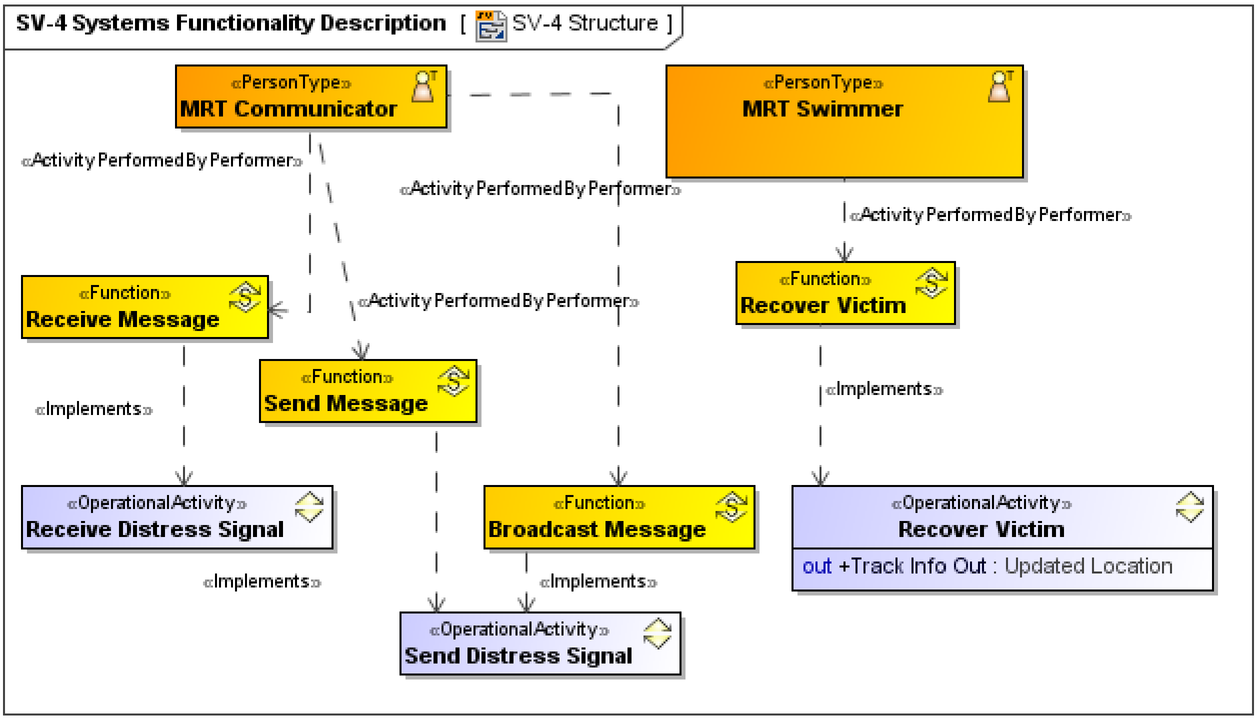


Figure 42 -- SV-4 Systems Functionality Description

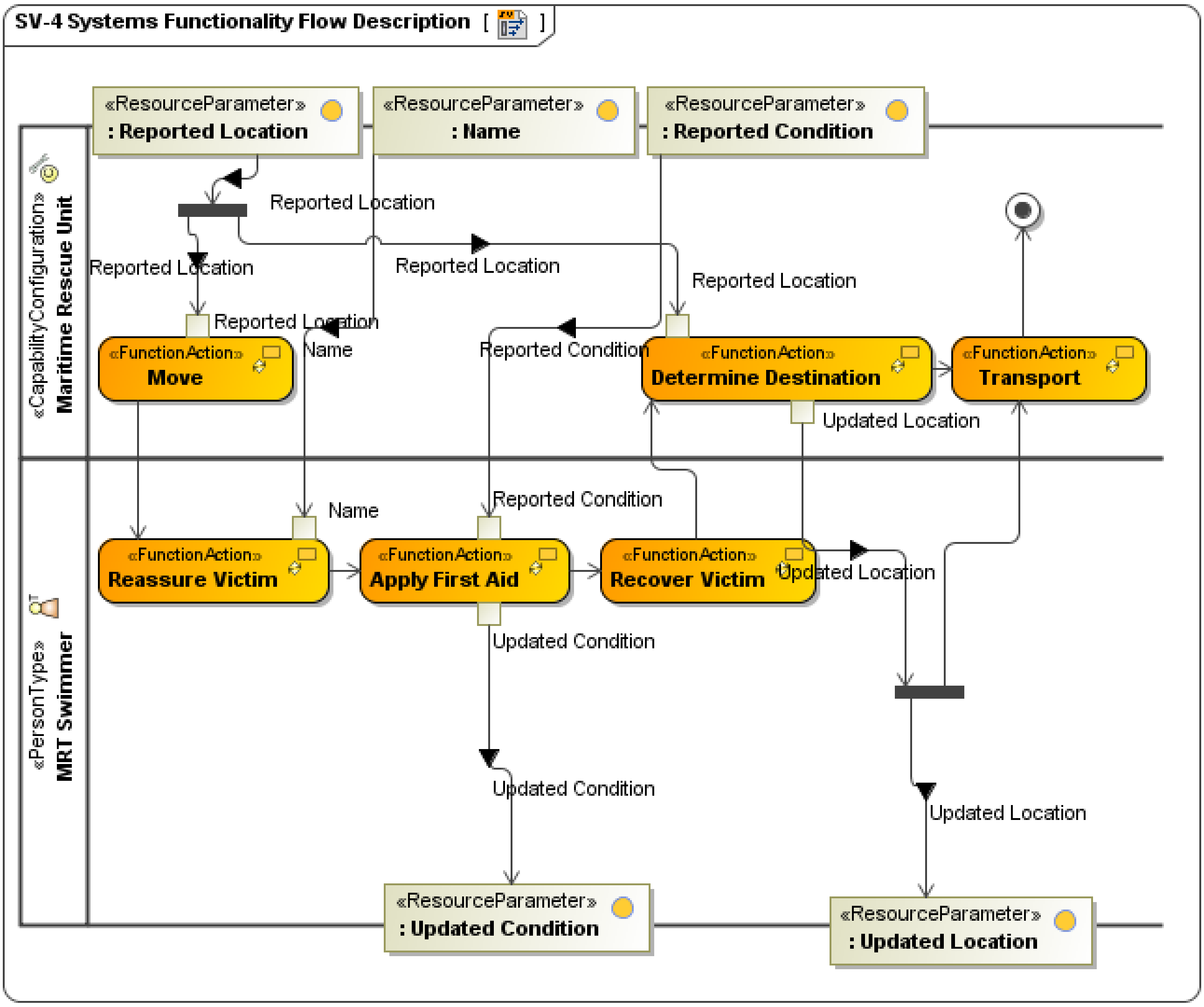


Figure 43 -- Fragment of SV-4 Systems Functionality Flow Description

Related elements

- Function
- System
- Software
- Capability Configuration
- NEW! Organization Type
- NEW! Person Type
- NEW! Activity Performed By Performer
- Function Action
- Function Edge
- NEW! Resource Parameter
- Resource Interaction
- NEW! Exchange Element
- Energy
- NEW! Geo Political Extent Type

Related procedures

- Creating SV-4 Functionality Description diagram
- Creating SV-4 Functionality Description Flow diagram
- Applying Military symbols

Related GUI

- Resource Interaction Creation Wizard
- Resource Interaction Manager Dialog
- Select Symbol Dialog

Related views

The SV-4 is the behavioral counterpart to the SV-1 Systems Interface Description (in the same way that OV-5b Operational Activity Model is the behavioral counterpart to OV-2 Operational Resource Flow Matrix).

2.7.7 SV-5a Operational Activity to Systems Function Traceability Matrix

Description

The SV-5a addresses the linkage between System Functions described in SV-4 Systems Functionality Description and Operational Activities specified in OV-5a Operational Activity Decomposition Tree or OV-5b Operational Activity Model. The SV-5a depicts the mapping of system functions and, optionally, the capabilities and performers that provide them to operational activities. The SV-5a identifies the transformation of an operational need into a purposeful action performed by a system or solution.

During requirements definition, the SV-5a plays a particularly important role in tracing the architectural elements associated with system function requirements to those associated with user requirements.

The intended usage of the SV-5a includes:

- Tracing functional system requirements to user requirements.
- Tracing solution options to requirements.
- Identification of overlaps or gaps.

Implementation

SV-5a can be represented using a SV-5a diagram which is an editable Dependency Matrix. System Functions will be used as row elements and Operational Activities will be used as column elements.

Sample

	Find Victim	Monitor Health	Process Warning Order	Provide Medical Assistance(Status Out : Medical Condition)	Receive Distress Signal	Recover Victim(Track Info Out : Updated Location)	Send Distress Signal	Send Warning Order	Transit To SAR Operation
SV-4					1	2	2		
Broadcast Message							↗		
Interact in the marine environment									
Receive Distress Signal									
Receive Message					↗				
Receive TDM									
Receive Track Information									
Recover Victim						↗			
Send Message							↗		
Send TDM									
Send Track Information									
Transmit Distress Signal									
Transport						↗			

Figure 44 -- SV-5a Operational Activity to Systems Function Traceability Matrix

Related elements

[Function]
[Operational Activity]
[NEW! Implements]

Related procedures

[Building SV-5 matrix]

Related views

DoDAF uses the term Operational Activity in the OVs and the term System Function in the SVs to refer to essentially the same kind of thing; both activities and functions are tasks that are performed, accept inputs, and develop outputs. The distinction between an Operational Activity and a Function is a question of what and how. The Operational Activity is a specification of what is to be done, regardless of the mechanism used. A System Function is specifies how a resource carries it out. For this reason, SV-5a is a significant model, as it ties together the logical specification in the OV-5a with the physical specification of the SV-4 Systems Functionality Description. System Functions can be carried out by Functional Resources (systems, performers executing activities, and performers).

2.7.8 SV-5b Operational Activity to Systems Traceability Matrix

Description

The SV-5b addresses the linkage between described in SV-1 Systems Functionality Description and Operational Activities specified in OV-5a Operational Activity Decomposition Tree or OV-5b Operational Activity Model. The SV-5b depicts the mapping of systems and, optionally, the capabilities and performers that provide them to operational activities. The SV-5b identifies the transformation of an operational need into a purposeful action performed by a system or solution.

During requirements definition, the SV-5b plays a particularly important role in tracing the architectural elements associated with system requirements to those associated with user requirements.

The intended usage of the SV-5b includes:

- Tracing system requirements to user requirements.
- Tracing solution options to requirements.
- Identification of overlaps or gaps.

Implementation

SV-5b can be represented using a SV-5b diagram which is a non-editable Dependency Matrix. Systems will be used as row elements and Operational Activities will be used as column elements.

Sample

	Find Victim	Monitor Health	Process Warning Order	Receive Distress Signal	Recover Victim(Track Info Out : Updated Location)	Rescue	Search	Send Distress Signal	Send Warning Order	Transit To SAR Operation
SV-2				2				6		
Distress Beacon										
ESM System										
Frequency Scanner										
Link 16								X		
Link 16 Terminal										
Naval Ship										
Receiver										
Signal Processor										
Track Interface										
Transmitter										
Voice Radio				X				X		

Figure 45 -- SV-5b Operational Activity to Systems Traceability Matrix

Related elements

- System
- Function
- Operational Activity
- NEW! Activity Performed By Performer
- NEW! Implements

Related procedures

- Building SV-5 matrix

Related views

The SV-5b is generally presented as a matrix of the relationship between systems and activities and can be a summary of the Operational Activity to System Function Traceability Matrix (SV-5a). The SV-5b can show requirements traceability with Operational Activities on one axis of a matrix, the System Functions on the other axis, and with an X, date, or phase in the intersecting cells, where appropriate.

2.7.9 SV-6 Systems Resource Flow Matrix

Description

The SV-6 specifies the characteristics of the System Resource Flows exchanged between systems with emphasis on resources crossing the system boundary.

The SV-6 focuses on the specific aspects of the system Resource Flow and the system Resource Flow content in a tabular format.

The intended usage of the SV-6 includes:

- Detailed definition of Resource Flows.

Implementation

SV-6 can be represented using:

- A SV-6 table.
- A SV-6 spreadsheet report.

Sample

#	Interaction ID	Resource Interaction Item	Sending Performer	Receiving Performer	Producing Function	Consuming Function
1	RI-6	Message	Voice Radio	Voice Radio	Broadcast Message	Receive Message
2	RI-4	TDM	Link 16 Terminal	Link 16	Send TDM	Receive TDM
3	RI-2	TDM	Link 16	Link 16 Terminal	Send TDM	Receive TDM
4	RI-3	Track	ESM System	Link 16 Terminal	Send Track Information	Receive Track Information
5	RI-5	Track	ESM System	Link 16	Send Track Information	Receive Track Information
6	RI-1	Distress Signal	Distress Beacon	ESM System	Transmit Distress Signal	Receive Distress Signal

Figure 46 -- SV-6 Systems Resource Flow Matrix

Related elements

- System
- Software

Capability Configuration
NEW! Organization Type
NEW! Person Type
Resource Interaction
NEW! Exchange Element
Energy
NEW! Geo Political Extent Type
Function

Related procedures

Adding Existing Resource Interaction to SV-6 table

Related views

The SV-6 is the physical equivalent of the logical OV-3 table and provides detailed information on the system connections which implement the Resource Flow exchanges specified in OV-3.

2.7.10 SV-7 Systems Measures Matrix

Description

The SV-7 depicts the measures (metrics) of resources. The Systems Measures Matrix expands on the information presented in a SV-1 by depicting the characteristics of the resources in the SV-1.

The intended usage of the SV-7 includes:

- Definition of performance characteristics and measures (metrics).
- Identification of non-functional requirements.

Implementation

SV-7 can be represented using:

- A SV-7 typical measures table.
- A SV-7 actual measures table.
- **NEW!** A SV-7 actual measures spreadsheet report.

Sample

#	Measure Type	Measurement	Resource
1	Voice Radio Transmitter Measurements	Transmission Rate : GB	Transmitter
2	Voice Radio Receiver Measurements	Gain : dB Signal To Noise Ratio : dB	Receiver
3	Signal Processor Measurements	Comms Channel Bandwidth Support : GB	Signal Processor
4	Status Alerting Measurements	Min. Status Change Alert Accuracy : meters Min. Alert Response Time : seconds	Status Alerting

Figure 47 -- SV-7 Systems Typical Measures Matrix

#	Resource	Performance Requirement	Measure	Metric
1	Transmitter	Transmission Rate	2	GB
2	Status Alerting	Min. Alert Response Time	30	seconds
3	Status Alerting	Min. Status Change Alert Accuracy	500	meters
4	Signal Processor	Comms Channel Bandwidth Support	2	GB
5	Receiver	Signal To Noise Ratio	20	dB
6	Receiver	Gain	60	dB

Figure 48 -- SV-7 Systems Actual Measures Matrix

Related elements

- System
- Software
- Capability Configuration
- NEW! Organization Type
- NEW! Person Type
- Measure Type
- NEW! Measure
- Measurement
- NEW! Actual Property

Related procedures

- Creating SV-7 Typical table
- Creating SV-7 Actual table
- Generating SV-7 Actual table from SV-7 Typical table
- Generating reports

Related views

Icon	Product	Relationship
SV-1	SV-1 Systems Interface Description	The Systems Measures Matrix expands on the information presented in SV-1 by depicting the characteristics of the Systems and other Resources shown in the SV-1.
SV-2	SV-2 Systems Communication Description	The Systems Measures Matrix expands on the information presented in SV-2 by depicting the characteristics of the Systems shown in the SV-2.

2.7.11 SV-8 Systems Evolution Description

Description

The SV-8 presents a whole lifecycle view of resources (systems), describing how they change over time. It shows the structure of several resources mapped against a timeline.

The intended usage of the SV-8 includes:

- Development of incremental acquisition strategy.
- Planning technology insertion.

Implementation

NEW! SV-8 can be represented using a SV-8 diagram which is based on the UML Composite structure diagram.

Related elements

NEW! Whole Life Configuration
NEW! Version Of Configuration
NEW! Resource Role
Resource Connector

Related views

Icon	Product	Relationship
	SV-1 Systems Interface Description	The SV-8 model shows the structure of resources modeled in SV-1.
	PV-2 Project Timelines	The changes depicted in the SV-8 are derived from the project milestones that are shown in a PV-2 Project Timelines. When the PV-2 Project Timelines is used for capability acquisition projects, there is likely to be a close relationship between these two models.

2.7.12 SV-9 Systems Technology & Skills Forecast

Description

The SV-9 defines the underlying current and expected supporting technologies and skills. Expected supporting technologies and skills are those that can be reasonably forecast given the current state of technology and skills as well as the expected improvements or trends. New technologies and skills are tied to specific time periods, which can correlate against the time periods used in SV-8 milestones and linked to Capability Phases.

The SV-9 provides a summary of emerging technologies and skills that impact the architecture.

The SV-9 provides descriptions of relevant:

- Emerging capabilities.
- Industry trends.
- Predictions (with associated confidence factors) of the availability and readiness of specific hardware and software systems.
- Current and possible future skills.

In addition to providing an inventory of trends, capabilities and systems, the DoDAF-described Model SV-9 also includes an assessment of the potential impact of these items on the architecture. Given the future-oriented nature of this model, forecasts are typically made in short, mid and long-term timeframes, such as 6, 12 and 18-month intervals.

The intended usage of the SV-9 includes:

- Forecasting technology readiness against time.
- HR Trends Analysis.
- Recruitment Planning.
- Planning technology insertion.
- Input to options analysis.

Implementation

SV-9 can be represented using a SV-9 table.

Sample

#	Technology area	From: 2008-04-16 To: 2009-04-16	From: 2009-04-16 To: 2010-04-16
1	Maritime Rescue Coordination Center Software		Airwave
2	Helicopter	Sikorsky S-61	Sikorsky S92A Augusta Westland 139
3	Compas-Sarsat System Standard	Beacon alert 406 MHz Beacon alert 121.5 MHz Beacon alert 243 MHz	Beacon alert 406 MHz

Related elements

- Forecast
- System
- Software
- Capability Configuration
- NEW! Organization Type
- NEW! Person Type
- Protocol
- Standard

Related procedures

- Creating SV-9 table

Related views

The SV-9 DoDAF-described Model forecasts relates to the Standards Profile (StdV-1) in that a timed forecast may contribute to the decision to retire or phase out the use of a certain standard in connection with a resource. Similarly, SV-9 forecasts relate to the Standards Forecasts (StdV-2) in that a certain standard may be adopted depending on a certain technology or skill becoming available (e.g., the availability of Java Script may influence the decision to adopt a new HTML standard).

2.7.13 SV-10a Systems Rules Model

Description

The SV-10a specifies functional and nonfunctional constraints on the implementation aspects of the architecture (i.e., the structural and behavioral elements of the Systems Viewpoint).

The SV-10a DoDAF-described Model describes constraints on the resources, functions, data, and ports that make up the SV . The constraints are specified in text and may be functional or structural (i.e., non-functional).

The intended usage of the SV-10a includes:

- Definition of implementation logic.
- Identification of resource constraints.

Implementation

SV-10a can be represented using:

- A SV-10a table.
- A SV-10a spreadsheet report.

Sample

#	Applies to	Rule Specification	Kind
1	Naval Ship	Only SOLAS regulated ships of 300 GT and above are required to carry AIS.	StructuralAssertion
2	Distress Beacon	Should be capable of processing beacon alerts on 121.5 MHz, 243 MHz and 406 MHz.	StructuralAssertion
3	Aircraft	At each location, one helicopter should be available at 15 minutes readiness between 0800 and 2200 hours with another available at 60 minutes readiness between 0800 hours and evening civil twilight (ECT). Between 2200 and 0800 hours, one helicopter should be held at 45 minutes readiness.	StructuralAssertion
4	Aircraft	Other RAF and RN helicopters can be used on SAR missions when available. Requests for such assistance should be made through the ARCC.	StructuralAssertion
5	Aircraft	All RAF SAR helicopter rear crew should be medically trained	StructuralAssertion

Figure 49 -- SV-10a Systems Rules Model

Related elements

- Resource Constraint
- System
- Software
- Capability Configuration
- NEW! Organization Type
- NEW! Person Type
- Function
- NEW! Entity Item
- Resource Interaction
- NEW! Exchange Element

Related procedures

- Creating SV-10a table

Related views

In contrast to the OV-6a Operational Rules Model, SV-10a focuses on physical and data constraints rather than business rules.

2.7.14 SV-10b Systems State Transition Description

Description

The SV-10b is a graphical method of describing a resource (or system function) response to various events by changing its state. The diagram basically represents the sets of events to which the resources in the Activities respond (by taking an action to move to a new state) as a function of its current state. Each transition specifies an event and an action.

The explicit time sequencing of service functions in response to external and internal events is not fully expressed in SV-4 Systems Functionality Description. The SV-10b can be used to describe the explicit sequencing of the functions. Alternatively, SV-10b can be used to reflect explicit sequencing of the actions internal to a single function, or the sequencing of system functions with respect to a specific resource.

The intended usage of the SV-10b includes:

- Definition of states, events and state transitions (behavioral modeling).
- Identification of constraints.

Implementation

SV-10b can be represented using a UML State Machine diagram.

Sample

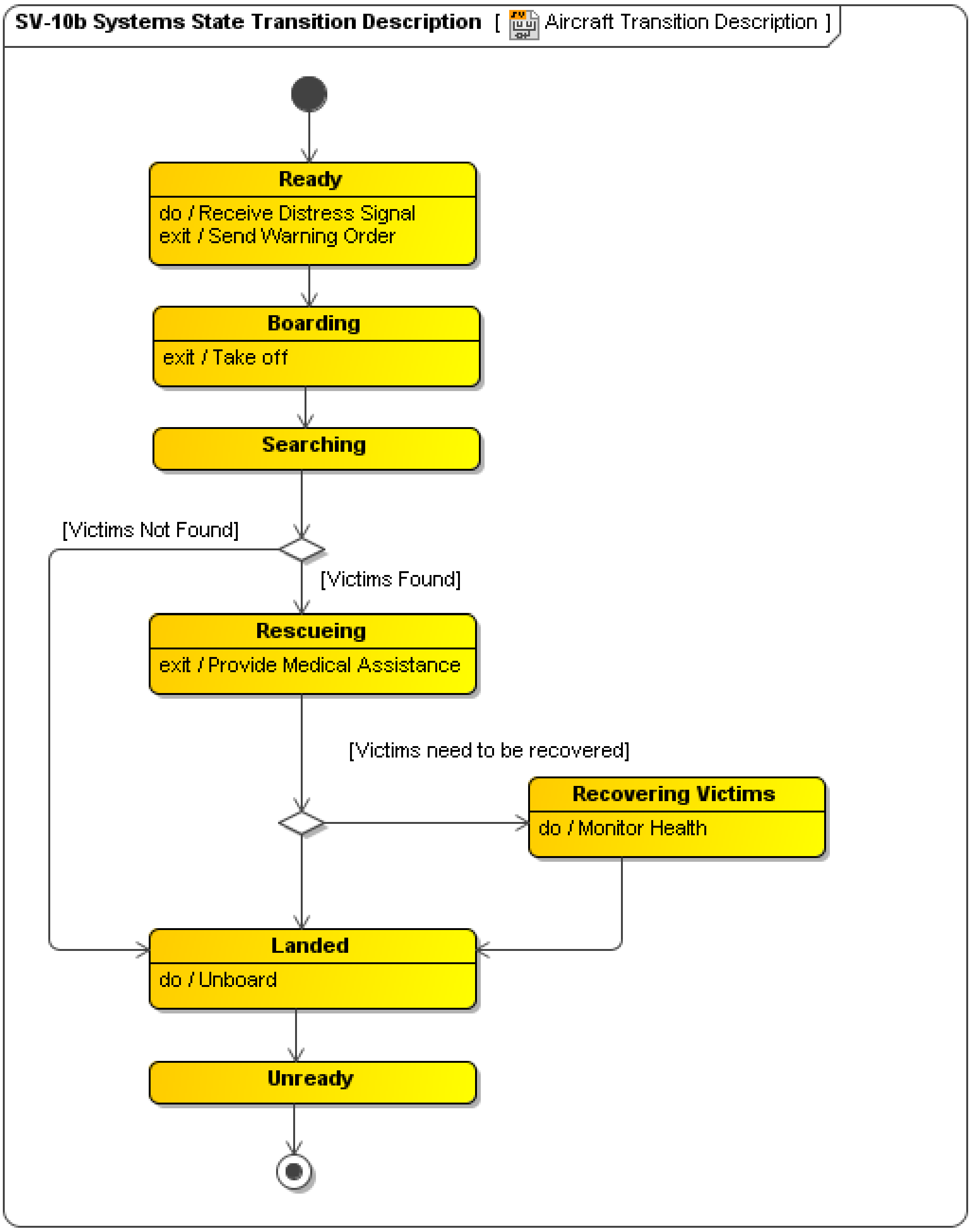


Figure 50 -- SV-10b Systems State Transition Description

Related elements

- Resources State Machine
- NEW! Resource State
- System
- Software
- Capability Configuration
- NEW! Organization Type
- NEW! Person Type

Related views

The SV-10b can be used to describe the detailed sequencing of functions described in SV-4 Systems Functionality Description. However, the relationship between the actions included in SV-10b and the functions in SV-4 Systems Functionality Description depends on the purposes of the architecture and the level of abstraction used in the models. The explicit sequencing of functions in response to external and internal events is not fully expressed in SV-4 Systems Functionality Description. SV-10b can be used to reflect explicit sequencing of the functions, the sequencing of actions internal to a single function, or the sequencing of functions with respect to a specific resource.

Depending upon the architecture project’s needs, the SV-10b may be used separately or in conjunction with the SV-10c Systems Event-Trace Description.

2.7.15 SV-10c Systems Event-Trace Description

Description

The SV-10c provides a time-ordered examination of the interactions between functional resources. Each event-trace diagram should have an accompanying description that defines the particular scenario or situation.

The SV-10c is valuable for moving to the next level of detail from the initial solution design, to help define a sequence of functions and system data interfaces, and to ensure that each participating resource or System Port role has the necessary information it needs, at the right time, to perform its assigned functionality.

The intended usage of the SV-10c includes:

- Analysis of resource events impacting operation.
- Behavioral analysis.
- Identification of non-functional system requirements.

Implementation

SV-10b can be represented using a UML State Machine diagram.

Sample

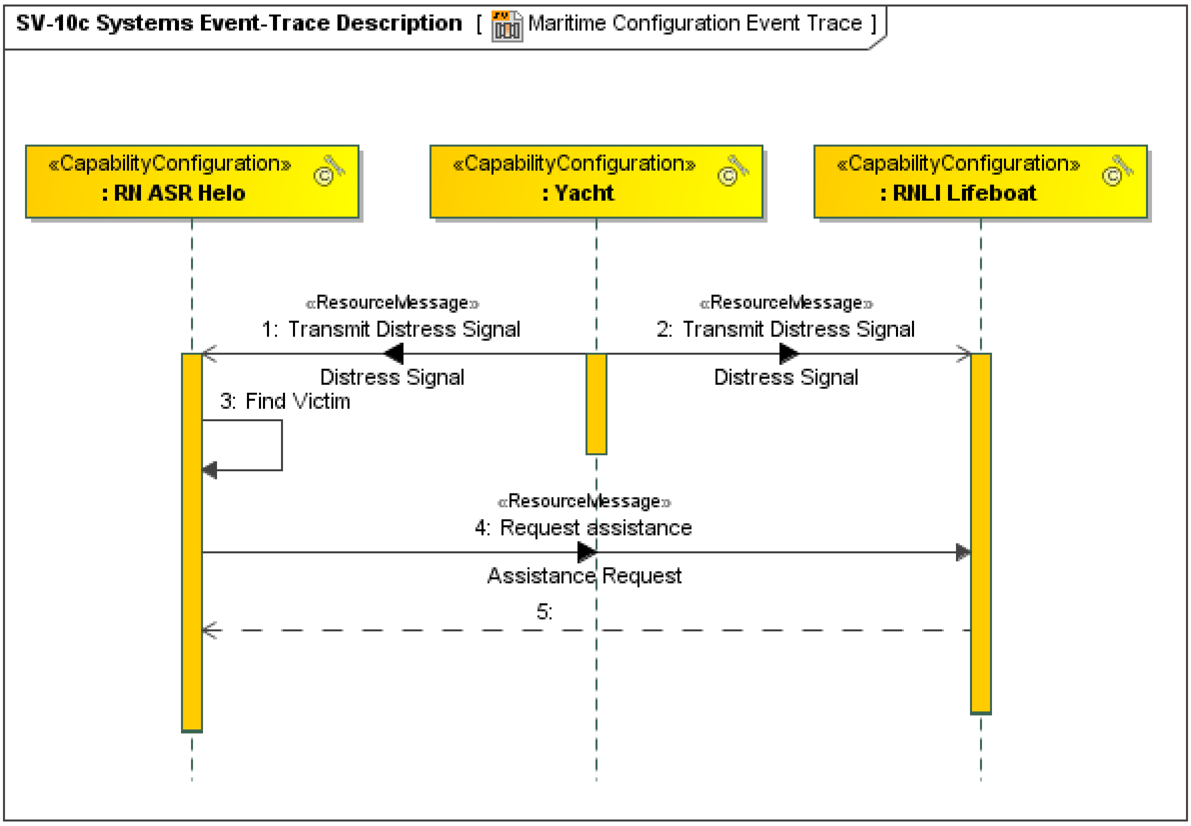


Figure 51 -- SV-10c Systems Event-Trace Description

Related elements

- Resource Event Trace
- Resource Message
- Resource Interaction

Related GUI

- Resource Interaction Creation Wizard
- Resource Interaction Manager Dialog

Related views

The SV-10c is typically used in conjunction with the SV-10b Systems State Transition Description to describe the dynamic behavior of resources. The data content of messages that connect Resource Flows in a SV-10c may be related with Resource Flows (the interactions in the SV-1 Systems Interface Description and SV-3 Systems-Systems Matrix), Resource Flows (the data in the SV-4 Systems Functionality Description and SV-6 Systems Resource Flow Matrix) and entities (in DIV-3 Physical Data Model) modeled in other models.

2.8 Standards Viewpoint

“The DoDAF-described Models within the Standards Viewpoint is the set of rules governing the arrangement, interaction, and interdependence of parts or elements of the Architectural Description. These sets of rules can be captured at the enterprise level and applied to each solution, while each solution’s architectural description depicts only those rules pertinent to architecture described. Its purpose is to ensure that a solution satisfies a specified set of operational or capability requirements. The Standards Models capture the doctrinal, operational, business, technical, or industry implementation guidelines upon which engineering specifications are based, common building blocks are established, and solutions are developed. It includes a collection of the doctrinal, operational, business, technical, or industry standards, implementation conventions, standards options, rules, and criteria that can be organized into profiles that govern solution elements for a given architecture. Current DoD guidance requires the Technical Standards portions of models be produced from DISR to determine the minimum set of standards and guidelines for the acquisition of all DoD systems that produce, use, or exchange information." *[DoDAF V2.0 Volume II]*

The views of this viewpoint are described in the following sections:

- StdV-1 Standards Profile
- StdV-2 Standards Forecast

2.8.1 StdV-1 Standards Profile

Description

The StdV-1 defines the technical, operational, and business standards, guidance, and policy applicable to the architecture being described. As well as identifying applicable technical standards, the DoDAF V2.0 StdV-1 also documents the policies and standards that apply to the operational or business context. The DISR is an architecture resource for technical standards that can be used in the generation of the StdV-1 and StdV-2 Standards Forecast.

In most cases, building a Standards Profile consists of identifying and listing the applicable portions of existing and emerging documentation. A StdV-1 should identify both existing guidelines, as well as any areas lacking guidance. As with other models, each profile is assigned a specific timescale (e.g., "As-Is", "To-Be", or transitional). Linking the profile to a defined timescale enables the profile to consider both emerging technologies and any current technical standards that are expected to be updated or become obsolete. If more than one emerging standard time-period is applicable to an architecture, then a StdV-2 Standards Forecast should be completed as well as a StdV-1.

The intended usage of the StdV-1 includes:

- Application of standards (informing project strategy).
- Standards compliance.

Implementation

StdV-1 can be represented by a StdV-1 table.

Sample

#	System element	Standard / Policy
1	Boat	GPS VHF AIS
2	Fixed Wing Aircraft	HF UHF VHF IMM VHF
3	Helicopter	VHF UHF HF

Figure 52 -- StdV-1 Standards Profile

Related elements

NEW! Functional Standard
NEW! Technical Standard
Protocol

Related views

The Standards cited are referenced as relationships to the systems, services, system functions, service functions, system data, service data, hardware/software items or communication protocols, where applicable, in:

- SV-1 Systems Interface Description
- SV-2 Systems Communication Description
- SV-4 Systems Functionality Description
- SV-6 Systems Resource Flow Matrix
- SvcV-1 Services Context Description
- SvcV-2 Services Resource Flow Description
- SvcV-4 Services Functionality Description
- SvcV-6 Services Resource Flow Matrix
- DIV-2 Logical Data Model
- DIV-3 Physical Data Model

2.8.2 StdV-2 Standards Forecast

Description

The StdV-2 contains expected changes in technology related standards, operational standards, or business standards and conventions, which are documented in the StdV-1 model. The forecast for evolutionary changes in the standards need to be correlated against the time periods mentioned in the SV-8 Systems Evolution Description,

SvcV-8 Services Evolution Description, SV-9 Systems Technology & Skills Forecast, and SvcV-9 Services Technology & Skills Forecast models.

A StdV-2 is a detailed description of emerging standards relevant to the systems, operational, and business activities covered by the Architectural Description. The forecast should be tailored to focus on areas that are related to the purpose for which a given Architectural Description is being built, and should identify issues that affect the architecture. A StdV-2 complements and expands on the StdV-1Standards Profile model and should be used when more than one emerging standard time-period is applicable to the architecture.

One of the prime purposes of this model is to identify critical technology standards, their fragility, and the impact of these standards on the future development and maintainability of the architecture and its constituent elements.

The intended usage of the StdV-2 includes:

- Forecasting future changes in standards (informing project strategy).

Implementation

The StdV-2 can be represented using a StdV-2 table.

Sample

#	Technology area	From: 2008-04-16 To: 2009-04-16	From: 2009-04-16 To: 2010-04-16
1	Compas-Sarsat System Standard	Beacon alert 243 MHz Beacon alert 406 MHz Beacon alert 121.5 MHz	Beacon alert 406 MHz

Figure 53 -- StdV-2 Standards Forecast

Related elements

- NEW! Functional Standard
- NEW! Technical Standard
- Protocol
- Forecast

Related views

StdV-2 delineates the standards that potentially impact the relevant system and service elements (from SV-1 Systems Interface Description, SV-2 Systems Resource Flow Description, SV-4 Systems Functionality Description, SV-6 Systems Resource Flow Matrix, SvcV-1 Services Context Description, SvcV-2 Services Resource Flow Description, SvcV-4 Services Functionality Description, SV-6 Services Resource Flow Matrix, and DIV-2 Logical Data Model) and relates them to the time periods that are listed in the SV-8 Systems Evolution Description, SvcV-8 Services Evolution Description, SV-9 Systems Technology & Skills Forecast, and SvcV-9 Services Technology & Skills Forecast models.

3 MODAF VIEWPOINTS AND VIEWS

All MODAF views are described in the following sections:

- All Views Viewpoint
- Strategic Viewpoint
- Acquisition Viewpoint
- Operational Viewpoint
- Service Oriented Viewpoint
- Systems Viewpoint
- Technical Standards Viewpoint

3.1 All Views Viewpoint

Elements that are part of the All View. The All-Views (AVs) provide an overarching description of the architecture, its scope, ownership, timeframe and all of the other meta data that is required in order to effectively search and query architectural models. They also provide a place to record any findings arising from the architecting process. The AVs include a dictionary of the terms used in the construction of the architecture – which helps others fully understand its meaning at a later date. Since the AVs provide critical information for the future access and exploitation of an architectural model their population is essential whenever an architecture is created or modified. The AVs provide a critical input into the processes that provide architectural governance.

he views of this viewpoint are described in the following sections:

- AV-1 Overview and Summary Information
- AV-2 Integrated Dictionary

3.1.1 AV-1 Overview and Summary Information

Description

The overview and summary information contained within the AV-1 product provides an executive-level summary information in a consistent form that allows for quick reference and comparison between architectural descriptions. AV-1 includes assumptions, constraints, and limitations that may affect high-level decisions relating to an architecture. In an enterprise repository environment, individual architectures are mapped against enterprise phases to provide context between the architectures. AV-1 is usually a structured text product. Organizations may create a template for the AV-1 that can then be used to create a consistent set of information across different architecture-based projects.

Implementation

AV-1 can be represented:

- Using a report, which is automatically generated from all data. Since only a partial AV-1 report can be generated, the rest of data must be filled in manually.
- Using a AV-1 diagram which is based on the UML Class diagram.

Sample

Overview & Summary Information (AV-1)
September 02, 2011 UPDM Sample, Revision: 1

2. Architecture Project Identification

2.1. Name

SAR Satellite Aid Tracking System

2.2. Architect

Coastguard Agency Architecture 4

2.3. Organization developing the architecture

Maritime and Caostguard Agency

2.4. Assumptions and constraints

None

2.5. Approval authority

Howard Overtree

3. Scope: Architecture View(s) and Products Identification

3.1. Views and Products Developed

3.1.1. Strategic View Products

StV-1

Name	Documentation
StV-1	"StV-1" Diagram describes the strategic context for Search and Rescue Capabilities. It outlines the vision for a capability area over a specified period of time. It describes how high level goals and strategy are to be delivered in terms of capability.

Figure 54 -- Fragment of AV-1 Overview and Summary Information report

Related elements

- Architectural Description
- Defines Architecture
- Architecture Metadata

Related procedures

- Generating reports

3.1.2 AV-2 Integrated Dictionary

Description

An AV-2 presents all the Elements used in an architecture as a standalone structure. An AV-2 presents all the Elements as a specialization hierarchy, provides a text definition for each one and references the source of the element. An AV-2 shows elements from the Ontology that have been used in the architecture and new elements that have been introduced by the architecture. Architectures often introduce new terms – usually because the architecture is covering new technology or business processes. The purpose of the AV-2 is to provide a local extension of the Ontology to explain the terms and abbreviations used in building the architecture.

Implementation

AV-2 can be represented:

- Using a report, which is automatically generated from all data.
- Using an AV-2 diagram which is based on the UML Class diagram.

Sample

Integrated Dictionary (AV-2) Report

September 02, 2011 UPDM Sample, Revision: 1

2. Integrated Dictionary (AV-2)

1. Actual Organization

1.1. Department Of Transport - actual organization.
1.2. RNLI - actual organization.
1.3. MRCC - actual organization.
1.4. MoD SAR Lead - actual organization.
1.5. Ambulance Service Association - actual organization.
1.6. Ministry Of Defence - actual organization.
1.7. Maritime and Caostguard Agency - actual organization.
1.8. DoT SAR Lead - actual organization.

2. Actual Organization Relationship

2.1. aliases with - actual organization relationship.

Figure 55 -- Fragment of AV-2 Integrated Dictionary report

Related elements

Definition
Alias
Same As

Related procedures

Generating reports

3.2 Strategic Viewpoint

The Strategic View (StV) shows the elements that are part of StV-1 through StV-6. The Strategic Elements are used in the Strategic View that provides an overall Enterprise Architecture assessment of the Capabilities and their relationships facilitating Capability Management (e.g. capability introduction, integration, re-alignment and removal). While an Enterprise will have a number of UPDM Architecture Descriptions that have the Operational, System, Technical Standards, and All Views, only one Strategic View will exist across a number of Architecture Descriptions.

The views of this viewpoint are described in the following sections:

- StV-1 Enterprise Vision
- StV-2 Capability Taxonomy
- StV-3 Capability Phasing
- StV-4 Capability Dependencies
- StV-5 Capability to Organization Deployment Mapping
- StV-6 Operational Activity to Capability Mapping

3.2.1 StV-1 Enterprise Vision

Description

StV-1 addresses the enterprise concerns associated with the overall vision for transformational endeavors and thus defines the strategic context for a group of Enterprise capabilities. The purpose of an StV-1 is to provide a strategic context for the capabilities described in the Architecture. It also provides a high-level scope for the Architecture that is more general than the scenario-based scope defined in an OV-1. The Views are high-level and describe capabilities using terminology that is easily understood by non-technical readers (though they may make extensive use of military terminology and acronyms that are clearly defined in the AV-2 View).

Implementation

StV-1 can be represented using a StV-1 diagram which is based on the UML Class diagram.

Sample

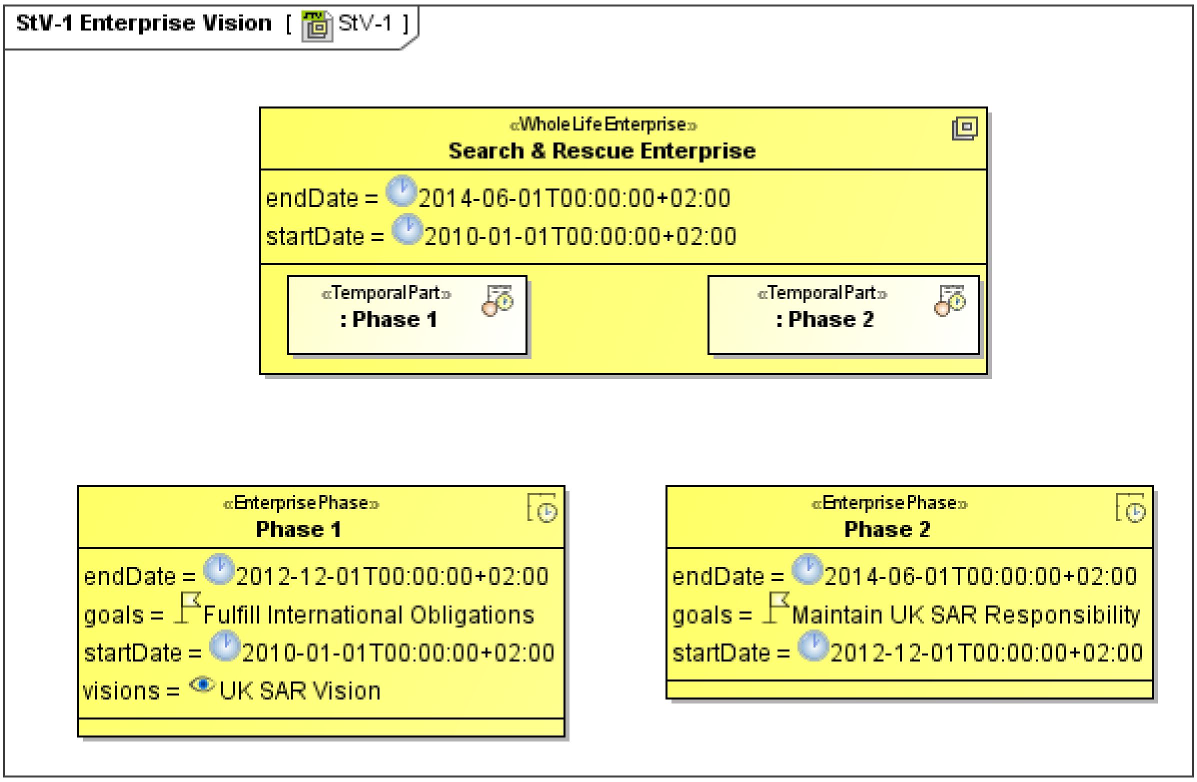


Figure 56 -- StV-1 Enterprise Vision

Related elements

- Enterprise Goal
- Enterprise Vision
- Enterprise Phase
- Whole-Life Enterprise
- Structural Part
- Temporal Part
- Enduring Task
- Capability
- Exhibits

Related procedures

- Creating StV-1 diagram

3.2.2 StV-2 Capability Taxonomy

Description

The view presents a hierarchy of capabilities. These capabilities may be presented in context of an Enterprise Phase, i.e. it can show the required capabilities for current and future enterprises. The StV-2 specifies all the capabilities that are reference throughout one or more architectures. In addition it can be used as a source document for the development of high-level use cases and Key User Requirements (KUR). The StV-2 also provides metrics against each capability that may be used to measure successfully fielded capability.

Implementation

StV-2 can be represented using a StV-2 diagram which is based on the UML Class diagram.

NEW! NOTE If your project has migrated from any earlier than 17.0.1 version, the old StV-5 View representation based on the UML Class diagram is loaded as the StV-2 Capability Taxonomy diagram.

Sample

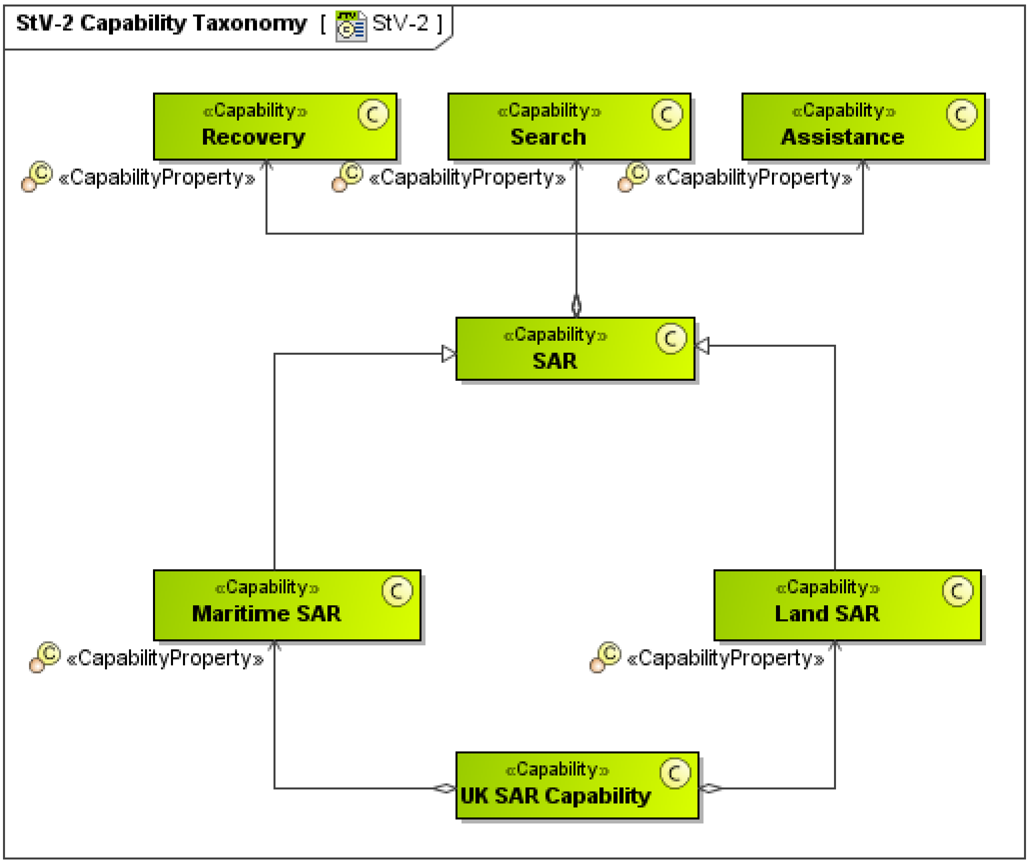


Figure 57 -- StV-2 Capability Taxonomy

Related elements

- Capability
- Exhibits
- Climate
- Environment
- Environment Property
- Light Condition
- NEW! Location

Related procedures

- Creating StV-2 diagram

3.2.3 StV-3 Capability Phasing

Description

StV-3 addresses the planned achievement of capability at different points in time or during specific periods of time, i.e. capability phasing. StV-3 Views support the Capability Audit process by providing a method to identify gaps or duplication in capability provision. The view indicates capability increments, which should be associated with delivery milestones within acquisition projects (when the increments are associated with capability deliveries).

Implementation

StV-3 can be represented using a StV-3 diagram which is realized as a time based diagram.

Sample

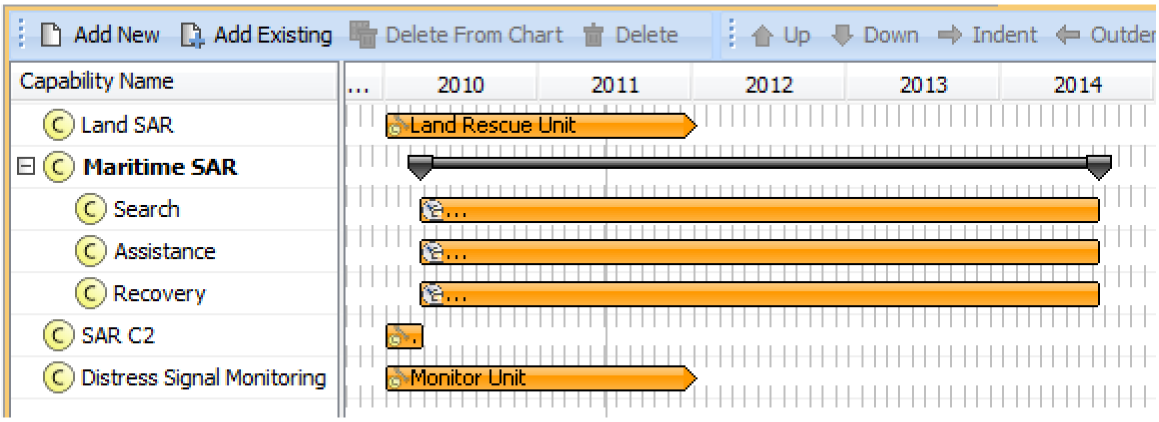


Figure 58 -- StV-3 Capability Phasing

Related elements

- Capability
- Capability Configuration
- Exhibits
- Increment Milestone
- Out Of Service Milestone
- Actual Project

Related views

The View is created by analyzing programmatic project data to determine when the projects providing elements of military capability are to be delivered, upgraded and/or withdrawn (this data may be provided in part by a Programme Timelines (AcV-2) View). Then the capability increments identified are structured according to the required capabilities determined in the Capability Taxonomy (StV-2) View and the Enterprise Phases (from StV-1).

3.2.4 StV-4 Capability Dependencies

Description

An StV-4 Product describes the dependencies between planned capabilities. It also defines logical groupings of capabilities. The StV-4 View provides a means of analyzing the dependencies between capabilities. The groupings of capabilities are logical, and the purpose of the groupings is to guide enterprise management.

Implementation

StV-4 can be represented using a StV-4 diagram which is based on the UML Class diagram.

Sample

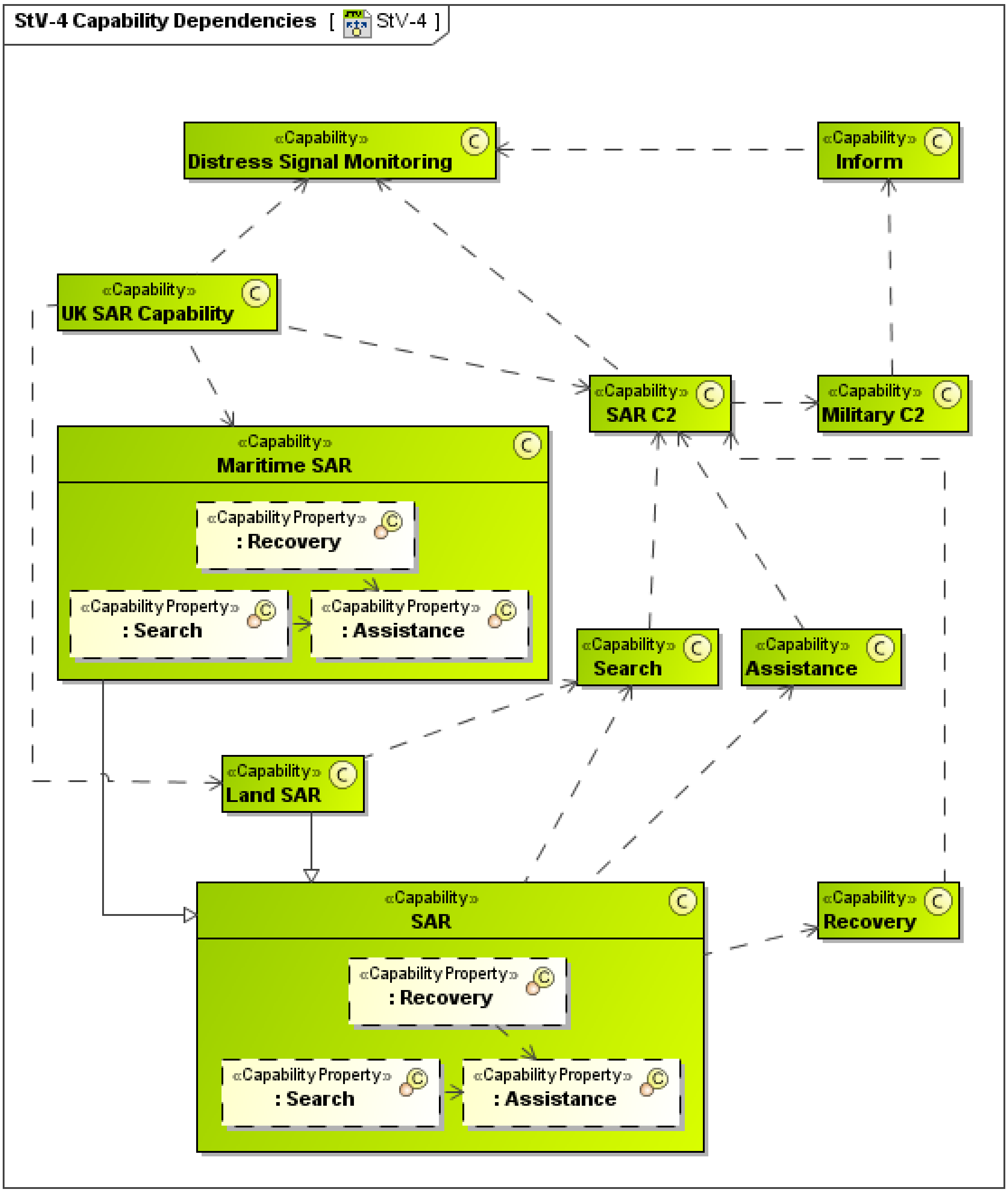


Figure 59 -- StV-4 Capability Dependencies

Related elements

[Capability]

[NEW! Capability Property]

Related procedures

[Creating StV-4 diagram]

Related views

The Capability Dependencies (StV-4) View describes the relationships between capabilities (capabilities may be reused from an StV-2). It also defines logical groupings of capabilities. This contrasts with the StV-2 which also deals with relationships between Capabilities, but the StV-2 only addresses the specialization-generalization relationship (i.e. capability taxonomy).

3.2.5 StV-5 Capability to Organization Deployment Mapping

Description

The StV-5 defines Capability to Organization Deployment Mapping. It addresses the fulfillment of capability requirements, in particular by network enabled capabilities. This view shows the planned capability deployment and interconnection for a particular EnterprisePhase. This view will provide a more detailed dependency analysis than is possible using StV-3. The StV-5 View is used to support the capability management process and, in particular, assist the planning of fielding.

Implementation

StV-5 can be represented using:

- **NEW!** A StV-5 table.

NOTE	If your project has migrated from any earlier than 17.0.1 version, the old StV-5 View representation based on the UML Class diagram is loaded as the StV-2 Capability Taxonomy diagram.

- A StV-5 spreadsheet report.

Sample

Maritime Rescue Team expansion (From 2011-01-01 To 2011-03-31)	Hire new MRT Drivers	Hire new MRT Pilots	Plan training tasks for new employees	Perform training tasks
HR Manager	ERP	ERP	ERP PM Software	
Jr HR Manager	ERP	ERP	ERP	
Qualified Helo Pilot				MRT Pilot Helicopter
Qualified Lifeboat Driver				MRT Driver Boat

Figure 60 -- StV-5 Capability to Organization Deployment Mapping

Related elements

[Capability](#)
[Capability Configuration](#)
[Exhibits](#)
[Actual Organization](#)
[Actual Post](#)
[Deployed Milestone](#)
[No Longer Used Milestone](#)
[Actual Project](#)
[Enterprise Phase](#)
[Whole-Life Enterprise](#)

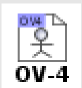
Related procedures

Creating StV-5 table
Modifying StV-5 table

Related GUI

NEW! Deployment Milestones Creation Wizard

Related views

Icon	View	Relationship
	StV-1 Enterprise Vision	Capability Phasing is defined in StV-1.
	StV-2 Capability Taxonomy	Capabilities shown in StV-5 table are usually modeled in StV-2 Capability Taxonomy.
	AcV-2 Programme Timelines	The timing is based on project milestones from AcV-2 which indicate when capability configuration will be delivered to an organiation.
	OV-4 Organizational Relationships Chart	Actual Organizational Resources related to deployment of Capability Configurations are taken from OV-4 Organizational Relationships Chart.

3.2.6 StV-6 Operational Activity to Capability Mapping

Description

The StV-6 describes the mapping between the capabilities required by an Enterprise and the operational activities that those capabilities support.

Implementation

StV-6 can be represented using a StV-6 diagram which is an editable Dependency Matrix. The Capabilities will be used as row elements and the Operational Activities will be used as column elements.

Sample

	Coordinate Other Agencies	Firefight	Investigate Reports Of MissingPersons	Provide continuous radar surveillance	Provide emergency towing cover in high risk shipping area	Solve incident involving chemicals	Solve incidents in all areas of inhospitable terrain	Transport Patient	Treat Patient
Land SAR	✓	✓	✓			✓	✓	✓	✓
Maritime SAR		✓		✓	✓	✓		✓	

Figure 61 -- StV-6 Operational Activity to Capability Mapping

Related elements

Capability
Standard Operational Activity
Maps to Capability

Related procedures

Building StV-6 matrix

Related views

The StV-6 View provides a bridge between capability analyses using StVs and operational activities analyzed using OVs. Specifically, it identifies how operational activities can be performed using various available capability elements. It is similar in function to the SV-5 which maps system functions to operational activities.

3.3 Acquisition Viewpoint

The AcquisitionElements describe project details, including dependencies between projects and capability integration. These Views guide the acquisition and fielding processes.

The views of this viewpoint are described in the following sections:

- AcV-1 Acquisition Clusters
- AcV-2 Programme Timelines

3.3.1 AcV-1 Acquisition Clusters

Description

The Acquisition Clusters (AcV-1) View describes how acquisition projects are grouped in organisational terms as a coherent portfolio of acquisition programmes.

The AcV-1 View provides a way of describing the organizational relationships between multiple acquisition projects, each of which is responsible for delivering individual systems or capabilities. By definition, this View covers acquisition programmes consisting of multiple projects and will generally not be developed by those building Architectures for an individual project. In essence, the AcV-1 is an organizational breakdown consisting of actual organizations (see OV-4). The view is strongly linked with the StV-4 which shows capability clusters and dependencies.

The AcV-1 View is hierarchical in nature. Higher level groupings of projects (or, rather the organisations that own these projects) form acquisition clusters.

The intent of an AcV-1 View Product is to show:

- All of the acquisition projects delivering systems or system of systems (SoS) within the acquisition programmes under consideration.
- Other systems and SoS which may have a bearing on the Architecture.
- How the systems will be best integrated into acquisition clusters.
- The nesting of acquisition clusters to form a hierarchy.

Implementation

AcV-1 can be represented using:

- An AcV-1 Acquisition Clusters diagram which is based on the UML Class diagram.
- An AcV-1 Responsibility Matrix which is an editable Dependency Matrix.

Sample

	Ambulance Service Association	Department Of Transport	DoT SAR Lead	Lifeboat Driver	Maritime and Coastguard Agency	Ministry Of Defence	MoD SAR Lead	Radio Operator	Rescue Swimmer	RNLI
SAR-H					↙	↙				
Training Paramedics to work alongside Fire Rescue Service	↙				↙					
Emergency Response Enhancement	↙									
Flood Response					↙					
SAR Project						↙				

Figure 62 -- AcV-1 Responsibility Matrix

Related elements

Actual Organization

- [Actual Post]
- [Actual Project]
- [NEW! Organizational Project Relationship]
- [NEW! Project Ownership]
- [Project Sequence]
- [NEW! Project Type]
- [Project Milestone]
- [NEW! Project Milestone Role]
- [NEW! Actual Project Milestone Role]
- [NEW! Status Indicators]

Related procedures

- [Creating AcV-1 diagram]
- [Building AcV-1 matrix]

Related views

In essence, the AcV-1 is an organizational breakdown consisting of actual organizations (see OV-4). The view is strongly linked with the StV-4 which shows capability clusters and dependencies.

3.3.2 AcV-2 Programme Timelines

Description

The AcV-2 view provides a timeline perspective on programmes.

The AcV-2 View is intended primarily to support the acquisition and fielding processes including the management of dependencies between projects and the integration of all the DLODs to achieve a successfully integrated military capability.

For capability-based procurement, these work streams might conveniently be equated with Defence Lines of Development (DLODs).

Implementation

AcV-2 can be represented using an AcV-2 diagram which is realized as a Gantt Chart.

Sample

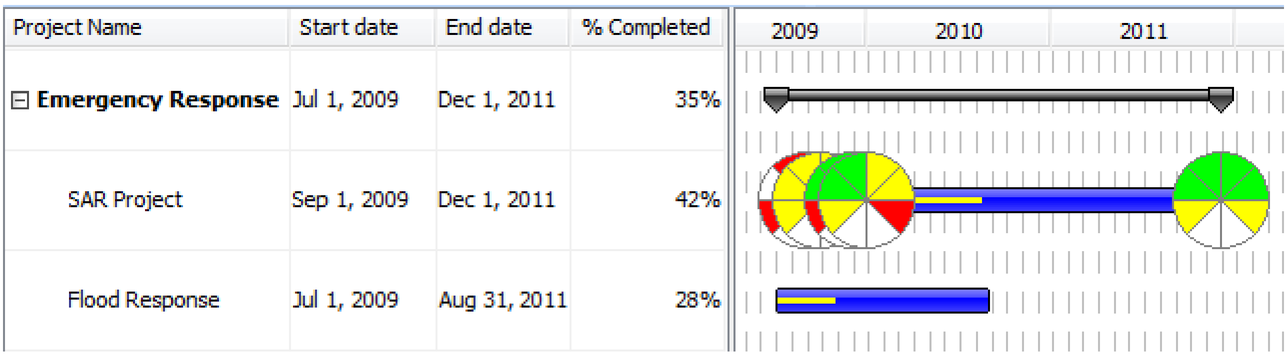


Figure 63 -- Acv-2 Programme Timelines

Related elements

- [Actual Project]

Project Status
Project Sequence
Project Theme
Actual Project Milestone
Increment Milestone
Out Of Service Milestone
Milestone Sequence
Project Milestone

Related procedures

Creating AcV-2 diagram

Related GUI

NEW! Project Status Application Wizard

Related views

The use of AcV-2 should support the management of capability delivery and be aligned with the capability phasing view (StV-3), if one exists.

3.4 Operational Viewpoint

The Operational Viewpoint is about real-world activities, the people and machinery that perform them, and the means by which they are performed. The Operational Viewpoint is divided into nine views intended to answer the "who", "what", "when", "where", "why", and "how" of a mission.

The Operational Views are common to MODAF and DoDAF; OV-1b, OV-1c, and OV-2 however, have been customized to provide for MOD requirements. The Operational Views describe the tasks and activities, operational elements, and information exchanges required to conduct operations. In MODAF thinking, the OV Views are considered to illustrate the Logical Architecture of the enterprise.

View Online Demo	UPDM: Operational Viewpoint

The views of this viewpoint are described in the following sections:

- OV-1 High-Level Operational Concept Graphic
- OV-2 Operational Node Relationship Description
- OV-3 Operational Information Exchange Matrix
- OV-4 Organizational Relationships Chart
- OV-5 Operational Activity Model
- OV-6a Operational Rules Model
- OV-6b Operational State Transition Description
- OV-6c Operational Event-Trace Description
- OV-7 Information Model

3.4.1 OV-1 High-Level Operational Concept Graphic

Description

The purpose of High-level Operational Concept Graphic is to provide a high-level graphical and textual description of operational concept (high level organizations, missions, geographic configuration, connectivity, etc) of what the architecture is supposed to do, and how it is supposed to do it. The OV-1, along with the corresponding AV-1 product is intended to serve as an executive summary of the architecture.

Implementation

OV-1 can be represented using:

- A link to an external document.
- An OV-1 diagram which is based on the UML Composite Structure diagram.
- An OV-1 Free Form diagram which is based on the UML Class diagram.
- A UML Composite Structure Diagram.

Sample

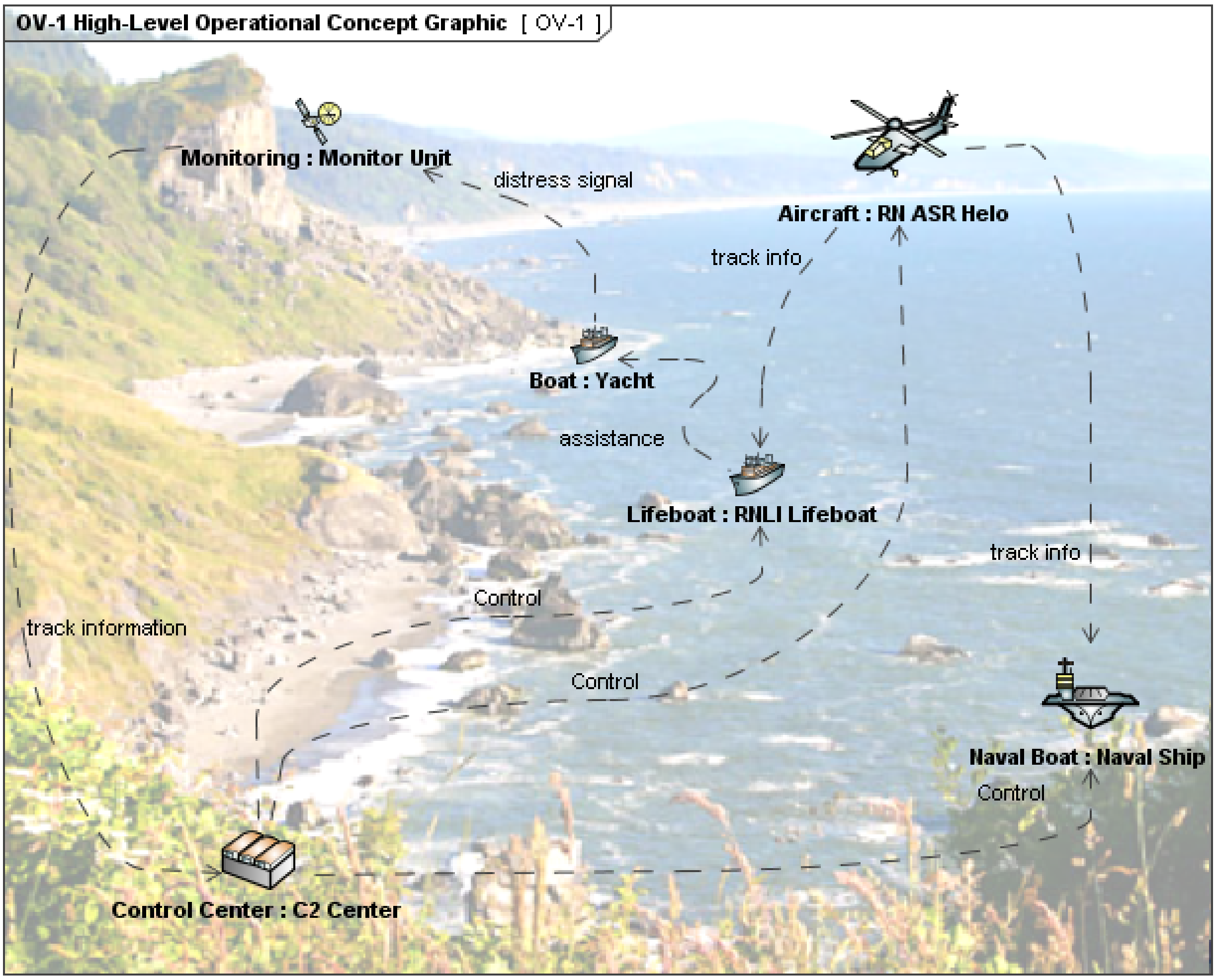


Figure 64 -- OV-1 High-Level Operational Concept Graphic

Related elements

[High-Level Operational Concept]
[Concept Role]
[Arbitrary Relationship]

Related procedures

Creating OV-1 diagram

3.4.2 OV-2 Operational Node Relationship Description

Description

The Operational Node Connectivity Description is intended to track the need to exchange information from specific operational nodes (that play a key role in the architecture) to others. An OV-2 does not depict the connectivity between the nodes. MODAF modifies the OV-2 in two ways. First it recommends that an OV-2 diagram (now OV-2a) shows the platforms or geographic locations at which operational nodes are deployed. Secondly it provides additional information (OV-2b) about each needline in the form of a requirements specification. There are now four types of needlines identified as follows:

1. InformationExchange.
2. EnergyFlow.
3. MaterielFlow.
4. MovementOfPeople.

In addition, MODAF permits service-oriented architectures. Instead of needlines between nodes, it is possible simply to show which services the nodes provide and consume. Finally, MODAF again permits known resources to be shown in an OV-2. However, this must be clearly shown as a KnownResource in an OV-2 model. LogicalArchitecture, which is the container class for all the nodes and KnownResources, is introduced.

Implementation

OV-2 can be represented using:

- An OV-2 diagram which is based on the UML Class diagram.
- An OV-2 diagram which is based on the UML Composite Structure diagram.
- A UML Class diagram.
- A UML Composite Structure diagram.
- A SysML Block Definition diagram.
- A SysML Internal Block diagram.

Sample

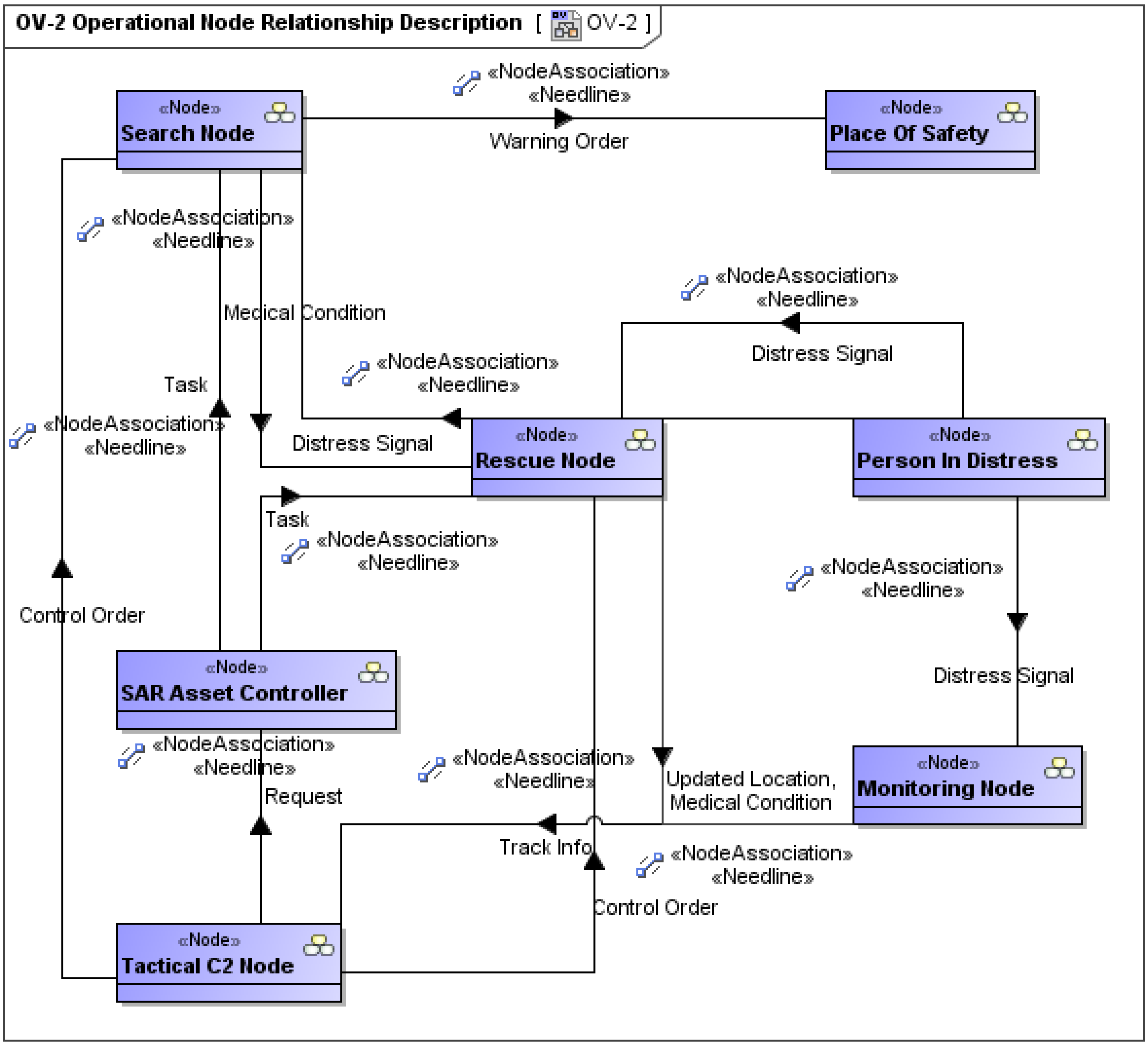


Figure 65 -- OV-2 Operational Node Relationship Description

Related elements

- Node
- Logical Architecture
- NEW! Operational Exchange
- NEW! Exchange Element
- Node Port
- Node Role
- Needline
- Capability
- Exhibits
- NEW! Actual Location
- Location Type
- Energy
- NEW! Materiel
- NEW! Is Capable Of Performing
- Operational Activity

Known Resource
Resource Artifact
Software
Capability Configuration
Organization (MODAF)
Post
Problem Domain
NEW! Security Domain

Related procedures

Creating OV-2 diagram
Creating Operational Exchanges in OV-2 diagram

Related GUI

Operational Exchange Creation Wizard
Operational Exchange Manager Dialog

Related views

An OV-2 is highly related with an OV-5. Operational Nodes shown in the OV-2 are the performers of the Operational Activities modeled in the OV-5. OV-2 focuses on the Operational Nodes, with the activities being a secondary adornment. The OV-5, on the other hand, places first-order attention on operational activities and only second-order attention on Nodes, which can be shown as annotations or swim-lanes on the activities.

Information flows can be modeled either in the OV-2 or OV-5. In both cases they are highly associated and in general should be reused between these views.

The OV-2 displays the Capabilities required by Nodes from StV-2. That is an association between two abstraction levels of user requirements where the OV is more specific than the StV and a Node is more specific concept than a Capability.

The other important mapping is between OV-2 and SV-1. The specification Node and implementation Resource are subjects to map here. One OV-2 product can have several implementations in the SV-1.

3.4.3 OV-2 Operational Node Internal Relationship Description

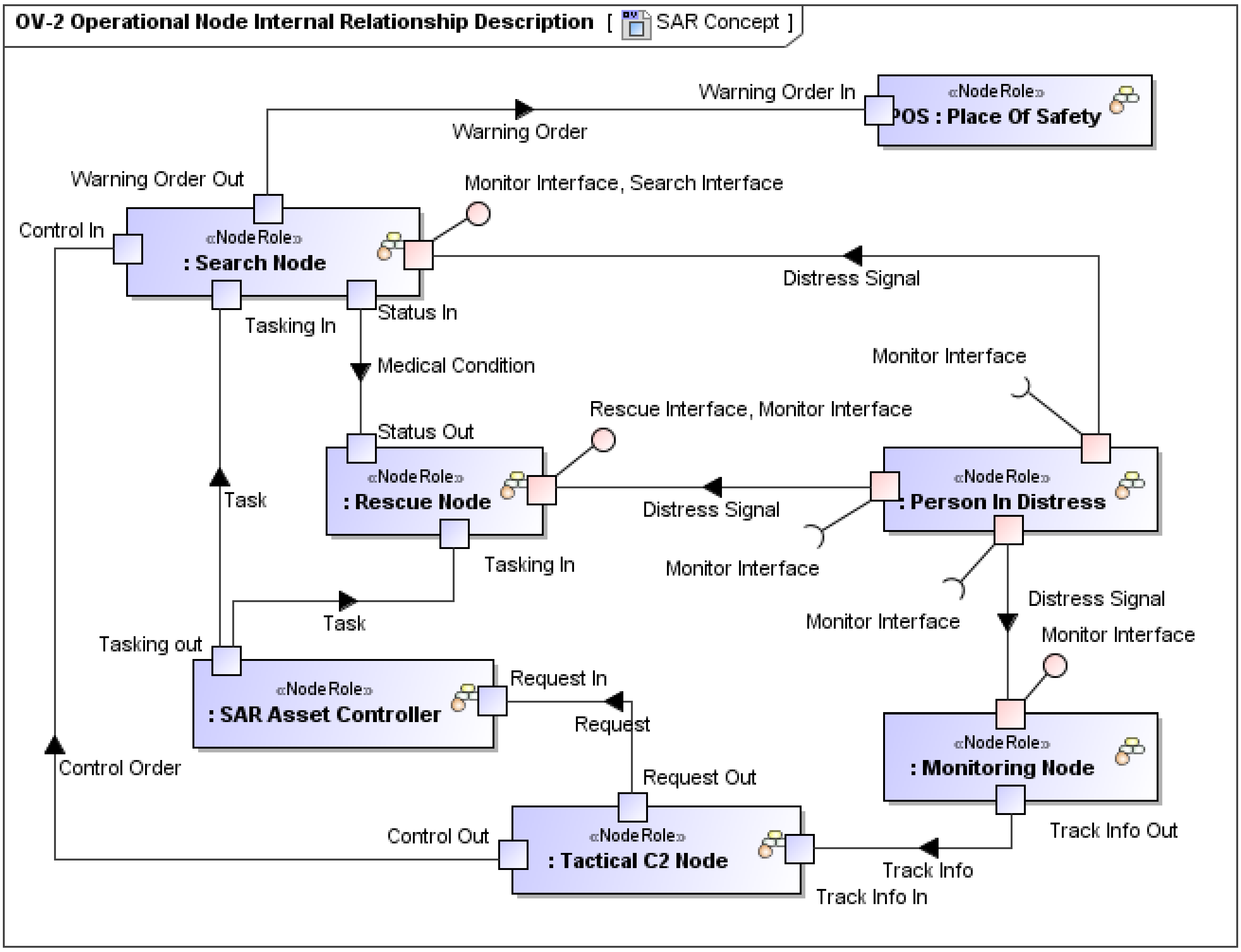
Description

Implementation

OV-2 can be represented using:

- An OV-2 diagram which is based on the UML Class diagram.
- An OV-2 diagram which is based on the UML Composite Structure diagram.
- A UML Class diagram.
- A UML Composite Structure diagram.
- A SysML Block Definition diagram.
- A SysML Internal Block diagram.

Sample



Related elements

- [Known Resource]
- [Needline]
- [Node Port]
- [Node Role]
- [NEW! Operational Exchange]
- [Service Channel]
- [Service]
- [NEW! Property]
- [Request]

Related procedures

- [Creating OV-2 diagram]
- [Creating Operational Exchanges in OV-2 diagram]

Related views

An OV-2 is highly related with an OV-5. Operational Nodes shown in the OV-2 are the performers of the Operational Activities modeled in the OV-5. OV-2 focuses on the Operational Nodes, with the activities being a secondary adornment. The OV-5, on the other hand, places first-order attention on operational activities and only second-order attention on Nodes, which can be shown as annotations or swim-lanes on the activities.

Information flows can be modeled either in the OV-2 or OV-5. In both cases they are highly associated and in general should be reused between these views.

The OV-2 displays the Capabilities required by Nodes from StV-2. That is an association between two abstraction levels of user requirements where the OV is more specific than the StV and a Node is more specific concept than a Capability.

The other important mapping is between OV-2 and SV-1. The specification Node and implementation Resource are subjects to map here. One OV-2 product can have several implementations in the SV-1.

3.4.4 OV-3 Operational Information Exchange Matrix

Description

Information exchanges express the relationship across the three basic architecture data elements of an OV (operational activities, operational nodes, and information flow) with a focus on the specific aspects of the information flow and the information content.

The Information Exchanges of the OV-3 should remain at a high level of aggregation to represent actual information workflow products that are used at the operational nodes shown in the OV-2 (and not their subordinate operational nodes).

Implementation

OV-3 can be represented using:

- An OV-3 table.
- An OV-3 spreadsheet report.

Sample

#	Operational Exchange Item	Sending Node	Receiving Node	Producing Operational Activity	Consuming Operational Activity
1	Request	Tactical C2 Node	SAR Asset Controller		
2	Control Order	Tactical C2 Node	Rescue Node		
3	Control Order	Tactical C2 Node	Search Node		
4	Warning Order	Search Node	Place Of Safety	Send Warning Order	Process Warning Order
5	Medical Condition	Search Node	Rescue Node	Monitor Health	Provide Medical Assistance
6	Task	SAR Asset Controller	Search Node		
7	Task	SAR Asset Controller	Rescue Node		
8	Distress Signal	Person In Distress	Search Node	Send Distress Signal	Receive Distress Signal
9	Distress Signal	Person In Distress	Rescue Node	Send Distress Signal	Receive Distress Signal
10	Distress Signal	Person In Distress	Monitoring Node		
11	Track Info	Monitoring Node	Tactical C2 Node		

Figure 66 -- OV-3 Operational Information Exchange Matrix

Related elements

[Node](#)
[NEW! Operational Exchange](#)
[NEW! Exchange Element](#)
[Energy](#)
[NEW! Materiel](#)
[Resource Artifact](#)

Post
Software
Capability Configuration
Organization (MODAF)
Operational Activity

Related procedures

Creating OV-3 table

Related views

An OV-3 is initially constructed from the information contained in the Operational Node Connectivity Description (OV-2).

3.4.5 OV-4 Organizational Relationships Chart

Description

The Organizational Relationships Chart illustrates the command structure or relationships (as opposed to relationships with respect to a business process flow) among human roles, organizations, or organization types that are the key players in architecture. MODAF divides The OV-4 in two views: an OV-4 Typical and an OV-4 Actual. The former is exactly as the DoDAF OV-4, while the latter is a special form of the SV-1; where the resources are restricted to being organizational.

Implementation

OV-4 can be represented using:

- An OV-4 diagram which is based on the UML Class diagram.
- A UML Class diagram.
- A SysML Block Definition diagram.

Sample

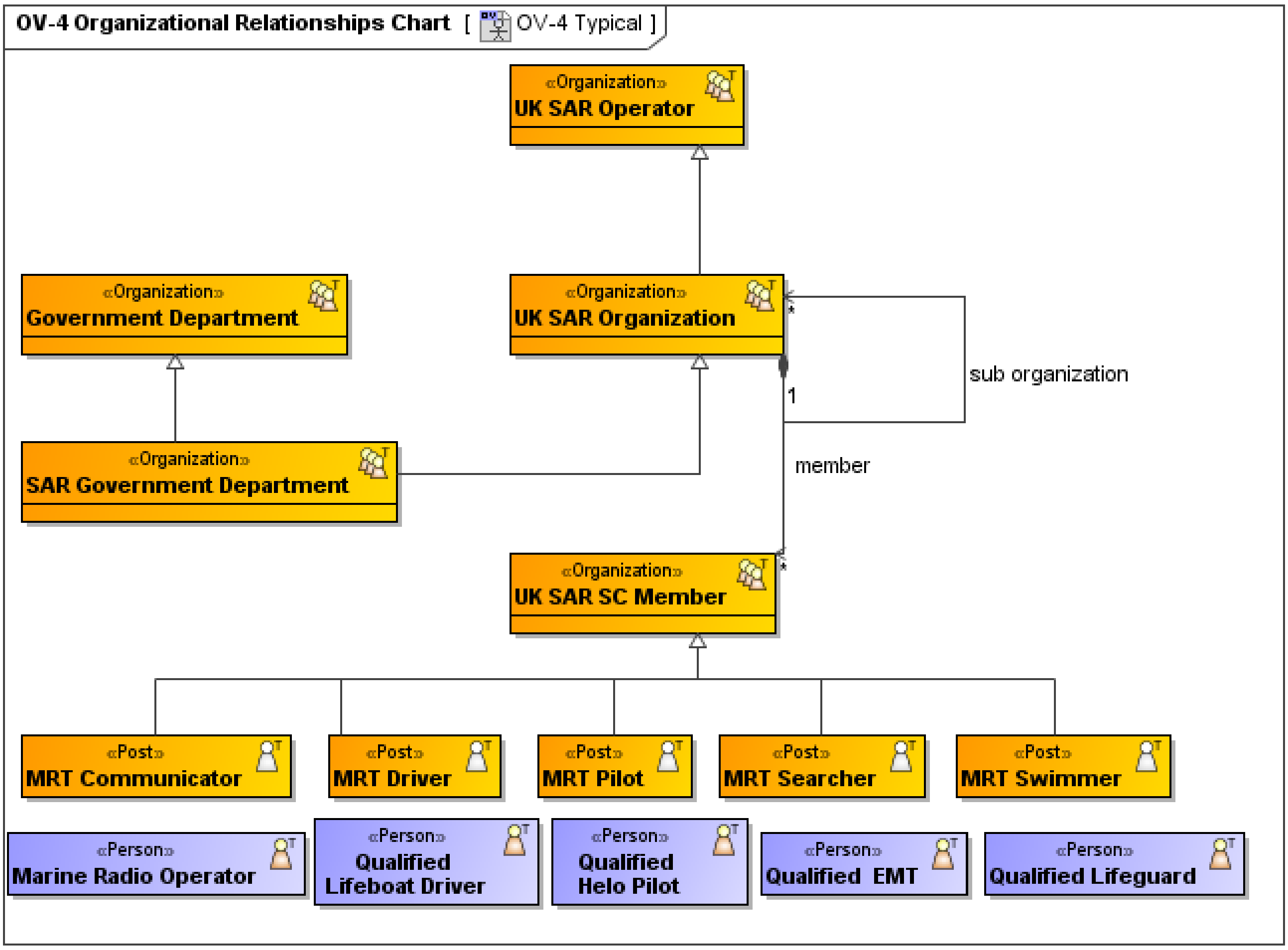


Figure 67 -- OV-4 Organizational Relationships Chart

Related elements

- Organization (MODAF)
- Post
- Person
- Command
- Competence
- Provides Competence
- Requires Competence
- Actual Organization
- Actual Post
- Actual Person
- Fills Post
- Actual Organization Relationship
- Actual Organization Role
- Operational Activity
- Owns Process

Related procedures

- Creating OV-4 diagram
- Instantiating Structures

Related views

The organizations that are modeled using an OV-4 in the Operational Viewpoint may also appear in other views, for example, SV-1 (organizational constituents of a capability configuration), AcV-1 (actual organizations that own projects), and SV-5 (organizational resources performs functions).

3.4.6 OV-5 Operational Activity Model

Description

The Operational Activity Model describes the operations that are normally conducted in the course of achieving a mission or a business goal, from a net-centric perspective. It describes capabilities, operational activities (or tasks), input and output (I/O) flows between activities, and I/O flows to/from activities that are outside the scope of the architecture. It is imperative that the levels-of-detail between the OV-2, OV-3, and OV-5 remain cohesive. For example, if one diagram of OV-2 operational nodes is developed that shows aggregated organizations only, then it is imperative that the corresponding OV-5 product be developed to show only those operational activities that are meaningful with respect to these operational nodes. Similarly, the information exchanges of OV-3 should remain at a high level of aggregation to represent actual information workflow products that are used at the operational nodes depicted in OV-2 (and not their subordinate operational nodes). The net-centric OV-5 may be used in the following ways:

- Delineate lines of dependency on external activities when coupled with an OV-2.
- Highlight information flows to depict the status of the information's refinement (raw, pre-processed, fused, etc.).
- Provide the critical foundation for depicting Task, Post, Process, and Use (TPPU) activity sequencing and timing in the OV-6a, OV-6b, and OV-6c.
- Identify critical mission threads and operational information exchanges by annotating which activities are critical, i.e., identify the activities in the model that are critical.

Implementation

OV-5 can be represented using:

- An OV-5 diagram for Operational Activity hierarchies. This diagram is based on the UML Class diagram.
- An OV-5 diagram for Operational Activity flows. This diagram is based on the UML Activity diagram.
- A UML Class diagram.
- A UML Activity diagram.
- A SysML Block diagram.
- A SysML Activity diagram.

Sample

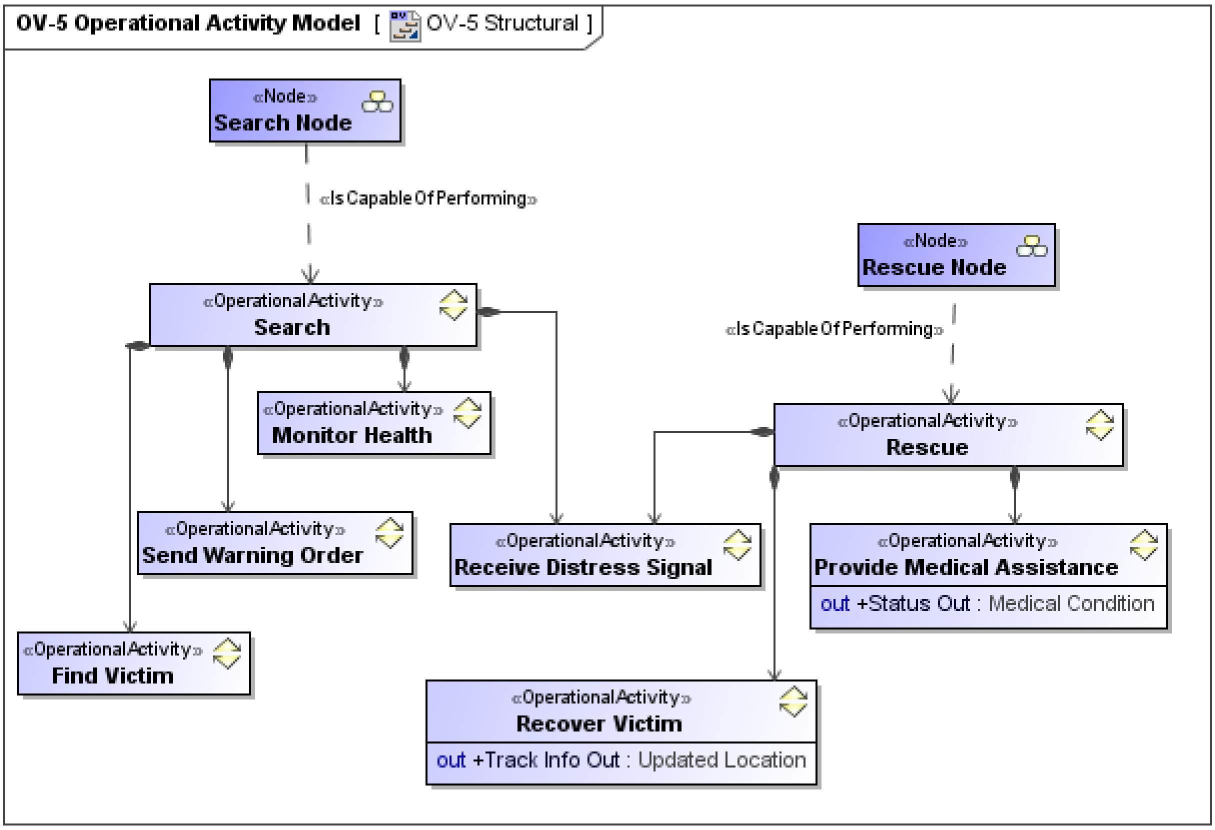


Figure 68 -- OV-5 Operational Activity hierarchy Model

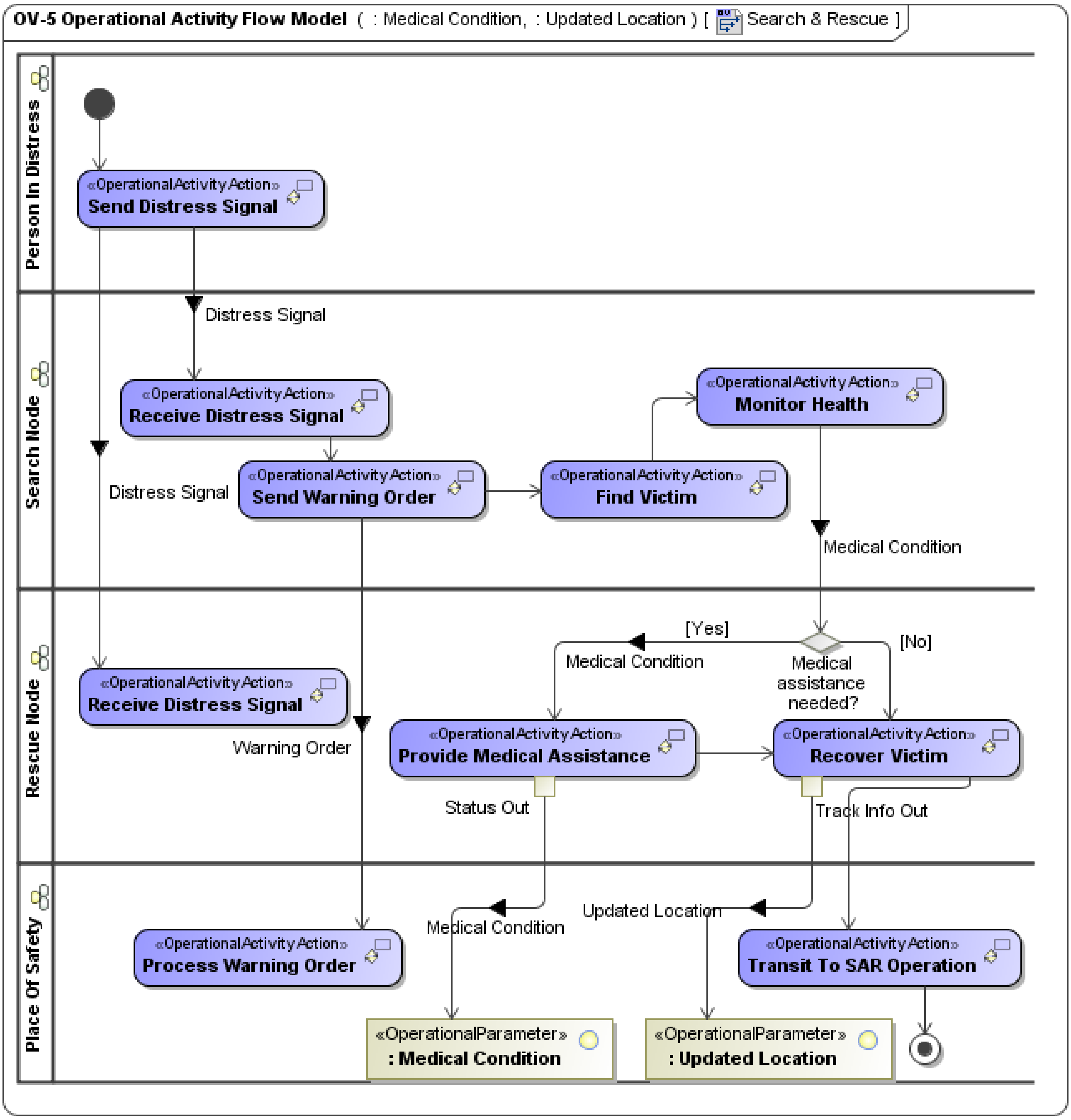


Figure 69 -- Fragment of OV-5 Operational Activity Model

Related elements

- Operational Activity
- Operational Parameter
- Standard Operational Activity
- Node
- NEW! Is Capable Of Performing
- Operational Activity Action
- Operational Activity Edge
- NEW! Operational Exchange
- NEW! Exchange Element

[Energy](#)
[NEW! Materiel](#)

Related procedures

Creating OV-5 Operational Activity Model diagram
Creating OV-5 Operational Activity Flow Model diagram
Displaying possible Operational Exchanges on the selected Operational Activity Edge

Related GUI

Operational Exchange Creation Wizard
Operational Exchange Manager Dialog

Related views

The OV-5 and OV-2 are, to a degree, complements of each other. An OV-5 focuses on the operational activities whereas OV-2 focuses on the operational nodes. Due to the relationship between nodes and operational activities, these types of view should normally be developed together.

To maintain this independence from implementation, the logical Nodes in an OV-2 are used to represent the structure which carries out the Operational Activities. Operational Activities are realized as Functions (SV-4) which are the “how” to the Operational Activities’ “what”, for example, they are specified in terms of the resources that carry them out.

The activities described in an OV-5 may be Standard Operational Activities which are defined in the StV-6 (which also maps the activities to corresponding capabilities).

3.4.7 OV-6a Operational Rules Model

Description

The Operational Rules Model specifies operational or business rules that are constraints on an enterprise, a mission, operation, business, or an architecture. While other OV views (e.g., OV-1, OV-2, and OV-5) describe the structure of a business—what the business can do—for the most part, they do not describe what the business must do, or what it cannot do. At the mission level, an OV-6a may consist of doctrine, guidance, rules of engagement, and so forth. At the operation level, rules may include such things as a military Operational Plan (OPLAN). At lower levels, an OV-6a describes the rules under which the architecture or its nodes behave under specified conditions. Such rules can be expressed in a textual form, for example, “If (these conditions) exist, and (this event) occurs, then (perform these actions).” At a top level, rules should at least embody the concepts of operations defined in an OV-1, and should provide guidelines for the development and definition of more detailed rules and behavioral definitions that will occur later in the architecture definition process.

Implementation

OV-6a can be represented using:

- An OV-6a table.
- An OV-6a spreadsheet report.

Sample

#	Applies To	Rule Specification	Rule Kind
1	Search Node Rescue Node Monitoring Node	Respond to emergencies 24 hours a day	Constraint
2	Rescue Node	Minimize the risk of pollution of the marine environment from ships	Constraint
3	Rescue Node Search Node	Where the coverage provided by military SAR assets meets the civil SAR requirement, they will be made available for civil aeronautical, maritime and land based SAR operations.	Constraint
4	Monitoring Node Search Node	The organization is based upon a continuous communications watch on VHF, VHFDSC, MF and MFDSC radio at 19 MRCC/MRSCs, which provide radio coverage of UK coastal and offshore waters out to 150 nautical miles.	Constraint
5	Monitoring Node	Satellite communications extend coverage throughout the UKSRR and worldwide.	Constraint
6	SAR Asset Controll	SAR Operations are supported by a computerized command & control system, which provides incident management and recording; resource selection and alerting; logging and databases. A computerized system provides the facility to predict the movement of drifting targets at sea; produce search areas and optimum search coverage plans for search units.	Constraint

Figure 70 -- OV-6a Operational Rules Model

Related elements

[Operational Constraint](#)
[Node](#)
[Operational Activity](#)
[NEW! Entity Item](#)
[NEW! Operational Exchange](#)
[NEW! Exchange Element](#)

Related procedures

[Creating OV-6a table](#)

Related views

An OV-6a constrains the structure elements of OV-1, OV-2, and OV-5. OV-6a can also be used to extend the capture of business requirements by constraining the structure and validity of the OV-7 elements.

As the View name implies, the rules captured in an OV-6a are operational (i.e., mission-oriented) whereas resource-oriented rules are defined in an SV-10 (OV-6 is the “what” to SV-10’s “how”).

3.4.8 OV-6b Operational State Transition Description

Description

The Operational State Transition Description is a graphical method of describing how an operational node or activity responds to various events by changing its state. The diagram represents the sets of events to which the architecture will respond (by taking an action to move to a new state) as a function of its current state. Each transition specifies an event and an action. The explicit sequencing of activities in response to external and internal events is not fully expressed in an OV-5. An OV-6b can be used to describe the explicit sequencing of the operational activities.

Alternatively, an OV-6b can be used to reflect the explicit sequencing of actions internal to a single operational activity or the sequencing of operational activities with respect to a specific operational node. In a net-centric architecture, the OV-6b is used to describe the set of state transitions for providers and consumers in the Net-Centric Environment (NCE) in response to the posting of information to the NCE or retrieving of information from the NCE.

Implementation

OV-6b can be represented using a UML State Machine diagram.

Sample

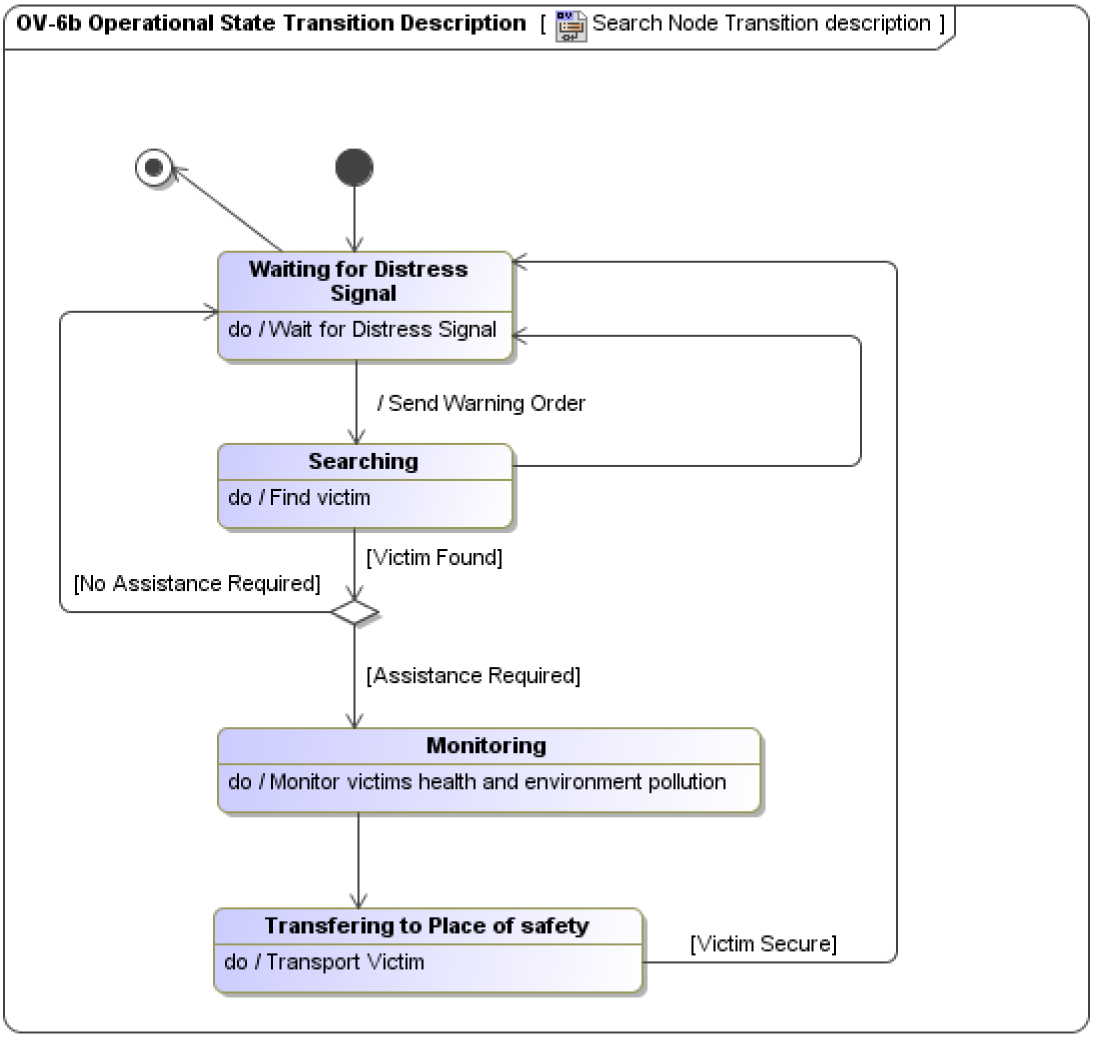


Figure 71 -- OV-6b Operational State Transition Description

Related elements

- Operational State Description
- NEW! Operational State
- Node

Related views

An OV-6b can be used to describe the detailed sequencing of activities or work flow in the business process. The OV-6b is particularly useful for describing critical sequencing of behaviors and timing of operational activities that cannot be adequately described in the Activity Model (OV-5).

3.4.9 OV-6c Operational Event-Trace Description

Description

The Operational Event-Trace Description provides a time-ordered examination of the information exchanges between participating operational nodes as a result of a particular operational thread or scenario. Each event-trace diagram should have an accompanying description that defines the particular scenario or situation and represent a specific capability. The OV-6c is also used in conjunction with an OV-5 to depict process flow (such as an IDEF3 model). A process flow model captures precedence and causality relations between situations and events by providing a structured method for expressing knowledge about how a process or organization works. A process flow model should be annotated with the names of the operational nodes responsible for conducting those activities.

The net-centric OV-6c describes the business and mission processes that need to be executed to achieve Net-Centric Operations (NCO). The ability to discover, access, and understand information and capabilities from the NCE, where and when they are needed, is supported by the OV-6c and can be decomposed to the level of specificity required for the subject architecture. In the NCE, the OV-6c may depict the following:

- Exchanges between the Service Functionality Providers and Service Consumers, the Service Consumers and external Service Functionality Providers, and between the Service Functionality Providers and Unanticipated Users.
- Sequences that describe the timeline for the availability of information for any of its refinement states (raw, preprocessed, fused, etc.).
- Handling, methodologies, and the Enterprise Information Environment (EIE) infrastructure components that
- support the operational concepts of post before processing.
- Illustration of one-to-many, many-to-one, and many-to-many exchanges between Service Functionality Providers and Service Consumers found in the net-centric OV-3.

Implementation

OV-6c can be represented using a UML Sequence diagram.

Sample

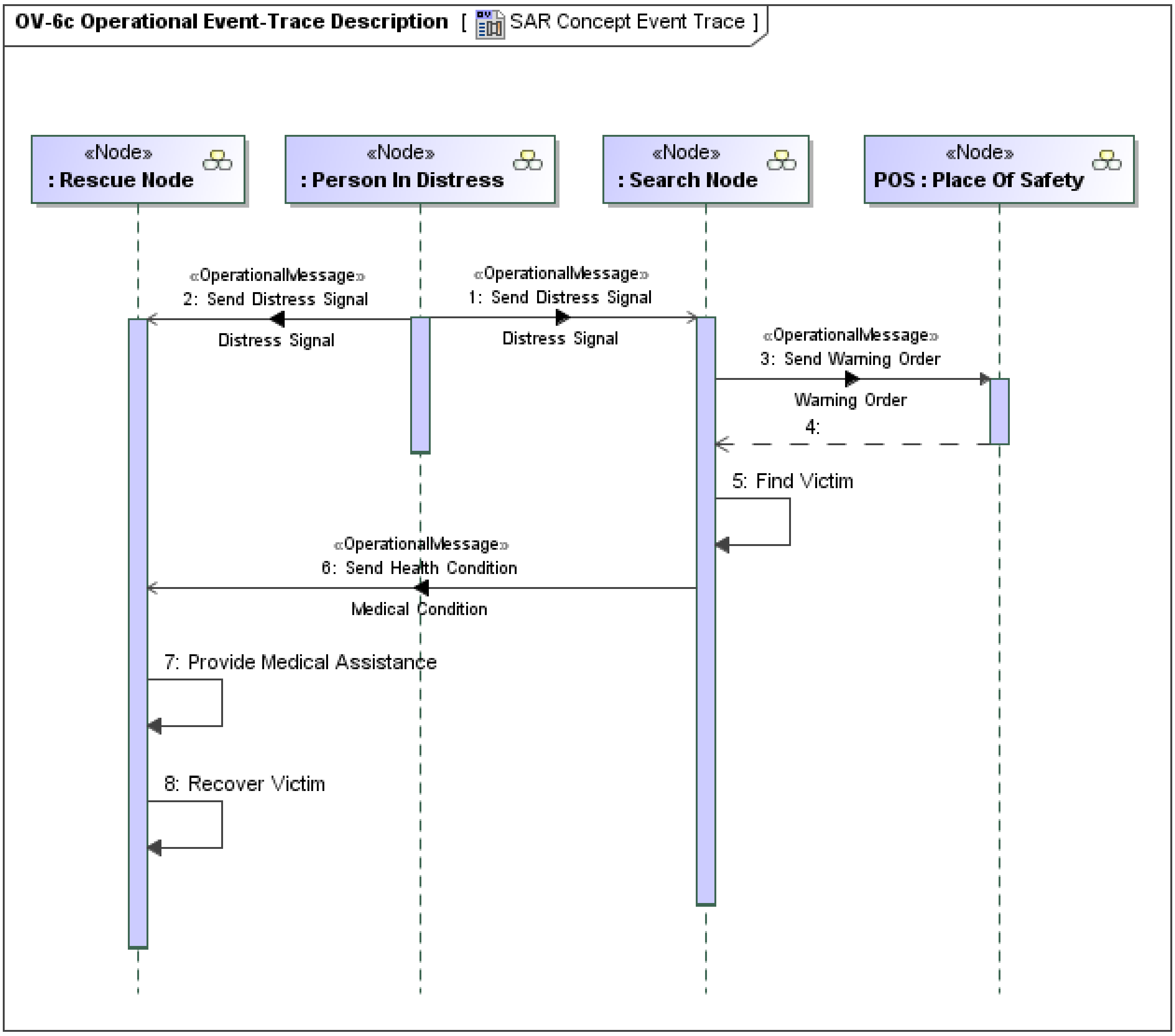


Figure 72 -- OV-6c Operational Event-Trace Description

Related elements

- Operational Event Trace
- Operational Message
- NEW! Operational Exchange
- Node
- Node Role

Related GUI

- Operational Exchange Creation Wizard
- Operational Exchange Manager Dialog

Related views

The OV-6c can be used by itself or in conjunction with an Operational State Transition Description (OV-6b) to describe the dynamic behavior of processes.

The information content of messages that connect life-lines in an OV-6c View Product may be related, in modeling terms, with the information flows (OV-3, OV-5) and information entities (OV-7) modeled in other views.

3.4.10 OV-7 Information Model

Description

The Logical Data Model describes the structure of an architecture domain's system data types and the structural business process rules (defined in the architecture's Operational View) that govern the system data. It provides a definition of architecture domain data types, their attributes or characteristics, and their interrelationships. An OV-7, including the domain's system data types or entity definitions, is a key element in supporting interoperability between architectures, since these definitions may be used by other organizations to determine system data compatibility. Often, different organizations may use the same entity name to mean very different kinds of system data with different internal structure. This situation will pose significant interoperability risks, as the system data models may appear to be compatible, each having a Target Track data entity but having different and incompatible interpretations of what Target Track means.

In the NCE, the OV-7 describes the structure of data types (information elements) for information being made available or being consumed by the OV-5 activities and provides the organization and composition of metadata that can be used to characterize the information exchanged in the NCE.

Cameo Data Modeler plugin integration

You can use the Entity Relationship diagram for conceptual, logical, and physical data modeling in OV-7.

Note that the Entity Relationship diagram is supported in OV-7. It allows for using the information engineering notation within this view.

Implementation

OV-7 can be represented using:

- An OV-7 diagram which is based on the UML Class diagram.
- A UML Class diagram.
- A SysML Block Definition diagram.

Sample

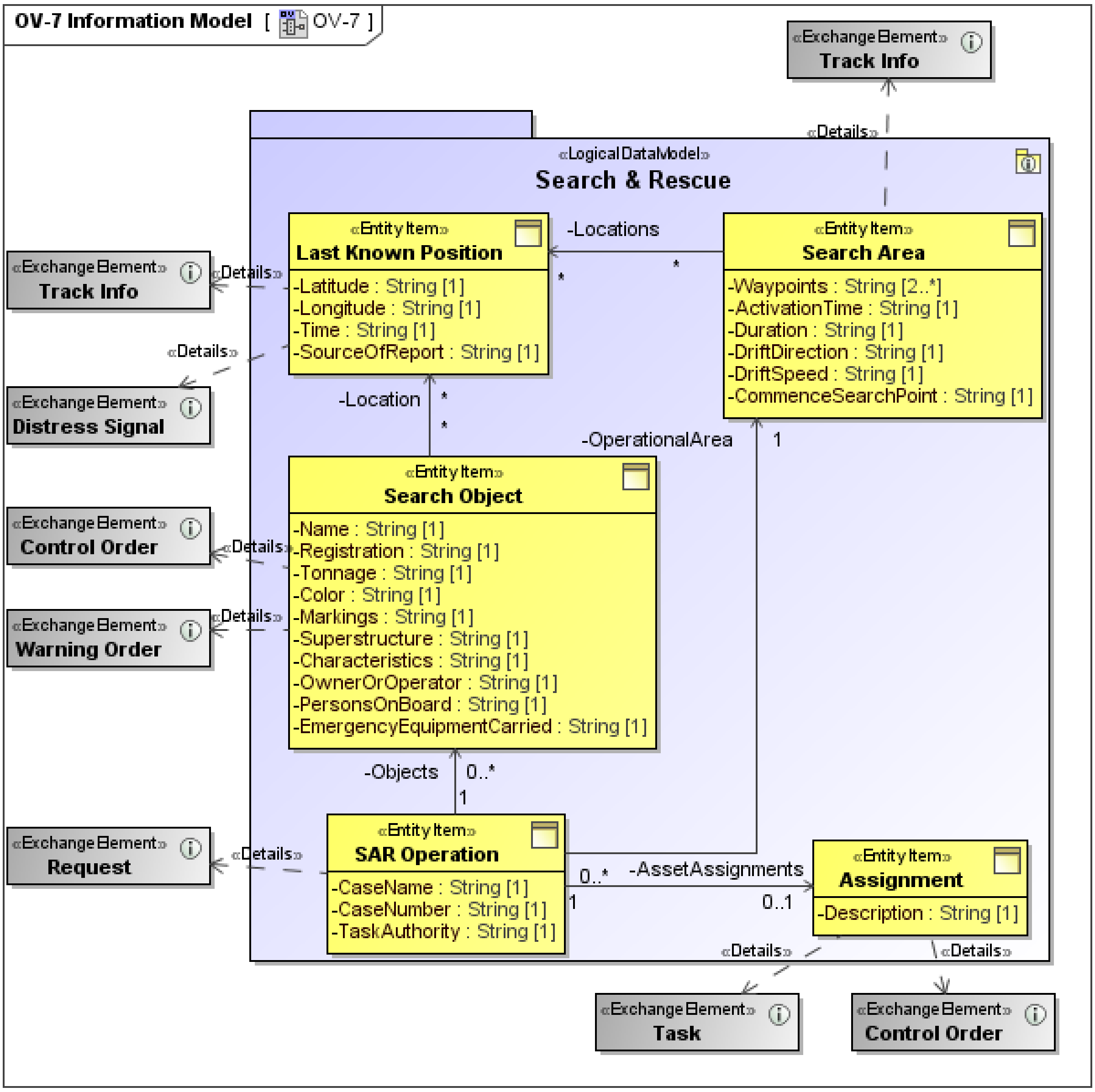


Figure 73 -- OV-7 Information Model

Related elements

[Logical Data Model]
[NEW! Entity Item]
[NEW! Entity Attribute]
[NEW! Entity Relationship]
[NEW! Details]
[NEW! Exchange Element]

Related procedures

[Creating OV-7 diagram]

Related views

An Operational Information Entity within an OV-7 may be an Information Element in an OV-3 or an Activity Flow Object in an OV-5.

Note that MODAF talks about ‘information’ in the Operational Viewpoint and ‘data’ in the System Viewpoint. The intention of this is that OV-7 describes information or data of importance to the business (e.g., information products that might be referred to in doctrine, SOPs, etc.) whereas SV-11 describes data relevant at the system level.

3.5 Service Oriented Viewpoint

The Services View (SOV) shows the elements that are part of SOV-1 through SOV-5.

The Service-Orientated View is a description of services needed to directly support the operational domain as described in the Operational View. A service is described as a unit of work through which a particular Resource provides a useful result to a consuming Resource.

The views of this viewpoint are described in the following sections:

- SOV-1 Service Taxonomy
- SOV-2 Service Interface Specification
- SOV-3 Capability to Service Mapping
- SOV-4a Service Constraints
- SOV-4b Service State Model
- SOV-4c Service Interaction Specification
- SOV-5 Service Functionality Flow

3.5.1 SOV-1 Service Taxonomy

Description

The Service Taxonomy View (SOV-1) specifies a hierarchy of services. The elements in the hierarchy are service specifications (i.e. service interfaces), and the relationships between the elements are specializations – i.e. one Service is a special type of another. Along with SOV-2, it specifies a standard library of Service specifications for an enterprise, which Service implementers are expected to conform to.

Implementation

SOV-1 can be represented using a SOV-1 diagram which is based on the UML Class diagram.

Sample

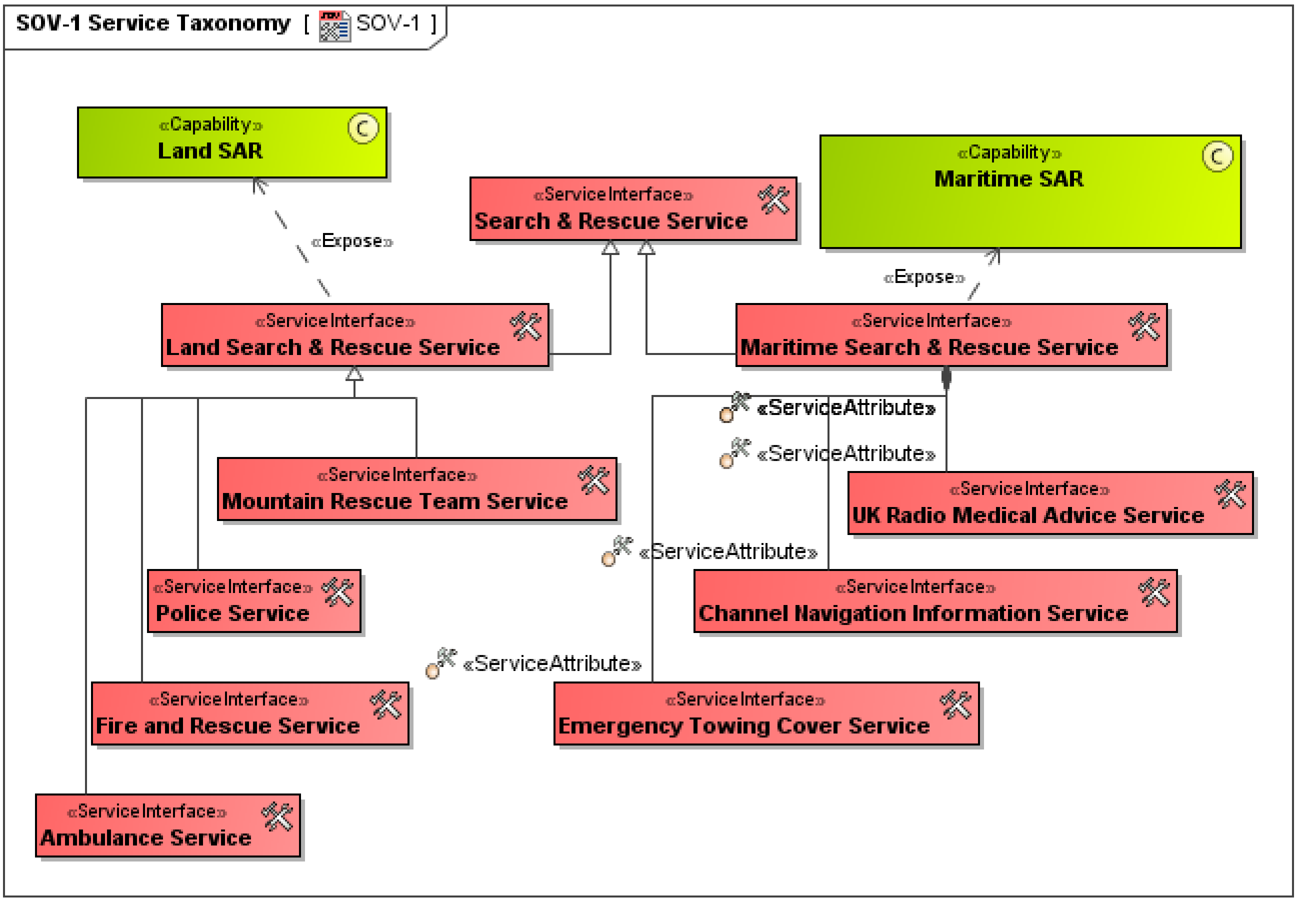


Figure 74 -- SOV-1 Service Taxonomy

Related elements

[Service Interface]
[Capability]
[Expose]

Related procedures

[Creating SOV-1 diagram]

Related views

The Services Interfaces in COV-1 can realize Capabilities (from StV-2) and also support the Operational Activities (from OV-5).

3.5.2 SOV-2 Service Interface Specification

Description

The purpose of the Service Interface Specification View (SOV-2) is to define the interfaces presented by a service. A Service presents one or more interfaces to consumers (a “consumer” being any agent capable of using the service – a person, an organization, a system or another service). In this case, the architect specifies the provided interfaces. A service may also be capable of using interfaces exposed by other services, and the architect may specify these as used interfaces.

Implementation

SOV-2 can be represented using a report which is automatically generated from all data.

Sample

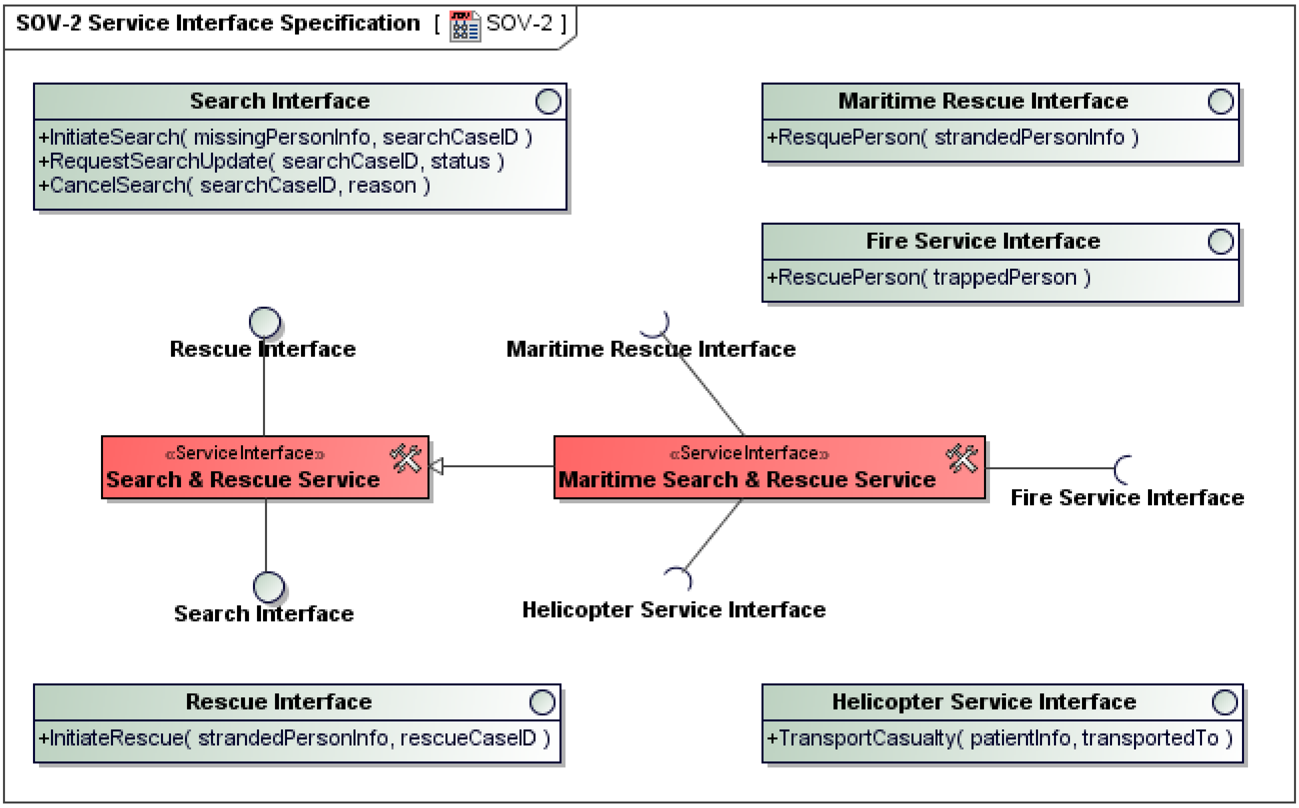


Figure 75 -- SOV-2 Service Interface Specification

Related elements

- Service Interface
- Service Operation
- Service Attribute
- Service Parameter
- Service
- Request

3.5.3 SOV-3 Capability to Service Mapping

Description

The Capability to Service Mapping View (SOV-3) depicts which services contribute to the achievement of a capability. It is in the form of a table generated from the database. If a network enabled capability is to be delivered by the orchestration of loosely couple services (i.e. a service-oriented architecture), it is important to know which services have the potential to support particular capabilities. This helps to prevent redundant services or capabilities, (except where specifically required) and what is known as stovepipe development. An SOV-3 presents a simple mapping of services to capabilities, showing which services contribute to which capability.

Implementation

SOV-3 can be represented using a StV-6 diagram which is an editable Dependency Matrix. The Service Interfaces will be used as the row elements and the Capabilities will be used as the column elements.

Sample

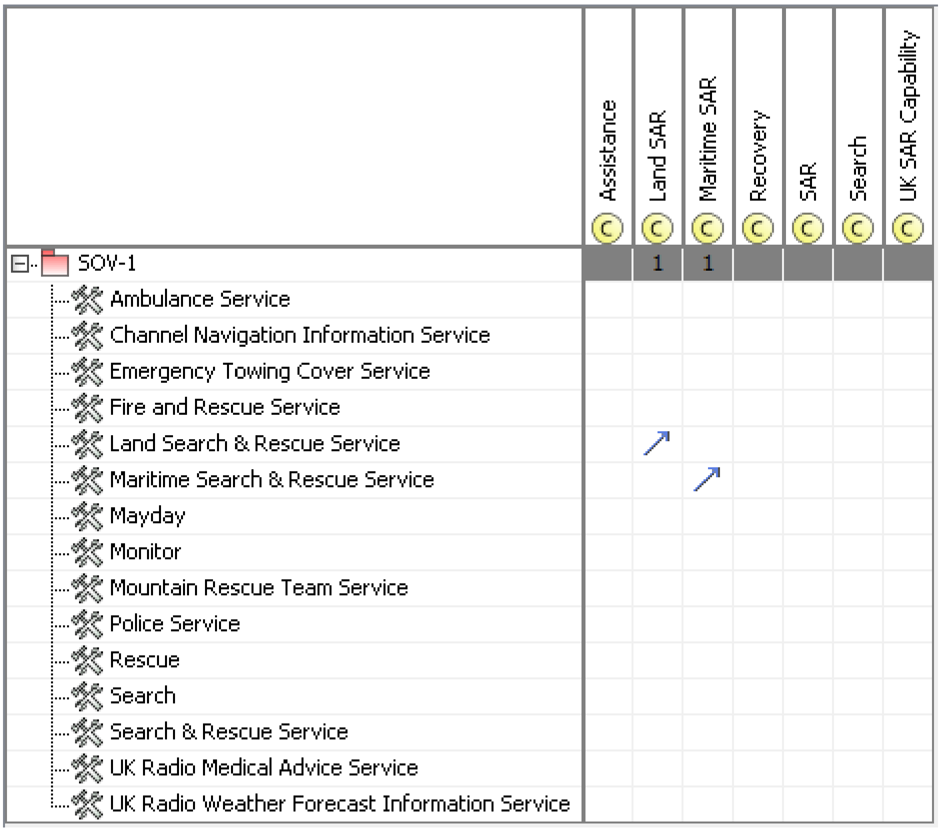


Figure 76 -- SOV-3 Capability to Service Mapping

Related elements

- Service Interface
- Expose
- Capability

Related procedures

- Building SOV-3 matrix

3.5.4 SOV-4a Service Constraints

Description

The purpose of the Service Constraints View (SOV-4a) is to specify constraints that apply to providers and consumers of services. To better enable consistency and re-use of service specifications, it is important to set constraints on how a service should behave. An SOV-4a product specifies constraints against services to which implementations of the service must conform.

Implementation

SOV-4a can be represented using:

- A SOV-4a table.
- A SOV-4a spreadsheet report.

Sample

#	Applies To	Rule Specification	Owner
1	UK Radio Medical Advice Service	Vessels making calls on either VHF or MF radio, or telephone call requiring medical advice or assistance should be provided with a radio/telephone link to the appropriate medical authorities.	SOV-4a
2	UK Radio Medical Advice Service	If medical advice requires the casualty to be taken off the vessel then the MRCC/MRSC providing the link will arrange for the casualty to be transported from the vessel to a hospital.	SOV-4a
3	Fire and Rescue Service	Each Fire Authority is required to make provision for firefighting within its area.	SOV-4a
4	Fire and Rescue Service	In addition to fire fighting within the area of responsibility Fire Authority may use resources for other purposes which currently can include those incidents involving chemicals, road traffic accidents, rescue.	SOV-4a
5	Fire and Rescue Service	Fire Brigades should have the ability to mobilize personnel and equipment quickly to almost any part of the UK mainland and generally receive calls for assistance through the public service communications network.	SOV-4a
6	Emergency Towing Cover Service	MCA charters four Emergency Towing Vessels (ETVs) to provide emergency towing cover in high risk shipping areas 24 hours a day.	SOV-4a
7	Channel Navigation Information Service	Provides continuous radar surveillance of the Straits of Dover to ensure vessels transiting the Straits do so in accordance with the International Regulations for Preventing Collisions at Sea 24 hours a day.	SOV-4a
8	Channel Navigation Information Service	Makes regular safety broadcasts, which include weather conditions and other occurrences within the traffic separation scheme to assist vessels in their passage planning through this busy waterway 24 hours a day.	SOV-4a
9	Channel Navigation Information Service	Vessels over 300 Gross Registered Tonnes (GRT) should be required to report.	SOV-4a

Figure 77 -- SOV-4a Service Constraints

Related elements

Service Policy

Service Interface

Related procedures

Filling in SOV-4a table

3.5.5 SOV-4b Service State Model

Description

The purpose of the Service State Model View (SOV-4b) is to specify the possible states a service may have, and the possible transitions between those states. It is generally considered good practice to make services stateless – i.e. consumers of a service are not aware of what state the service is in. However, in specifying a service, it is often necessary to specify the allowable states so as to constrain how implementations of the service will behave. As the states of a service may affect its ability to supply those services, it is important for consumers to understand those states. An SOV-4b is a specification of those states, and the possible transitions between them.

Implementation

SOV-4b can be represented using a UML State Machine diagram.

Sample

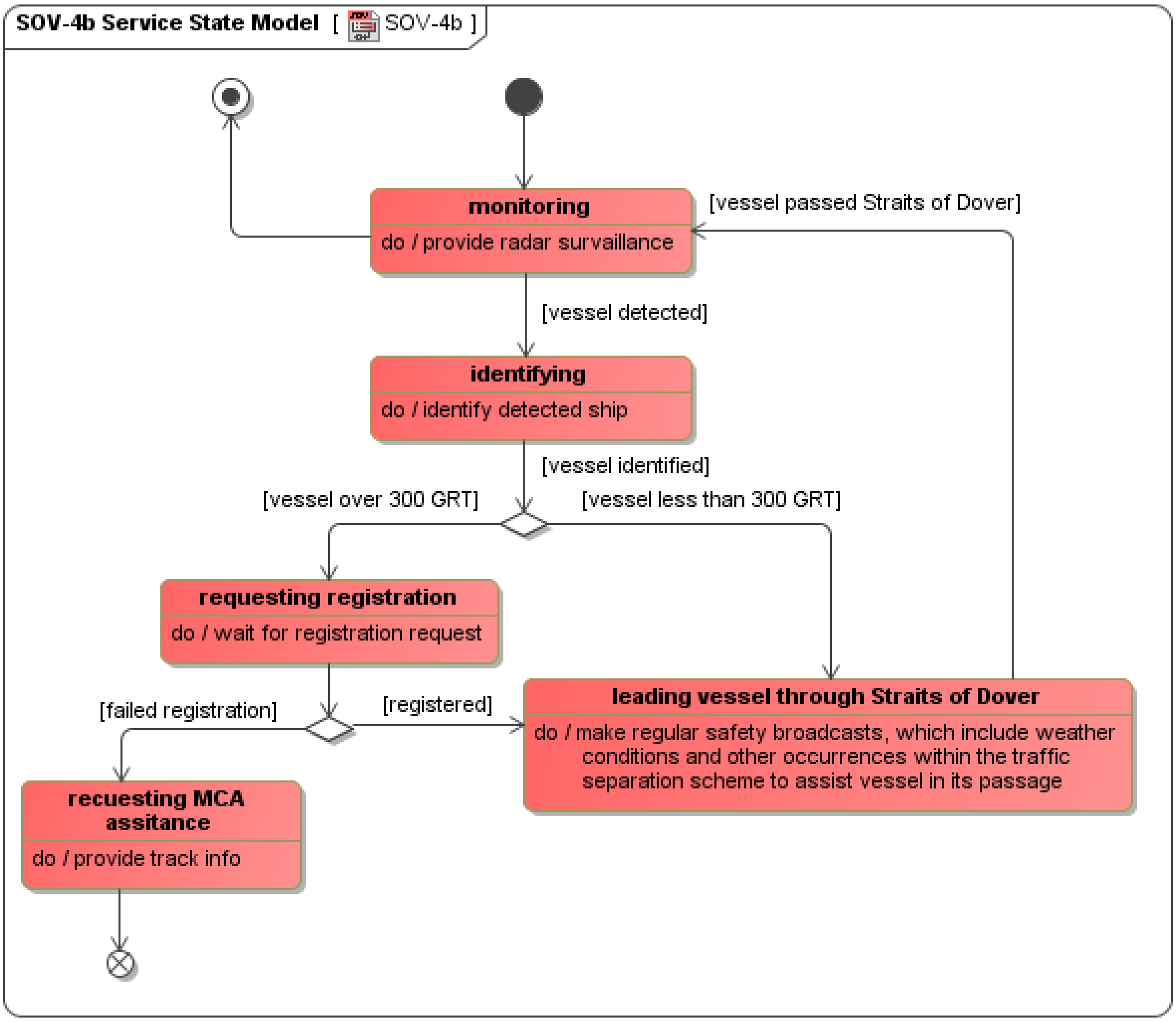


Figure 78 -- SOV-4b Service State Model

Related elements

Service State Machine

Service Interface

3.5.6 SOV-4c Service Interaction Specification

Description

The purpose of the Service Interaction Specification View (SOV-4c) is to specify how a service interacts with external agents, and the sequence and dependencies of those interactions. An SOV-4c product does not specify the sequencing of an orchestrated set of services (see OV-6c). It's purpose is to specify the general sequence of interactions that are possible for a given service.

Implementation

SOV-4c can be represented using a UML Sequence diagram.

Sample

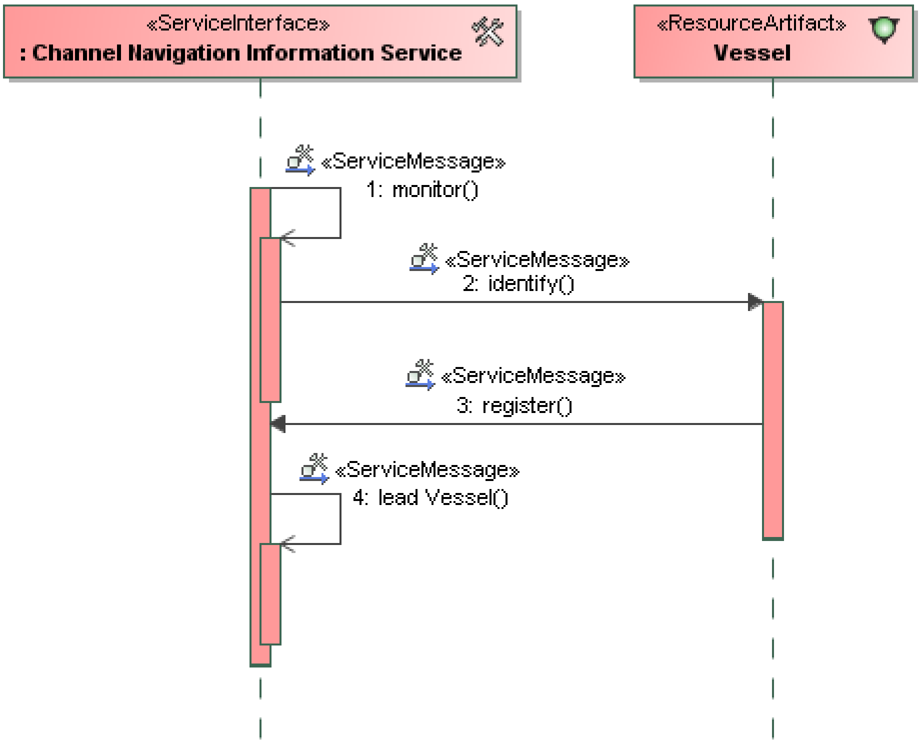


Figure 79 -- SOV-4c Service Interaction Specification

Related elements

- Service Interaction
- Service Message
- Service Interface
- Service Attribute

3.5.7 SOV-5 Service Functionality Flow

Description

The Service Functionality View (SOV-5) defines the behavior of a service in terms of the functions it is expected to perform. SOV-5 is the key behavioral specification for services. Equivalent in nature to OV-5 and SV-4, it specifies a set of functions that a service implementation is expected to perform. It is especially useful during the initial exploration of the requirements for a service.

Implementation

SOV-5 can be represented using:

- A SOV-5 diagram for the Operational Activity flows. This diagram is based on the UML Activity diagram.
- A SOV-5 diagram based on the UML Clas diagram.
- A UML Activity diagram.
- A SysML Activity diagram.
- A UML Class diagram.

Sample

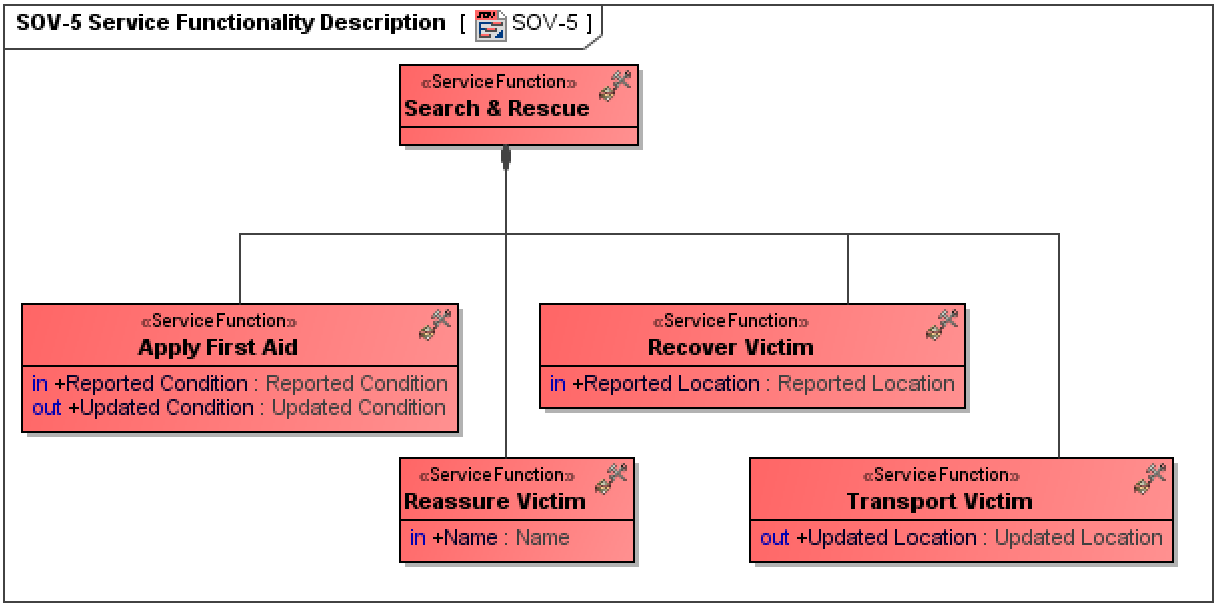


Figure 80 -- Service Functionality Description

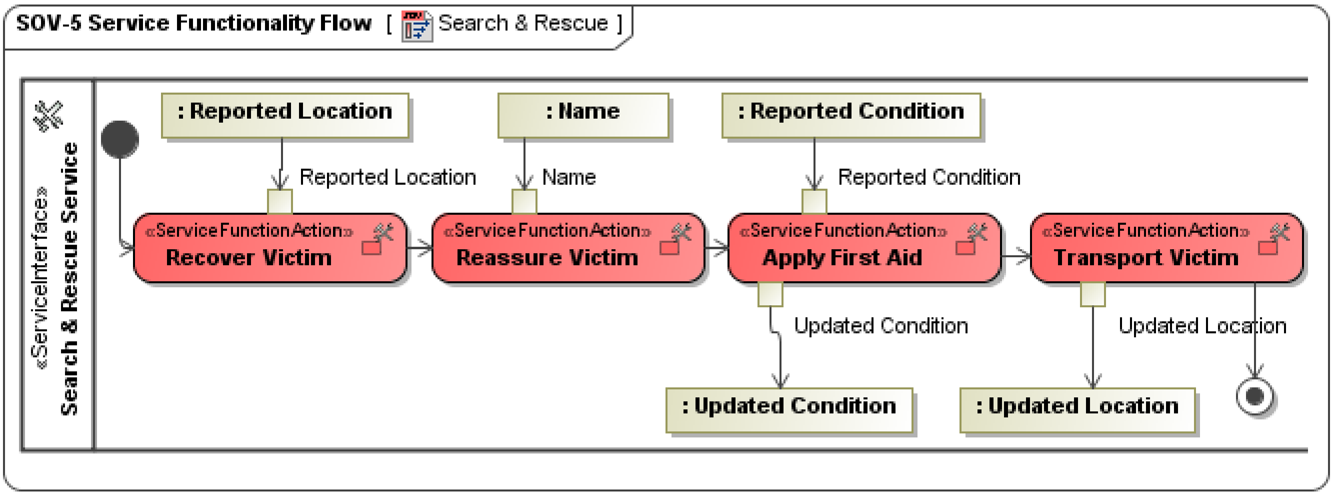


Figure 81 -- Fragment of OV-5 Service Functionality Flow

Related elements

- Service Function
- Service Operation Action
- Service Function Action
- Function Edge
- Service Operation
- Service Parameter
- Service Interface

Related procedures

- Creating SOV-5 Service Functionality Description diagram
- Creating SOV-5 Service Functionality Flow diagram

Related views

An SOV-5 is the key behavioral specification for services. It is equivalent in nature to the OV-5 and SV-4. It specifies a set of functions that a service implementation is expected to perform.

An SOV-5 specifies the required functionality that an implementation of a service is expected to have – the implementation is represented in the SV-1 and SV-4.

3.6 Systems Viewpoint

The System View (SV) shows the elements that are part of SV-1 through SV-12. Models in the System Viewpoint represent alternate realizations in terms of equipment capability of the operational capabilities expressed through models in the Operational Viewpoint and in the User Requirements. The System Viewpoint primarily addresses the specification of the system capability needed (rather than implementation details). Significant changes originally made in MODAF improved the ability for modelers to represent configuration of capability that include people as well as systems and platforms.

View Online Demo	**NEW!** UPDM: Systems Viewpoint

The views of this view are described in the following sections:

- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description
- SV-3 Resource Interaction Matrix
- SV-4 Functionality Description
- SV-5 Function to Operational Activity Traceability Matrix
- SV-6 Systems Data Exchange Matrix
- SV-7 Resource Performance Parameters Matrix
- SV-8 Capability Configuration Management
- SV-9 Technology & Skills Forecast
- SV-10a Resource Constraints Specification
- SV-10b Resource Constraints Specification
- SV-10c Resource Event-Trace Description
- SV-11 Physical Schema
- SV-12 Service Provision

3.6.1 SV-1 Resource Interaction Specification

Description

The Resource Interaction Specification (SV-1) addresses the composition and interaction of resources. SV-1 now incorporates the human elements – Posts, Organizations and Roles. This view was previously known as the System Interface Description; the name change reflects the expanded scope of modeling in the solution space. The Resource Interaction Specification (SV-1) links together the operational and systems architecture views by depicting how resources are structured and interact in order to realize the logical architecture specified in an OV-2. An SV-1 may represent the realization of a requirement specified in an OV-2 (i.e. in a to-be architecture), and so there may be many alternative SV configurations that could realize the operational requirement. Alternatively, in an as-is architecture, the OV-2 may simply be a simplified, logical representation of the SV-1 to allow communication of key information flows to non-technical stakeholders. A resource interaction is a simplified representation of a pathway or network, usually depicted graphically as a connector (i.e. a line with possible amplifying information). The SV-1 depicts all interactions between resources that are of interest to the architect. Note that interactions between systems may be further specified in detail in the SV-2 and SV-6. Sub-resource assemblies may be identified in the SV-1 to any level (i.e. depth) of decomposition the architect sees fit. The SV-1 may also identify the Physical Assets (e.g. Platforms) at which resources are deployed, and optionally overlay Operational Nodes that utilize those resources. In many cases, an operational node depicted in an OV-2 product may well be the logical representation of the resource that is shown in the SV-1.

Implementation

SV-1 can be represented using:

- A SV-1 diagram which is based on the UML Class diagram.
- A SV-1 diagram which is based on the UML Composite Structure diagram.
- A UML Class diagram.
- A UML Composite Structure diagram.
- A SysML Block Definition diagram.
- A SysML Internal Block diagram.

Sample

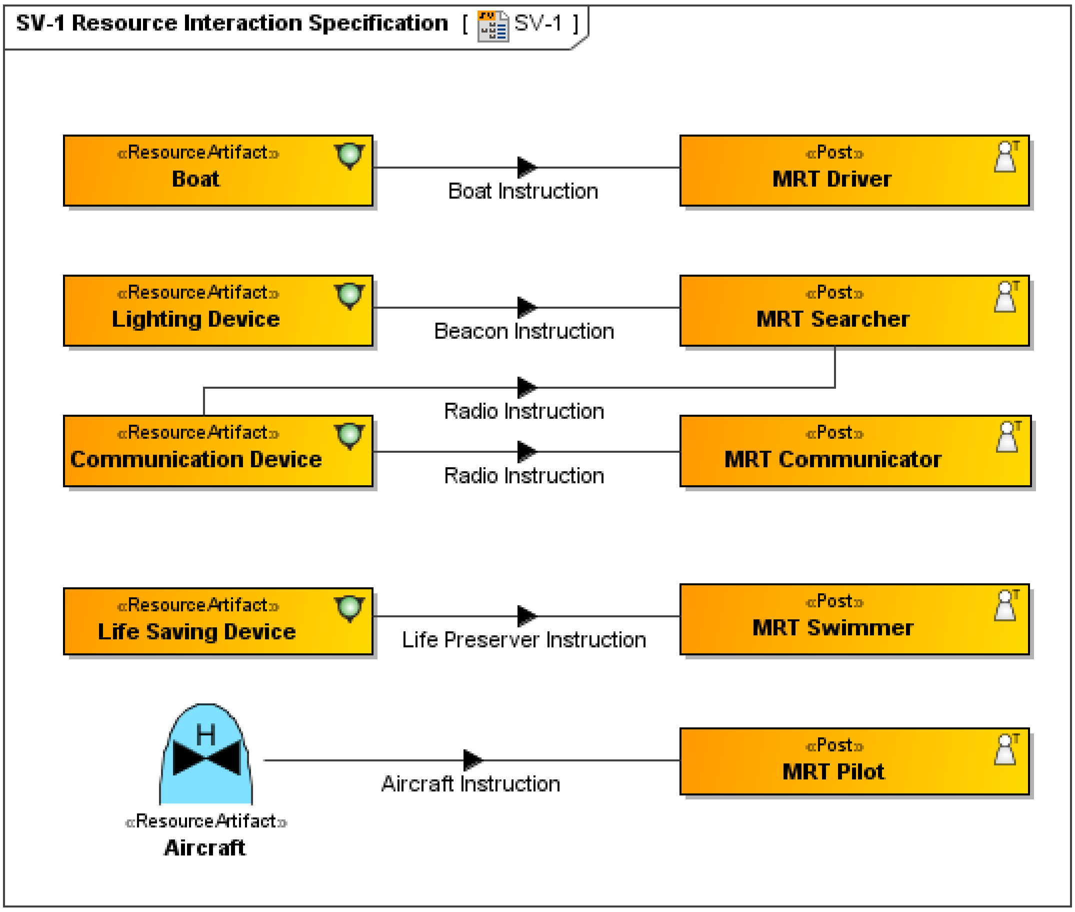


Figure 82 -- SV-1 Resource Interaction Specification

Related elements

[Resource Artifact]
[Software]
[Capability Configuration]

Organization (MODAF)
Post
NEW! Resource Role
Resource Interface
Resource Port
Resource Connector
Capability
Exhibits
Fielded Capability
Service
Request
Resource Interaction
Control
NEW! Exchange Element
Energy
NEW! Materiel

Related procedures

Creating SV-1 diagram
Creating Resource Interaction in SV-1 diagram

Related GUI

Resource Interaction Creation Wizard
Resource Interaction Manager Dialog

Related views

An SV-1 can optionally be adorned with nodes originally specified in an OV-2. In this way, traceability can be established from the logical OV structure to the physical SV structure.

An interaction, as depicted in the SV-1, is an indicator that information passes from one resource to another. In the case of systems, this can be expanded into further detail in an SV-2. Resource Interactions are summarized in a Resource Interactions Matrix (SV-3).

The functions performed by the resources are specified in an SV-4 Resource Functionality Description, but may optionally be overlaid on the Resources in the SV-1.

An Operational View (OV) suite may specify a set of requirements – either as a specific operational plan, or a scenario for procurement. As OV-2 and OV-5 specify the logical structure and behavior, SV-1 and SV-4 specify the physical structure and behavior (to the level of detail required by the architectural stakeholders).

3.6.2 SV-1 Resource Internal Interaction Specification

Description

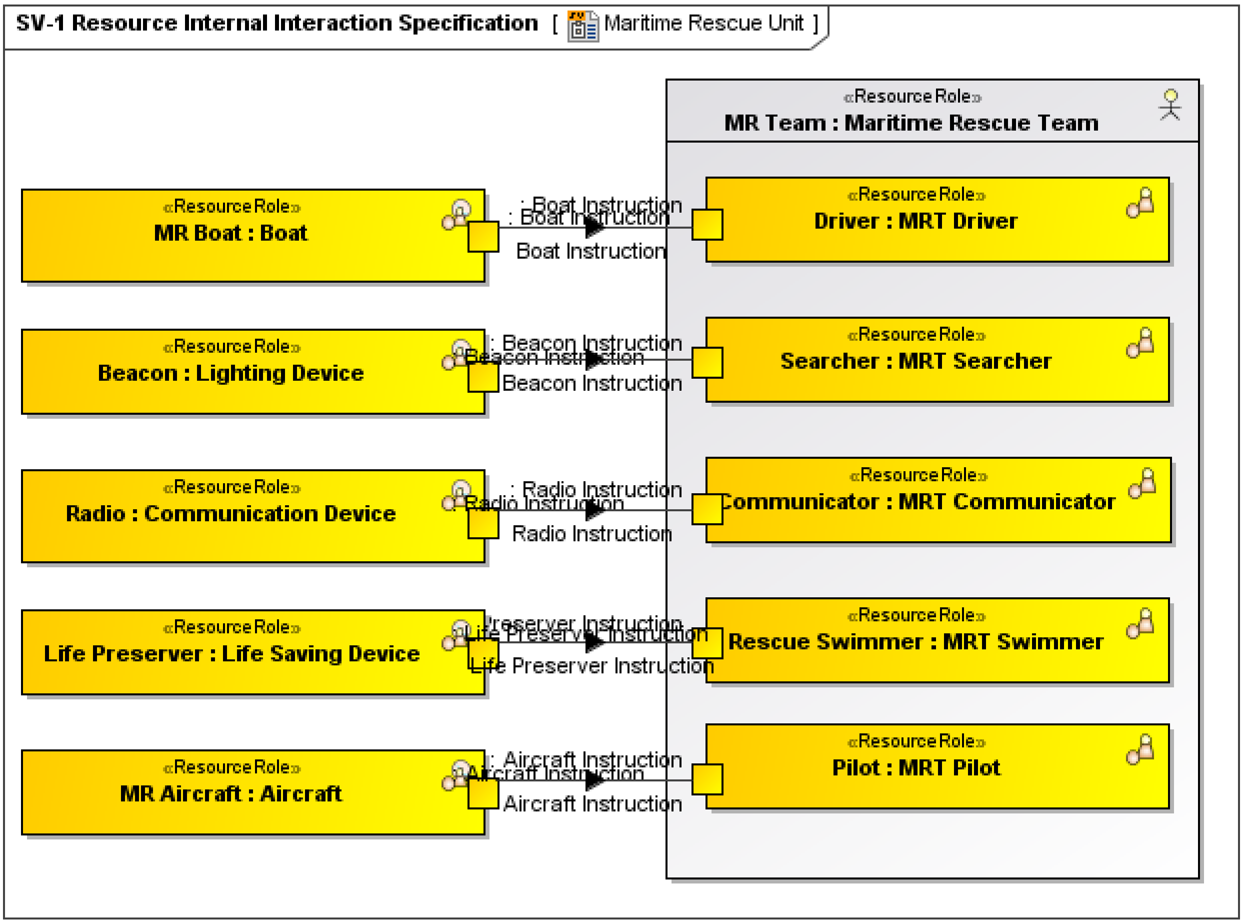
The Resource Internal Interaction Specification (SV-1) addresses the internal composition and interaction of resources.

Implementation

SV-1 can be represented using:

- A SV-1 diagram which is based on the UML Class diagram.
- A SV-1 diagram which is based on the UML Composite Structure diagram.
- A UML Class diagram.
- A UML Composite Structure diagram.
- A SysML Block Definition diagram.
- A SysML Internal Block diagram.

Sample



Related elements

- System
- Resource Interface
- Resource Port
- Resource Connector
- Service
- Request
- Resource Interaction

Related procedures

- Creating SV-1 diagram
- Creating Resource Interaction in SV-1 diagram

Related views

An SV-1 can optionally be adorned with nodes originally specified in an OV-2. In this way, traceability can be established from the logical OV structure to the physical SV structure.

An interaction, as depicted in the SV-1, is an indicator that information passes from one resource to another. In the case of systems, this can be expanded into further detail in an SV-2. Resource Interactions are summarized in a Resource Interactions Matrix (SV-3).

The functions performed by the resources are specified in an SV-4 Resource Functionality Description, but may optionally be overlaid on the Resources in the SV-1.

An Operational View (OV) suite may specify a set of requirements – either as a specific operational plan, or a scenario for procurement. As OV-2 and OV-5 specify the logical structure and behavior, SV-1 and SV-4 specify the physical structure and behavior (to the level of detail required by the architectural stakeholders).

3.6.3 SV-2 Resource Communications Description

Description

The Systems Communications Description series of views specifies the communications networks and pathways that link systems, and provides details regarding their configuration. The networks and pathways documented through these views represent the physical implementation of the information needlines identified in an Operational Node Connectivity Description (OV-2). The SV-2 series focuses on the physical characteristics of each link, to include specification of such attributes as the geographic location of network components (e.g. routers, switches, amplifiers and repeaters). Attributes such as capacities (e.g. bandwidth, throughput), frequencies used, security encryption methods used, and other descriptive information are usually presented in a corresponding SV-6 product (though most architecture tools would prompt the architect to enter such data as the SV-2 views are being developed).

Implementation

SV-2 can be represented using:

- A SV-2 diagram which is based on the UML Class diagram.
- A SV-2 diagram which is based on the UML Composite Structure diagram.
- A UML Class diagram.
- A UML Composite Structure diagram.
- A SysML Block Definition diagram.
- A SysML Internal Block diagram.

Sample

N/A

Related elements

Resource Artifact
Software
Capability Configuration
Organization (MODAF)
Post
Resource Port
Resource Connector

NEW! Resource Role
Resource Interface
Protocol
Standard
Service
Request
Resource Interaction
Control
NEW! Exchange Element
Energy
NEW! Materiel

Related procedures

Creating SV-2 diagram
Creating Resource Interaction in SV-2 diagram

Related GUI

Resource Interaction Creation Wizard
Resource Interaction Manager Dialog

Related views

Any protocol and Standard referred to in an SV-2 diagram must be defined in the TV-1 Technical Standards View.

3.6.4 SV-2 Resource Internal Communications Description

Description

The SV-2 series of views specifies the internal communications networks and pathways that link systems, and provides details regarding their configuration.

Implementation

SV-2 can be represented using:

- A SV-2 diagram which is based on the UML Class diagram.
- A SV-2 diagram which is based on the UML Composite Structure diagram.
- A UML Class diagram.
- A UML Composite Structure diagram.
- A SysML Block Definition diagram.
- A SysML Internal Block diagram.

Sample

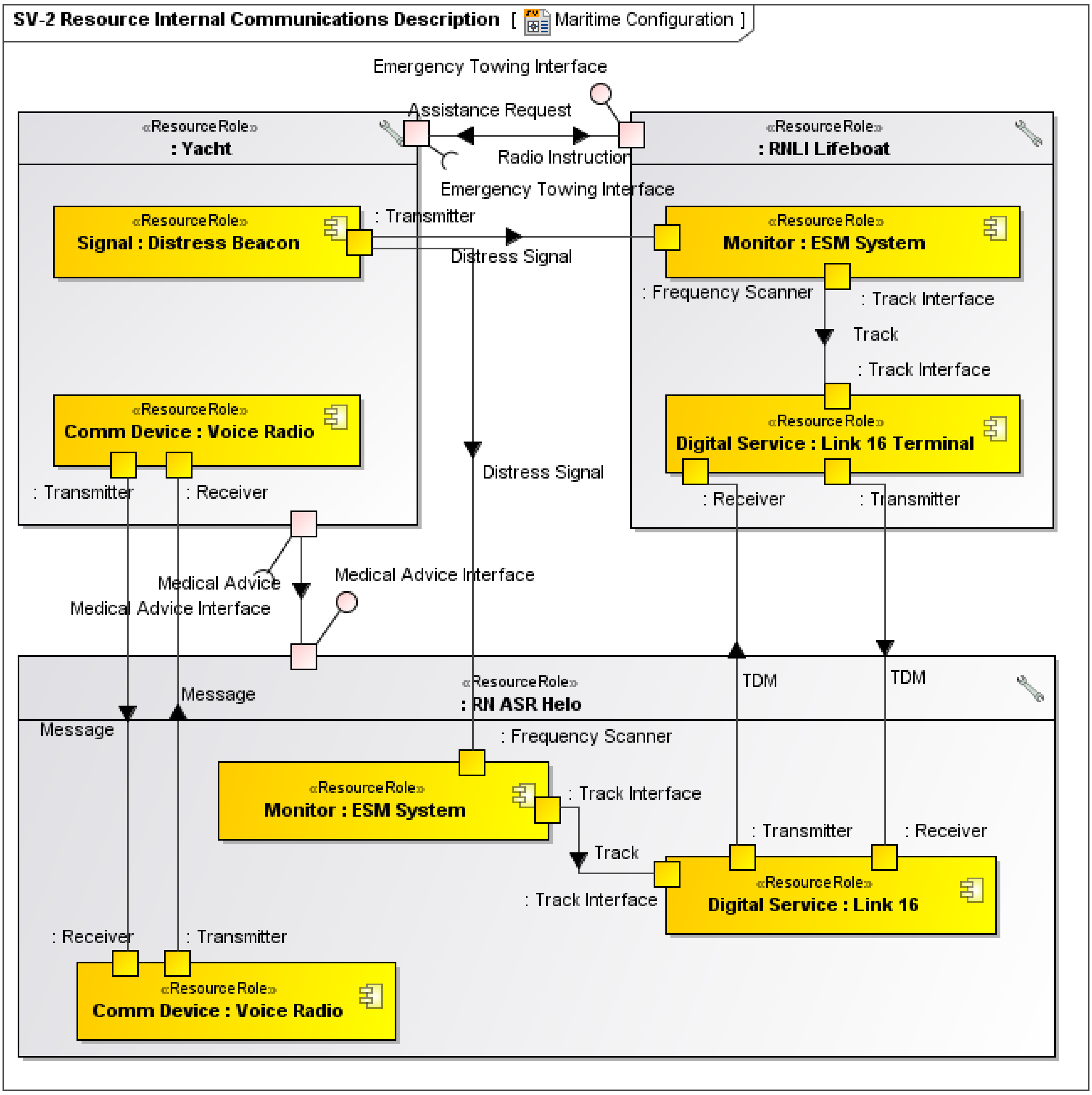


Figure 83 -- SV-2 Resource Communications Description

Related elements

- System
- Resource Interface
- Resource Port
- Resource Connector
- Service
- Request
- Resource Interaction

Related procedures

- Creating SV-2 diagram

Creating Resource Interaction in SV-2 diagram

Related views

Any protocol and Standard referred to in an SV-2 diagram must be defined in the TV-1 Technical Standards View.

3.6.5 SV-3 Resource Interaction Matrix

Description

The Resource Interaction Matrix provides a tabular summary of the resource interactions specified in the SV-1 for the Architecture. An SV-3 Product allows a quick overview of all the resource interactions specified in one or more SV-1 diagrams. The SV-3 can be organized in a number of ways to emphasize the association of groups of system pairs in context with the architecture's purpose.

Implementation

SV-3 can be represented using a SV-3 diagram which is an editable Dependency Matrix. Rows and Columns in the matrix represent the Resources.

Sample

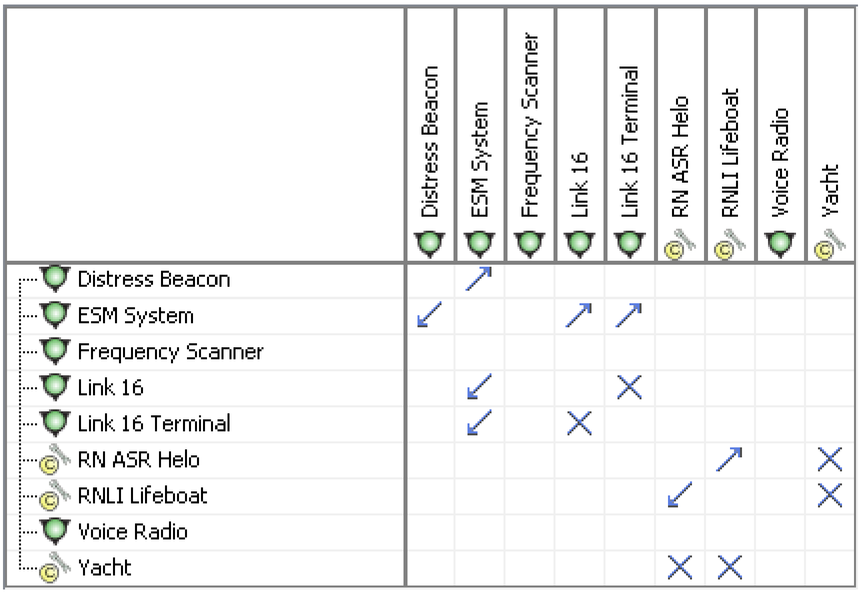


Figure 84 -- SV-3 Resource Interaction Matrix

Related elements

- Resource Artifact
- Software
- Capability Configuration
- Organization (MODAF)
- Post
- NEW! Exchange Element
- Resource Interaction
- NEW! Materiel
- Energy

Related procedures

Building SV-3 matrix

Related views

SV-3 is a summary description of the resource interactions that are identified in SV-1.

3.6.6 SV-4 Functionality Description

Description

The Functionality Descriptions (SV-4) address human and system functionality. The primary purposes of SV-4 are to develop a clear description of the necessary data flows that are input (consumed) by and output (produced) by each resource, ensure that the functional connectivity is complete, and ensure that the functional decomposition reaches an appropriate level of detail. The Functionality Description provides detailed information regarding the allocation of functions to resources and flow of data between functions. The SV-4 is the systems view counterpart.

Implementation

SV-4 can be represented using:

- A SV-4 diagram for Function hierarchies. This diagram is based on the UML Class diagram.
- An SV-4 diagram for Function flows. This diagram is based on the UML Activity diagram.
- A UML Class diagram.
- A UML Activity diagram.
- A SysML Block diagram.
- A SysML Activity diagram.

Sample

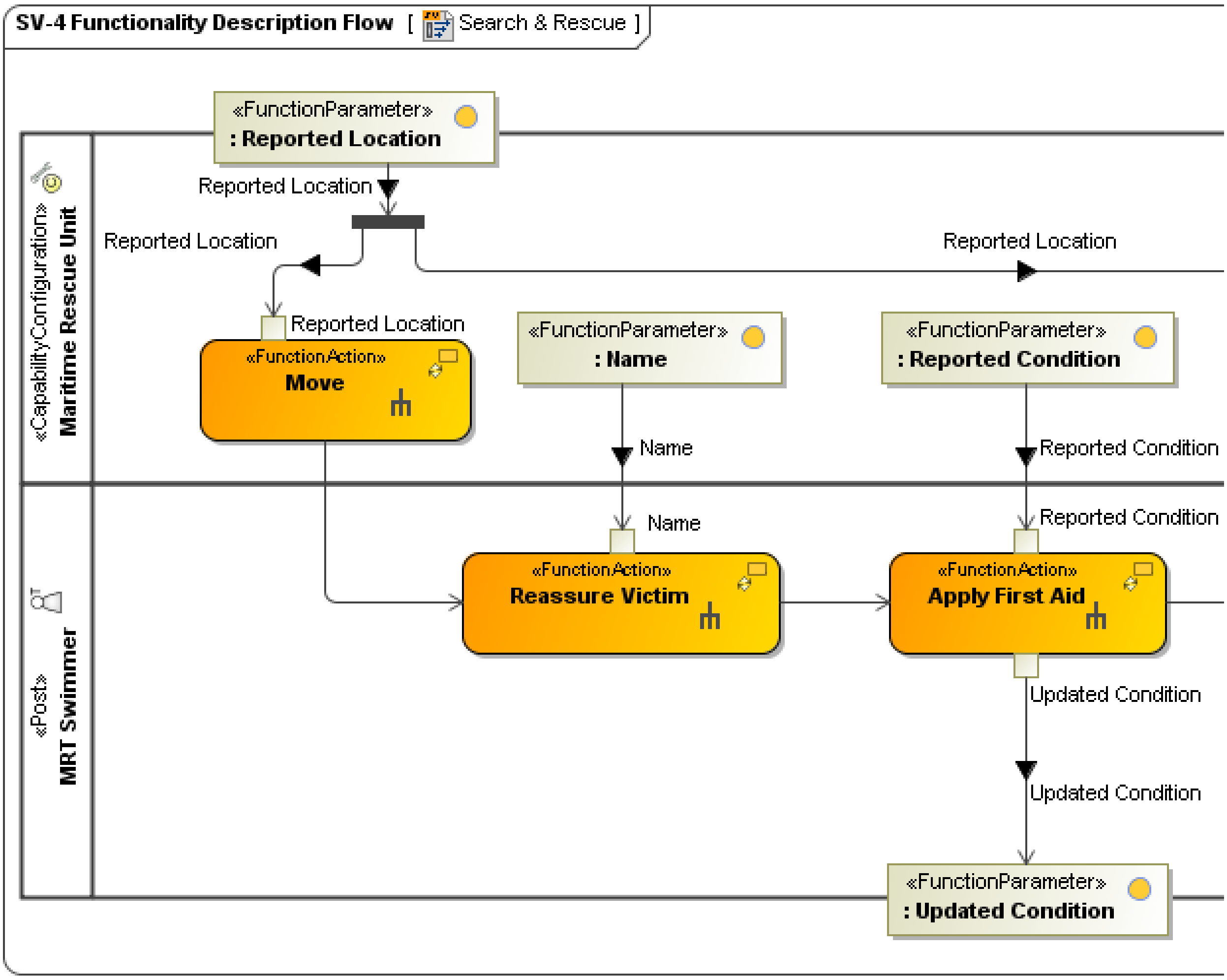


Figure 85 -- Fragment of SV-4 Functionality Description Flow

NOTE	You can also create SV-4 Business Process Diagram (BPD). In order to do that, use the Cameo Business Modeler plugin. For more information on how to model the business process diagram, see “BPMN Process Diagram” in CameoBusinessModelerUserGuide.pdf

Related elements

- Function
- Operational Activity
- Standard Operational Activity
- Resource Artifact
- Software
- Capability Configuration
- Organization (MODAF)
- Post
- NEW! Is Capable Of Performing
- Function Action
- Function Edge
- Function Parameter

Resource Interaction
NEW! Exchange Element
Energy
NEW! Materiel

Related procedures

Creating SV-4 Functionality Description diagram
Creating SV-4 Functionality Description Flow diagram

Related GUI

Resource Interaction Creation Wizard
Resource Interaction Manager Dialog

Related views

An SV-4 is the behavioral counterpart to the SV-1 (in the same way that OV-5 is the behavioral counterpart to OV-2).

The functions are likely to be related to Operational Activities captured in an OV-5. Although there is a correlation between the Operational Activity Model (OV-5) and the functional hierarchy of SV-4, it need not be a one-to-one mapping, hence, the need for a Function to Operational Activity Traceability Matrix (SV-5), which provides that mapping.

3.6.7 SV-5 Function to Operational Activity Traceability Matrix

Description

The Function to Operational Activity Traceability Matrix (SV-5) addresses the linkage between functions described in an SV-4 and Operational Activities specified in an OV-5. The SV-5 View depicts the mapping of functions (and, optionally, the functional resources that provide them) to operational activities and thus identifies the transformation of an operational need into a purposeful action performed by a system or solution.

Implementation

SV-5 can be represented using a SV-5 diagram which is an editable Dependency Matrix. The Functions will be used as the row elements and the Operational Activities will be used as the column elements.

Sample

	Find Victim	Monitor Health	Process Warning Order	Provide Medical Assistance	Receive Distress Signal	Recover Victim	Rescue	Search	Send Distress Signal	Send Warning Order	Transit To SAR Operation
SV-4	1			1	1	2			2		
Apply First Aid				↗							
Broadcast Message									↗		
Determine Destination	↗										
Interact in the marine environment											
Receive Distress Signal											
Receive Message					↗						
Receive TDM											
Receive Track Information											
Recover Victim						↗					
Send Message									↗		
Send TDM											
Send Track Information											
Transmit Distress Signal											
Transport						↗					

Figure 86 -- SV-5 Function to Operational Activity Traceability Matrix

Related elements

[Function](#)

[Operational Activity](#)

[NEW! Implements](#)

Related procedures

[Building SV-5 matrix](#)

Related views

An SV-5 addresses the linkage between the functions described in an SV-4 and the Operational Activities specified in an OV-5.

3.6.8 SV-6 Systems Data Exchange Matrix

Description

The Systems Data Exchange Matrix specifies the characteristics of the system data exchanged between systems. The focus is on data crossing the system boundary. An SV-6 focuses on the specific aspects of the system data flow and the system data content in a tabular format.

Implementation

SV-6 can be represented using:

- A SV-6 table.
- A SV-6 spreadsheet report.

Sample

#	Resource Interaction Item	Sending Resource	Receiving Resource	Producing Function	Consuming Function
1	Distress Signal	Distress Beacon	ESM System	Transmit Distress Signal	Receive Distress Signal
2	Message	Voice Radio	Voice Radio	Broadcast Message	Receive Message
3	TDM	Link 16 Terminal	Link 16	Send TDM	Receive TDM
4	TDM	Link 16	Link 16 Terminal	Send TDM	Receive TDM
5	Track	ESM System	Link 16 Terminal	Send Track Information	Receive Track Information
6	Track	ESM System	Link 16	Send Track Information	Receive Track Information

Figure 87 -- Systems Data Exchange Matrix

Related elements

Resource Artifact
Software
Capability Configuration
Organization (MODAF)
Post
NEW! Exchange Element
Resource Interaction
NEW! Materiel
Energy

Related procedures

Adding Existing Resource Interaction to SV-6 table

Related views

SV-6 is the physical equivalent of the logical OV-3 table and provides detailed information on the system connections which implement the information exchanges specified in an OV-3.

3.6.9 SV-7 Resource Performance Parameters Matrix

Description

The SV-7 is the Resource Performance Parameters Matrix and depicts the performance characteristics of a Functional Resource (system, role, or capability configuration). The Resource Performance Parameters Matrix expands on the information presented in an SV-1 by depicting the characteristics of the Functional Resources shown in the SV-1. The Resource Performance Parameters Matrix View specifies qualitative and quantitative characteristics of functional resources and the performance parameters of each resource. The performance parameters are selected by the architect and end user community.

Implementation

SV-7 can be represented using:

- A SV-7 typical parameters table.
- A SV-7 actual parameters table.
- **NEW!** A SV-7 actual parameters spreadsheet report.

Sample

Add New | Add Existing | Remove | Delete | Up | Down | Export | Show Full Types

#	Measurement Set	Measure	Resource
1	Voice Radio Transmitter Measurements	-Transmission Rate : GB	Transmitter
2	Voice Radio Receiver Measurements	-Gain : dB -Signal To Noise Ratio : dB	Receiver
3	Status Alerting Measurements	-Min. Status Change Alert Accuracy : meters -Min. Alert Response Time : seconds	Status Alerting
4	Signal Processor Measurements	-Comms Channel Bandwidth Support : GB	Signal Processor

Figure 88 -- SV-7 Typical table

Add New | Add Existing | Remove | Up | Down | Add Missing Actual Measurements

#	Resource	Performance Requirement	Measure	Metric
1	Receiver	Gain	60	dB
2	Status Alerting	Min. Status Change Alert Accuracy	500	meters
3	Status Alerting	Min. Alert Response Time	30	seconds
4	Receiver	Signal To Noise Ratio	20	dB
5	Transmitter	Transmission Rate	2	GB
6	Signal Processor	Comms Channel Bandwidth Support	2	GB

Figure 89 -- SV-7 Actual table

Related elements

Resource Artifact
Software
System
Capability Configuration
Organization (MODAF)
Post
Measurement Set
Actual Property Set
Measurement
Actual Measurement

Related procedures

Creating SV-7 Typical table
Creating SV-7 Actual table
Generating SV-7 Actual table from SV-7 Typical table
Generating reports

Related views

Icon	View	Relationship
	SV-1 Resource Interaction Specification	The Resource Performance Parameters Matrix expands on the information presented in an SV-1 by depicting the characteristics of the Resources shown in the SV-1.
	SV-2 Resource Communications Description	SV-7 expands on the information presented in an SV-2 by depicting the characteristics of the Resources shown in the SV-2.

3.6.10 SV-8 Capability Configuration Management

Description

The Capability Configuration Management view presents a whole lifecycle view of a resource, describing how its configuration changes over time. The SV-8 provides an overview of how a capability configuration structure changes over time. It shows the structure of several capability configurations mapped against a timeline.

Implementation

NEW! SV-8 can be represented using a SV-8 diagram which is based on the UML Composite structure diagram.

Related elements

- NEW! Whole Life Configuration
- NEW! Version Of Configuration
- NEW! Resource Role
- Resource Interface

Related views

Icon	Product	Relationship
SV-1	SV-1 Resource Interaction Specification	
AcV-2	AcV-2 Programme Timelines	The changes depicted in the SV-8 View are derived from the project milestones that are shown using an AcV-2. When the AcV-2 is used to model project timelines for capability acquisition projects, there is likely to be a close relationship between these two Views.

3.6.11 SV-9 Technology & Skills Forecast

Description

The Technology & Skills Forecast defines the underlying current and expected supporting technologies and skills. Expected supporting technologies and skills are those that can be reasonably forecast given the current state of technology and skills, and expected improvements/ trends. New technologies and skills will be tied to specific time periods, which can correlate against the time periods used in SV-8 milestones and linked to Enterprise Phases. SV-9 provides a summary of emerging technologies and skills that impact the Resources that constitute the Architecture. The SV-9 provides descriptions of relevant: emerging capabilities, industry trends, predictions of the availability and readiness of specific hardware and software products, and current and possible future skills In addition to providing an inventory of trends, capabilities and products, the SV-9 also includes an assessment of the potential impact of these items on the architecture.

Implementation

SV-9 can be represented using a SV-9 table.

Sample

Add New | Add Existing | Time Period | Remove | Delete | Up | Down | Sort Columns

#	Technology area	From: 2008-04-16 To: 2009-04-16	From: 2009-04-16 To: 2010-04-16
1	Maritime Rescue Coordination Center Software		Airwave
2	Helicopter	Sikorsky S-61	Sikorsky S92A Augusta Westland 139
3	Compas-Sarsat System Standard	Beacon alert 121.5 MHz Beacon alert 243 MHz Beacon alert 406 MHz	Beacon alert 406 MHz

Figure 90 -- SV-9 Technology & Skills Forecast

Related elements

- Forecast
- Resource Artifact
- Software
- Capability Configuration

Organization (MODAF)
Post
Protocol
Standard

Related procedures

Creating SV-9 table

Related GUI

Time Periods Dialog

Related views

The specific time periods selected (and the trends being tracked) will be coordinated with the Architecture transition plans (see SV-8). That is, insertion of new capabilities and upgrading / re-training of existing resources may depend on or be driven by the availability of new technology and associated skills.

If standards are an integral part of the technologies important to the evolution of a given Architecture, then it may be convenient to combine the SV-9 with the Technical Standards Forecast (TV-2).

3.6.12 SV-10a Resource Constraints Specification

Description

The purpose the SV-10a Resource Constraints Specification is to specify functional and non-functional constraints on the implementation aspects of the architecture (i.e. the structural and behavioral elements of the SV viewpoint). SV-10a describes constraints on the resources, functions, data and ports that make up the SV physical architecture.

The constraints are specified in text and may be functional or structural (i.e. non-functional).

Implementation

SV-10a can be represented using:

- A SV-10a table.
- A SV-10a spreadsheet report.

Sample

#	Applies To	Rule Specification
1	Aircraft	At each location, one helicopter should be available at 15 minutes readiness between 0800 and 2200 hours with another available at 60 minutes readiness between 0800 hours and evening civil twilight (ECT). Between 2200 and 0800 hours, one helicopter should be held at 45 minutes readiness.
2	Aircraft	Other RAF and RN helicopters can be used on SAR missions when available. Requests for such assistance should be made through the ARCC.
3	Aircraft	All RAF SAR helicopter rear crew should be medically trained
4	Distress Beacon	Should be capable of processing beacon alerts on 121.5 MHz, 243 MHz and 406 MHz.
5	Naval Ship	Only SOLAS regulated ships of 300 GT and above are required to carry AIS.

Figure 91 -- SV-10a Resource Constraints Specification

Related elements

- Resource Constraint
- Resource Artifact
- Software
- Capability Configuration
- Organization (MODAF)
- Post
- Function
- NEW! Entity Item
- Resource Interaction
- NEW! Exchange Element

Related procedures

- Creating SV-10a table

Related views

SV-10a describes constraints on resources, functions, and data that make up the SV physical architecture.

Where a Resource Constraint is based on some standard, then that standard should be listed in the Standards Profile (TV-1).

3.6.13 SV-10b Resource Constraints Specification

Description

The Resource State Transition Description (SV-10b) is a graphical method of describing a ResourceType's (or Function's) response to various events by changing its state. The diagram basically represents the sets of events to which the subjects will respond (by taking an action to move to a new state) as a function of its current state. Each transition specifies an event and an action.

Implementation

SV-10b can be represented using a UML State Machine diagram.

Sample

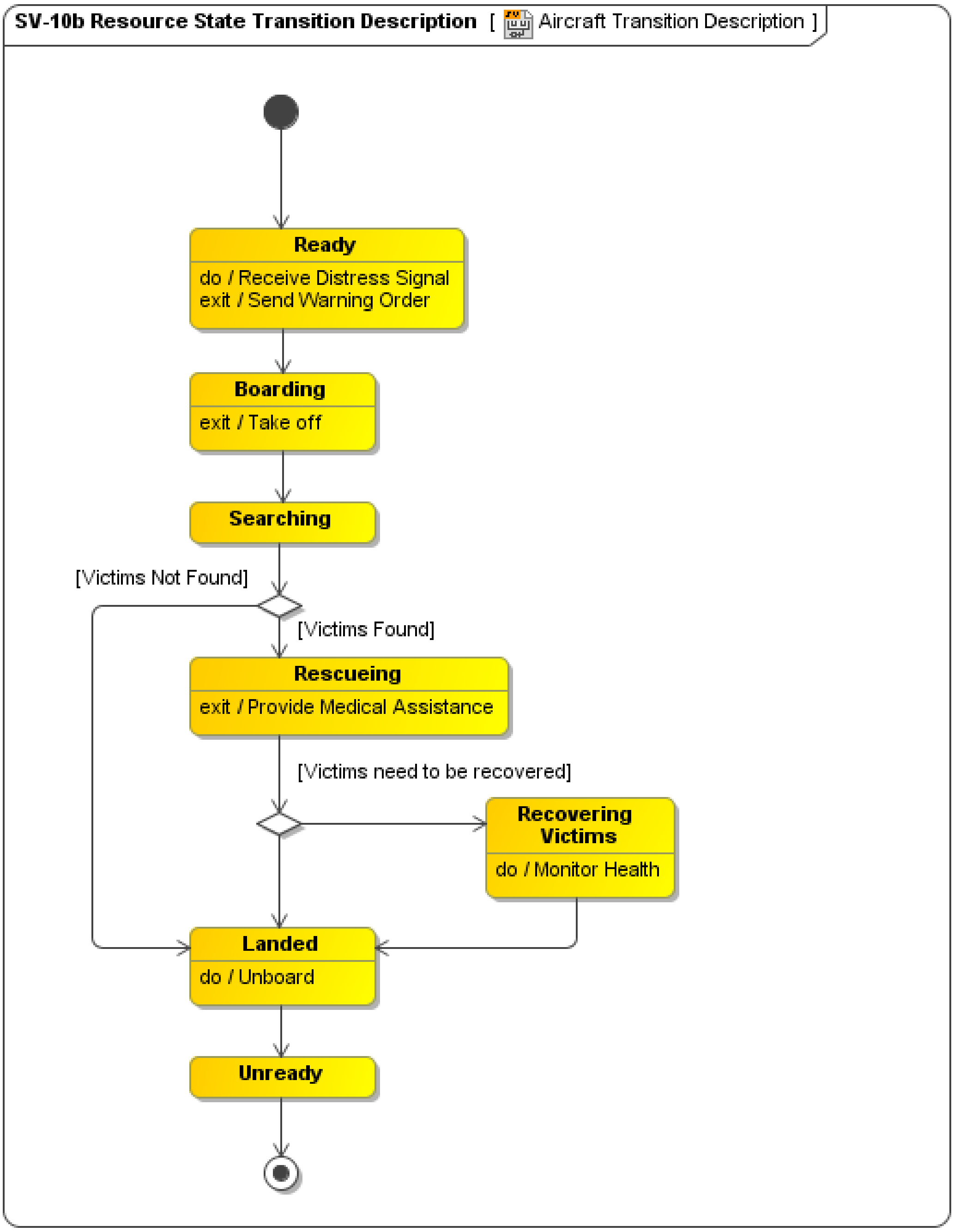


Figure 92 -- SV-10b Resource Constraints Specification

Related elements

- [Resources State Machine]
- [NEW! Resource State]
- [Resource Artifact]
- [Software]
- [Capability Configuration]
- [Organization (MODAF)]
- [Post]

Related views

An SV-10a describes constraints on resources, functions, and data that make up the SV physical architecture.

Where a Resource Constraint is based on some standard, then that standard should be listed in the Standards Profile (TV-1).

3.6.14 SV-10c Resource Event-Trace Description

Description

The Resource Event-Trace Description provides a time-ordered examination of the interactions between functional resources. Each event-trace diagram will have an accompanying description that defines the particular scenario or situation. The SV-10c is valuable for moving to the next level of detail from the initial solution design, to help define a sequence of functions and system data interfaces, and to ensure that each participating Resource or System Port role has the necessary information it needs, at the right time, in order to perform its assigned functionality.

Implementation

SV-10c can be represented using a UML Sequence diagram.

Sample

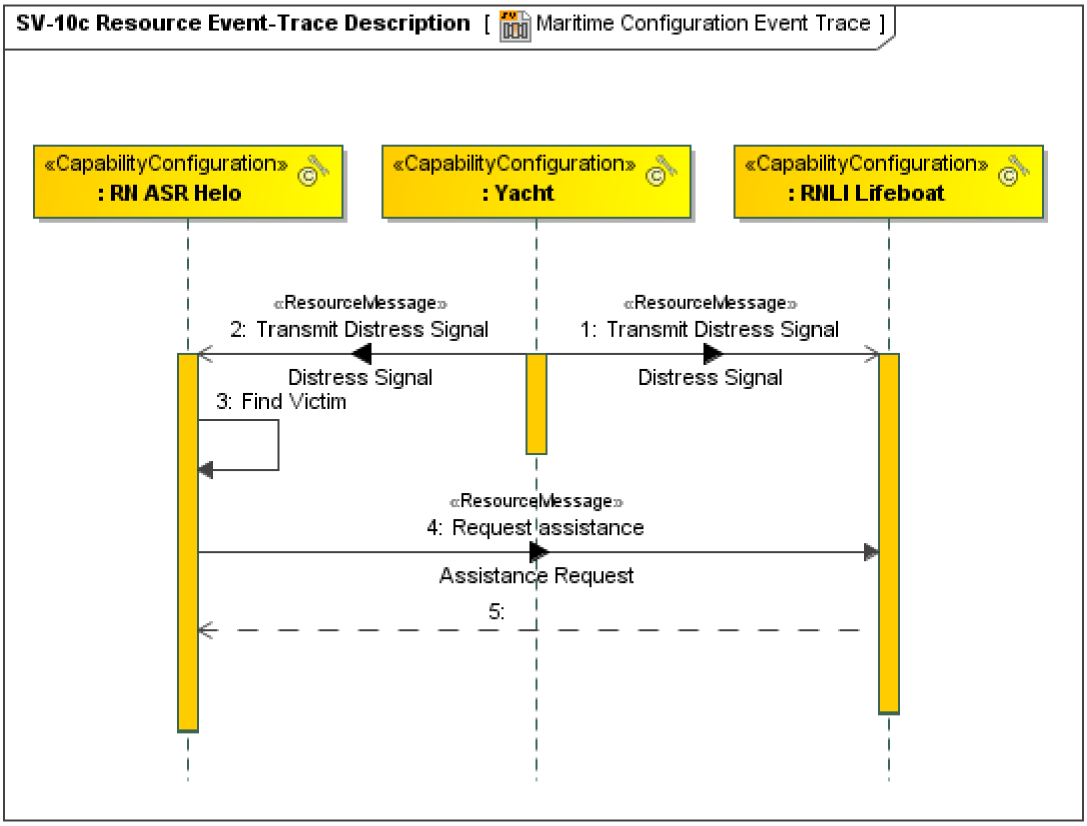


Figure 93 -- SV-10c Resource Event-Trace Description

NOTE	You can also create SV-10c Business Process Diagram (BPD). In order to do that, use the Cameo Business Modeler plugin. For more information on how to model the business process diagram, see "BPMN Process Diagram" in CameoBusinessModelerUserGuide.pdf

Related elements

- Resource Event Trace
- Resource Message
- NEW! Resource Role
- Resource Interaction
- NEW! Exchange Element
- Energy
- NEW! Materiel
- Resource Artifact
- Software
- Capability Configuration
- Organization (MODAF)
- Post

Related GUI

- Resource Interaction Creation Wizard
- Resource Interaction Manager Dialog

Related views

The SV-10c is typically used in conjunction with the Resource State Transition Description (SV-10b) to describe the dynamic behavior of resources.

The data content of 'messages' that connect life-lines in an SV-10c View Product may be related, in modelling terms, with resource interactions (SV-1, 3), data flows (SV-4, 6) and data schema entities (SV-11) modeled in other views.

3.6.15 SV-11 Physical Schema

Description

The SV-11 View defines the structure of the various kinds of system data that are utilized by the systems in the Architecture. The Physical Schema is one of the Architectural Products closest to actual system design in the Framework. SV-11 is used to describe how the information represented in the Information Model (OV-7) is actually implemented. While the mapping between the logical and physical data models is relatively straightforward, the relationship between the components of each model (e.g. entity types in the logical model versus relational tables in the physical model) is frequently one-to-many or many-to-many.

Cameo Data Modeler plugin integration

You can use the Entity Relationship diagram for conceptual, logical, and physical data modeling in SV-11. It supports the information engineering notation within this view.

Note that the Entity Relationship diagram is supported in SV-11. It allows for using the information engineering notation within this view.

Implementation

SV-11 can be represented using:

- A SV-11 diagram which is based on the UML Class diagram.
- A UML Class diagram.
- A SysML Block Definition diagram.

Sample

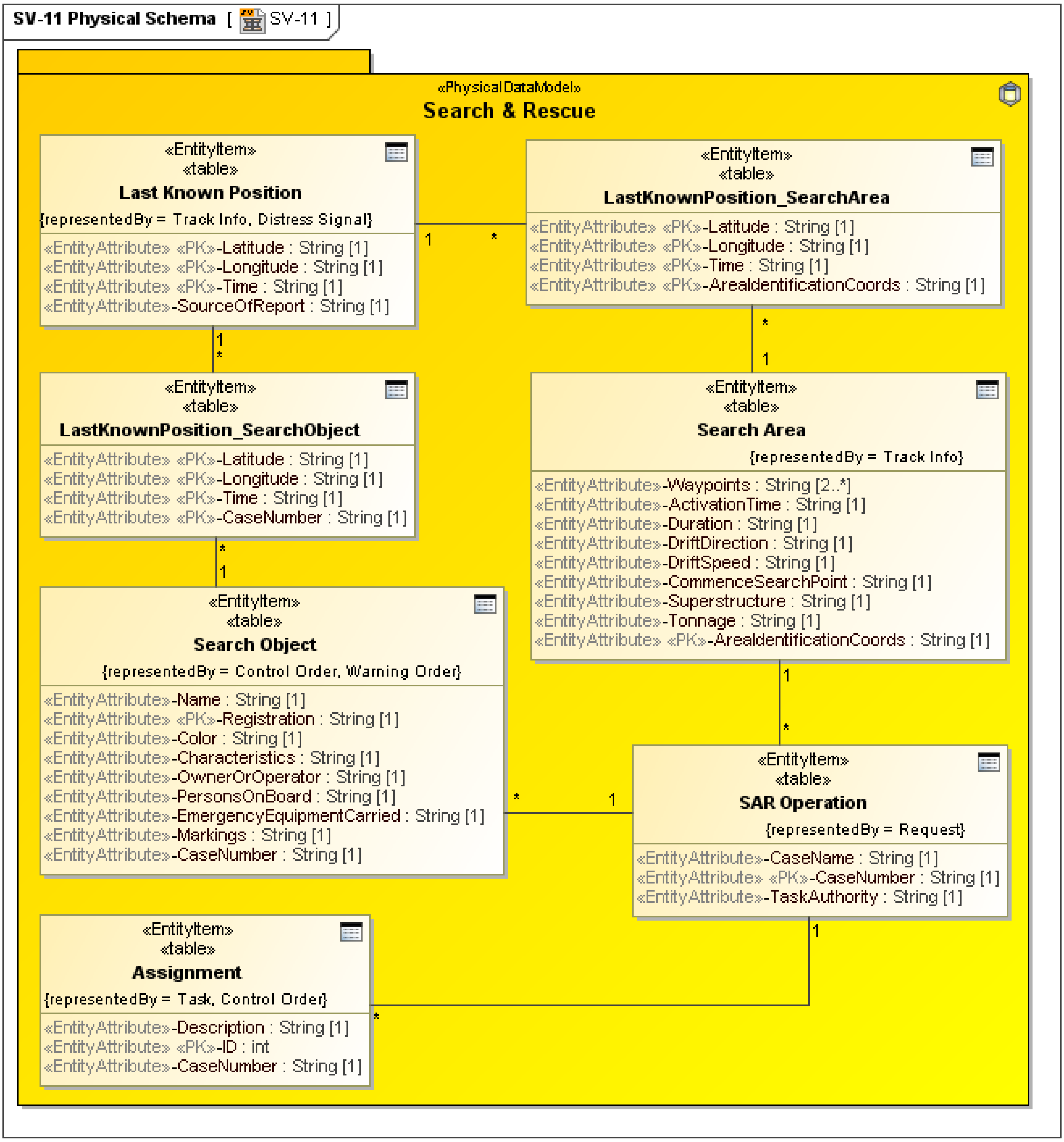


Figure 94 -- SV-11 Physical Schema

Related elements

[NEW! Entity Item]

- NEW! Entity Attribute
- NEW! Entity Relationship
- NEW! Exchange Element
- NEW! Details
- Physical Data Model

Related views

The Physical Schema is one of the Architectural Products closest to actual system design in the Framework. An SV-11 is used to describe how information represented in the Information Model (OV-7) is actually implemented.

3.6.16 SV-12 Service Provision

Description

The SV-12 defines the relationships between the Capability Configurations and Services.

Implementation

SV-12 can be represented using a SV-12 diagram which is an editable Dependency Matrix. The Service Interfaces will be used as the row elements and the Resources will be used as the column elements.

Sample

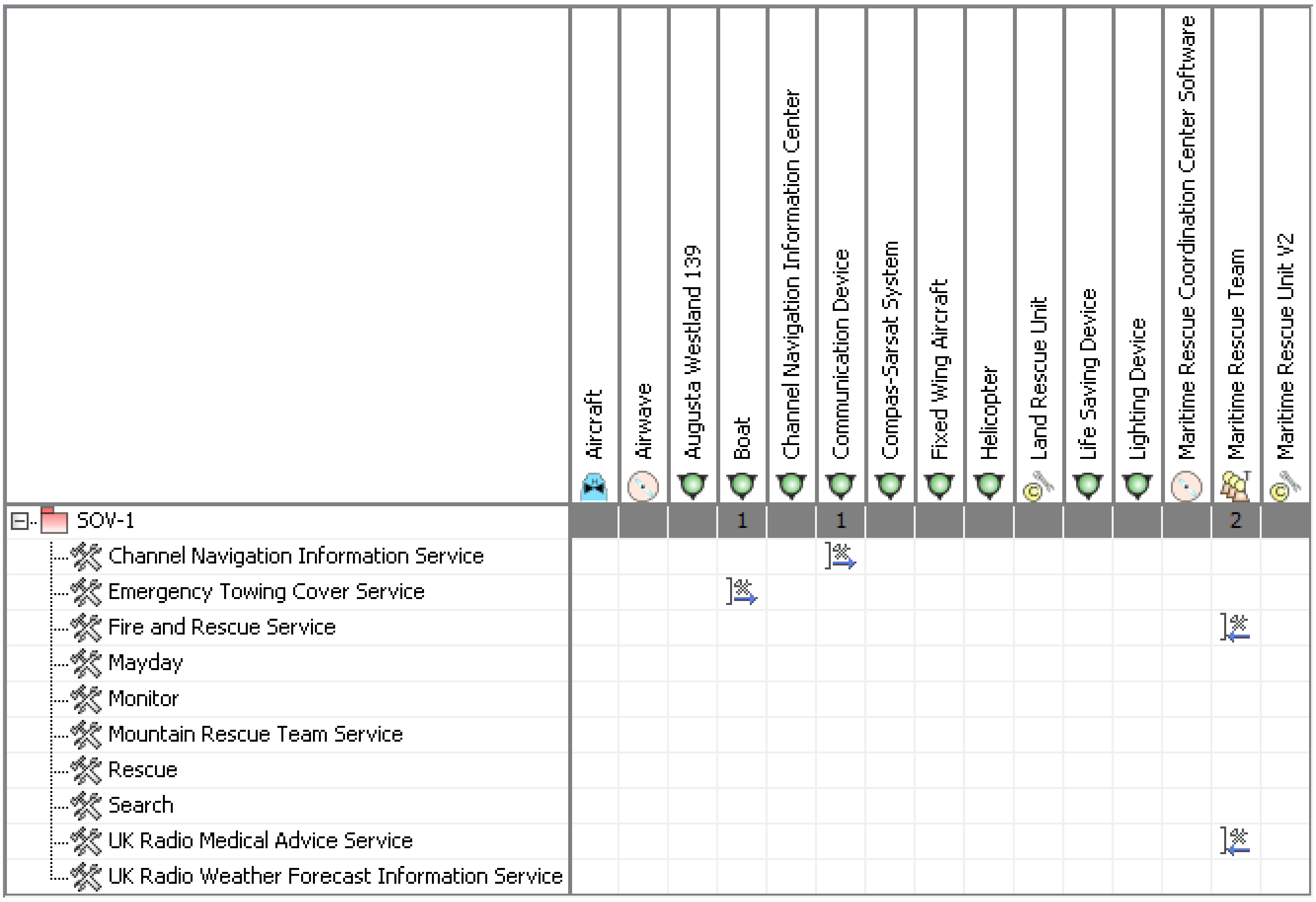


Figure 95 -- SV-12 Service Provision

Related elements

- Resource Artifact

Software
Capability Configuration
Organization (MODAF)
Post
Service Interface
Service
Request

Related procedures

Building SV-12 Service Provision matrix

Related views

The service attributes defined in SOV-1 can be given values in an SV-12 and related to the environment under which those values are true.

3.7 Technical Standards Viewpoint

The Technical View (TV) shows the elements that are part of TV-1 through TV-2.

The Technical View is a set of views delineating standards, rules, notations, and conventions that apply to the implementation of the system architecture. When the standards profile is tied to the system elements to which they apply, TV-1 serves as the bridge between the SV and TV. SV-9 forecasts relate to the TV-1 in that a timed technology forecast may contribute to the decision to retire or phase out the use of a certain standard in connection with a system element. Similarly, SV-9 forecasts relate to TV-2 standards forecasts in that a certain standard may be adopted depending on a certain technology becoming available (e.g., the availability of Java Script may influence the decision to adopt a new HTML standard).

MODAF extends the core DoDAF Technical Standards Views to include non-technical standards and policies applicable to the architecture such as operational doctrine, industry process standards, etc. Additionally, the TV-1 may also document policies and standards applicable to the operational or business context. MODAF also distinguishes between ‘applicability’ and ‘conformance’ with regard to architectural elements. If a standard is applicable to a given architecture, that architecture need not be fully conformant with the standard. The degree of conformance to a given standard may be judged on a risk basis at an approval point. An association between a Standard and an architectural element is not to be interpreted as stating the level of compliance of the element is fully compliant with that Standard. Additional evidences would need to be given (outside MODAF) to confirm the level of compliance. Finally, MODAF adds the explicit requirement that any Standards cited in TV-1 View must, where appropriate, be in accordance with the trend towards open architectures – i.e. standards which encourage stove-piped systems are expressly prohibited.

The views of this viewpoint are described in the following sections:

- TV-1 Standards Profile
- TV-2 Standards Forecast

3.7.1 TV-1 Standards Profile

Description

A TV-1 defines the technical and non-technical standards, guidance, and policy applicable to the architecture.

As well as identifying applicable technical standards, the TV-1 may document the policies and standards that apply to the operational or business context.

Implementation

TV-1 can be represented by a TV-1 table.

Sample

#	System element	Standard / Policy
1	Boat	GPS VHF AIS
2	Fixed Wing Aircraft	HF UHF VHF IMM VHF
3	Helicopter	VHF UHF HF

Figure 96 -- TV-1 Standards Profile

Related elements

Standard
Protocol

Related procedures

Creating TV-1 table

Related views

A TV-1 serves as the bridge between the SV and TV. The SV-9 forecasts relate to the TV-1 in that a timed technology forecast may contribute to the decision to retire or phase out the use of a certain standard in connection with a system element.

3.7.2 TV-2 Standards Forecast

Description

The forecast for evolutionary changes in the standards needs to be correlated against the time periods mentioned in the SV-8 and SV-9 views.

A Standards Forecast is a detailed description of emerging standards relevant to the systems and business processes covered by the architecture. The forecast should be tailored to focus on areas that are related to the purpose for which a given architecture description is being built, and should identify issues that will affect the architecture.

A TV-2 complements and expands on the Standards Profile (TV-1) product and should be used when more than one emerging standard time-period is applicable to the architecture. For standards advice refer to the JSP 602 series of documents.

One of the prime purposes of this Product is to identify critical technology standards, their fragility, and the impact of these standards on the future development and maintainability of the Architecture and its constituent elements.

Implementation

TV-2 can be represented using a TV-2 table.

Sample

#	Technology area	From: 2008-04-16 To: 2009-04-16	From: 2009-04-16 To: 2010-04-16
1	Compas-Sarsat System Standard	Beacon alert 243 MHz Beacon alert 406 MHz Beacon alert 121.5 MHz	Beacon alert 406 MHz

Figure 97 -- TV-2 Standards Forecast

Related elements

Standard
Protocol
Forecast

Related procedures

Creating TV-2 table

Related GUI

Time Periods Dialog

Related views

A TV-2 delineates the standards that will potentially impact the relevant system elements (from SV-1, SV-2, SV-4, SV-6, and OV-7) and relates them to the time periods that are listed in the SV-8 and SV-9. A system's evolution, specified in the SV-8, may be tied to a future standard listed in the TV-2. A timed technology forecast from the SV-9 is related to a TV-2 standards forecast in the following manner: a certain technology may be dependent on a TV-2 standard (i.e., a standard listed in TV-2 may not be adopted until a certain technology becomes available).

4 SUPPORTIVE VIEWS

The supportive views are described in the following sections:

- Implementation Matrix
- Service Channels Summary Table
- Service Channels Summary Matrix

4.1 Implementation Matrix

Description

The Implementation Matrix describes the mapping between Systems Operational and Service oriented viewpoint elements.

Both DoDAF and MODAF Operational viewpoint elements should be implemented by the Systems or service oriented viewpoint elements. The implementation in UPDM is defined by the Implements relationship connecting implementation and specification elements In order to specify the implementation and analyze implementation gaps the Implementation Matrix is added as a supportive product for UPDM.

Implementation

An Implementation Matrix in MagicDraw can be represented by a Dependency Matrix based diagram. The implementation elements will be used as the row elements and specification (implemented) elements will be used as the column elements.

To be more specific, systems elements are: System Resources, Functions, and Resource Interactions.

Operational elements are: Nodes (MODAF) or Performers (DoDAF), Operational Activities, and Operational Exchanges.

Service oriented elements are: Service Function.

Sample

	Monitoring Node	Person In Distress	Place Of Safety	Rescue Node	SAR Asset Controller	SAR Concept	Search Node	Tactical C2 Node
Aircraft				↗			↗	
Airwave								
Augusta Westland 139				↗			↗	
Boat				↗			↗	
Channel Navigation Information Center								
Communication Device								
Compas-Sarsat System	↗							
Fixed Wing Aircraft							↗	
Helicopter				↗				
Land Rescue Unit								
Life Saving Device				↗				
Lighting Device				↗				
Maritime Rescue Coordination Center Software								
Maritime Rescue Team						↗		
Maritime Rescue Unit				↗		↗		
Maritime Rescue Unit V2				↗				
MRT Communicator							↗	
MRT Driver					↗			
MRT Pilot								
MRT Searcher							↗	
MRT Swimmer				↗				
Sikorsky S-61								
Sikorsky S92A								

Predefined configurations

There are several types of predefined implementation matrices:

- Nodes/Performers Implementation Matrix. It maps Nodes/Performers to System Resources only.
- Operational Activities Implementation Matrix. It maps Operational Activities to Functions.
- Operational Exchanges Implementation Matrix. It maps Operational Exchanges to Resource Interactions.

You can find Predefined Matrices by clicking **Analyze** > **OV-SV Gap analysis**.

These matrices provide analysis of the whole model of a particular implementation, so you do not have to define the scope or any additional properties for building them.

Related elements

- System
- Function
- Resource Interaction
- Node

[Performer](#)
[Operational Activity](#)
[NEW! Operational Exchange](#)
[System Function](#)

4.2 Service Channels Summary Table

The Service Channel Summary Table specifies the characteristics of service resource flows between Services. The Service Channel Summary Table is the physical equivalent of the logical OV-3 Operational Resource Flow Matrix and provides detailed information on the service connections which implement the Resource Flow exchanges specified in OV-3 Operational Resource Flow Matrix.

In addition, this model is useful in support of net-centric (service-oriented) implementation of services. According to the Net-Centric Data Strategy, a net-centric implementation needs to focus in on the data in the Service Resource Flow, as well as the services that produce or consume the data of the Service Resource Flow. In a netcentric implementation, not all the consumers are known and this model emphasizes the focus on the producer and Service Resource Flow.

Implementation

Service Channel Summary Table can be represented using:

- A Service Channel Summary Table diagram.
- A Service Channel Summary Table spreadsheet report.

Sample

#	Required Items	Service Provider	Service Requester	Provider's Service Interface	Requester's Service Interface
1	Radio Instruction	RNLI Lifeboat	Yacht	Emergency Towing Cover	Emergency Towing Cover
2	Medical Advice	RN ASR Helo	Yacht	UK Radio Medical Advice	UK Radio Medical Advice
3	Distress Signal	Rescue Node	Person In Distress	Rescue	Mayday
4	Distress Signal	Monitoring Node	Person In Distress	Monitor	Mayday
5	Distress Signal	Search Node	Person In Distress	Search	Mayday

Related elements

[Service Channel](#)
[Service Interface](#)
[Service](#)
[Request](#)
[Expose](#)
[Service Operation](#)
[Service Parameter](#)
[Performer](#)
[System](#)
[NEW! Materiel](#)
[Capability Configuration](#)
[NEW! Organization](#)
[Post](#)

Related procedures

Creating Service Channel Summary Table

Related GUI

Service Channel Creation Wizard

Related views

Icon	View	Relationship
SV-6 OV-3	SV-6 Systems Resource Flow Matrix OV-3 Operational Resource Flow Matrix	Each Service Channel exchange listed in the Service Channel Summary table should be traceable to Resource Exchange listed in the corresponding SV-6 Systems Resource Flow Matrix or Operational Exchange listed in the corresponding OV-3 Operational Resource Flow Matrix.
SvcV-4	SvcV-4 Services Functionality Description	Each Service Channel exchange may relate to a known service function (from SOV-5) that produces or consumes it.
SvcV-7 Actual SvcV-7 Typical	SvcV-7 Services Measures Matrix	SvcV-7 Services Measures Matrix builds on the Service Channel Summary table and should be developed at the same time.
DIV-2 DIV-3	DIV-2 Logical Data Model DIV-3 Physical Data Model	Exchange Elements as well as the other type exchange items are exchanged by Service Providers and Service Requesters represented in Service Channel Summary table.

4.3 Service Channels Summary Matrix

Description

A Service Channel Summary matrix enables a quick overview of all the service interactions specified in one or more OV and SV models. The matrix format supports a rapid assessment of potential commonalities and redundancies (or, if fault-tolerance is desired, the lack of redundancies). In addition, this model is useful in support of net-centric (service-oriented) implementation of services.

The Service Channel Summary Matrix can be organized in a number of ways to emphasize the association of service pairs in context with the architecture's purpose. One type of organization is a Service Hierarchy or Taxonomy of Services.

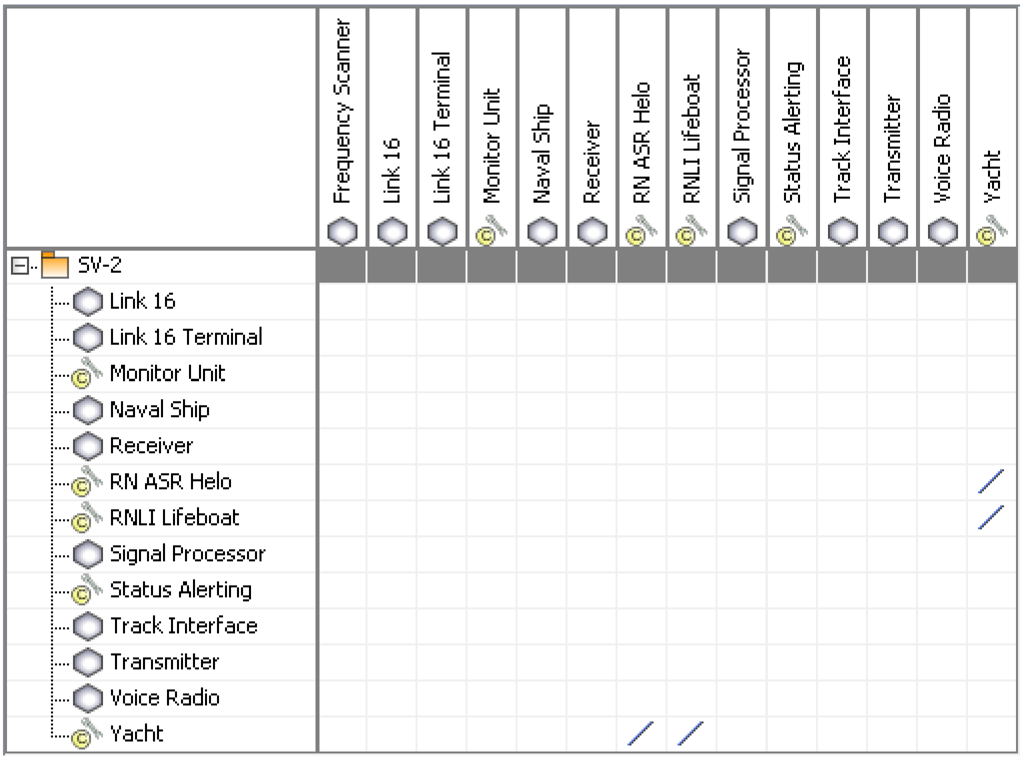
The intended usage of the Service Channel Summary Matrix includes:

- Summarizing service resource interactions.
- Interface management.
- Comparing interoperability characteristics of solution options.

Implementation

Service Channel Summary Matrix can be represented using a Service Channel Summary Matrix diagram which is an editable Dependency Matrix.

Sample



Related elements

- Service Channel
- Service Interface
- Service
- Request
- System
- NEW! Materiel
- NEW! Organization
- Post

Related procedures

- Building Service Channel Summary Matrix

Related GUI

Service Channel Creation Wizard

Related views

This model is useful in support of net-centric (service-oriented) implementation of services as an input to the SvcV-10a Services Rules Model, SvcV-10b Services State Transition Description, and SvcV-10c Services Event-Trace Description, implemented as orchestrations of services.

5 UPDM 2.0 ELEMENTS

All UPDM 2.0 elements are described in the following sections:

- All Views Viewpoint
- Capability Viewpoint and Strategic Viewpoint Elements
- Project Viewpoint and Acquisition Viewpoint Elements
- Operational Viewpoint Elements
- Services Viewpoint and Service Oriented Viewpoint Elements
- Systems Viewpoint Elements
- Standards Viewpoint and Technical Standards Viewpoint Elements

5.1 All Views Viewpoint

The elements of this viewpoint are described in the following sections:

- Actual Measurement
- Actual Property Set
- Alias
- Architectural Description
- Architecture Metadata
- Architectural Reference
- Climate
- NEW! Condition
- NEW! Condition Property
- NEW! Geo Political Extent Type
- NEW! Geo Political Extent
- Defines Architecture
- Definition
- Environment
- Environment Property
- NEW! Exchange Element
- NEW! Implements
- NEW! Information
- Light Condition
- NEW! Actual Location
- NEW! Location
- Location Type
- Measurement
- Measurement Set

- Measure Type
- Metadata
- NEW! Measure
- NEW! Property
- NEW! Overlap
- NEW! Actual Property
- NEW! Is Capable Of Performing
- NEW! Activity Performed By Performer
- Same As

5.1.1 Actual Measurement

Description

UPDM: An actual value of the Measurement.

MODAF: NA

DoDAF: NA

Architecture Framework

MODAF, DoDAF

Extensions

UML Slot

Related MODAF views

SV-7 Resource Performance Parameters Matrix

5.1.2 Actual Property Set

Description

UPDM: A set or collection of ActualMeasurement(s). A date of measurement can be set. An intent of ActualMeasurementSet can be “Result”, “Required”, or “Estimate”.

MODAF: NA

DoDAF: NA

Architecture Framework

MODAF

Properties

Property	Description
date : ISO8601DateTime[1]	The date of Actual Measurement Set.

Extensions

UML Instance Specification

Related DoDAF views

SV-7 Systems Measures Matrix
SvcV-7 Services Measures Matrix

Related MODAF views

SV-7 Resource Performance Parameters Matrix

5.1.3 Alias

Description

A UPDM Artifact used to define an alternative name for an element as used by DoDAF or MODAF.

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
nameOwner : String[*]	The person or organization that uses an alternative name.

Extensions

UML Comment

Related DoDAF views

AV-2 Integrated Dictionary

Related MODAF views

AV-2 Integrated Dictionary

5.1.4 Architectural Description

Description

MODAF: A specification of a system of systems at a technical level which also provides the business context for the system of systems.

DoDAF: Information describing architecture.

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
approvalAuthority: ActualOrganizationalResource[*]	References the actual organizational resource that has the authority to approve the architectural description.
architect : String[*]	The name of the architect responsible for the ArchitecturalDescription.
assumptionAndConstraint : String[*]	Any assumptions, constraints, and limitations contained in the ArchitecturalDescription, including those affecting deployment, communications performance, information assurance environments, etc.
creatingOrganization : String[1]	Describes the ActualOrganizationalResource creating the ArchitecturalDescription.
dateCompleted : String[0..1]	Date that the Architectural Description was completed.
purpose : String[1]	Explains the need for the Architecture, what it will demonstrate, the types of analyses that will be applied to it, who is expected to perform the analyses, what decisions are expected to be made on the basis of each form of analysis, who is expected to make those decisions, and what actions are expected to result.
recommendations : String[1]	States the recommendations that have been developed based on the architecture effort. Examples include recommended system implementations, and opportunities for technology insertion.
summaryOfFindings : String[1]	Summarizes the findings that have been developed so far. This may be updated several times during the development of the ArchitecturalDescription.
toolsUsed : String[1]	Identifies any tools used to develop the ArchitecturalDescription as well as the file names and formats if appropriate.
toBe : Boolean[1]	Indicates whether the ArchitecturalDescription is an existing or future one.
Viewpoint : String[1]	
Views : View[1..*]	
architectureFramework : Architecture-FrameworkKind [1]	The architectureFramework tag identifies the subset of aliases to use within the context of the ArchitecturalDescription (i. e. DoDAF, MODAF or none)

Extensions

UML Package

Related DoDAF views

AV-1 Overview and Summary Information

Related MODAF views

AV-1 Overview and Summary Information

5.1.5 Architecture Metadata

Description

UPDM: An information on Architectural Description. It states things like what methodology, notation, etc. has been used.

MODAF: A Metadata element that applies to the whole architecture.

Architecture Framework

DoDAF, MODAF

Extensions

UML Comment

Related DoDAF views

AV-1 Overview and Summary Information

Related MODAF views

AV-1 Overview and Summary Information

5.1.6 Architectural Reference

Description

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

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

5.1.7 Climate

Description

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

DoDAF: The state of an environment or situation in which a Performer performs.

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

Related DoDAF views

CV-2 Capability Taxonomy

Related MODAF views

StV-2 Capability Taxonomy

5.1.8 NEW! Condition

Description

MODAF: 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.).

DoDAF: An object that encompasses meteorological, geographic, and control features mission significance.

Architecture Framework

DoDAF, MODAF

Extensions

UML Data Type

5.1.9 NEW! Condition Property

Description

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

DoDAF: NA

Architecture Framework

MODAF

Extensions

UML Property

5.1.10 NEW! Geo Political Extent Type

Description

MODAF:NA

DoDAF: A geospatial extent whose boundaries are by declaration or agreement by political parties.

Architecture Framework

DoDAF

Extensions

UML Data Type

5.1.11 NEW! Geo Political Extent

Description

UPDM: An instance of a GeoPoliticalExtentType.

MODAF:NA

DoDAF: NA

Architecture Framework

DoDAF

Extensions

UML Instance Specification

5.1.12 Defines Architecture

Description

UPDM: An ArchitecturalDescription describes the architecture for an EnterprisePhase. The DefinesArchitecture stereotype establishes a relationship between ArchitecturalDescription and EnterprisePhase.

Architecture Framework

DoDAF, MODAF

Extensions

UML Realization

Related DoDAF views

AV-1 Overview and Summary Information

Related MODAF views

AV-1 Overview and Summary Information

5.1.13 Definition

Description

UPDM: A definition of an element in the architecture.

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
author : String[1..*]	The original or current person (architect) responsible for an element.

Extensions

UML Comment

Related DoDAF views

AV-2 Integrated Dictionary

Related MODAF views

AV-2 Integrated Dictionary

5.1.14 Environment

Description

MODAF: 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.).

DoDAF: An object that encompasses meteorological, geographic, and control features mission significance.

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

Related DoDAF views

CV-2 Capability Taxonomy

Related MODAF views

StV-2 Capability Taxonomy

5.1.15 Environment Property

Description

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

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Property

Related DoDAF views

CV-2 Capability Taxonomy

Related MODAF views

StV-2 Capability Taxonomy

5.1.16 NEW! Exchange Element

Description

MODAF: A relationship specifying the need to exchange information between nodes.

DoDAF: NA - this is a specialization of OperationalExchange (DoDAF::Interface).

Architecture Framework

DoDAF, MODAF

Extensions

UML Data Type

5.1.17 NEW! Implements

Description

UPDM:Tuple defining the relationship between systems and service elements and operational elements

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

Architecture Framework

DoDAF, MODAF

Extensions

UML Abstraction

5.1.18 NEW! Information

Description

UPDM:As DoDAF

MODAF:N/A

DoDAF:Information is the state of a something of interest that is materialized - in any medium or form - and communicated or received.

Architecture Framework

DoDAF

Extensions

UML Comment

5.1.19 Light Condition

Description

DoDAF: NA – this is a specialization of EnvironmentalType (DoDAF::GeoFeature).

Architecture Framework

DoDAF, MODAF

Extensions

UML Data Type

Related DoDAF views

CV-2 Capability Taxonomy

Related MODAF views

StV-2 Capability Taxonomy

5.1.20 NEW! Actual Location

Description

MODAF: A PhysicalLocation (MODAF::ActualLocation) is 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 PhysicalLocation is a "GPS reference", the string will contain the GPS coordinates.

NOTE	This has been extended in UPDM to include non-earth locations.

DoDAF: All subtypes of << IndividualType>> Location, such as Facility, Site, etc.

Architecture Framework

DoDAF, MODAF

Extensions

UML Instance Specification

5.1.21 NEW! Location

Description

DoDAF: All subtypes of << IndividualType>> Location, such as Facility, Site, etc.

Architecture Framework

DoDAF

Extensions

UML Instance Specification

5.1.22 Location Type

Description

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

DoDAF: A point or extent in space that may be referred to physically or logically. Includes concepts such as: Facility, Installation, RealProperty, Site, , and instances of conditions such as underwater (as specified in UJTLs).

Architecture Framework

DoDAF, MODAF

Extensions

UML Data Type

Related DoDAF views

CV-2 Capability Taxonomy

Related MODAF views

StV-2 Capability Taxonomy

5.1.23 Measurement

Description

A DoDAF alias for ActualMeasurement.

Architecture Framework

MODAF

Properties

Property	Description
maxValue : String[0..1]	The maximum value of the measurement.
minValue : String[0..1]	The minimum value of the measurement.

Extensions

UML Property

Related MODAF views

SV-7 Resource Performance Parameters Matrix

5.1.24 Measurement Set

Description

A set or collection of measurements.

Architecture Framework

DoDAF, MODAF

Extensions

UML DataType

Related DoDAF views

SV-7 Systems Measures Matrix
SvcV-7 Services Measures Matrix

Related MODAF views

SV-7 Resource Performance Parameters Matrix

5.1.25 Measure Type

Description

DoDAF: A category of Measures.

Architecture Framework

DoDAF

Extensions

UML Data Type

Related DoDAF views

SV-7 Systems Measures Matrix
SvcV-7 Services Measures Matrix

5.1.26 Metadata

Description

MODAF: Annotation that can be applied to any element in the architecture.

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Comment

5.1.27 NEW! Measure

Description

MODAF:NA

DoDAF:The magnitude of some attribute of an individual.

Architecture Framework

DoDAF

Extension

UML Instance Specification

5.1.28 NEW! Property

Description

UPDM: The defining feature of an actual property, used to capture measurements

MODAF:NA

DoDAF:NA

Architecture Framework

DoDAF, MODAF

Extension

UML Property

5.1.29 NEW! Overlap

Description

IDEAS:A couple of wholePart couples where the part in each couple is the same.

Architecture Framework

MODAF

Extension

UML Dependency

5.1.30 NEW! Actual Property

Description

UPDM:The value of a Measure.

MODAF:NA

DoDAF:NA

Architecture Framework

DoDAF, MODAF

Extension

UML Slot

5.1.31 NEW! Is Capable Of Performing

Description

UPDM: Links a Performer to the behavior that it can perform.

DoDAF: The Performs (DoDAF::activityPerformedByPerformer) relationship is an overlap between a Performer and a PerformedActivity (DoDAF::Activity) wherein the activity is performed by the Performer.

Architecture Framework

DoDAF, MODAF

Extension

UML Dependency

5.1.32 NEW! Activity Performed By Performer

Description

UPDM: Links a Performer to the behavior that it can perform

DoDAF:An overlap of an Activity with a Resource, in particular a consuming or producing Activity that expresses an input, output, consumption, or production Activity of the Resource

Architecture Framework

DoDAF

Extension

UML Dependency

5.1.33 Same As

Description

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

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

Related DoDAF views

AV-2 Integrated Dictionary

Related MODAF views

AV-2 Integrated Dictionary

5.2 Capability Viewpoint and Strategic Viewpoint Elements

The elements of these viewpoints are described in the following sections:

- Capability
- NEW! Capability Property
- Deployed Milestone
- No Longer Used Milestone
- Desired Effect
- Enduring Task
- Enterprise Goal
- Enterprise Phase
- Enterprise Vision
- Exhibits
- Capability Of Performer
- Maps to Capability
- NEW! Activity Part Of Capability
- Standard Operational Activity
- Structural Part
- Temporal Part
- Vision
- Vision Statement

- Whole-Life Enterprise

5.2.1 Capability

Description

MODAF: A high level specification of the enterprise's ability.

DoDAF: The ability to achieve a desired effect under specified [performance] standards and conditions through combinations of ways and means [activities and resources] to perform a set of activities.

Architecture Framework

DoDAF, MODAF, DoDAF 2.0

Properties

Property	Description
environmentConditions : Environment[0..*]	The environmental conditions pertinent to this Capability typically including weather, threat, security, terrain, etc.

Extensions

UML Class

Related DoDAF views

- CV-1 Vision
- CV-2 Capability Taxonomy
- CV-3 Capability Phasing
- CV-4 Capability Dependencies
- CV-5 Capability to Organizational Development Mapping
- CV-6 Capability to Operational Activities Mapping
- CV-7 Capability to Services Mapping
- OV-2 Operational Resource Flow Description
- OV-5 Operational Activity Model
- PV-3 Project to Capability Mapping
- SV-1 Systems Interface Description
- SvcV-1 Services Context Description

Related MODAF views

- OV-2 Operational Node Relationship Description
- SOV-1 Service Taxonomy
- SOV-3 Capability to Service Mapping
- StV-2 Capability Taxonomy
- StV-3 Capability Phasing
- StV-4 Capability Dependencies
- StV-5 Capability to Organization Deployment Mapping
- StV-6 Operational Activity to Capability Mapping

SV-1 Resource Interaction Specification

5.2.2 NEW! Capability Property

Description

UPDM: A property of a capability.

MODAF: NA

DoDAF: NA

Architecture Framework

MODAF, DoDAF

Extensions

UML Property

5.2.3 Deployed Milestone

Description

MODAF: 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.

DoDAF: NA

Architecture Framework

MODAF, DoDAF

Properties

Property	Description
configuration : CapabilityConfiguration[1..*]	Affected CapabilityConfigurations.
usedBy : ActualOrganizationalResource[1..*]	ActualOrganizationalResources using CapabilityConfiguration deployed at this Milestone.

Extensions

UML Instance Specification

Related DoDAF views

CV-5 Capability to Organizational Development Mapping
SV-8 Systems Evolution Description

Related MODAF views

StV-5 Capability to Organization Deployment Mapping
SV-8 Capability Configuration Management

5.2.4 No Longer Used Milestone

Description

MODAF: 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.

Architecture Framework

MODAF, DoDAF

Properties

Property	Description
noLongerUsedBy : ActualOrganizationalResource[1..*]	ActualOrganizationalResources that are no longer using CapabilityConfiguration that went out of service at this Milestone.
configuration : CapabilityConfiguration[1..*]	Affected CapabilityConfigurations.

Extensions

UML Instance Specification

Related DoDAF views

- CV-5 Capability to Organizational Development Mapping
- SV-8 Systems Evolution Description

Related MODAF views

- StV-5 Capability to Organization Deployment Mapping
- SV-8 Capability Configuration Management

5.2.5 Desired Effect

Description

The result, outcome, or consequence of an action [activity].

Architecture Framework

DoDAF

Properties

Property	Description
benefits : String[0..*]	A description of the usefulness of the Desired Effect in terms of why the state or condition of the Enterprise is worth attaining.
enterprisePhase : EnterprisePhase[1]	Phase of the Desired Effect.

Extensions

UML Class

Related DoDAF views

CV-1 Vision

5.2.6 Enduring Task

Description

MODAF: A type of behavior recognized by an enterprise as being essential to achieving its goals, i.e., a strategic specification of what the enterprise does.

DoDAF: NA

Architecture Framework

MODAF

Extensions

UML Class

Related MODAF views

StV-1 Enterprise Vision

5.2.7 Enterprise Goal

Description

MODAF: A specific, required objective of the enterprise that the architecture represents.

DoDAF: (DoDAF::IndividualDesiredEffect): A desired change in the state as a result of some activity.

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

Related MODAF views

StV-1 Enterprise Vision

5.2.8 Enterprise Phase

Description

MODAF: A specific, required objective of the enterprise that the architecture represents.

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
endDate : ISO8601DateTime[1]	The time and date at which the Phase ends.
startDate : ISO8601DateTime[1]	The time and date at which the Phase starts.
goals : EnterpriseGoal[*]	The Goal towards which this Phase is directed and is in support of.
visions : EnterpriseVision[*]	The Vision towards which this Phase is directed and is in support of.
statementTasks : EnduringTask[*]	Collection of statement tasks.
fulfills : Mission [*]	
describedBy : ArchitecturalDescription [*]	

Extensions

UML Class

Related DoDAF views

- CV-1 Vision
- CV-5 Capability to Organizational Development Mapping

Related MODAF views

- StV-1 Enterprise Vision
- StV-5 Capability to Organization Deployment Mapping

5.2.9 Enterprise Vision

Description

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

DoDAF: (DoDAF::Vision): An end that describes the future state of the enterprise, without regard to how it is to be achieved; a mental image of what the future will or could be like.

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

Related MODAF views

StV-1 Enterprise Vision

5.2.10 Exhibits

Description

UPDM: Relationship between a Node and a capability the node provides.

MODAF: (MODAF::CapabilityForNode): An assertion that a Node is required to have a Capability.

DoDAF: A couple that represents the capability that a performer manifests.

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

Related DoDAF views

OV-2 Operational Resource Flow Description

Related MODAF views

OV-2 Operational Node Relationship Description

5.2.11 Capability Of Performer

Description

UPDM:A couple that represents the capability that a resource, node or enterprise phase exhibits (Exhibits).

MODAF:An assertion that a Node is required to have a Capability (Capability for node).

DoDAF: A couple that represents the capability that a performer has.

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

Related DoDAF views

SV-1 Systems Interface Description
SvcV-1 Services Context Description

5.2.12 Maps to Capability

Description

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

DoDAF: MapsToCapability (DoDAF::ActivityPartOfCapability) is a disposition to manifest an Activity. An Activity to be performed to achieve a desired effect under specified [performance] standards and conditions through combinations of ways and means.

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

Related DoDAF views

- CV-6 Capability to Operational Activities Mapping
- OV-5 Operational Activity Model

Related MODAF views

- StV-6 Operational Activity to Capability Mapping

5.2.13 NEW! Activity Part Of Capability

Description

UPDM: As in DoDAF

DoDAF: A disposition to manifest an Activity. An Activity to be performed to achieve a desired effect under specified [performance] standards and conditions through combinations of ways and means.

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

5.2.14 Standard Operational Activity

Description

MODAF: An OperationalActivity that is a standard procedure that is doctrinal.

NOTE	This is equivalent to what some defense organizations call JETLs.

DoDAF: Work, not specific to a single organization, weapon system or individual, that transforms inputs into outputs or changes their state (DoDAF::Activity).

Architecture Framework

DoDAF, MODAF

Extensions

UML Activity

Related DoDAF views

- CV-6 Capability to Operational Activities Mapping
- SvcV-1 Services Context Description

Related MODAF views

- OV-5 Operational Activity Model
- SOV-1 Service Taxonomy
- StV-6 Operational Activity to Capability Mapping
- SV-5 Function to Operational Activity Traceability Matrix

5.2.15 Structural Part

Description

UPDM: An EnterprisePhase can be sub-divided into structural and temporal parts. StructuralPart describes the EnterprisePhase elements that describe the structure.

MODAF: Asserts that one EnterprisePhase is a spatial part of another, (MODAF::EnterpriseStructure).

NOTE	This is a topological structuring relationship, hence the EnterprisePhase may be physically disjoint.

Architecture Framework

DoDAF, MODAF

Extensions

UML Property

Related MODAF views

- StV-1 Enterprise Vision

5.2.16 Temporal Part

Description

UPDM Artifact: An EnterprisePhase can be sub-divided into structural and temporal parts. TemporalPart describes the EnterprisePhase elements that have a time based nature.

MODAF: Asserts that one EnterprisePhase is a temporal part of another.

NOTE	This means that both EnterprisePhases have the same spatial extent, i.e., this is only a temporal structure (MODAF::EnterpriseTemporalPart).

Architecture Framework

DoDAF, MODAF

Extensions

UML Property

Related MODAF views

StV-1 Enterprise Vision

5.2.17 Vision

Description

An end that describes the future state of the enterprise, without regard to how it is to be achieved; a mental image of what the future will or could be like.

Architecture Framework

DoDAF

Properties

Property	Description
statement : VisionStatement[*]	A description of the Vision.
enterprisePhase : EnterprisePhase[1]	The phase which temporally locates the Vision.

Extensions

UML Class

Related DoDAF views

CV-1 Vision

5.2.18 Vision Statement

Description

MODAF: A high-level textual description of an Enterprise Vision.

DoDAF: An end that describes the future state of the enterprise, without regard to how it is to be achieved; a mental image of what the future will or could be like (DODAF::Vision).

Architecture Framework

DoDAF, MODAF

Extensions

UML Comment

Related DoDAF views

CV-1 Vision

5.2.19 Whole-Life Enterprise

Description

UPDM: A WholeLifeEnterprise is a purposeful endeavor of any size involving people, organizations and supporting systems (including physical systems and/or processes).

MODAF: An EnterprisePhase that represents the whole existance of an enterprise.

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

Related MODAF views

StV-1 Enterprise Vision

5.3 Project Viewpoint and Acquisition Viewpoint Elements

The elements of these viewpoints are described in the following sections:

- Actual Project
- Actual Project Milestone
- NEW! Actual Project Milestone Role
- Increment Milestone
- Milestone Sequence
- NEW! Organizational Project Relationship
- Out Of Service Milestone
- NEW! Project Activity
- NEW! Activity Part Of Project
- Project
- NEW! Project Type
- Project Milestone
- NEW! Project Milestone Role
- NEW! Project Ownership
- Project Sequence
- Project Status
- Project Theme

- NEW! Status Indicators

5.3.1 Actual Project

Description

MODAF: (MODAF::Project): A time-limited endeavour to create a specific set of products or services.

DoDAF: (DoDAF::Project): A temporary endeavor undertaken to create Resources or Desired Effects.

Architecture Framework

MODAF, DoDAF

Properties

Property	Description
endDate : ISO8601DateTime[0..1]	An end time of a Project.
startDate :ISO8601DateTime[1]	A start time for a Project.
part : Project[0..*]	The sub-projects.
whole : Project[0..1]	A parent project.
ownedMilestones : ActualProjectMilestone[1..*]	The milestones associated with a project.

Extensions

UML Instance Specification

Related DoDAF views

CV-3 Capability Phasing
CV-5 Capability to Organizational Development Mapping
PV-1 Project Portfolio Relationships
PV-2 Project Timelines
PV-3 Project to Capability Mapping
SV-8 Systems Evolution Description

Related MODAF views

AcV-1 Acquisition Clusters
AcV-2 Programme Timelines
StV-3 Capability Phasing
StV-5 Capability to Organization Deployment Mapping
SV-8 Capability Configuration Management

5.3.2 Actual Project Milestone

Description

MODAF: (ProjectMilestone): An event in a ActualProject (MODAF::Project) by which progress is measured.

NOTE	In the case of an acquisition project, there are two key types of milestones which shall be represented using subtypes - IncrementMilestone (MODAF::CapabilityIncrement) and OutOfServiceMilestone (MODAF::OutOfService)

DoDAF: NA

Architecture Framework

MODAF, DoDAF

Properties

Property	Description
date : ISO8601DateTime[1]	Defines time for a ProjectMilestone.

Extensions

UML Instance Specification

Related DoDAF views

PV-2 Project Timelines

Related MODAF views

AcV-2 Programme Timelines

5.3.3 NEW! Actual Project Milestone Role

Description

UPDM: An instance of a ProjectMilestoneRole in the context of an ActualProject.

Architecture Framework

MODAF, DoDAF

Extensions

UML Slot

5.3.4 Increment Milestone

Description

MODAF: (MODAF::CapabilityIncrement): An ActualProjectMilestone (MODAF::ProjectMilestone) that indicates the point in time at which a project is predicted to deliver or has delivered a Capability.

DoDAF: NA

Architecture Framework

MODAF, DoDAF

Properties

Property	Description
configuration : CapabilityConfiguration[1..*]	The CapabilityConfiguration that is added to the Capability Increment milestone.

Extensions

UML Instance Specification

Related DoDAF views

- CV-3 Capability Phasing
- PV-2 Project Timelines

Related MODAF views

- AcV-2 Programme Timelines
- StV-3 Capability Phasing

5.3.5 Milestone Sequence

Description

MODAF: A MilestoneSequence (MODAF::MilestoneRelationship) is a relationship between two milestones.

DoDAF: NA

Architecture Framework

MODAF, DoDAF

Extensions

UML Dependency

Related DoDAF views

- PV-2 Project Timelines
- SV-8 Systems Evolution Description

Related MODAF views

- AcV-2 Programme Timelines
- SV-8 Capability Configuration Management

5.3.6 NEW! Organizational Project Relationship

Description

MODAF:A relationship between an ActualOrganisation and a Project.

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

5.3.7 Out Of Service Milestone

Description

MODAF: An OutOfServiceMilestone (MODAF::OutOfService) is a ProjectMilestone that indicates a project's deliverable is to go out of service.

DoDAF: NA

Architecture Framework

MODAF, DoDAF

Properties

Properties	Description
configuration : CapabilityConfiguration[1..*]	CapabilityConfiguration that goes out of service at this OutOfServiceMilestone.

Extensions

UML Instance Specification

Related DoDAF views

- CV-3 Capability Phasing
- PV-2 Project Timelines

Related MODAF views

- AcV-2 Programme Timelines
- StV-3 Capability Phasing

5.3.8 NEW! Project Activity

Description

MODAF:NA

DoDAF: An activity carried out during a project.

Architecture Framework

DoDAF

Extensions

UML Activity

5.3.9 NEW! Activity Part Of Project

Description

UPDM: As in DoDAF

DoDAF: A wholePart relationship between a Project and an Activity (Task) that is part of the Project.

Architecture Framework

DoDAF

Extensions

UML Dependency

5.3.10 Project

Description

MODAF: A Project (MODAF::ProjectType) is used to define a category of project: For example, "Program", “Acquisition Project” or “Training Program".

DoDAF: NA (only Individual Project in DoDAF).

Architecture Framework

MODAF, DoDAF

Extensions

UML Class

Related DoDAF views

PV-1 Project Portfolio Relationships
PV-2 Project Timelines

Related MODAF views

AcV-1 Acquisition Clusters

5.3.11 NEW! Project Type

Description

MODAF: A Project (MODAF::ProjectType) is used to define a category of project: For example, "Programme", "Acquisition Project" or "Training Programme".

DoDAF: NA (only Individual Project in DoDAF).

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

5.3.12 Project Milestone

Description

UPDM: An element representing a collection of themes (e.g., DLOD or DOTMLPF) which is connected to a Project as part of a Project's definition. This is used as a template for ActualProjectMilestones.

MODAF: An event in a Project by which progress is measured.

Architecture Framework

MODAF, DoDAF

Extensions

UML Class

Related DoDAF views

PV-2 Project Timelines
PV-1 Project Portfolio Relationships

Related MODAF views

AcV-1 Acquisition Clusters
AcV-2 Programme Timelines

5.3.13 NEW! Project Milestone Role

Description

UPDM: The role played by a ProjectMilestone in the context of an ActualProjectMilestone

Architecture Framework

DoDAF, MODAF

Extensions

UML Property

5.3.14 NEW! Project Ownership

Description

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

Architecture Framework

MODAF

Extensions

UML Dependency

5.3.15 Project Sequence

Description

MODAF: Asserts that one ActualProject (MODAF::Project) follows from another, i.e. the target ActualProject cannot start until the source ActualProject has ended.

DoDAF: NA

Architecture Framework

MODAF, DoDAF

Extensions

UML Dependency

Related DoDAF views

PV-2 Project Timelines

Related MODAF views

AcV-2 Programme Timelines

5.3.16 Project Status

Description

MODAF: A ProjectStatus (MODAF::StatusAtMilestone) is a relationship between a Status and a milestone that asserts the status (i.e., level of progress) of a ProjectTheme for the project at the time of the ActualProjectMilestone (MODAF::Milestone).

DoDAF: NA

Architecture Framework

MODAF, DoDAF

Extensions

UML Slot

Related DoDAF views

PV-2 Project Timelines

Related MODAF views

AcV-2 Programme Timelines

5.3.17 Project Theme

Description

MODAF:An aspect by which the progress of various Projects may be measured. In UK MOD, this could be one of the defense lines of development (DLOD), or DOTMLPF in the US.

DoDAF: NA

Architecture Framework

MODAF, DoDAF

Extensions

UML Property

Related DoDAF views

PV-2 Project Timelines

Related MODAF views

AcV-2 Programme Timelines

5.3.18 NEW! Status Indicators

Description

UPDM: Specifies a status for a ProjectTheme (such as training status).

MODAF: An enumeration of the possible statuses (MODAF::StatusIndicator) for one of more ProjectThemes.

Architecture Framework

MODAF

Extensions

UML Enumeration

5.4 Operational Viewpoint Elements

The elements of this viewpoint are described in the following sections:

- Actual Organization
- Actual Organization Relationship
- Actual Organization Role
- Actual Person
- Actual Post
- Arbitrary Relationship
- Command
- Competence

- Concept Role
- Energy
- Fills Post
- High-Level Operational Concept
- NEW! Individual Person Role
- NEW! Organization Type
- Known Resource
- Logical Architecture
- Logical Data Model
- Mission
- Needline
- Node
- Node Port
- Node Role
- Operational Activity
- Operational Activity Action
- Operational Activity Edge
- Operational Constraint
- Operational Event Trace
- NEW! Operational Exchange
- Operational Message
- Operational Parameter
- NEW! Operational State
- Operational State Description
- Organization (MODAF)
- NEW! Organization
- Owns Process
- Performer
- Person
- NEW! Person Type
- Post
- Problem Domain
- Provides Competence
- Skill Of Person Type
- Requires Competence
- NEW! Responsibility
- NEW! Role Type
- Rule
- NEW! Security Domain
- Skill
- NEW! Trustline

5.4.1 Actual Organization

Description

MODAF: An actual specific organization, an instance of an organization class, for example, "The US Department of Defense".

DoDAF: [DoDAF::Organization]: A specific real-world assemblage of people and other resources organized for an on-going purpose.

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
ratifiedStandards : Standard[*]	The standards that were ratified by the ActualOrganization.

Extensions

UML Instance Specification

Related DoDAF views

- CV-5 Capability to Organizational Development Mapping
- OV-4 Organizational Relationships Chart
- PV-1 Project Portfolio Relationships

Related MODAF views

- AcV-1 Acquisition Clusters
- OV-4 Organizational Relationships Chart
- StV-5 Capability to Organization Deployment Mapping

5.4.2 Actual Organization Relationship

Description

UPDM: A relationship between two ActualOrganizationResources.

MODAF: NA

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Information Flow

Related DoDAF views

[OV-4 Organizational Relationships Chart]

Related MODAF views

[OV-4 Organizational Relationships Chart]

5.4.3 Actual Organization Role

Description

UPDM: Relates an actual specific organization to an actual specific organizational resource that fulfills a role in that organization.

MODAF: NA

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Slot

Related DoDAF views

[OV-4 Organizational Relationships Chart]

Related MODAF views

[OV-4 Organizational Relationships Chart]

5.4.4 Actual Person

Description

UPDM: Named individual that fulfills an ActualPost. An individual human being (vs Person which is a type), that is recognized by law as the subject of rights and duties.

MODAF: NA

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
filledPost : ActualPost[*]	The ActualPosts filled by this person.

Extensions

UML Instance Specification

Related DoDAF views

OV-4 Organizational Relationships Chart

Related MODAF views

OV-4 Organizational Relationships Chart

5.4.5 Actual Post

Description

UPDM: An actual, specific post, an instance of a PostType class, e.g., "President of the United States of America."

MODAF: NA

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
filledBy : ActualPerson[*]	The persons filling this ActualPost.

Extensions

UML Instance Specification

Related DoDAF views

CV-5 Capability to Organizational Development Mapping
OV-4 Organizational Relationships Chart
PV-1 Project Portfolio Relationships

Related MODAF views

AcV-1 Acquisition Clusters
OV-4 Organizational Relationships Chart
StV-5 Capability to Organization Deployment Mapping

5.4.6 Arbitrary Relationship

Description

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

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

Related DoDAF views

OV-1 High-Level Operational Concept Graphic

Related MODAF views

OV-1 High-Level Operational Concept Graphic

5.4.7 Command

Description

MODAF: Asserts that one OrganizationalResource (source) commands another (target).

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Information Flow

Related DoDAF views

OV-4 Organizational Relationships Chart

Related MODAF views

OV-4 Organizational Relationships Chart

5.4.8 Competence

Description

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

DoDAF: (DoDAF::Skill): The ability, coming from one's knowledge, practice, aptitude, etc., to do something well.

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

Related MODAF views

OV-4 Organizational Relationships Chart
SV-1 Resource Interaction Specification

5.4.9 Concept Role

Description

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

Architecture Framework

DoDAF, MODAF

Extensions

UML Property

Related DoDAF views

- OV-1 High-Level Operational Concept Graphic

Related MODAF views

- OV-1 High-Level Operational Concept Graphic

5.4.10 Energy

Description

UPDM: Energy to be exchanged between Nodes.

MODAF: NA

DoDAF: NA

Architecture Framework

MODAF, DoDAF

Extensions

UML Class

Related DoDAF views

- SV-1 Systems Interface Description
- SV-2 Systems Communication Description
- SV-3 Systems-Systems Matrix
- SV-4 Systems Functionality Description
- SV-6 Systems Resource Flow Matrix

Related MODAF views

- OV-2 Operational Node Relationship Description
- OV-3 Operational Information Exchange Matrix
- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description
- SV-3 Resource Interaction Matrix
- SV-4 Functionality Description
- SV-6 Systems Data Exchange Matrix

5.4.11 Fills Post

Description

UPDM: Asserts that ActualPerson fills an ActualPost.

MODAF: NA

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

Related DoDAF views

[OV-4 Organizational Relationships Chart]

Related MODAF views

[OV-4 Organizational Relationships Chart]

5.4.12 High-Level Operational Concept

Description

MODAF: A generalized model for operations.

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
describedMission : Mission[1..*]	A mission that is described by the HighLevelOperationalConcept.

Extensions

UML Class

Related DoDAF views

[OV-1 High-Level Operational Concept Graphic]

Related MODAF views

[OV-1 High-Level Operational Concept Graphic]

5.4.13 NEW! Individual Person Role

Description

UPDM: An individual person.

DoDAF: An Individual person.

Architecture Framework

DoDAF

Extensions

UML Instance Specification

5.4.14 NEW! Organization Type

Description

DoDAF: A type of Organization.

Architecture Framework

DoDAF

Extensions

UML Class

5.4.15 Known Resource

Description

MODAF: Asserts that a known Resource plays a part in the architecture.

DoDAF: NA – covered by the more general temporalWholePart element.

Architecture Framework

DoDAF, MODAF

Extensions

UML Property

Related MODAF views

OV-2 Operational Node Relationship Description

5.4.16 Logical Architecture

Description

MODAF: A CompositeStructureModel whose parts are either NodeRoles (MODAF::Node), ProblemDomains, or KnownResources.

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

Related DoDAF views

OV-2 Operational Resource Flow Description

Related MODAF views

OV-2 Operational Node Relationship Description

5.4.17 Logical Data Model

Description

MODAF: 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.

DoDAF: A Logical Data Model allows analysis of an architecture's data definition aspect, without consideration of implementation specific or product specific issues.

Architecture Framework

DoDAF, MODAF

Extensions

UML Package

Related DoDAF views

You can use the Entity Relationship diagram for DIV-1 Conceptual Data Model

DIV-2 Logical Data Model

Related MODAF views

OV-7 Information Model

5.4.18 Mission

Description

MODAF: A purpose to which a person, organization or autonomous system is tasked.

DoDAF: The task, together with the purpose, that clearly indicates the action to be taken.

Architecture Framework

DoDAF, DoDAF

Properties

Property	Description
missionArea : String[*]	The area in which a Mission will take place.

Extensions

UML UseCase

Related DoDAF views

- CV-2 Capability Taxonomy
- OV-2 Operational Resource Flow Description
- OV-6a Operational Rules Model

Related MODAF views

- StV-2 Capability Taxonomy

5.4.19 Needline

Description

MODAF: NA

DoDAF: A needline documents the requirement to exchange information between nodes. The needline does not indicate how the information transfer is implemented.

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
exchangedItem : NeedlineExchange[*]	An exchange that occurs on the Needline.

Extensions

UML Association, UML Connector

Related DoDAF views

- OV-2 Operational Resource Flow Description
- OV-3 Operational Resource Flow Matrix

Related MODAF views

- OV-2 Operational Node Relationship Description

5.4.20 Node

Description

MODAF: A Node (MODAF::NodeType) is a logical entity that performs operational activities.

NOTE	Nodes are specified independently of any physical realization.

DoDAF: A Node (DoDAF::OperationalNode) is an element of the operational architecture that produces, consumes, or processes information.

NOTE	This is also a specialization of Performer.

Architecture Framework

MODAF

Extensions

UML Class

Related MODAF views

- OV-2 Operational Node Relationship Description
- OV-3 Operational Information Exchange Matrix
- OV-6a Operational Rules Model
- OV-6b Operational State Transition Description
- OV-6c Operational Event-Trace Description
- SV-1 Resource Interaction Specification

5.4.21 Node Port

Description

UPDM: A port is a property of a Node that specifies a distinct interaction point between the node and its environment or between the (behavior of the) node and its internal parts. It is the “entry/exit” point where resources (e.g., energy, information/data and people, etc.) flow in and out of a node.

Architecture Framework

DoDAF, MODAF

Extensions

UML Port

Related DoDAF views

- OV-2 Operational Resource Flow Description

Related MODAF views

- OV-2 Operational Node Relationship Description

5.4.22 Node Role

Description

MODAF: A NodeRole (MODAF::Node) is used to link a parent Node to its sub-nodes.

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Property

Related MODAF views

- OV-2 Operational Node Relationship Description
- OV-6c Operational Event-Trace Description

5.4.23 Operational Activity

Description

MODAF: A logical process, specified independently of how the process is carried out.DoDAF: An activity is an action performed in conducting the business of an enterprise. It is a general term that does not imply a placement in a hierarchy (e.g., it could be a process or a task as defined in other documents and it could be at any level of the hierarchy of the OV-5). It is used to portray operational actions not hardware/software system functions.

NOTE	This is also a specialization of Activity.

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
subject : ActivitySubject[*]	An object acting upon this OperationalActivity.

Extensions

UML Activity

Related DoDAF views

- CV-6 Capability to Operational Activities Mapping
- OV-2 Operational Resource Flow Description
- OV-3 Operational Resource Flow Matrix
- OV-4 Organizational Relationships Chart
- OV-5 Operational Activity Model
- OV-6a Operational Rules Model
- SV-4 Systems Functionality Description

[SV-5a Operational Activity to Systems Function Traceability Matrix]
[SV-5b Operational Activity to Systems Traceability Matrix]
[SvcV-1 Services Context Description]
[SvcV-5 Operational Activity to Services Traceability Matrix]

Related MODAF views

[OV-3 Operational Information Exchange Matrix]
[OV-4 Organizational Relationships Chart]
[OV-5 Operational Activity Model]
[OV-6a Operational Rules Model]
[SOV-1 Service Taxonomy]
[SV-4 Functionality Description]
[SV-5 Function to Operational Activity Traceability Matrix]

5.4.24 Operational Activity Action

Description

UPDM The OperationalActivityAction is defined as a call behavior action that invokes the activity that needs to be preformed.

MODAF: Used to relate an OperationalActivity to its sub-activities.

Architecture Framework

DoDAF, MODAF

Extensions

UML CallBehaviorAction

Related DoDAF views

[OV-5 Operational Activity Model]

Related MODAF views

[OV-5 Operational Activity Model]

5.4.25 Operational Activity Edge

Description

UPDM An extension of «ActivityEdge» that is used to model the flow of control/objects through an OperationalActivity.

MODAF: An OperationalActivityEdge (MODAF::OperationalActivityFlow) is a flow of information, energy or materiel from one activity to another.

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
carriedItem : NeedlineExchangeItem[0..*]	Item that is carried on this OperationalActivityEdge.

Extensions

UML ActivityEdge

Related DoDAF views

[OV-5 Operational Activity Model]

Related MODAF views

[OV-5 Operational Activity Model]

5.4.26 Operational Constraint

Description

UPDM: An abstract Class that is extended by OperationalConstraint (a rule governing an operational behavior or property) and ResourceConstraint.

Architecture Framework

MODAF

Properties

Property	Description
InformationTechnologyStandardCategory : String[*]	A category of Information Technology Standard.

Extensions

UML Constraint

Related MODAF views

[OV-6a Operational Rules Model]

5.4.27 Operational Event Trace

Description

MODAF: An OperationalEventTrace (MODAF::OperationalInteractionSpecification) is a specification of the interactions between nodes in an operational architecture.

DoDAF: The Operational Event-Trace Description (OV-6c) DoDAF- described View provides a time ordered examination of the resource flows as a result of a particular scenario. Each event- trace diagram will have an accompanying description that defines the particular scenario or situation.

Architecture Framework

DoDAF, MODAF

Extensions

UML Interaction

Related DoDAF views

OV-6c Operational Event-Trace Description

Related MODAF views

OV-6c Operational Event-Trace Description

5.4.28 NEW! Operational Exchange

Description

UPDM: An utility element used as common flow for:

- InformationExchange
- OrganizationalExchange
- EnergyExchange
- MaterielExchange
- ConfigurationExchange
- GeoPoliticalExtent

An operational exchange is formed when an activity of one operational node consumes items produced by another activity of a different operational node.

An operational exchange describes the characteristics of the exchanged item, such as the content, format (voice, imagery, text and message format, etc.), throughput requirements, security or classification level, timeliness requirement, and the degree of interoperability.

MODAF: An OperationalExchange (MODAF::LogicalFlow) asserts that a flow exists or is required between Nodes (e.g. flows of information, people, materiel, or energy).

Architecture Framework

DoDAF, MODAF

Extensions

UML Information Flow

Related DoDAF views

OV-5 Operational Activity Model

Related MODAF views

OV-5 Operational Activity Model

5.4.29 Operational Message

Description

UPDM: Message for use in an Operational Event-Trace which carries any of the subtypes of OperationalExchange. This is used to provide additional information about OperationalMessages for display on an OV-6c.

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
carries : NeedlineExchange[*]	Carried NeedlineExchange.

Extensions

UML Message

Related DoDAF views

OV-6c Operational Event-Trace Description

Related MODAF views

OV-6c Operational Event-Trace Description

5.4.30 Operational Parameter

Description

UPDM: Represents inputs and outputs of an OperationalActivity. It is typed by OperationalExchangeItem.

Architecture Framework

DoDAF, MODAF

Extensions

UML Parameter

Related DoDAF views

OV-5 Operational Activity Model

Related MODAF views

OV-5 Operational Activity Model

5.4.31 NEW! Operational State

Description

UPDM: State identified in the context of an OperationalStateDescription.

Architecture Framework

DoDAF, MODAF

Extensions

UML State

5.4.32 Operational State Description

Description

UPDM: A state machine describing an operational behavior or property.

MODAF: An OperationalStateMachine (MODAF::OperationalStateDescription) is a rule governing an operational behavior or property.

DoDAF: The Operational State Transition Description (OV-6b) DoDAF-described View is a graphical method of describing how an Operational Activity responds to various events by changing its state. The diagram represents the sets of events to which the Architecture will respond (by taking an action to move to a new state) as a function of its current state. Each transition specifies an event and an action.

Architecture Framework

DoDAF, MODAF

Extensions

UML State Machine

Related DoDAF views

OV-6b Operational State Transition Description

Related MODAF views

OV-6b Operational State Transition Description

5.4.33 Organization (MODAF)

Description

MODAF: A group of persons, associated for a particular purpose.

DoDAF: A type of Organization.

Architecture Framework

DoDAF, MODAF, DoDAF 2.0

Extensions

UML Class

Related DoDAF views

OV-2 Operational Resource Flow Description

OV-3 Operational Resource Flow Matrix

- OV-4 Organizational Relationships Chart
- OV-5 Operational Activity Model
- SvcV-3b Services-Services Matrix
- SvcV-6 Services Resource Flow Matrix
- SV-1 Systems Interface Description
- SV-2 Systems Communication Description
- SV-3 Systems-Systems Matrix
- SV-4 Systems Functionality Description
- SV-6 Systems Resource Flow Matrix
- SV-7 Systems Measures Matrix
- SV-9 Systems Technology & Skills Forecast
- SV-10a Systems Rules Model
- SV-10b Systems State Transition Description

Related MODAF views

- OV-2 Operational Node Relationship Description
- OV-3 Operational Information Exchange Matrix
- OV-4 Organizational Relationships Chart
- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description
- SV-3 Resource Interaction Matrix
- SV-4 Functionality Description
- SV-6 Systems Data Exchange Matrix
- SV-7 Resource Performance Parameters Matrix
- SV-9 Technology & Skills Forecast
- SV-10a Resource Constraints Specification
- SV-10b Resource Constraints Specification
- SV-10c Resource Event-Trace Description
- SV-12 Service Provision

5.4.34 NEW! Organization

Description

DoDAF:A specific real-world assemblage of people and other resources organized for an on-going purpose.

Architecture Framework

DoDAF

Extension

UML Instance Specification

5.4.35 Owns Process

Description

MODAF: The OwnsProcess (MODAF::ProcessOwner) relationship asserts that an ActualOrganizationalResource has responsibility for an OperationalActivity.

NOTE	This does not imply the resource conducts the activity, merely that it has managerial responsibility for it.

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

Related DoDAF views

OV-4 Organizational Relationships Chart

Related MODAF views

OV-4 Organizational Relationships Chart

5.4.36 Performer

Description

Architecture Framework

DoDAF

Extensions

UML Class

Related DoDAF views

OV-2 Operational Resource Flow Description
OV-3 Operational Resource Flow Matrix
CV-5 Capability to Organizational Development Mapping
OV-6a Operational Rules Model
OV-6b Operational State Transition Description
OV-6c Operational Event-Trace Description
SV-1 Systems Interface Description
SvcV-3a Systems-Services Matrix
SvcV-6 Services Resource Flow Matrix

5.4.37 Person

Description

UPDM: A type of a human being that is recognized by law as the subject of rights and duties. This is used to define the characteristics that require capturing for ActualPersons (e.g., properties such as address, rank, telephone number, etc.).

MODAF: NA

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

Related DoDAF views

OV-4 Organizational Relationships Chart

Related MODAF views

OV-4 Organizational Relationships Chart

Related elements

5.4.38 NEW! Person Type

Description

DoDAF:A category of persons defined by the role or roles they share that are relevant to an architecture. Includes assigned materiel.

MODAF:NA

Architecture Framework

DoDAF

Extensions

UML Class

5.4.39 Post

Description

MODAF: A Post (MODAF::PostType) is 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.

DoDAF: A Post (DoDAF::PersonType) is a category of persons defined by the role or roles they share that are relevant to an architecture.

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

Related DoDAF views

- OV-2 Operational Resource Flow Description
- OV-3 Operational Resource Flow Matrix
- OV-4 Organizational Relationships Chart
- OV-5 Operational Activity Model
- SvcV-3b Services-Services Matrix
- SvcV-6 Services Resource Flow Matrix
- SV-1 Systems Interface Description
- SV-2 Systems Communication Description
- SV-3 Systems-Systems Matrix
- SV-4 Systems Functionality Description
- SV-6 Systems Resource Flow Matrix
- SV-7 Systems Measures Matrix
- SV-9 Systems Technology & Skills Forecast
- SV-10a Systems Rules Model
- SV-10b Systems State Transition Description

Related MODAF views

- OV-2 Operational Node Relationship Description
- OV-3 Operational Information Exchange Matrix
- OV-4 Organizational Relationships Chart
- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description
- SV-3 Resource Interaction Matrix
- SV-4 Functionality Description
- SV-6 Systems Data Exchange Matrix
- SV-7 Resource Performance Parameters Matrix
- SV-9 Technology & Skills Forecast
- SV-10a Resource Constraints Specification
- SV-10b Resource Constraints Specification
- SV-10c Resource Event-Trace Description
- SV-12 Service Provision

Related elements

5.4.40 Problem Domain

Description

MODAF: The boundary containing those Nodes which may be realized by functional 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.

DoDAF: NA – covered by the more general temporalWholePart element.

Architecture Framework

MODAF

Extensions

UML Property

Related MODAF views

OV-2 Operational Node Relationship Description

Related elements

5.4.41 Provides Competence

Description

UPDM: Asserts that a Resource type provides a competence.

MODAF: Asserts that a Role requires a Competence (MODAF::CompetenceForRole).

DoDAF: An overlap between a Personnel Type and the Skills it entails (DoDAF::SkillPartOfPersonType).

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

Related MODAF views

OV-4 Organizational Relationships Chart

SV-1 Resource Interaction Specification

Related elements

5.4.42 Skill Of Person Type

Description

UPDM:Alias for ProvidesCompetence, the tuple showing the skills and competencies required from a particular role or organization

DoDAF:A type property between a PersonRoleType and the Skills it entails

Architecture Framework

DoDAF

Extensions

UML Dependency

Related DoDAF views

- OV-4 Organizational Relationships Chart
- SV-1 Systems Interface Description

Related elements

5.4.43 Requires Competence

Description

MODAF: Asserts that an Role requires a Competence (MODAF::CompetenceForRole).

DoDAF: An overlap between a Personnel Type and the Skills it entails (DoDAF::SkillPartOfPersonType).

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

Related elements

5.4.44 NEW! Responsibility

Description

UPDM:Asserts that a Post or Organization has specific responsibilities.

MODAF:NA

DoDAF:NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

5.4.45 NEW! Role Type

Description

MODAF: An aspect of a person or organization that enables them to fulfill a particular function.

Architecture Framework

MODAF

Extensions

UML Class

5.4.46 Rule

Description

MODAF: An abstract Class that is extended by OperationalConstraint (A rule governing an operational behaviour or property.) and ResourceConstraint (A rule governing the structural or functional aspects of an implementation - this may also include constraints on OrganisationalResources that are part of an implementation).

DoDAF: Rule: A principle or condition that governs behavior; a prescribed guide for conduct or action. Subtype: Constraint: The range of permissible states for an object.

NOTE	Rule is abstract.

Architecture Framework

DoDAF, MODAF

Extensions

UML Constraint

Related DoDAF views

OV-6a Operational Rules Model

5.4.47 NEW! Security Domain

Description

MODAF:NA

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

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

5.4.48 Skill

Description

MODAF:A specific set of abilities defined by knowledge, skills and attitude (Competence).

DoDAF:The ability, coming from one's knowledge, practice, aptitude, etc., to do something well.

Architecture Framework

DoDAF

Extensions

UML Class

Related DoDAF views

- OV-4 Organizational Relationships Chart
- SV-1 Systems Interface Description

Related elements

5.4.49 NEW! Trustline

Description

MODAF: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 muist define their own scale of trust levels for a given architecture or set of architectures.

DoDAF:NA

Architecture Framework

MODAF

Properties

Property	Description
level : String	String denoting the level of Trust in the information source

Extensions

UML Dependency

5.5 Services Viewpoint and Service Oriented Viewpoint Elements

The elements of these viewpoints are described in the following sections:

- Expose
- Request
- Service Attribute
- NEW! Service Access
- Service Channel
- Service Function
- Service Function Action
- NEW! Service Description
- Service Interaction
- Service Interface
- Service Message
- Service Operation
- Service Operation Action
- Service Parameter
- Service State Machine
- Service Policy
- Service State Machine

5.5.1 Expose

Description

A dependency between a service interface and a capability. The service interface exposes the capability.

Origin

SoaML

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

Related DoDAF views

- CV-7 Capability to Services Mapping
- SvcV-1 Services Context Description
- SvcV-6 Services Resource Flow Matrix

Related MODAF views

- SOV-1 Service Taxonomy
- SOV-3 Capability to Service Mapping

5.5.2 Request

Description

A RequestPoint models the use of a service by a participant and defines the connection point through which a Participant makes requests and uses or consumes services.

Origin

SoaML

Architecture Framework

DoDAF, MODAF

Extensions

UML Port

Related DoDAF views

- SV-1 Systems Interface Description
- SV-2 Systems Communication Description
- SvcV-2 Services Resource Flow Description
- SvcV-3a Systems-Services Matrix
- SvcV-3b Services-Services Matrix
- SvcV-6 Services Resource Flow Matrix

Related MODAF views

- SOV-2 Service Interface Specification
- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description
- SV-12 Service Provision

5.5.3 Service Attribute

Description

UPDM: A property of a ServiceInterface that allows performance, reliability and cost values, etc., to be captured. This allows a user to choose between different ServiceInterfaces providing the same Capabilities.

MODAF: A property of Service.

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Property

Related DoDAF views

SvcV-2 Services Resource Flow Description

Related MODAF views

SOV-2 Service Interface Specification

5.5.4 NEW! Service Access

Description

UPDM: The mechanism by which a service is accessed

MODAF:NA

DoDAF:NA

Architecture Framework

DoDAF

Extensions

UML Class

5.5.5 Service Channel

Description

A communication path between ServicePoints and RequestPoints within an architecture.

Origin

SoaML

Architecture Framework

DoDAF, MODAF

Extensions

UML Connector

Related DoDAF views

SvcV-3a Systems-Services Matrix

SvcV-3b Services-Services Matrix

SvcV-6 Services Resource Flow Matrix

5.5.6 Service Function

Description

UPDM: A ServiceFunction describes the abstract behavior of ServiceOperations, regardless of the actual implementation.

MODAF: A type of activity describing the functionality of a service.

DoDAF: Information necessary to interact with the service in such terms as the service inputs, outputs, and associated semantics. The service description also conveys what is accomplished when the service is invoked and the conditions for using the service.

Architecture Framework

DoDAF, MODAF

Extensions

UML Activity

Related DoDAF views

SvcV-4 Services Functionality Description

Related MODAF views

SOV-5 Service Functionality Flow

5.5.7 Service Function Action

Description

UPDM: A call behavior action that invokes the ServiceFunction that needs to be preformed. This concept is required for mapping the architecture with UML and does not have a DoDAF or MoDAF equivalent.

Architecture Framework

DoDAF, MODAF

Extensions

UML Call Behavior Action

Related DoDAF views

SvcV-4 Services Functionality Description

Related MODAF views

SOV-5 Service Functionality Flow

5.5.8 NEW! Service Description

Description

UPDM: Package containing the elements that describe a service, from DoDAF 2.

DoDAF:Information necessary to interact with the service in such terms as the service inputs, outputs, and associated semantics. The service description also conveys what is accomplished when the service is invoked and the conditions for using the service.

Architecture Framework

DoDAF

Extensions

UML Package

5.5.9 Service Interaction

Description

UPDM: Interaction for a service interface.

MODAF: A model representing how a set of Service classes interacts with one another (MODAF::ServiceInteractionSpecification).

Architecture Framework

DoDAF, MODAF

Extensions

UML Interaction

Related DoDAF views

SvcV-10c Services Event-Trace Description

Related MODAF views

SOV-4c Service Interaction Specification

5.5.10 Service Interface

Description

UPDM: A contractual agreement between two resources that implement protocols through which the source service interacts to the destination resource. A physical connection between two resources that implements protocols through which the source resource can transmit items to the destination resource.

MODAF: The mechanism by which a Service communicates.

DoDAF: An overlap between Performers for the purpose of producing a Resource that is consumed by the other (DoDAF::Interface).

SOAML: Defines the interface to a Service Point or Request Point and is the type of a role in a service contract.

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
serviceInteraction : ServiceInteraction[0..1]	A Service interaction.
serviceStateMachine : ServiceStateMachine[0..1]	A Service state machine.

Extensions

UML Class

Related DoDAF views

- CV-7 Capability to Services Mapping
- SvcV-1 Services Context Description
- SvcV-2 Services Resource Flow Description
- SvcV-3a Systems-Services Matrix
- SvcV-3b Services-Services Matrix
- SvcV-4 Services Functionality Description
- SvcV-5 Operational Activity to Services Traceability Matrix
- SvcV-6 Services Resource Flow Matrix
- SvcV-7 Services Measures Matrix
- SvcV-9 Services Technology and Skills Forecast
- SvcV-10a Services Rules Model
- SvcV-10b Services State Transition Description

Related MODAF views

- SOV-1 Service Taxonomy
- SOV-2 Service Interface Specification
- SOV-3 Capability to Service Mapping
- SOV-4a Service Constraints
- SOV-4b Service State Model
- SOV-4c Service Interaction Specification
- SOV-5 Service Functionality Flow
- SV-12 Service Provision

5.5.11 Service Message

Description

UPDM: Message for use in a Service Interaction Specification, implements a resourceInteraction or any of the subtypes.

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
carries : ResourceInteraction[*]	A Carried ResourceInteraction.

Extensions

UML Message

Related DoDAF views

[SvcV-10c Services Event-Trace Description]

Related MODAF views

[SOV-4c Service Interaction Specification]

5.5.12 Service Operation

Description

UPDM: A ServiceOperation provides the access point for invoking the behavior of a provided service. The ServiceOperations are defined on ServiceInterfaces and mirrored on the providing Resource to handle calls forwarded on by the interface.

MODAF: A function or procedure which enables programmatic communication with a Service via a ServiceInterface (MODAF::ServiceInterfaceOperation).

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
abstractBehavior : ServiceFunction[0..1]	Links a ServiceOperation to the abstract description of its behavior, as provided by a ServiceFunction.
concreteBehavior : Function[0..1]	Links a ServiceOperation to the concrete description of its behavior, as provided by a Function.

Extensions

UML Operation

Related DoDAF views

SvcV-2 Services Resource Flow Description
SvcV-3a Systems-Services Matrix
SvcV-4 Services Functionality Description
SvcV-6 Services Resource Flow Matrix
SvcV-10c Services Event-Trace Description

Related MODAF views

SOV-2 Service Interface Specification

SOV-5 Service Functionality Flow

5.5.13 Service Operation Action

Description

UPDM Artifact: A call action that represents a Resource or Service Function invoking a ServiceOperation. This is used by a consuming Resource to model the call into the service. This concept is required for mapping the architecture with UML and does not have a DoDAF or MoDAF equivelent.

Architecture Framework

DoDAF, MODAF

Extensions

UML Call Operation Action

Related DoDAF views

SvcV-4 Services Functionality Description

Related MODAF views

SOV-5 Service Functionality Flow

5.5.14 Service Parameter

Description

UPDM: Represents inputs and outputs of Service. It is typed by ResourceInteractionItem.

MODAF: A constant or variable passed into or out of a ServiceInterface as part of the execution of a ServiceInterfaceOperation (MODAF::ServiceInterfaceParameter).

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Parameter

Related DoDAF views

SvcV-2 Services Resource Flow Description

SvcV-3a Systems-Services Matrix

SvcV-4 Services Functionality Description

SvcV-6 Services Resource Flow Matrix

Related MODAF views

SOV-2 Service Interface Specification

SOV-5 Service Functionality Flow

5.5.15 Service

Description

A ServicePoint is the offer of a service by one participant to others using well defined terms, conditions and interfaces. A ServicePoint defines the connection point through which a Participant offers its capabilities and provides a service to clients.

Origin

SoaML

Architecture Framework

DoDAF, MODAF

Extensions

UML Port

Related DoDAF views

- SV-1 Systems Interface Description
- SV-2 Systems Communication Description
- SvcV-2 Services Resource Flow Description
- SvcV-3a Systems-Services Matrix
- SvcV-3b Services-Services Matrix
- SvcV-6 Services Resource Flow Matrix

Related MODAF views

- SOV-2 Service Interface Specification
- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description
- SV-12 Service Provision

5.5.16 Service Policy

Description

UPDM: A constraint governing the consumers and providers of services.

MODAF: A constraint governing one or more services.

DoDAF: Agreement: A consent among parties regarding the terms and conditions of activities that said parties participate in.

Architecture Framework

DoDAF, MODAF

Extensions

UML Constraint

Related DoDAF views

SvcV-10a Services Rules Model

Related MODAF views

SOV-4a Service Constraints

5.5.17 Service State Machine

Description

UPDM: Artifact that extends a UML StateMachine.

Architecture Framework

DoDAF, MODAF

Extensions

UML State Machine

Related DoDAF views

SvcV-10b Services State Transition Description

Related MODAF views

SOV-4b Service State Model

5.6 Systems Viewpoint Elements

The elements of this viewpoint are described in the following sections:

- Capability Configuration
- Control
- Fielded Capability
- Forecast
- Function
- Function Action
- Function Edge
- Function Parameter
- NEW! Materiel
- Physical Data Model
- Resource Artifact
- Resource Connector
- Resource Constraint
- Resource Event Trace
- Resource Interaction
- Resource Interface
- Resource Message

- NEW! Resource Operation
- NEW! Resource Parameter
- NEW! Resource State
- Resource Port
- NEW! Resource Role
- Resources State Machine
- Software
- System
- System Function
- System Function Action
- System Function Edge
- NEW! Version Of Configuration
- NEW! Whole Life Configuration

5.6.1 Capability Configuration

Description

MODAF: A composite structure representing the physical and human resources (and their interactions) in an enterprise. A CapabilityConfiguration is a set of artifacts or an organization configured to provide a capability, and should be guided by [doctrine] which may take the form of Standard or OperationalConstraint stereotypes.

DoDAF: NA

Architecture Framework

MODAF, DoDAF

Properties

Property	Description
doctrine : Constraint[1..*]	Represents the doctrinal line of the capability development.
deployedMilestone : ConfigurationDeployed[*]	The milestone at which the configuration is deployed.
noLongerUsedMilestone : ConfigurationNoLongerUsed[0..1]	The milestone at which the configuration is no longer used.
incrementMilestone : CapabilityIncrementMilestone[*]	The milestone for incrementing a CapabilityConfiguration.
outOfServiceMilestone : OutOfServiceMilestone[0..1]	The milestone at which the capability is out of service.

Extensions

UML Class

Related DoDAF views

- CV-3 Capability Phasing
- CV-5 Capability to Organizational Development Mapping
- OV-2 Operational Resource Flow Description
- OV-3 Operational Resource Flow Matrix
- OV-5 Operational Activity Model
- SvcV-6 Services Resource Flow Matrix
- SV-1 Systems Interface Description
- SV-2 Systems Communication Description
- SV-3 Systems-Systems Matrix
- SV-4 Systems Functionality Description
- SV-6 Systems Resource Flow Matrix
- SV-7 Systems Measures Matrix
- SV-8 Systems Evolution Description
- SV-9 Systems Technology & Skills Forecast
- SV-10a Systems Rules Model
- SV-10b Systems State Transition Description

Related MODAF views

- StV-3 Capability Phasing
- StV-5 Capability to Organization Deployment Mapping
- OV-2 Operational Node Relationship Description
- OV-3 Operational Information Exchange Matrix
- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description
- SV-3 Resource Interaction Matrix
- SV-4 Functionality Description
- SV-6 Systems Data Exchange Matrix
- SV-7 Resource Performance Parameters Matrix
- SV-8 Capability Configuration Management
- SV-9 Technology & Skills Forecast
- SV-10a Resource Constraints Specification
- SV-10b Resource Constraints Specification
- SV-10c Resource Event-Trace Description
- SV-12 Service Provision

5.6.2 Control

Description

MODAF: A type of ResourceInteraction where one Resource (source) controls another (target). For example, the driver of a tank, one organisation having operational control of another, a fire control system controlling a weapons system.

DoDAF: NA

Architecture Framework

MODAF

Extensions

UML Information Flow

Related MODAF views

- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description

5.6.3 Fielded Capability

Description

MODAF: An actual, fully-realized capability. A FieldedCapability must indicate its configuration CapabilityConfiguration.

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Instance Specification

Related DoDAF views

- SV-1 Systems Interface Description

Related MODAF views

- SV-1 Resource Interaction Specification

5.6.4 Forecast

Description

MODAF: A statement about the future state of one or more types of system or standard.

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
startTime : ISO8601DateTime[1]	The start time of the forecast.
endTime : ISO8601DateTime[0..1]	The end time of the forecast.

Extensions

UML Dependency

Related DoDAF views

- StdV-2 Standards Forecast
- SV-9 Systems Technology & Skills Forecast
- SvcV-9 Services Technology and Skills Forecast

Related MODAF views

- SV-9 Technology & Skills Forecast
- TV-2 Standards Forecast

5.6.5 Function

Description

MODAF: An activity which is specified in context of the resource (human or machine) that performs it.

DoDAF: Activity: Work, not specific to a single organization, weapon system or individual that transforms inputs (Resources) into outputs (Resources) or changes their state.

Architecture Framework

MODAF

Properties

Property	Description
subject : ResourceInteractionItem[*]	The ResourceInteractionItem that is the subject of the Function.

Extensions

UML Activity

Related MODAF views

- SV-4 Functionality Description
- SV-5 Function to Operational Activity Traceability Matrix
- SV-10a Resource Constraints Specification

5.6.6 Function Action

Description

UPDM Artifact: The FunctionAction is defined as a call behavior action that invokes the function that needs to be performed. This concept is required for mapping the architecture with UML and does not have a DoDAF or MoDAF equivalent.

Architecture Framework

MODAF

Extensions

UML Call Behavior Action

Related MODAF views

SV-4 Functionality Description

5.6.7 Function Edge

Description

UPDM: An extension of «ActivityEdge» that is used to model the flow of control/objects through a Function.

MODAF: A FunctionEdge (MODAF::FunctionFlow) is a UML::ObjectFlow between Functions.

NOTE	This has been extended in UPDM to additionally include UML::ControlFlows.

Architecture Framework

MODAF

Extensions

UML Activity Edge

Related DoDAF views

SvcV-4 Services Functionality Description

Related MODAF views

SOV-5 Service Functionality Flow

SV-4 Functionality Description

5.6.8 Function Parameter

Description

UPDM: Represents inputs and outputs of Function. It is typed by ResourceInteractionItem.

Architecture Framework

DoDAF, MODAF

Extensions

UML Parameter

Related DoDAF views

SV-4 Systems Functionality Description

Related MODAF views

SV-4 Functionality Description

5.6.9 NEW! Materiel

Description

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

DoDAF: Equipment, apparatus or supplies that are of interest, without distinction as to its application for administrative or combat purposes.

Architecture Framework

MODAF, DoDAF

Extensions

UML Class

5.6.10 Physical Architecture

Description

MODAF:A configuration of Resources for a purpose.

DoDAF:NA

Architecture Framework

MODAF, DoDAF

Extensions

UML Class

5.6.11 Physical Data Model

Description

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

DoDAF: A Physical Data Model defines the structure of the various kinds of system or service data that are utilized by the systems or services in the Architecture.

Architecture Framework

MODAF, DoDAF

Extensions

UML Package

Related DoDAF views

- DIV-3 Physical Data Model

Related MODAF views

- SV-11 Physical Schema

5.6.12 Resource Artifact

Description

UPDM: A combination of physical element, energy, and data that are combined used to accomplish a task or function.

MODAF: A type of man-made object. Examples are "car", "radio", "fuel", etc. (MODAF::Artifact).

Architecture Framework

MODAF

Properties

Property	Description
facilityType : String[0..*]	The type of facility that the artifact is associated with.

Extensions

UML Class

Related MODAF views

- OV-2 Operational Node Relationship Description
- OV-3 Operational Information Exchange Matrix
- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description
- SV-3 Resource Interaction Matrix
- SV-4 Functionality Description
- SV-6 Systems Data Exchange Matrix
- SV-7 Resource Performance Parameters Matrix
- SV-9 Technology & Skills Forecast
- SV-10a Resource Constraints Specification
- SV-10b Resource Constraints Specification
- SV-10c Resource Event-Trace Description
- SV-12 Service Provision

5.6.13 Resource Connector

Description

UPDM: A physical connection between two resources that implements protocols through which the source resource can transmit items to the destination resource.

MODAF: Asserts that a connection exists between two ports belonging to parts in a system composite structure model (MODAF::SystemPortConnector).

DoDAF: NA

Architecture Framework

MODAF

Extensions

UML Connector

Related MODAF views

- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description

5.6.14 Resource Constraint

Description

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

DoDAF: The range of permissible states for an object (DoDAF::Constraint).

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
InformationTechnologyStandardCategory : String[*]	The information technology standard category that is associated with the resource constraint.

Extensions

UML Constraint

Related DoDAF views

- SV-10a Systems Rules Model

Related MODAF views

- SV-10a Resource Constraints Specification

5.6.15 Resource Event Trace

Description

UPDM: A UPDM artifact that extends a UML Interaction.

Architecture Framework

DoDAF, MODAF

Extensions

UML Interaction

Related DoDAF views

- SV-10c Systems Event-Trace Description

Related MODAF views

- SV-10c Resource Event-Trace Description

5.6.16 Resource Interaction

Description

UPDM: ResourceInteraction represents data that is exchanged between the resources.

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

DoDAF: NA

Architecture Framework

MODAF

Extensions

UML Information Flow

Related MODAF views

- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description
- SV-3 Resource Interaction Matrix
- SV-4 Functionality Description
- SV-6 Systems Data Exchange Matrix
- SV-10c Resource Event-Trace Description

5.6.17 Resource Interface

Description

UPDM: ResourceInterface is a contractual agreement between two resources that implement protocols through which the source resource to the destination resource.

MODAF: NA

DoDAF: An overlap between Performers for the purpose of producing a Resource that is consumed by the other (DoDAF::Interface).

Architecture Framework

DoDAF, MODAF

Extensions

UML Association

Related MODAF views

- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description
- SV-3 Resource Interaction Matrix
- SV-6 Systems Data Exchange Matrix

5.6.18 Resource Message

Description

UPDM: Message for use in a Resource Event-Trace, implements a ResourceInteraction.

MODAF: A specification of the interactions between aspects of a Resources architecture (MODAF::ResourceInteractionSpecification).

DoDAF: An overlap of an Activity with a Resource, in particular a consuming or producing Activity that expresses an input, output, consumption, or production Activity of the Resource (DoDAF::ActivityResourceOverlap).

Architecture Framework

DoDAF, MODAF

Extensions

UML Message

Related DoDAF views

- SV-10c Systems Event-Trace Description

Related MODAF views

- SV-10c Resource Event-Trace Description

5.6.19 NEW! Resource Operation

Description

UPDM: A partial or full realization of Function.

MODAF: NA

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Operation

5.6.20 NEW! Resource Parameter

Description

UPDM: Represents inputs and outputs of Function. It is typed by ResourceInteractionItem.

Architecture Framework

DoDAF, MODAF

Extensions

UML Parameter

5.6.21 NEW! Resource State

Description

UPDM: State identified in the context of an ResourceStateDescription.

MODAF: N/A

DoDAF: N/A

Architecture Framework

DoDAF, MODAF

Extensions

UML State

5.6.22 Resource Port

Description

UPDM: Port is an interaction point for a resource through which it can interact with the outside environment.

MODAF: An interface (logical or physical) provided by a System. A SystemPort may implement a PortType though there is no requirement for SystemPorts to be typed (MODAF::SystemPort).

DoDAF: An interface (logical or physical) provided by a System (DoDAF::Port).

Architecture Framework

DoDAF, MODAF

Extensions

UML Port

Related DoDAF views

- SV-1 Systems Interface Description
- SV-2 Systems Communication Description

Related MODAF views

- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description

5.6.23 NEW! Resource Role

Description

UPDM: abstract element.

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
performsInContext : Function [*]	Functions used by the ResourceRole.
MODAFRoleKind : MODAFRoleKind[1]	Enumeration of the kinds of role a resource can play.

Extensions

UML Property

5.6.24 Resources State Machine

Description

UPDM: Artifact that extends a UML StateMachine applied to Resources.

Architecture Framework

DoDAF, MODAF

Extensions

UML State Machine

Related DoDAF views

- SV-10b Systems State Transition Description

Related MODAF views

- SV-10b Resource Constraints Specification

5.6.25 Software

Description

MODAF: An executable computer programme.

DoDAF: Materiel: Equipment, apparatus or supplies that are of interest, without distinction as to its application for administrative or combat purposes.

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

Related DoDAF views

- SV-2 Systems Communication Description
- SV-9 Systems Technology & Skills Forecast

Related MODAF views

- OV-2 Operational Node Relationship Description
- OV-3 Operational Information Exchange Matrix
- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description
- SV-3 Resource Interaction Matrix
- SV-4 Functionality Description
- SV-6 Systems Data Exchange Matrix
- SV-7 Resource Performance Parameters Matrix
- SV-9 Technology & Skills Forecast
- SV-10a Resource Constraints Specification
- SV-10b Resource Constraints Specification
- SV-10c Resource Event-Trace Description
- SV-12 Service Provision

5.6.26 System

Description

A DoDAF alias for ResourceArtifact.

Architecture Framework

DoDAF

Extensions

UML Class

Related DoDAF views

- OV-2 Operational Resource Flow Description
- OV-3 Operational Resource Flow Matrix
- OV-5 Operational Activity Model
- SvcV-3a Systems-Services Matrix
- SvcV-3b Services-Services Matrix
- SvcV-6 Services Resource Flow Matrix
- SV-1 Systems Interface Description
- SV-2 Systems Communication Description
- SV-3 Systems-Systems Matrix
- SV-4 Systems Functionality Description
- SV-5b Operational Activity to Systems Traceability Matrix
- SV-6 Systems Resource Flow Matrix
- SV-7 Systems Measures Matrix
- SV-9 Systems Technology & Skills Forecast
- SV-10a Systems Rules Model
- SV-10b Systems State Transition Description

5.6.27 System Function

Description

A DoDAF alias for Function.

Architecture Framework

DoDAF

Extensions

UML Activity

Related DoDAF views

- SV-4 Systems Functionality Description
- SV-5a Operational Activity to Systems Function Traceability Matrix
- SV-5b Operational Activity to Systems Traceability Matrix
- SV-6 Systems Resource Flow Matrix
- SV-10a Systems Rules Model

5.6.28 System Function Action

Description

A DoDAF alias for FunctionAction.

Architecture Framework

DoDAF

Extensions

UML Call Behavior Action

Related DoDAF views

SV-4 Systems Functionality Description

5.6.29 System Function Edge

Description

A DoDAF alias for FunctionEdge.

Architecture Framework

DoDAF

Extensions

UML Activity Edge

Related DoDAF views

SV-4 Systems Functionality Description

5.6.30 NEW! Version Of Configuration

Description

MODAF:Asserts that a CapabilityConfiguration is a version of a WholeLifeConfiguration.

DoDAF:NA

Architecture Framework

MODAF, DoDAF

Extensions

UML Property

5.6.31 NEW! Whole Life Configuration

Description

MODAF:A set of versions of a CapabilityConfiguration over time.

DoDAF:NA

Architecture Framework

MODAF, DoDAF

Extensions

UML Class

5.7 Standards Viewpoint and Technical Standards Viewpoint Elements

The elements of this viewpoint are described in the following sections:

- NEW! Association Of Information
- NEW! Functional Standard
- Protocol
- Protocol Layer
- NEW! Security Attributes Group
- Standard
- Standard Configuration
- NEW! Entity Attribute
- NEW! Entity Item
- NEW! Entity Relationship
- NEW! Details
- NEW! Technical Standard

5.7.1 NEW! Association Of Information

Description

MODAF: Asserts that there is a relationship between two entities (Entity Relationship).

DoDAF: A relationship or association between two elements of information.

Architecture Framework

DoDAF

Extensions

UML Association

5.7.2 NEW! Functional Standard

Description

MODAF:NA

DoDAF:Functional standards set forth rules, conditions, guidelines, and characteristics.

Architecture Framework

DoDAF

Extensions

UML Class

5.7.3 Protocol

Description

MODAF: A Standard for communication. Protocols may be composite (i.e., a stack).

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

Related DoDAF views

- StdV-1 Standards Profile
- StdV-2 Standards Forecast
- SV-2 Systems Communication Description
- SV-9 Systems Technology & Skills Forecast

Related MODAF views

- SV-2 Resource Communications Description
- SV-9 Technology & Skills Forecast
- TV-1 Standards Profile
- TV-2 Standards Forecast

5.7.4 Protocol Layer

Description

MODAF: Asserts that a Protocol (upperLayer) uses another Protocol (lowerLayer) (MODAF::ProtocolStack).

Architecture Framework

DoDAF, MODAF

Extensions

UML Property

5.7.5 NEW! Security Attributes Group

Description

MODAF:NA

DoDAF:The group of Information Security Marking attributes in which the use of attributes 'classification' and 'ownerProducer' is required. This group is to be contrasted with group 'SecurityAttributesOptionGroup' in which use of those attributes is optional.

Architecture Framework

DoDAF

Extensions

UML Data Type

5.7.6 Standard

Description

MODAF: 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.

DoDAF: A formal agreement documenting generally accepted specifications or criteria for products, processes, procedures, policies, systems, and/or personnel.

Architecture Framework

DoDAF, MODAF

Properties

Property	Description
InformationTechnologyStandardCategory : String[*]	The information technology standard category which the «Standard» belongs to.
currentStatus : String[1]	The current status of the Standard.
mandatedDate : ISO8601DateTime[1]	The date the version of the standard was published.
ratifiedBy : ActualOrganization[1]	The organization that ratified this Standard.
retiredDate : ISO8601DateTime[1]	The date the version of the standard was retired.
shortName : String[1]	The short name of the standard.
version : String[1]	Represents the revision number of the standard, e.g., “1.2.1”, “v2”, “:2004”, etc.

Extensions

UML Class

Related DoDAF views

StdV-1 Standards Profile

StdV-2 Standards Forecast
SV-2 Systems Communication Description
SV-9 Systems Technology & Skills Forecast

Related MODAF views

SV-2 Resource Communications Description
SV-9 Technology & Skills Forecast
TV-1 Standards Profile
TV-2 Standards Forecast

5.7.7 Standard Configuration

Description

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

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Property

Related DoDAF views

SV-2 Systems Communication Description

Related MODAF views

SV-2 Resource Communications Description

5.7.8 NEW! Entity Attribute

Description

MODAF:A defined property of an EntityItem.

DoDAF:NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Property

5.7.9 NEW! Entity Item

Description

MODAF: (MODAF::Entity): A definition (type) of an item of interest.

DoDAF: NA

Architecture Framework

DoDAF, MODAF

Extensions

UML Class

5.7.10 NEW! Entity Relationship

Description

MODAF: Asserts that there is a relationship between two EntityItems.

DoDAF: (DoDAF::DataAssociation): A relationship or association between two elements of proceduralized information.

Architecture Framework

DoDAF, MODAF

Extensions

UML Association

5.7.11 NEW! Details

Description

UPDM: A tuple used to provide the relationship between an entityItem and an ExchangeElement.

Architecture Framework

DoDAF, MODAF

Extensions

UML Dependency

5.7.12 NEW! Technical Standard

Description

MODAF: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 (Standard).

DoDAF:Technical standards document specific technical methodologies and practices to design and implement.

Architecture Framework

DoDAF

Extensions

UML Class

6 USING CAMEO ENTERPRISE ARCHITECTURE

You can find out the useful information about working with Cameo Enterprise Architecture, while studying:

- Generic Procedures
- View-specific Procedures

6.1 Generic Procedures

Find out the common actions that are usually performed when using tables, matrices, and libraries, or handling the output information, described in the following sections:

- Creating diagrams, tables, or matrixes
- Handling tables
- Generating reports
- Using libraries
- Using SysML compliance mode
- Using SysML elements in UPDM 2 plugin
- Applying Actual Measurements
- Applying Military symbols
- Converting model between Enterprise Architecture Frameworks
- NEW! Using the Expand / Collapse Internal Structure Compartment
- Filtering Operational Activities and Functions
- Instantiating Structures

6.1.1 Creating diagrams, tables, or matrixes

To create a diagram, table, or matrix you can use one of the following:

- In the Containment tree, right-click a viewpoint package. On the shortcut menu point to **New Diagram** and then select the diagram, table, or matrix you want to create.
- In the Containment tree, right-click a view package or an element that can be the diagram owner. On the shortcut menu point to **New Diagram** and then select the diagram, table, or matrix you want to create.
- On the Content diagram pallet, click the button with the appropriate diagram, table, or matrix icon.

NOTE	Open the Structure diagram to see the structure of DoDAF or MODAF architecture on the diagram pane.

- On the **UPDM <viewpoint name> Diagrams** toolbar, click the button with the appropriate diagram, table, or matrix icon.
- From the main menu, select **Diagrams**, point to **UPDM <viewpoint name> Diagrams**, and then select the diagram, table, or matrix you want to create.

6.1.2 Handling tables

All the tables in Cameo Enterprise Architecture are editable. The purpose of the tables is to improve usability of particular UPDM products that cannot be achieved by using custom diagrams or matrixes. Tables can be created from diagrams menu exactly the same as diagrams.

In general the table pane consists of two major parts:

1. Toolbar
2. Data Table

These parts are arranged horizontally. The toolbar's position is fixed at the top of the page and the data table is right below the toolbar.

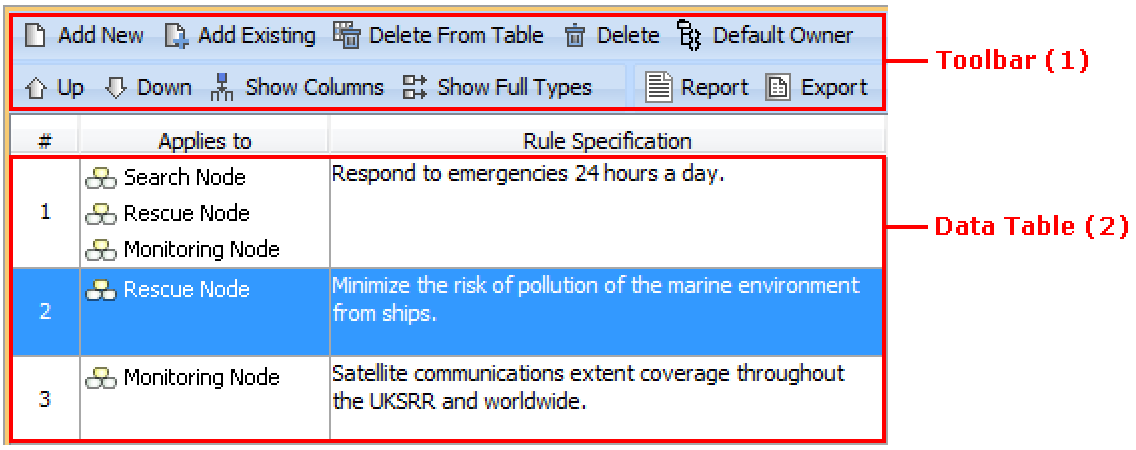
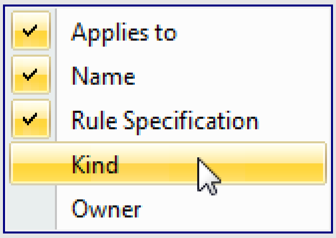
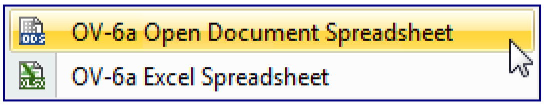


Figure 98 -- Structure of table pane

Toolbar buttons are quite similar for all tables. There are the **Add New**, **Add Existing**, **Delete from Table**, **Delete**, **Default Owner**, **Move Up** and **Move Down**, **Show Columns**, **Report**, **Export**, and **Show Full Types** buttons on the toolbar. Other buttons that are specific to particular product are described within the product specification sections.

Button	Description
Add New	To create a new element in the model and a new row in the data table.
Add Existing	To allow you choosing one or more existing elements from the model and add a new rows to the data table.
Delete from Table	To remove the selected element and row from the data table.
Delete	To remove the selected element and row from the data table and the model.
Default Owner	To define Constrains and Measurement Sets default ownership.
Move Up	To move the selected row up.
Move Down	To move the selected row down.

Button	Description
Show Columns	To open the shortcut menu with a list of the available columns for the data table (an example is given in the following figure).  You will find that currently displayed columns are selected. Click an unselected column to display it. Click a selected column to hide it.
Report	To create a corresponding spreadsheet report by passing all the elements form the data table directly to the report. The **Report** button is available for CV-5, OV-3 (both DoDAF and MODAF), OV-6a (both DoDAF and MODAF), SV-6, SV-7, SV-10a, SOV-4a, SvcV-6, SvcV-7, and SvcV-10a, StV-5 tables. As it is displayed in the following figure, you can generate either an OpenDocument (.ods) or Microsoft Excel 2007 (.xslx) spreadsheet report. 
Export	To export an active table either to a plain text file (.cvs) or to a Hypertext Markup Language (.html) format.
Show Full Types	To show or hide the full path (qualified name) of each element used in the data table.

Tables are fully synchronized with model which means that modification to the table such as deleting or creating will affect model elements except for a few cases that are described within the product specification sections.

Some tables, such as OV-3 and SV-6, allow rows filtering.

To filter rows

1. Create an OV-3 or SV-6 table.
2. On the table toolbar, click the **Show Rows** button.
3. Deselect row types that you want to hide or select row types that you want to show in the table.

6.1.3 Generating reports

Cameo Enterprise Architecture report handling functionality allows you to store UPDM report data in a project. With this feature you can easily manage multiple reports with different properties and quickly print a report directly from the model. Another benefit from storing your report data within a project is that you can easily pass the report on to other users by passing the project.

UPDM reports can be handled similarly as any other artifacts: diagrams, matrices, and tables. There is a report data element created by default in a project template for each UPDM report. A report data element is filled in with predefined default data.

You can create a new report data element from a viewpoint or view package shortcut menu.

To create an AV-1 Overview & Summary report data element:

1. In the Containment tree, right-click the All Views package.
2. Click **New Report** > **AV-1 Overview & Summary Information**. A new report data element that stores the default data for a particular report will be created.

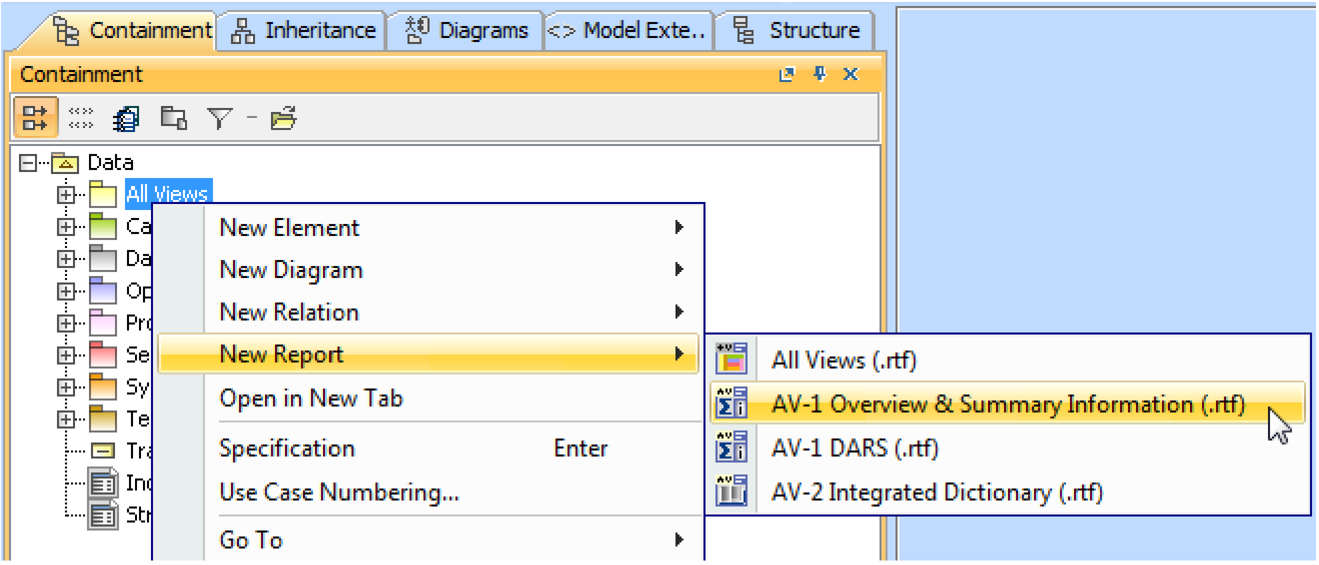


Figure 99 -- AV-1 Overview & Summary Information report data element creation

The newly created report data element will be filled in with default data required for successful report generation.

To see variables and data of the report, expand the report element node in the Containment tree. If you need to change data stored within a variable, open the variable's Specification window and then edit the **Value** property value.

You can store not only variables as data within a report data element, but the editable default report properties as well. The following table lists available editable default report properties and their descriptions.

Property	Description
Name	To specify the name of the report data element.
Generate Recursively	Set to *true* to generate the report, recursively including all inner packages within a defined report scope.
Data	To select one or more packages and / or elements to define a scope for generating the report.
Auto Image Size	To specify an image size in the report.
Empty Text	To specify a value to be inserted when data contains no value.

Property	Description
Image Format	To select an image format for all the images in the report.
Template	To select a report template. **NOTE:** A report template is not part of a project.
Variables	To add, remove, and order report input variables.

To edit a report property, open the report data element's Specification window.

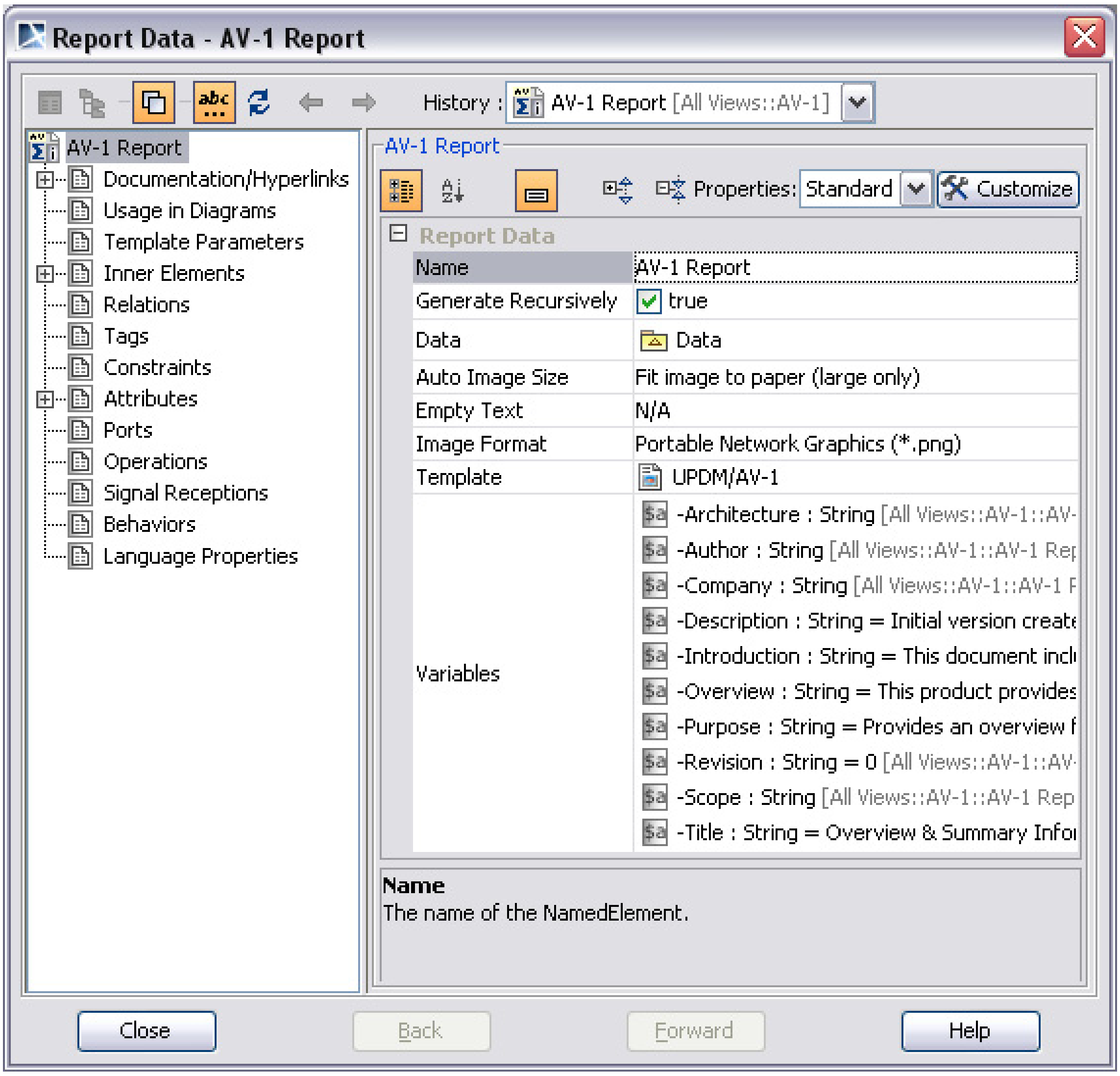
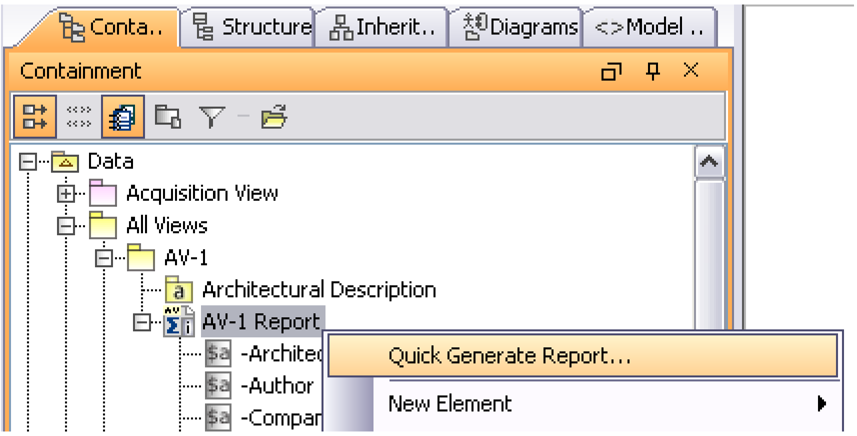


Figure 100 -- Report data element's Specification window

You can generate a report directly from the report data element without using the **Report Wizard**. To generate a report from the report data element:

1. Right-click a report data element and on its shortcut menu click **Quick Generate Report**.



2. Specify the location to save the generated report.
3. Select whether or not to open the generated report directly after the generation.

You can create several reports with different data for each type of the report.

You can also use the **Report Wizard** for report generation. Using this wizard, you can generate a report either from existing report data elements (after loading them to the wizard) or from external report data.

Related DoDAF views

- AV-1 Overview and Summary Information
- AV-2 Integrated Dictionary
- CV-5 Capability to Organizational Development Mapping
- OV-3 Operational Resource Flow Matrix
- OV-6a Operational Rules Model
- SvcV-6 Services Resource Flow Matrix
- SvcV-7 Services Measures Matrix
- SV-6 Systems Resource Flow Matrix
- SV-7 Systems Measures Matrix
- SV-10a Systems Rules Model

Related MODAF views

- AV-1 Overview and Summary Information
- AV-2 Integrated Dictionary
- StV-5 Capability to Organization Deployment Mapping
- OV-3 Operational Information Exchange Matrix
- OV-6a Operational Rules Model
- SV-6 Systems Data Exchange Matrix
- SV-7 Resource Performance Parameters Matrix
- SV-10a Resource Constraints Specification

6.1.4 Using libraries

UPDM 2 plugin supports three element libraries:

1. The Universal Joint Task List (UJTL).
2. DoD Information Technology Standards and Profile Registry (DISR).

3. Joint Conditions.

The **Universal Joint Task List (UJTL)**, when augmented with the Service task lists, is a comprehensive integrated menu of functional tasks, conditions, measures, and criteria. It supports all levels of the Department of Defense in executing the National Military Strategy. In UPDM UJTL library consists of a list of Operational Activities representing universal joint tasks.

The **DoD IT Standards Registry (DISR)** is an online repository of IT standards formerly captured in the Joint Technical Architecture (JTA), Version 6.0. DISR replaces JTA. In UPDM, DISR is the list of standard elements that any of UPDM element may conform to. DISR Library usage is the same as UJTL library. Library item indexes are included when searching for elements within the element Selection dialog.

The **Joint Conditions Library** supports physical, military, and civil locations, where joint tasks can be performed. You can use it, when selecting Locations.

Example:

Let us say, we need to add a standard or a policy for a system element using the StdV-1 Standards Profile table. We will select a standard from the DISR library.

To add a standard/policy from the DISR library

1. Create the StdV-1 diagram.
2. Create new or add an existing system element.
3. In the Standard / Policy cell of the created or added row, click the Edit button. The **Select Standard** dialog opens.
4. Click the **DISR Library** tab. The list of DISR standards is displayed.
5. Select the standard and do one of the following:
    - Double-click the selected standard to add it to the **Selected elements** list
    - Click the **+** button to add the selected standard to the **Selected elements** list.
6. Click **OK** after you finish selecting the standards.

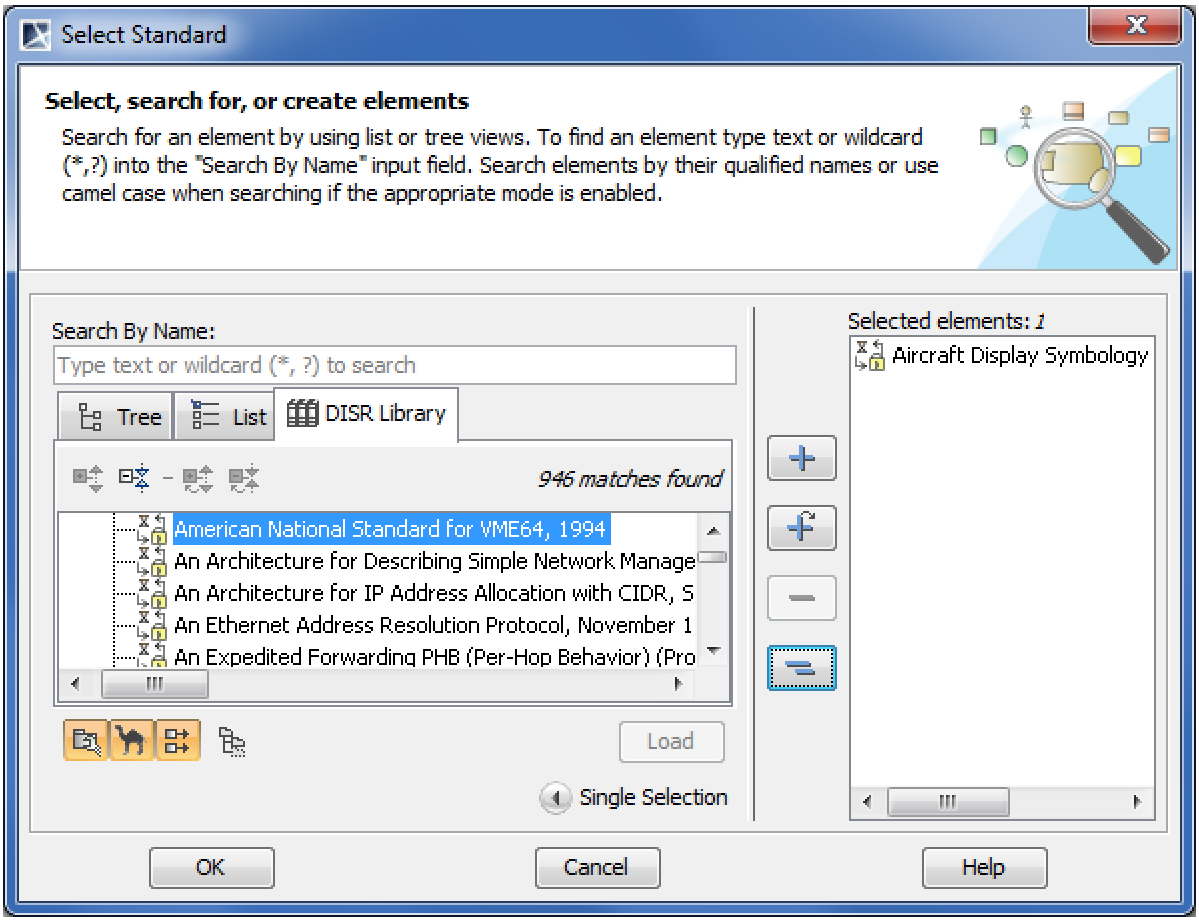


Figure 101 -- Selecting standards from DISR Library

6.1.5 Using SysML compliance mode

You can use SysML capabilities in your UPDM model. For that purpose you can enable the SysML compliance mode in one of the following ways:

- Enable the SysML compliance mode while creating a new project.
- Enable the SysML compliance mode after the project is created.

To enable SysML compliance mode while creating a new project

1. On the **File** menu click **New Project**. The **New Project** dialog opens.
2. Specify project type, name, and location.
3. In the **<project type> Project Options** area, set the **SysML compliance mode (UPDM L1 compliance level)** to true.
4. Click **OK** when you are done.

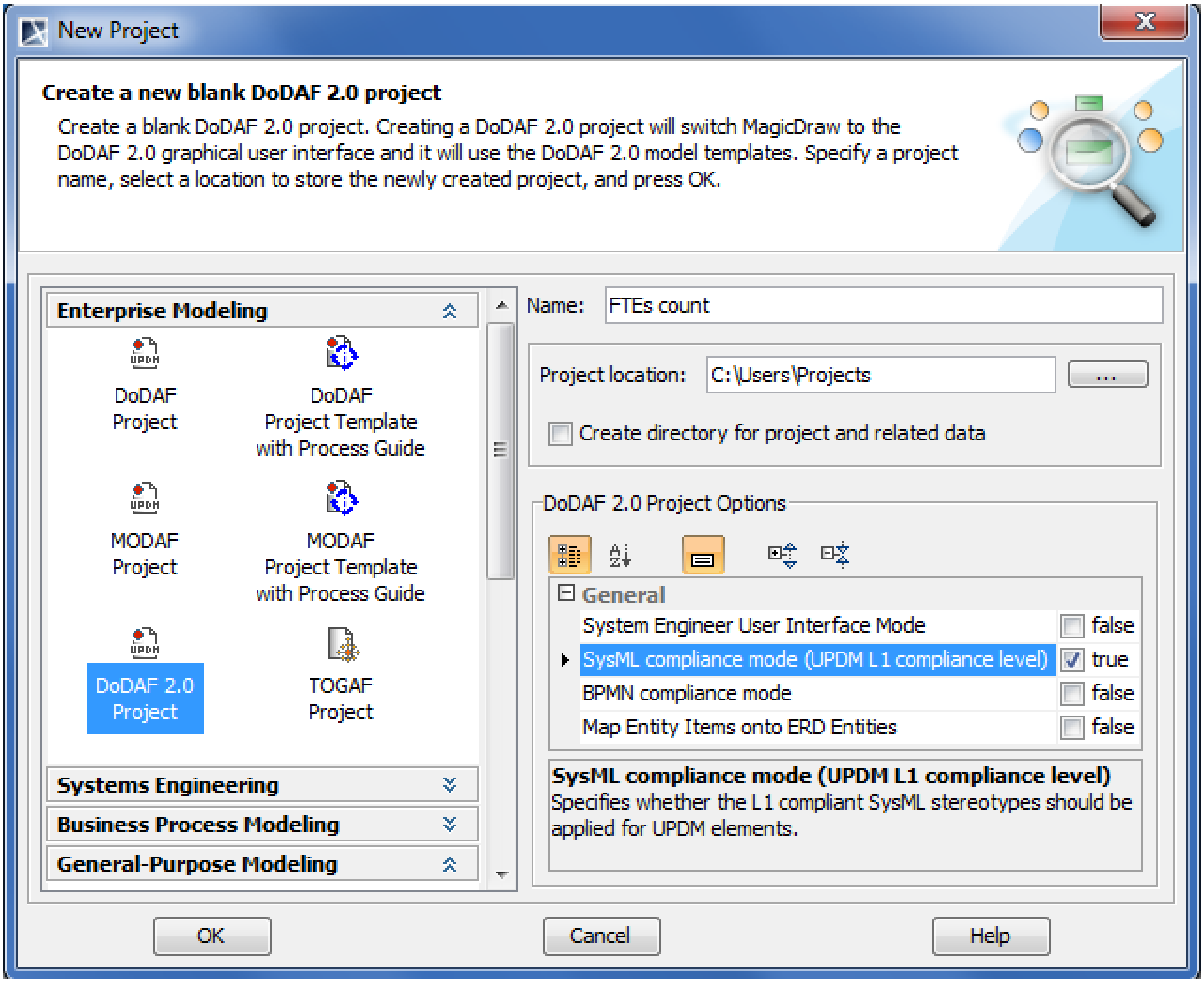


Figure 102 -- Enabling SysML compliance mode while creating new project

To enable SysML compliance mode after the project is created

1. On the **Options** menu click **Projects**. The **Project Options** dialog opens.
2. Select the **General project options** tab.
3. In the **UPDM** properties group, set the **SysML compliance mode (UPDM L1 compliance level)** property value to *true*.

TIP!	You can use the Quick filter box to find the SysML compliance mode (UPDM L1 compliance level) property more quickly. Simply start typing the property name in the Quick filter box. For more information about the Quick filter box please refer to “Quick filter” in MagicDraw UserManual.pdf.

4. Click **OK**.

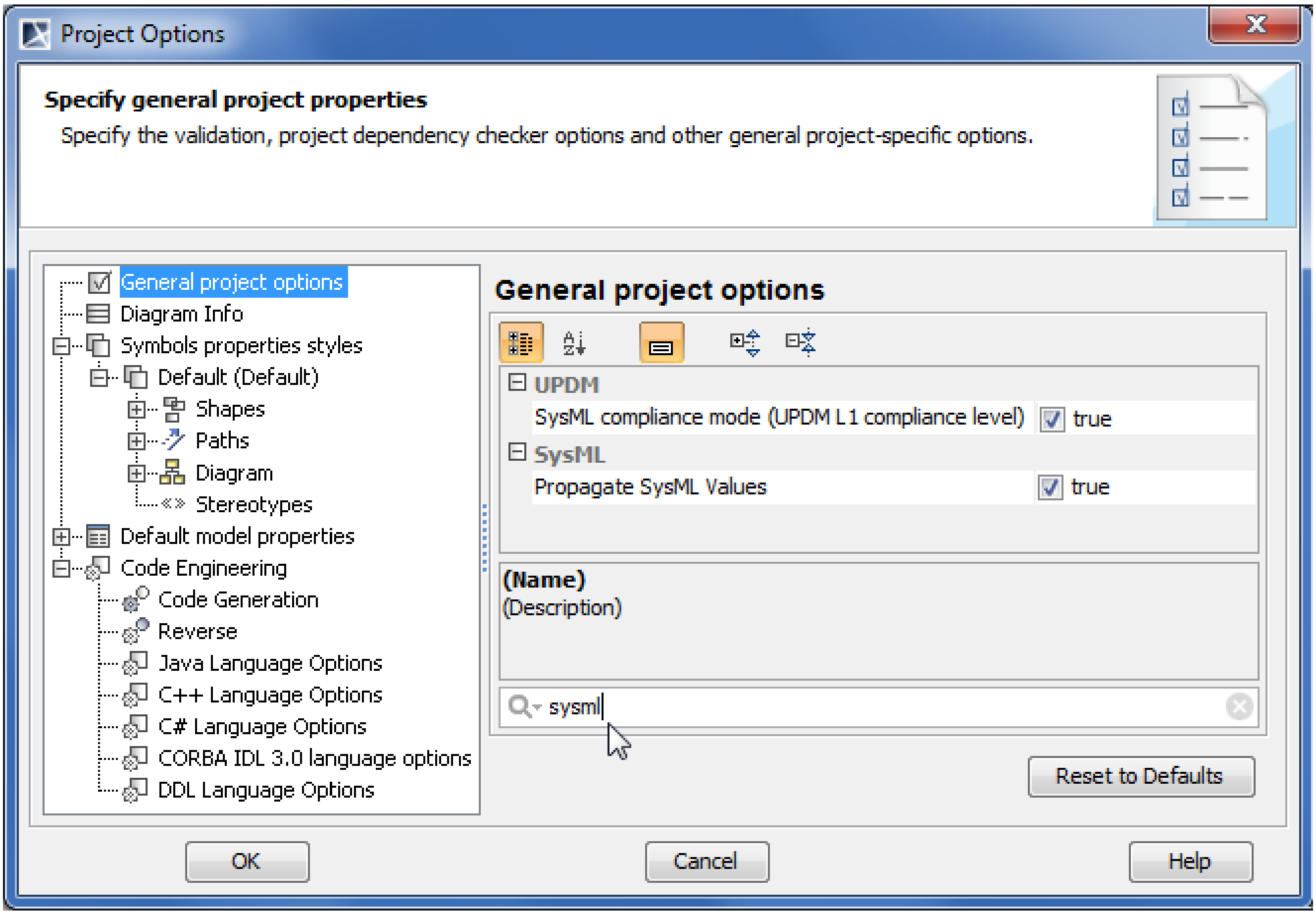


Figure 103 -- Enabling SysML compliance mode for the created project

Example:

The following example describes the actual situation, how you can use the SysML compliance mode in the UPDM model.

Let us say, we need to describe a full-time equivalent (FTE) calculations in the UPDM model.

First, we need to create the typical organizational structure using OV-4 Organizational Relationship Chart diagram. The typical organizational structure defines types of departments and roles and how they are associated together in the modeled enterprise. The Department can contain any number of Employees and any number of sub Departments.

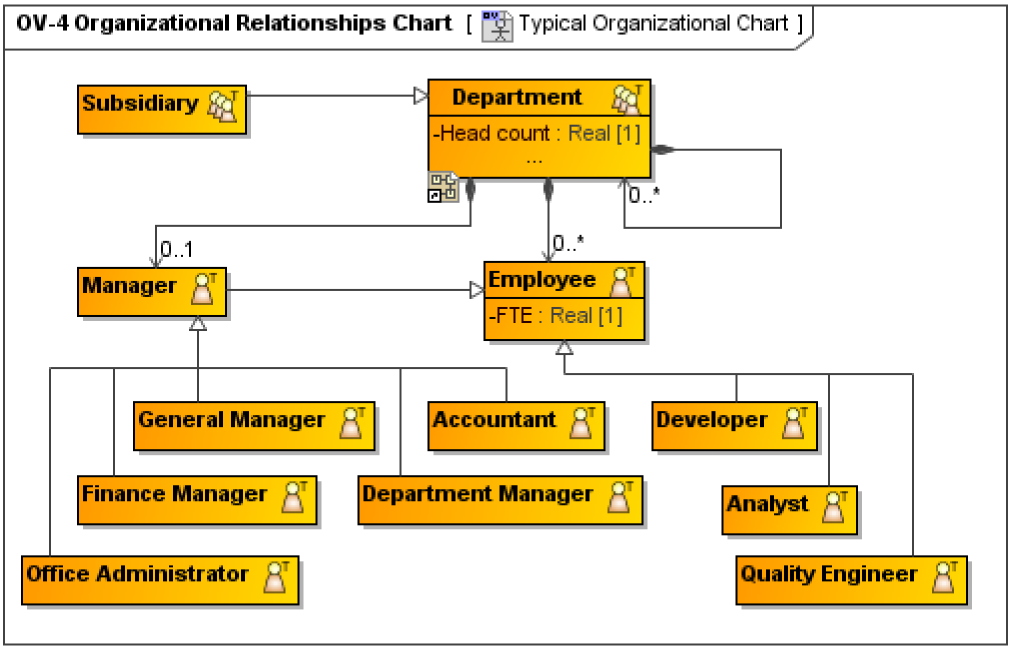


Figure 104 -- Typical organizational structure

Secondly, we generate an actual organizational chart based on the typical organizational chart (see "Instantiating Structures" on page 282). An actual organizational chart shows concrete departments and residing employees. Each employee works a certain number of FTEs.

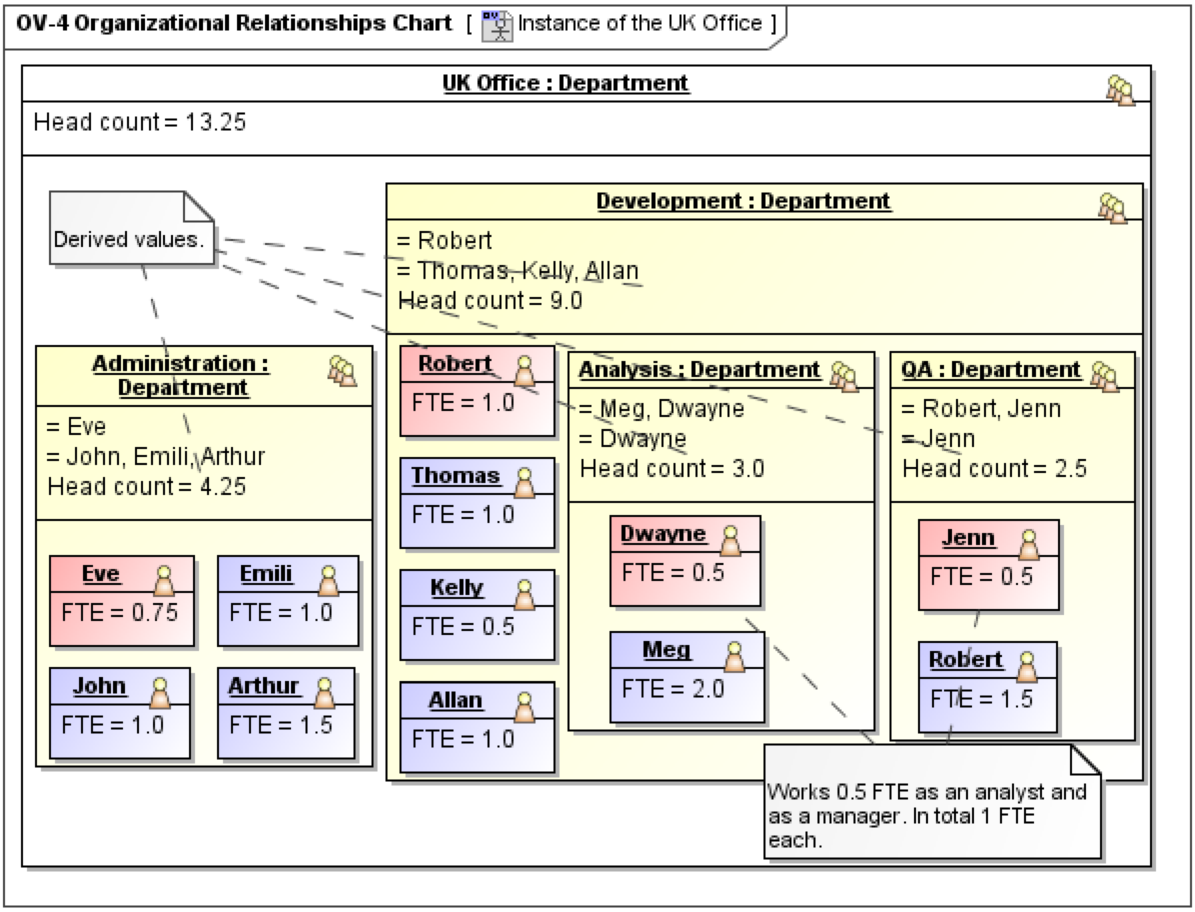


Figure 105 -- Actual organizational structure generated from typical organizational structure

Thirdly, we can use the SysML Parametric Diagram to describe the recursive FTE's calculation for the selected department and each residing sub-department.

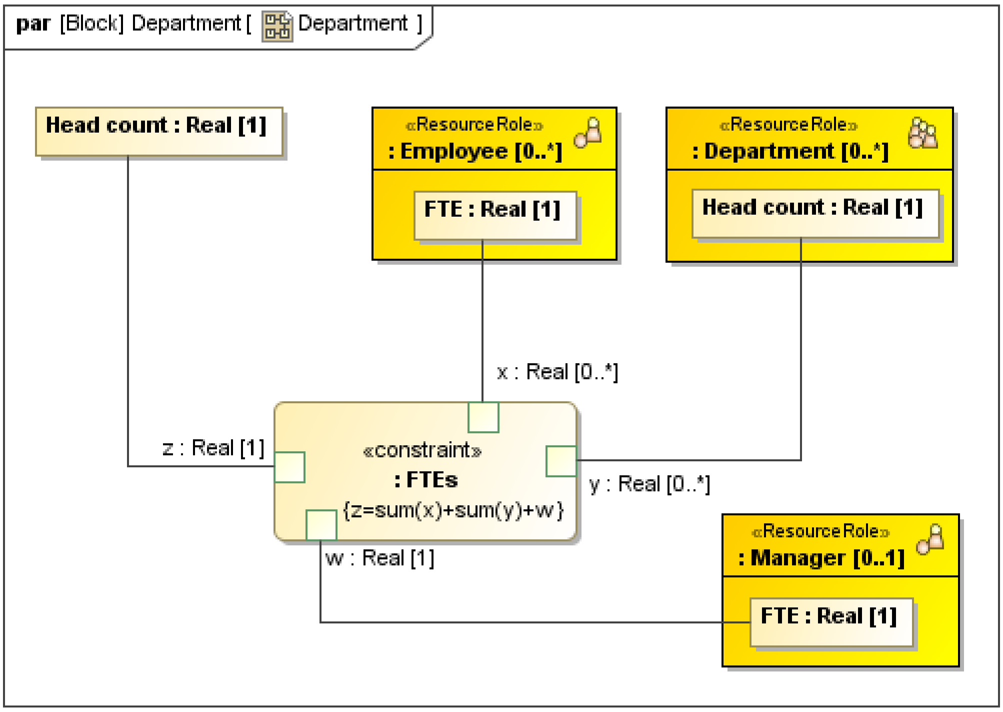


Figure 106 -- Described FTE's calculation

NOTE	You can execute the described calculations using Cameo Simulation Toolkit. For more information on Cameo Simulation Toolkit, see https://www.magicdraw.com/simulation

6.1.6 Using SysML elements in UPDM 2 plugin

SysML elements can be used to extend UPDM provided set of concepts.

SysML toolbars are available in the following diagrams:

Icon	View
	OV-2
	SV-1

Icon	View
	SV-2
	CV-1
	StV-1

By default SysML toolbars are collapsed.

To expand SysML toolbars

1. On the main menu, click **Options** > **Environment**.
2. In the **Environment Options** dialog, click the **UPDM** tab.
3. Click the **System Engineer User Interface Mode** property value to set it to *true*.

Example:

We will use the Requirement element, which is a SysML element, in an OV-2 diagram.

1. Create an OV-2 diagram.
2. Create a Performer/ Node in the diagram.
3. On the **SysML Requirements Diagram** toolbar in the diagram pallet, click the **Requirement** button.
4. Create a Requirement.
5. Draw the Satisfy relationship between the Performer/ Node and the Requirement.

As you can see in the following figure, we have expressed that the architecture element satisfies the Requirement.

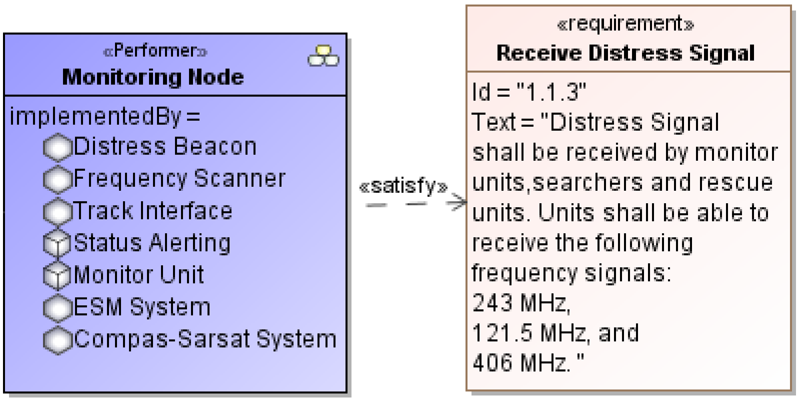


Figure 107 -- Using SysML elements in UPDM

6.1.7 Applying Actual Measurements

Actual Measurements can be applied to measurable elements only.

To make an element measurable:

1. Create a Measurement Set with one Measurement at least.
2. Select the element you want to measure and open its specification window.
3. Add the created Measurement Set as a value for the **Measurement Types** property.

As soon as you make the element measurable, define actual values for all measurements contained within the Measurement Set.

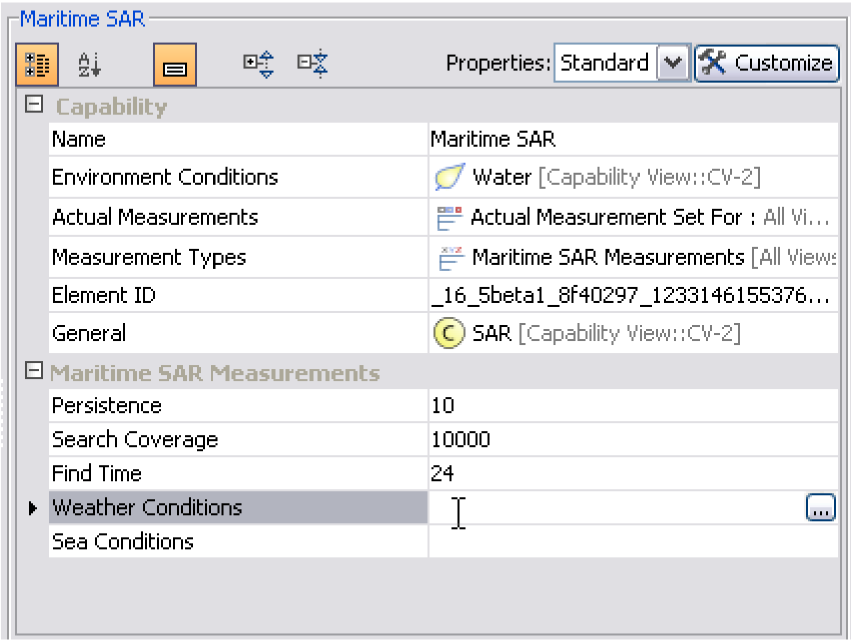


Figure 108 -- Defining actual values in element Specification window

6.1.8 Applying Military symbols

Military Symbols can be applied to Resources in the SV-1, SV-2 and SV-4 views.

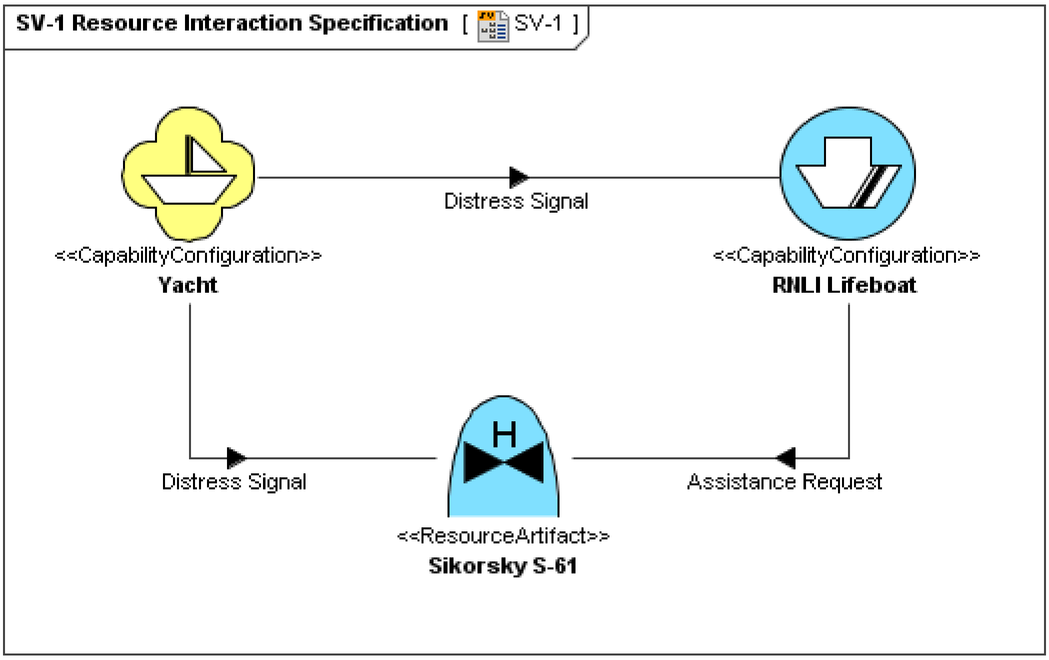


Figure 109 -- MIL-STD-2525B Symbology in SV-1 diagram

If you want to use the Military Symbology in your model, you can create Resources either from MIL-STD-2525B Symbology toolbar (1) or by clicking the **MIL-STD-2525B Symbology** item on the Resource smart manipulator (2).

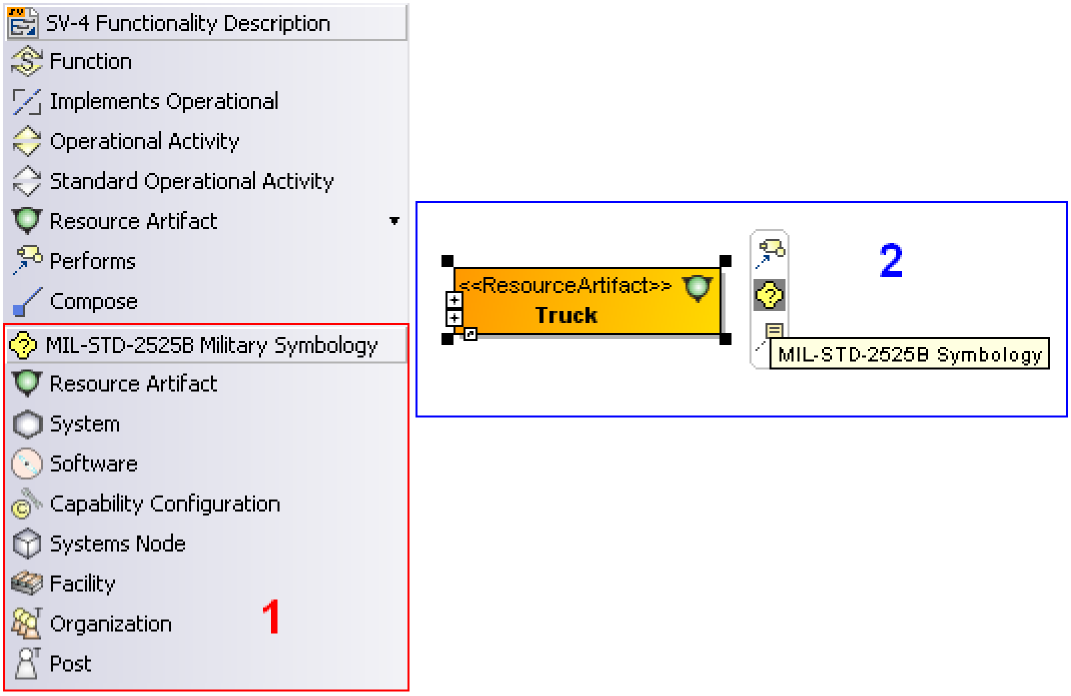


Figure 110 -- Two ways of using the Military Symbology

The affiliation and frame styles can be specified for the Symbol before its assignment:

- Affiliation - the threat posed by the warfighting object being represented. The basic affiliation categories are unknown, friend, neutral, and hostile. Additionally the pending, suspect, assumed friend, joker and faker affiliations may be applied.
- Frame - The geometric border of a symbol that provides an indication of the affiliation, battle dimension, and status of a warfighting object.

Affiliation can be defined for all military symbols available. Its a bit different with a frame property. It can be changed for no more than 1/5 of a symbols.

You can define or change these properties in the **Select Symbol** dialog.

Use the **Select Symbol** dialog to browse the hierarchy of the military symbols. The dialog provides the three search options:

1. Simple Search: type what you want to find in the hierarchy.
2. ID Search: use an MIL-STD-2525B symbology ID to find the exact symbol in the hierarchy, for example, type “1.X.3.2.2.1.3”...
3. Pattern Search: type * to find any symbols, for example, type “*Frying”... if you want to find “Fixed Wing” somewhere in the hierarchy.

NOTE	You can easily find recently used symbols by opening the **Recently used** tab.

You can also apply a military symbol to any UPDM element by using the element’s specification window, image property.

Related DoDAF views

SV-1 Systems Interface Description

SV-2 Systems Communication Description

[SV-4 Systems Functionality Description](#)

Related GUI

[Select Symbol Dialog](#)

6.1.9 Converting model between Enterprise Architecture Frameworks

To convert an enterprise model to an alternate Enterprise Architecture Framework (EAF):

1. Do either:
   - Change the perspective to another EAF's perspective.
   - On the main menu, click **File** > **Convert To** and then select an EAF.
2. In the Model Conversion Options dialog, specify model conversion options
3. Click **Yes**.

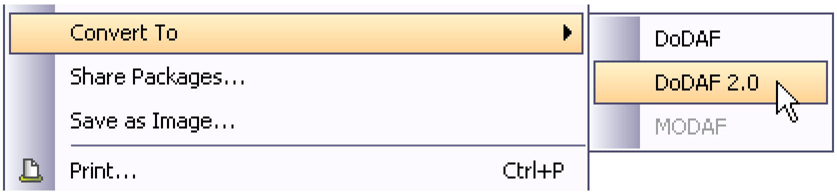


Figure 111 -- Selecting Enterprise Architecture Framework for model conversion

Related GUI

[Model Conversion Options Dialog](#)

6.1.10 NEW! Using the Expand / Collapse Internal Structure Compartment

Starting with version 17.0.1, the **Expand / Collapse internal structure compartment** functionality is available from the element's smart manipulator toolbar.

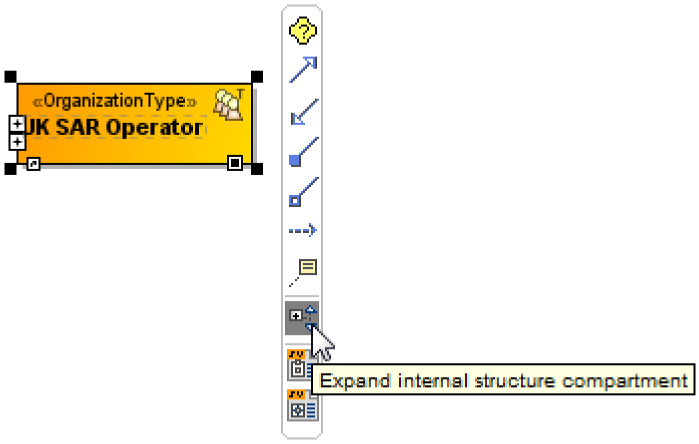


Figure 112 -- Expand internal structure compartment button in smart manipulator toolbar

If you have an internal structure defined for the selected element, after clicking the Expand internal structure compartment button the compartment is expanded and the existing internal structure is displayed in it.

NOTE	If you have more that one internal structure defined, none of them are displayed in the expanded compartment after clicking the **Expand internal structure compartment** button.

Related elements

- Performer
- Node
- NEW! Organization Type
- Organization (MODAF)
- System
- Resource Artifact
- Software
- Capability
- Whole-Life Enterprise
- Logical Architecture
- NEW! Service Access
- Capability Configuration
- Enterprise Phase
- Physical Architecture

Related DoDAF views

- CV-1 Vision
- CV-4 Capability Dependencies
- OV-2 Operational Resource Flow Description
- OV-4 Organizational Relationships Chart
- SvcV-1 Services Context Description
- SvcV-2 Services Resource Flow Description
- SV-1 Systems Interface Description
- SV-2 Systems Communication Description

Related MODAF views

- OV-2 Operational Node Relationship Description
- OV-4 Organizational Relationships Chart
- SV-1 Resource Interaction Specification
- SV-2 Resource Communications Description
- StV-1 Enterprise Vision

6.1.11 Filtering Operational Activities and Functions

To make the activities' and functions' management more usable, additional filters have been implemented to filter the Composite, TOP most, Atomic Activities in consuming and producing Activities and Functions dialogs.

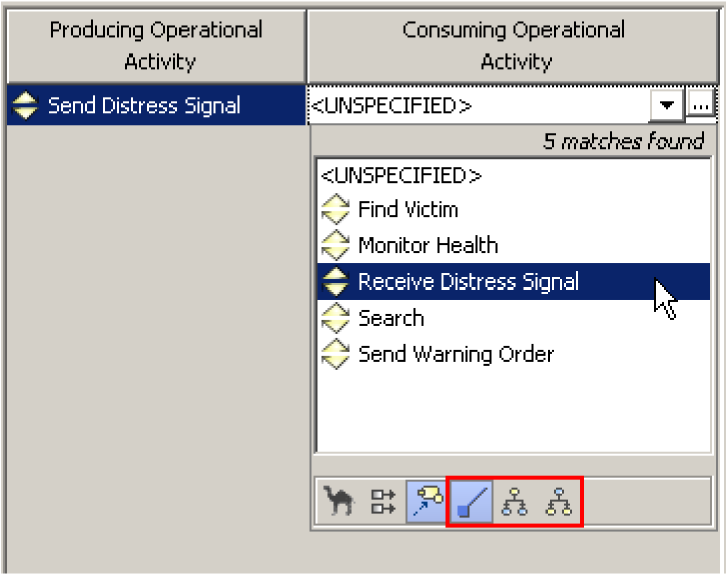


Figure 113 -- Fragment of Producing and Consuming Operational Activities dialog. Filtering options

-  filter allows the selection of the Activities or Functions that are the composite parts of directly performed Activities or Functions.
-  filter allows the selection of TOP most Activities or Functions.
-  filter allows the selection of Activities or Functions that are composite parts of other Activities or Functions and do not have composite parts.

To apply filters on the element selection from the drop-down list, click appropriate buttons as it is displayed in the figure above.

For the more concrete element selection, use different combinations of these filters.

Related GUI

[Producing and Consuming Activities Dialog]
[Producing and Consuming Functions Dialog]

6.1.12 Instantiating Structures

To automatically instantiate any typical structure of UPDM architecture, the **Automatic Instantiation Wizard** should be used.

To open the Automatic Instantiation Wizard

1. Select any number of instantiable UPDM elements.
2. On the shortcut menu, click **Create Instance**.

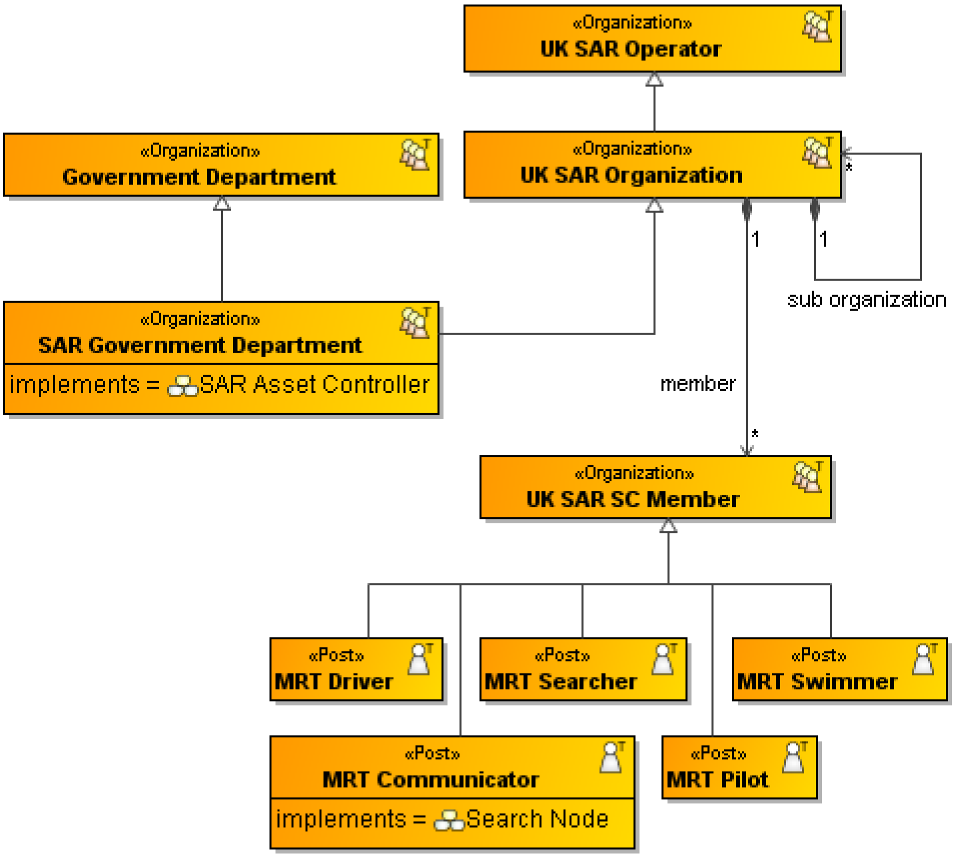


Figure 114 -- Example of OV-4 Typical diagram

To instantiate the proposed typical structure:

1. Select all typical classes you want to instantiate. You can do it in a diagram or alternatively in the Model Browser.
2. Right-click on the selected typical UPDM elements and from the shortcut menu, select **Create Instance**. The **Automatic Instantiation Wizard** will open.
3. Follow the steps of the wizard.
4. Click **Finish**. A new OV-4 Actual diagram will be created.

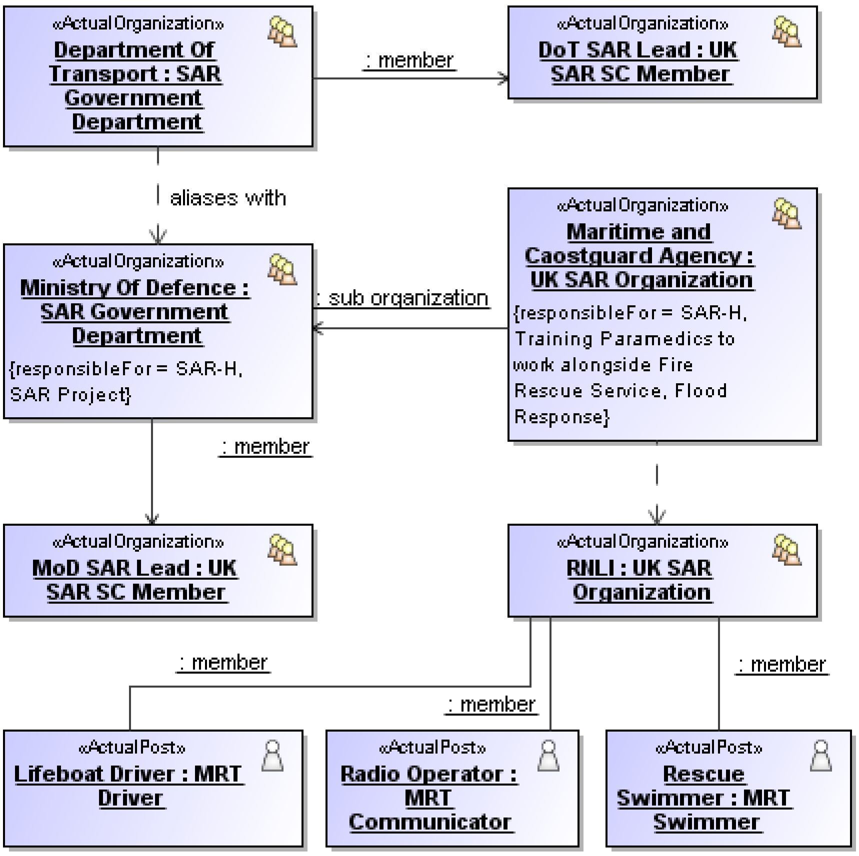


Figure 115 -- Example of OV-4 Actual diagram

For instantiable UPDM elements corresponding actual elements will be created. For example, by instantiating Organization results in Actual Organization and etc. For all other structural elements UML Instance Specifications will be created.

Typical UPDM element	Actual UPDM element
Project Type	Project (DoDAF), Actual Project (MODAF)
Project Milestone	Actual Project Milestone
Project Theme	Project Status
Project Milestone Role	Actual Project Milestone Role
Organization	Actual Organization
Organization Type	Organization
Sub Organization (Resource Role typed by and owned by Organization Type (DoDAF) or Organization (MODAF))	Actual Organization Role
Person Type	Individual Person Role
Post	Actual Post

Typical UPDM element	Actual UPDM element
Post Role (Resource Role typed by Person Type (DoDAF) or Post (MODAF) and owned by Organization Type (DoDAF) or Organization (MODAF)).	Actual Organization Role
Person	Actual Person
Measurement Set	Actual Measurement Set
Measure Type	Measure
Measurement	Actual Measurement
Geo Political Extent Type	Geo Political Extent
Location Type	Actual Location
Location	Actual Location
Capability Configuration	Fielded Capability

Related DoDAF views

OV-4 Organizational Relationships Chart
SV-1 Systems Interface Description

Related MODAF views

OV-4 Organizational Relationships Chart

Related GUI

Automatic Instantiation Wizard

6.2 View-specific Procedures

For the descriptions on creating and handling both DoDAF and MODAF views, refer to the following sections:

- AV-1 procedures
- AcV-1 procedures
- AcV-2 procedures
- CV-1 procedures
- CV-2 procedures
- NEW! CV-3 procedures
- CV-4 procedures
- NEW! CV-5 procedures
- CV-6 procedures
- CV-7 procedures
- DIV-1 procedures
- DIV-2 procedures

- DIV-3 procedures
- OV-1 procedures
- OV-2 procedures
- OV-3 procedures
- OV-4 procedures
- OV-5 procedures
- OV-6a procedures
- OV-7 procedures
- PV-1 procedures
- NEW! PV-2 procedures
- PV-3 procedures
- SOV-1 procedures
- SOV-3 procedures
- SOV-4a procedures
- SOV-5 procedures
- StV-1 procedures
- StV-2 procedures
- NEW! StV-3 procedures
- StV-4 procedures
- NEW! StV-5 procedures
- StV-6 procedures
- SV-1 procedures
- SV-2 procedures
- SV-3 procedures
- SV-4 procedures
- SV-5 procedures
- SV-6 procedures
- SV-7 procedures
- SV-9 procedures
- SV-10a procedures
- SV-12 procedures
- SvcV-1 procedures
- SvcV-3a procedures
- SvcV-3b procedures
- SvcV-5 procedures
- SvcV-6 procedures
- SvcV-7 procedures
- SvcV-9 procedures
- TV-1 procedures
- TV-2 procedures
- StdV-1 procedures
- StdV-2 procedures

- Implementation Matrix procedures
- Service Channel Summary Table procedures
- Service Channel Summary Matrix procedures

6.2.1 AV-1 procedures

These are the procedures of the AV-1 view:

- NEW! Loading DARS template

6.2.1.1 NEW! Loading DARS template

Before generating an AV-1 DARS report, you must load the DARS template in AV-1 and provide the template with relevant data.

To load the DARS template in AV-1

1. In the Containment tree, expand **All Views** > AV-1.
2. Select the Architecture Description element and open its Specification window.
3. In the general pane, click the **Load DARS Template** button (as it is show in the following figure). The DARS template will be loaded, and you will be able to see the extended property set in the element's Specification window. Fill in the extension property values for the AV-1 DARS report.

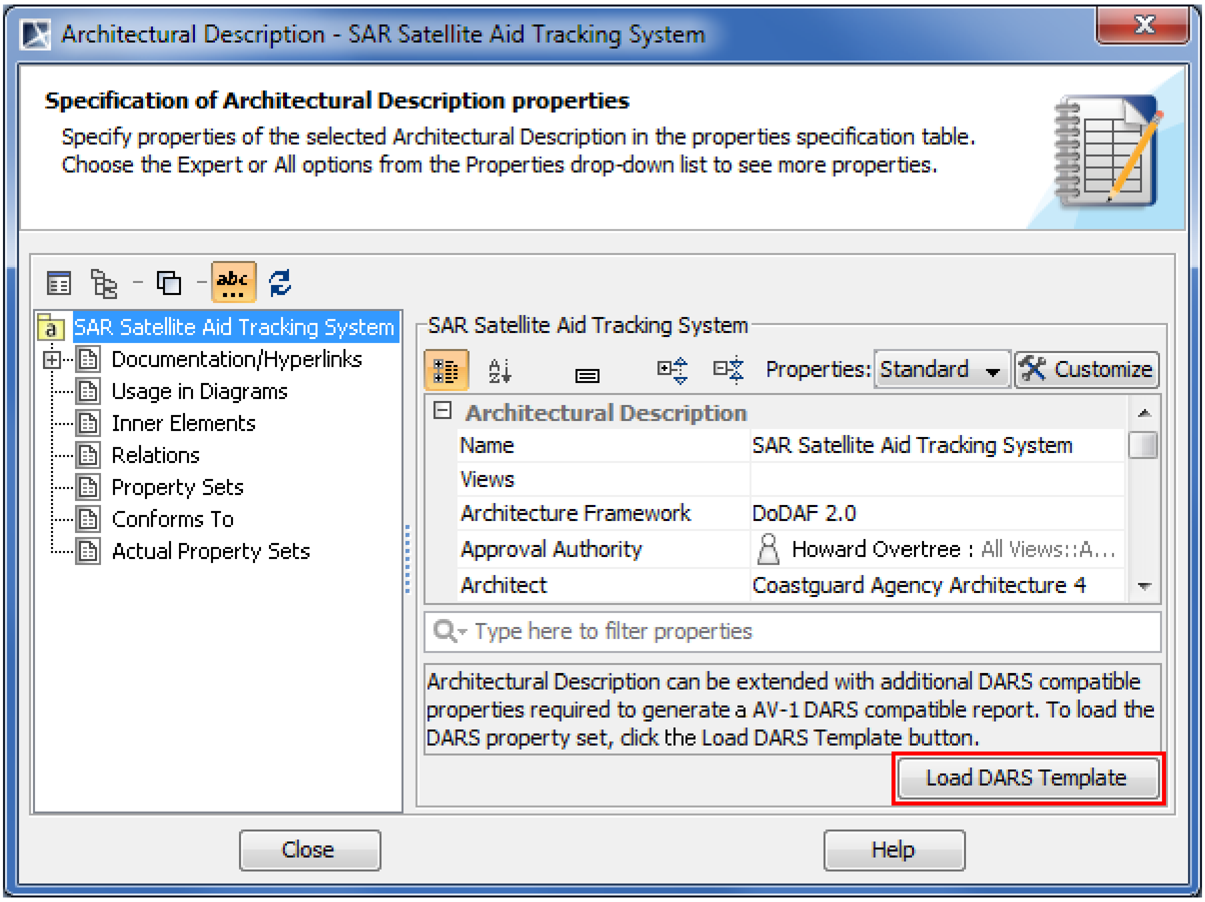


Figure 116 -- Load DARS Template button in Architectural Description's Specification window

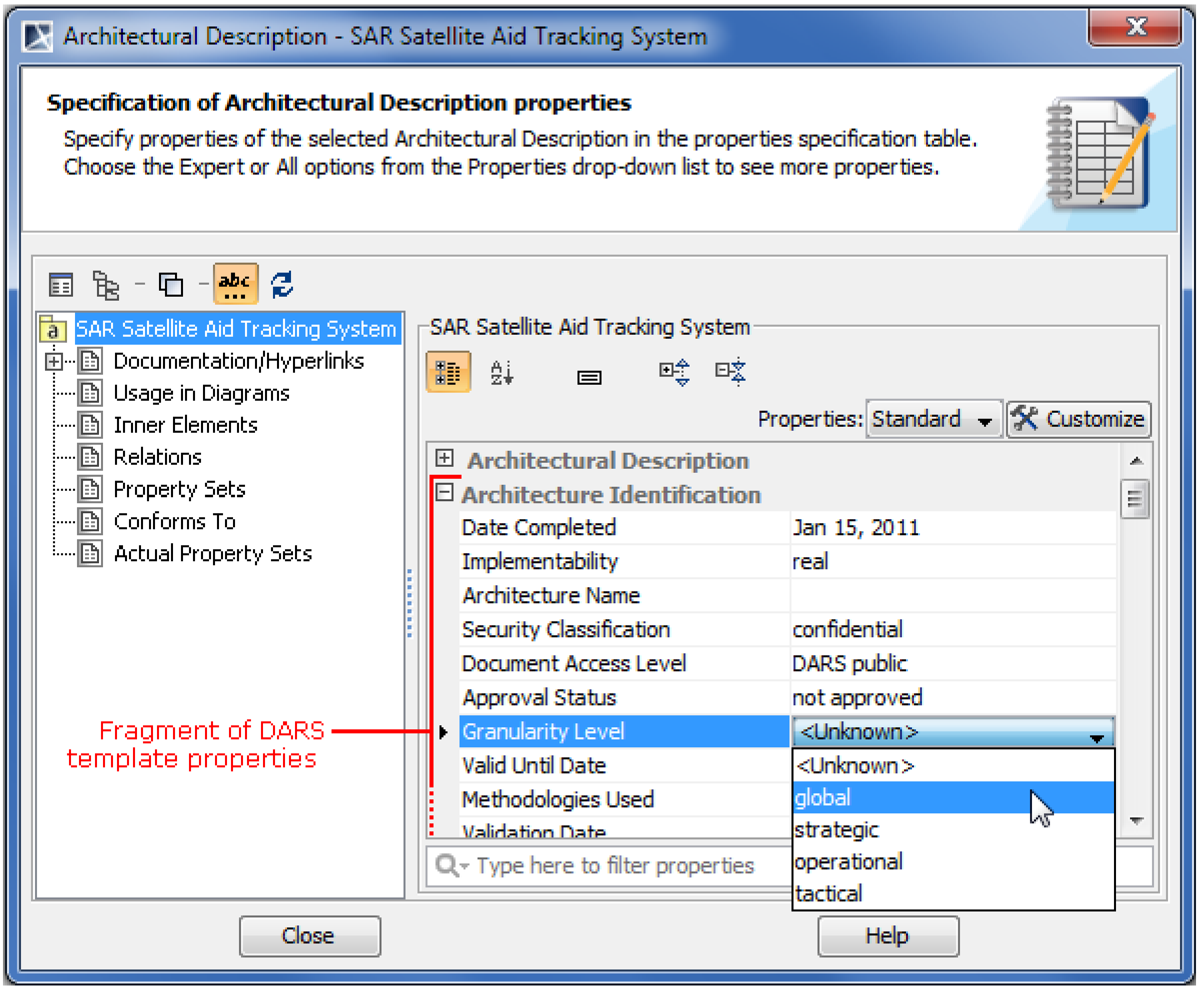


Figure 117 -- Providing data for AV-1 DARS report

Related views

[AV-1 Overview and Summary Information]

Related procedures

[Generating reports]

6.2.2 AcV-1 procedures

These are the procedures of the AcV-1 view:

- Creating AcV-1 diagram
- Building AcV-1 matrix

6.2.2.1 Creating AcV-1 diagram

It is recommended to create an OV-4 before creating an AcV-1.

To create an AcV-1 diagram

1. Create Actual Projects.

2. Associate Actual Projects by dragging one project (part) to another (whole). Alternatively you can specify the *whole* and *part* properties.
3. Associate Actual Projects with Actual Organizations (OV-4) or Actual Posts (OV-4) responsible for them by using the Organizational Project Relationship.

TIP!	You can nest Actual Projects, Actual Organizations, and Actual Posts to one another in the diagram to make it look more attractive and easier to read (see the figure below).

NOTE	You can also use an AcV-1 Responsibility Matrix to define the association between Actual Projects and Actual Organizational resources.

Related MODAF views

AcV-1 Acquisition Clusters

Related procedures

Building AcV-1 matrix

6.2.2.2 Building AcV-1 matrix

It is recommended to create an OV-4 before creating an AcV-1.

The AcV-1 is an editable matrix displaying the responsibility of Actual Organizational resources (Actual Organizations or Actual Posts) for Actual Projects.

The rows in the AcV-1 Responsibility Matrix represent Actual Projects and the columns represent Actual Organizational resources (Actual Organization or Actual Post).

To build an AcV-1 matrix

1. Specify the **Row Scope** (Actual Projects).
2. Specify the **Column Scope** (Actual Organizations and Actual Posts).
3. Click the **Rebuild** button.

Related MODAF views

AcV-1 Acquisition Clusters

Related procedures

Creating AcV-1 diagram

6.2.3 AcV-2 procedures

These are the procedures of the AcV-2 view:

- Creating AcV-2 diagram
- Adding actual projects to AcV-2 diagram
- Deleting actual projects from AcV-2 diagram
- Relating actual projects in AcV-2 diagram
- Adding milestones in AcV-2 diagram
- Deleting milestones in AcV-2 diagram
- Applying actual project status in AcV-2 diagram

- Removing actual project status in AcV-2 diagram

6.2.3.1 Creating AcV-2 diagram

When you choose to create AcV-2 diagram, **AcV-2 Creation Wizard** opens by default.

To create an AcV-2 diagram from the wizard

1. From the **Diagrams** menu, select **UPDM AcV Diagrams** > **AcV-2 Project Timeliness**.
2. In the **AcV-2 Project Timeliness** dialog, click **Add**. **AcV-2 Creation Wizard** opens.
3. Specify the diagram name and create or select the owner for the diagram. Click **Next**.
4. Add the project(s). Click **Next**.
5. Set the chart properties.
6. Click **Finish**.

NOTE	If you do not wish to use the AcV-2 Creation Wizard next time, clear the check box near “Show the wizard next time, when I create AcV-2”. Also you can disable the wizard. Go to **Options** > **Environment**. In the **Environment Options** dialog go to **UPDM** tab. In the **General** properties, set **Show PV-2 / AcV-2 Creation Wizard each Time Creating New Chart** to false.

To create an AcV-2 diagram manually

1. From the **Diagrams** menu, select **UPDM AcV Diagrams** > **AcV-2 Project Timeliness**.
2. In the **AcV-2 Project Timeliness** dialog click **Add**.
3. Specify the diagram name and create or select the owner of the diagram.

TIP!	You can select as a diagram owner a view or viewpoint that is already created in the UPDM project template.

4. Click **OK**. The blank AcV-2 diagram is created.

Related MODAF views

AcV-2 Programme Timelines

Related GUI

NEW! Diagram Creation Wizard

6.2.3.2 Adding actual projects to AcV-2 diagram

You can add a new or an existing actual project to the AcV-2 diagram.

To add a new actual project

1. On the AcV-2 diagram toolbar, click **Add New** > Actual **Project**. On the diagram pane, an empty line for the newly created actual project appears.
2. Specify a time frame for the actual project.

To add a new actual sub project

1. Select the actual project for which you want to create an actual sub project.
2. Do one of the following:
    - On the AcV-2 diagram toolbar, click **Add New** > **Actual Sub Project**.

- On the shortcut menu of the selected actual project, click **Add new Actual Sub Project**.

3. Specify a time frame for the actual sub project.

To add an existing actual project

1. On the AcV-2 diagram toolbar, click **Add Existing**. The **Select Element** dialog opens.
2. In the dialog, select an Actual project (or several actual projects) and click the **+** button.
3. Click **OK** when you are done.

6.2.3.3 Deleting actual projects from AcV-2 diagram

To delete an actual project from the chart

1. Select an actual project.
2. On the diagram toolbar, click **Delete From Chart**.

IMPORTANT!	Actual Sub Projects can only be deleted from the model.

To delete an actual project from the model

1. Select an actual project.
2. On the diagram toolbar, click **Delete**.

6.2.3.4 Relating actual projects in AcV-2 diagram

You can relate actual projects to a sequence using the following relation types:

- Finish to Start. Target actual project cannot start earlier than the source actual project finishes.
- Start to Start. The target actual project cannot start earlier than the source actual project starts.
- Finish to Finish. The target actual project cannot finish earlier than the source actual project finishes.
- Start to Finish. The target actual project cannot finish earlier than the source actual project starts.

You can change actual project dates by moving an actual project across the timeline. The Actual Project Sequence validation rule is executed while changing the related project dates. If dates in the project sequence violate the rule, the relation is highlighted in red.

To relate actual projects

1. Select two actual projects.
2. On the diagram toolbar, click **Relate**.
3. Select one of the available relation types:
   - **Finish to Start**
   - **Start to Start**
   - **Finish to Finish**
   - **Start to Finish**

To remove the relation between actual projects

1. Select two related actual projects.
2. On the diagram toolbar, click **Relate**.
3. Select None.

To resolve the incorrect actual project sequence

1. On the highlighted relation shortcut menu, click **Validate**.
2. Select one of the suggested solutions.

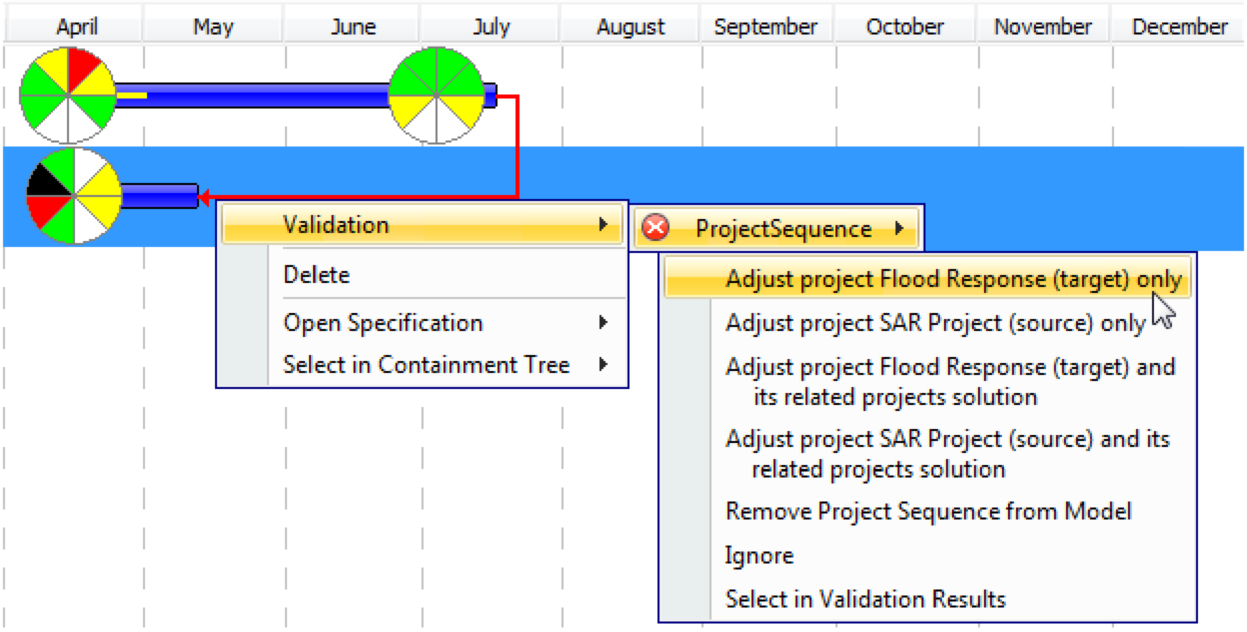


Figure 118 -- Available validation suggestions

NOTE	If you change dates of an actual project containing actual sub projects, actual sub project dates change correspondingly.

6.2.3.5 Adding milestones in AcV-2 diagram

To add a milestone

1. Select an actual project.
2. Do one of the following:
    - On the diagram toolbar, click **Add New** > **Milestone**.
    - On the selected actual project shortcut menu, click **Add new Actual Project Milestone**.
3. Select one of the available milestone kinds:
    - **Out Of Service Milestone**
    - **Increment Milestone**
    - **Deployed Milestone**
    - **No Longer Used Milestone**
    - **Actual Project Milestone**
4. The **Actual Project Milestone Creation Wizard** opens.
5. Specify milestone settings in the following wizard steps and click **Finish** when you are done.

Related GUI

NEW! Actual Project Milestone Creation Wizard

NEW! Project Status Application Wizard

6.2.3.6 Deleting milestones in AcV-2 diagram

To delete a milestone

1. Select a milestone.
2. From the milestone shortcut menu, select **Delete**.

6.2.3.7 Applying actual project status in AcV-2 diagram

To apply the actual project status to a new milestone

1. From the milestone shortcut menu, select **Apply Status**.
2. Specify the actual project status by following steps of the **Project Status Application Wizard**.

To edit the actual project status

1. From the milestone shortcut menu, select **Edit Status**.
2. Edit the actual project status by following the steps of the **Project Status Application Wizard**.

NOTE	If two or more milestones overlap, from the shortcut menu select **Specify Project Status** and then select the milestone you want to edit the status for.

Related MODAF views

AcV-2 Programme Timelines

Related procedures

Removing actual project status in AcV-2 diagram
Creating AcV-2 diagram

Related GUI

NEW! Project Status Application Wizard

6.2.3.8 Removing actual project status in AcV-2 diagram

To remove the project status

1. From the milestone shortcut menu, select **Edit Status**.
2. In the opened **Project Status Application Wizard**, click the Remove project status indicator mark button.
3. Click **Finish** when you are done.

Related MODAF views

AcV-2 Programme Timelines

Related procedures

Creating AcV-2 diagram
Applying actual project status in AcV-2 diagram

Related GUI

NEW! Project Status Application Wizard

6.2.4 CV-1 procedures

These are the procedures of the CV-1 view:

- Creating CV-1 diagram

6.2.4.1 Creating CV-1 diagram

CV-1 should be the first product for DoDAF 2.0 architectures.

To create a CV-1 diagram

1. Create an Enterprise Phase.
2. Create a Vision and define a Vision Statement.
3. Associate the Vision with the Enterprise Phase.
4. Create a Capability.
5. Connect the Capability and the Enterprise Phase using the Capability of Performer relationship.

An additional Enterprise Phase can be created and linked to Goals and the Vision by using the *goal* and *vision* properties of the Enterprise Phase.

In order to complete the CV-1, a CV-2 should be modelled to create the Capabilities that Enterprise Phase exhibits.

Related DoDAF views

CV-1 Vision

6.2.5 CV-2 procedures

These are the procedures of the CV-2 view:

- Creating CV-2 diagram

6.2.5.1 Creating CV-2 diagram

The CV-2 should be modeled just before the CV-1 is completed.

To create a CV-2 diagram

1. Create Capabilities.
2. Connect the Capabilities using Generalizations (general-specific relationships) or Aggregations (whole-part relationships).

You can also link Capabilities with the Performers and Resources using Capability of Performer relationship. Relationship can be associated with environmental Conditions by filling in the *environmentConditions* property and expressing the civil, military or physical conditions required for the realization of target Capability.

Related DoDAF views

CV-2 Capability Taxonomy

6.2.6 NEW! CV-3 procedures

These are the procedures of the CV-3 view:

- Creating CV-3 diagram
- Adding capabilities to CV-3 chart
- Removing capabilities from CV-3 chart

6.2.6.1 Creating CV-3 diagram

When you choose to create CV-3 diagram, **CV-3 Creation Wizard** opens.

To create a CV-3 diagram from the wizard

1. From the **Diagrams** menu, select **UPDM CV Diagrams** > **CV-3 Capability Phasing**.
2. In the **CV-3 Capability Phasing** dialog, click **Add**. **CV-3 Creation Wizard** opens.
3. Follow the steps of the wizard.
4. Click **Finish** when you are done.

NOTE	If you do not wish to use the CV-3 Creation Wizard next time, clear the check box near “Show the wizard next time, when I create CV-3”. Also you can disable the wizard. Go to **Options** > **Environment**. In the **Environment Options** dialog go to **UPDM** tab. In the **General** properties, set **Show CV-3/ StV-3 Creation Wizard each Time Creating New Chart** to false.

To create a CV-3 diagram manually

1. From the **Diagrams** menu, select **UPDM CV Diagrams** > **CV-3 Capability Phasing**.
2. In the **CV-3 Capability Phasing** dialog click **Add**.
3. Specify the diagram name and create or select the owner of the diagram.

TIP!	You can select as a diagram owner a view or viewpoint that is already created in the UPDM project template.

4. Click **OK**. The blank CV-3 diagram is created.

Related DoDAF views

CV-3 Capability Phasing

Related GUI

NEW! Diagram Creation Wizard

6.2.6.2 Adding capabilities to CV-3 chart

To add a new capability

- On the CV-3 diagram toolbar, click **Add New** > **Capability**. On the diagram pane, an empty line for the newly created capability appears.

To add a new sub capability

1. Select the capability for which you want to create a sub capability.
2. Do one of the following:
    - On the CV-3 diagram toolbar, click **Add New** > **Sub Capability**.
    - On the shortcut menu of the selected capability, click **Add new Sub Capability**.
3. On the diagram pane, an empty line for the newly created capability appears.

To add a new capability provision

1. Select the capability for which you want to create a new capability provision.
2. Do one of the following:
   - On the CV-3 diagram toolbar, click **Add New** > **Capability Provision**.
   - On the shortcut menu of the selected capability, click **Add new Capability Provision**.
3. Follow the steps of the **Capability Provision Creation Wizard**.
4. Click **Finish**, when you are done.

To add an existing capability

1. On the CV-3 diagram toolbar, click **Add Existing**. The **Select** element dialog opens.
2. In the dialog, select a capability (or several capabilities) and click the **+** button.
3. Click **OK** when you are done.

To add an existing sub capability

1. Select the capability for which you want to add a sub capability.
2. Do one of the following:
   - On the CV-3 diagram toolbar, click **Add Existing** > **Sub Capability**.
   - On the shortcut menu of the selected capability, click **Add existing Sub Capability**.
3. In the opened **Select Capability** dialog, select a capability (or several capabilities) and click the **+** button.
4. Click **OK** when you are done.

Related GUI

NEW! Capability Provision Creation Wizard

6.2.6.3 Removing capabilities from CV-3 chart

To delete a capability from the chart

1. Select a capability.
2. On the diagram toolbar, click **Delete From Chart**.

IMPORTANT! Sub Capabilities can only be deleted only from the model.

To delete a capability from the model

1. Select a capability.
2. On the diagram toolbar, click **Delete**.

6.2.7 CV-4 procedures

These are the procedures of the CV-4 view:

- Creating CV-4 diagram

6.2.7.1 Creating CV-4 diagram

The CV-4 is created just after the CV-2 is completed.

To create a CV-4 diagram

1. Create or reuse Capabilities from an CV-2 (recommended).
2. Connect the Capabilities with Dependencies.

Related DoDAF views

CV-4 Capability Dependencies

6.2.8 NEW! CV-5 procedures

These are the procedures of the CV-5 view:

- Creating CV-5 table
- Modifying CV-5 table
- Manipulations in CV-5 table. These procedures are described in Section “Manipulations in generic table” of “MagicDraw UserManual.pdf”.

6.2.8.1 Creating CV-5 table

The content of the CV-5 table are Resources used by Actual Organizational Resources (Organizations and Actual Posts) to realize Capabilities in a particular time period of the enterprise. Rows of the CV-5 table are Actual Organizational Resources, and columns are Capabilities.

A relationship between an Actual Organizational Resource and a Resource is expressed by the Deployed and No Longer Used Milestones. There can be one or more Resources related to the Actual Organizational Resource. The Deployed Milestone defines the time when the resource is started to use. The No Longer Used Milestone defines the time when the resource is no longer used.

A CV-5 table can be owned by a Capability Phase that will be the context element for this table. The Capability Phase element is related to the CV-1 view.

A relationship between a Capability and a context element is represented by the Capability of Performer.

To create the CV-5 table you need to do the following:

1. Create an empty table for the selected Enterprise Phase.
2. Add Actual Organizational Resources as table rows.
3. Add resources in table cells as table content.

To create a CV-5 table:

NOTE	The owner of the CV-5 table can be only an Enterprise Phase.

- Use one of the cases described in Section Creating diagrams, tables, or matrixes.
  The empty table with the column number equal to associated Capabilities in the CV-1 view will be created.

Maritime Rescue Team expansion (From 2011-01-01 To 2011-03-31)	Hire new MRT Drivers	Hire new MRT Pilots	Plan training tasks for new employees	Perform training tasks

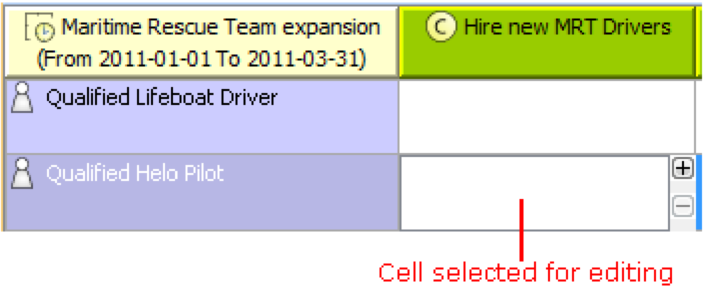
Figure 119 -- Example of empty CV-5 table

To add rows to a CV-5 table:

1. Click the **Add Rows** button in the table toolbar or press CTRL+INSERT. The element Selection dialog will open.
2. Select Actual Organizational Resources you need to add to the table. For the detailed information about the element Selection dialog see Section “Selecting an Element” in “MagicDraw UserManual.pdf”.
3. Click **OK** when you are finished.

To add resources to a CV-5 table:

1. Click the cell wherein you want to add a resource.
2. Click the **+** button that will appear at the right of the selected cell as it is shown in the following figure. The **Deployment Milestones** creation wizard will open.



3. Using the **Deployment Milestones** creation wizard select resources and specify both deployment and no longer used dates for them.
4. Click **Finish** when you are done.

Related DoDAF views

CV-5 Capability to Organizational Development Mapping

Related procedures

Creating diagrams, tables, or matrixes

Modifying CV-5 table

Related GUI

NEW! Deployment Milestones Creation Wizard

6.2.8.2 Modifying CV-5 table

Please refer to Section Handling tables, if you are looking for the following table handling features:

- Delete a selected row.
- Delete a selected row from a table.
- Move a selected row up.
- Move a selected row down.
- Export a table to a plain text file format (.cvs) or a Hypertext Markup Language format (.html).
- Generate a report.

To add/ remove columns to a CV-5 table

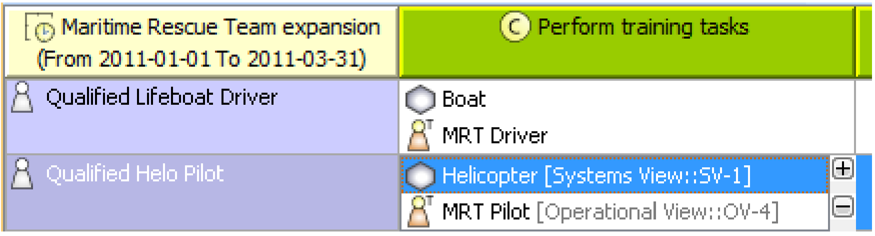
1. In the table toolbar, click the **Add/ Remove Columns** button. The element Selection dialog will open.

2. Select capabilities to add or remove from a table. For the detailed information about the element Selection dialog see Section “Selecting an Element” in “MagicDraw UserManual.pdf”.
3. Click **OK** when you are finished.

NOTES
- Capabilities will be removed only from the table. They will not be removed from the model.
- A Capability of Performer relationship between the context element and a removed Capability will be removed from the model.
- A Capability of Performer relationship between the context element and an added Capability will be added in the model.

To add/ remove resources to a CV-5 table

1. Click the cell you want to edit.
2. The **+** and **-** buttons will appear at the right of the cell as it is shown in the following figure.



3. Do one of the following:
   - Click the **+** button to add a resource. The **Deployment Milestones** creation wizard will open.
   - Select a resource you want to remove and click the **-** button.

NOTE The Resource will be removed from the table, but not from the model.

Related DoDAF views

CV-5 Capability to Organizational Development Mapping

Related procedures

Creating CV-5 table

Handling tables

Related GUI

NEW! Deployment Milestones Creation Wizard

6.2.9 CV-6 procedures

These are the procedures of the CV-6 view:

- Building CV-6 matrix

6.2.9.1 Building CV-6 matrix

A CV-6 Capability to Operational Activity Mapping matrix describes the mapping between Capabilities required by an Enterprise and the Operational Activities that these Capabilities support.

The rows of the matrix are Capabilities and the columns are Operational Activities.

To build a CV-6 matrix

1. Specify the **Row Scope** (Capabilities).
2. Specify the **Column Scope** (Operational Activities).
3. Click the **Rebuild** button.

Operational Activities maps to Capabilities using the Activity Part of Capability relationship.

To map an Operational Activity to a Capability, click the intersection between the desired elements. By pressing on the intersection once again, the relation will be deleted.

Related DoDAF views

CV-6 Capability to Operational Activities Mapping

6.2.10 CV-7 procedures

These are the procedures of the CV-7 view:

- Building CV-7 matrix

6.2.10.1 Building CV-7 matrix

The rows of this matrix are Service Accesses and the columns are Capabilities.

To build a CV-7 matrix:

1. Specify **Row Scope** (Service Accesses).
2. Specify **Column Scope** (Capabilities).
3. Click the **Rebuild** button.

Service Accesses expose Capabilities using the Capability of Performer relationship.

To map Service Access to Capability, click the intersection between the desired elements. By pressing on the intersection once again, the relation will be deleted.

Related DoDAF views

CV-7 Capability to Services Mapping

6.2.11 DIV-1 procedures

These are the procedures of the DIV-1 view:

- Creating DIV-1 diagram

6.2.11.1 Creating DIV-1 diagram

To create a DIV-1 diagram:

1. Create Exchange Elements.
2. Connect Exchange Elements using Generalizations.

You can also use a DIV-1 diagram to display Entities taxonomy. Entities can be linked with Exchange Elements. To relate these UPDM Elements, use Details relationship.

Related DoDAF views

You can use the Entity Relationship diagram for DIV-1 Conceptual Data Model

6.2.12 DIV-2 procedures

These are the procedures of the DIV-2 view:

- Creating DIV-2 diagram

6.2.12.1 Creating DIV-2 diagram

To create a DIV-2 diagram

1. Create Entity Items or Exchange Elements.
2. Add Entity Attributes for Entity Items.
3. Draw Association of Information relationships between Entity Items.

Entities can be linked with Exchange Elements. To relate these elements, use Details relationship.

Related DoDAF views

DIV-2 Logical Data Model

6.2.13 DIV-3 procedures

These are the procedures of the DIV-3 view:

- Creating DIV-3 diagram

6.2.13.1 Creating DIV-3 diagram

To create a DIV-3 diagram

1. Create Entity Items or Exchange Elements.
2. Add Entity Attributes for Entity Items.
3. Draw Association of Information relationships between Entity Items or Exchange Elements.

Entities can be linked with Exchange Elements. To relate these elements, use Details relationship.

Related DoDAF views

DIV-3 Physical Data Model

6.2.14 OV-1 procedures

These are the procedures of the OV-1 view:

- Creating OV-1 diagram

6.2.14.1 Creating OV-1 diagram

To create an OV-1 view, you can use one of the following diagrams:

- OV-1 Free Form.
- OV-1 High-Level Operational Concept Graphic.

An OV-1 High-Level Operational Concept Graphic Diagram is based on the UML Composite Structure Diagram. Since it is a bit complex, the OV-1 Free Form diagram can be used alternatively.

A Concept Role here is a property for a High-Level Operational Concept element. It represents a role that an element (the type of this property) is playing in this High-Level Operational Concept. According to the UPDM specification Concept Role may represent (to have a type set as) an Operational Node, any of the Resources (System, Systems Node, etc.) or Location. The difference among Concept Role, Operational Node Concept Role and other Roles is the type or in other words, the represented element of the Concept Role.

Concept Role represents logical or physical unit of your architecture. It means that you should have those units in the architecture before creating the diagram. This approach is a bit different and may appear strange to DoDAF users, but in MODAF an OV-1 is usually created at the later stages of the architecture. For this reason we have implemented an OV-1 Free Form diagram that is more likely what DoDAF users are used to.

To create an OV-1 High-Level Operational Concept Graphic diagram

1. Make sure you have SV-1 and OV-2 diagrams completed.
2. Create Concept Roles.
3. Specify the types of the Concept Roles.
4. Associate Concept Roles using Arbitrary Relationships.

Related DoDAF views

OV-1 High-Level Operational Concept Graphic

Related MODAF views

OV-1 High-Level Operational Concept Graphic

6.2.15 OV-2 procedures

These are the procedures of the OV-2 view:

- Creating OV-2 diagram
- Creating Operational Exchanges in OV-2 diagram

6.2.15.1 Creating OV-2 diagram

OV-2 diagram name in DoDAF differs from the one in MODAF, though the diagram concept in both architecture frameworks is the same.

OV-2 is one of the starting views of the architecture for DoDAF and requires the Strategic Viewpoint to be developed for MODAF.

To create an OV-2 diagram:

1. Create Logical Architectures (MODAF) or Performers (DoDAF).
2. Model internal structures of created context elements using Node Roles typed by Nodes (MODAF) or Performers (DoDAF).
3. Associate Node Roles using Needlines.
4. Create Operational Exchanges flowing via Needlines.

Related DoDAF views

OV-2 Operational Resource Flow Description

Related MODAF views

OV-2 Operational Node Relationship Description

Related procedures

[Creating Operational Exchanges in OV-2 diagram]

6.2.15.2 Creating Operational Exchanges in OV-2 diagram

To create an Operational Exchange in the OV-2 diagram:

1. Open the **Operational Exchange** creation wizard. To open the wizard, do either:
   - Select a Needline and on the smart manipulator click the New Operational Exchange button.
   - On the **Operational Resource Flows** (DoDAF) or **Operational Exchanges** (MODAF) toolbar in the diagram pallet click the **Operational Exchange** button and then click the Needline.
2. Specify the Operational Exchange item either by choosing an existing Operational Exchange or creating a new one.
3. Specify the direction of the Operational Exchange.

An OV-2 view also allows you to show mappings among Capabilities and Performers (DoDAF) or Nodes (MODAF), Physical Location requirements, and Services provided or requested by Performers or Nodes.

The structure of each Performer (DoDAF) or Node (MODAF) can be modeled using the Operational Node Internal Relationship Description diagram or in a special structure compartment of this element shape.

Once the OV-2 diagram has been completed, you can proceed creating the OV-5 diagram.

Related DoDAF views

OV-2 Operational Resource Flow Description

Related MODAF views

OV-2 Operational Node Relationship Description

Related procedures

Creating OV-2 diagram

Related GUI

Operational Exchange Creation Wizard

6.2.16 OV-3 procedures

These are the procedures of the OV-3 view:

- Creating OV-3 table

6.2.16.1 Creating OV-3 table

To create an OV-3 table

1. Add existing Operational Exchanges.

2. Click the **Add Existing** button to select Operational Exchanges or Needlines. In case a Needline has been selected, all Operational Exchanges flowing via it will be added to the table.

NOTES	
	• You need to use an OV-2 to create or modify Operational Exchanges. • You can remove the rows of Operational Exchanges from the model or table, order, or export them to a CSV or HTML format. • Right-click on a cell to open the shortcut menu.

Related DoDAF views

OV-3 Operational Resource Flow Matrix

Related MODAF views

OV-3 Operational Information Exchange Matrix

6.2.17 OV-4 procedures

These are the procedures of the OV-4 view:

- Creating OV-4 diagram

6.2.17.1 Creating OV-4 diagram

To create an OV-4 diagram

1. Create Organization Types (DoDAF) or Organizations (MODAF) and Person Types (DoDAF) or Posts (MODAF).
2. Display the generalizations (general-specific relationships) and compositions (whole-part relationships) between them.
3. Create Actual Organizations and Individual Person Roles (DoDAF) or Actual Posts (MODAF).
4. Relate Actual Organizational resources with Actual Organization Relationship.

You can also display Skills (DoDAF) and Competencies (MODAF) of the Organizational Resources.

You can use the Commands relationship to display the Operational Resource that is in charge of others.

You can display Persons and Actual Persons in an OV-4 (MODAF only). Actual Persons can fill in Actual Posts. You can display this relationship using the Fills Post dependency.

Organizations Resources are the resources and in general they could be modelled just before SV-1 view.

Related DoDAF views

OV-4 Organizational Relationships Chart

Related MODAF views

OV-4 Organizational Relationships Chart

6.2.18 OV-5 procedures

These are the procedures of the OV-5 view:

- Creating OV-5 Operational Activity Model diagram
- Creating OV-5 Operational Activity Flow Model diagram
- Displaying possible Operational Exchanges on the selected Operational Activity Edge

6.2.18.1 Creating OV-5 Operational Activity Model diagram

The OV-5 view consists of these two diagrams:

1. Operational Activity Model. This diagram represents Operational Activity hierarchies.
2. Operational Activity Flow Model. This diagram represents Operational Activity flows.

The Operational Activity Model diagram must be created first.

To create an OV-5 diagram for Operational Activity hierarchies:

1. Create Operational Activities.
2. Create or Reuse from OV-2 (recommended) Performers (DoDAF) or Nodes (MODAF).
3. Draw Is Capable of Performing relationship between them and Operational Activities.
4. Draw Compositions (whole-part relationships) between Operational Activities if necessary.

Related DoDAF views

OV-5 Operational Activity Model

Related MODAF views

OV-5 Operational Activity Model

Related procedures

Creating OV-5 Operational Activity Flow Model diagram

6.2.18.2 Creating OV-5 Operational Activity Flow Model diagram

The OV-5 view consists of these two diagrams:

1. Operational Activity Model. This diagram represents Operational Activity hierarchies.
2. Operational Activity Flow Model.This diagram represents Operational Activity flows.

Before creating the Operational Activity Flow Model diagram, the Operational Activity Model diagram must be created first.

To create an OV-5 diagram for Operational Activity flows:

1. Create Operational Activity Actions or just drop Operational Activities from the Containment tree directly to the Diagram.
2. Connect Operational Activity Actions with Operational Activity Edges.
3. Display the possible Operational Exchanges on Operational Activity Edges.

Related DoDAF views

OV-5 Operational Activity Model

Related MODAF views

OV-5 Operational Activity Model

Related procedures

Creating OV-5 Operational Activity Model diagram

Displaying possible Operational Exchanges on the selected Operational Activity Edge

6.2.18.3 Displaying possible Operational Exchanges on the selected Operational Activity Edge

To display possible Operational Exchanges on the selected Operational Activity Edge:

1. Select Operational Activity Edge and on the smart manipulator, click the Operational Exchange Manager button.
2. Select the possible Operational Exchanges to realize.

You can also click the **Operational Exchange** button on the diagram pallet and click the Operational Activity Edge to open the **Operational Exchange** creation wizard.

Related DoDAF views

OV-5 Operational Activity Model

Related MODAF views

OV-5 Operational Activity Model

Related procedures

Creating OV-5 Operational Activity Flow Model diagram

Related GUI

Operational Exchange Creation Wizard

Operational Exchange Manager Dialog

6.2.19 OV-6a procedures

These are the procedures of the OV-6a view:

- Creating OV-6a table

6.2.19.1 Creating OV-6a table

To create an OV-6a table, do one of the following:

- Add a new Operational Constraint by clicking the **Create New Operational Constraint** button and select constrained Operational Element (Performer (DoDAF), Node (MODAF), Operational Activity, Entity Item, Exchange Element, Operational Exchange, and Mission). Fill in the specification cell with an expression that can be written in natural or technical language (for example English or OCL).
- Add Existing Operational Constraints by clicking the **Add Existing Operational Constraint** button and select Operational Constraints from the model.

NOTES

- You can add or edit constrained elements in every row in the table.
- You can also remove Rows (Operational Constraints) from the model or table, order, or export them to a CSV or HTML format.
- Right-click on a cell to see more menus.

Related DoDAF views

OV-6a Operational Rules Model

Related MODAF views

OV-6a Operational Rules Model

6.2.20 OV-7 procedures

These are the procedures of the OV-7 view:

- Creating OV-7 diagram

6.2.20.1 Creating OV-7 diagram

To create an OV-7 diagram:

1. Create Entity Items.
2. Add Entity Attributes.
3. Draw Associations of Information (DoDAF) or Entity Relationships (MODAF).

Entities can be linked with Exchange Elements. To relate these UPDM Elements, use Details relationship.

Related views

OV-7 Information Model

6.2.21 PV-1 procedures

These are the procedures of the PV-1 view:

- Creating PV-1 diagram
- Building PV-1 matrix

6.2.21.1 Creating PV-1 diagram

It is recommended to create an OV-4 creating a PV-1.

To create a PV-1 diagram:

1. Create Projects.
2. Associate Projects by dragging one project (part) to the other (whole). Alternatively you can specify the *whole* and *part* properties.
3. Associate Projects with Organizations (OV-4) or Individual Person Roles (OV-4) responsible for them using Organizational Project Relationship.

TIP!	You can nest Projects to one another in the diagram to make it look more attractive and easier to read (see the figure below).

Related DoDAF views

PV-1 Project Portfolio Relationships

Related procedures

Building PV-1 matrix

6.2.21.2 Building PV-1 matrix

It is recommended to create an OV-4 before creating a PV-1.

The PV-1 is an editable matrix displaying the responsibility of Actual Organizational resources (Organizations or Individual Person Roles) for Projects.

The rows in the PV-1 Responsibility Matrix represent Projects and the columns represent Actual Organizational resources (Organization or Individual Person Roles).

To build a PV-1 matrix:

1. Specify the **Row Scope** (Projects).
2. Specify the **Column Scope** (Organizations and Individual Person Roles).
3. Click the **Rebuild** button.

Related DoDAF views

PV-1 Project Portfolio Relationships

Related procedures

Creating PV-1 diagram

6.2.22 NEW! PV-2 procedures

These are the procedures of the PV-2 view:

- Creating PV-2 diagram
- Adding projects in PV-2 diagram
- Deleting projects in PV-2 diagram
- Relating projects in PV-2 diagram
- Adding Milestones in PV-2 diagram
- Deleting Milestones in PV-2 diagram
- Applying project status in PV-2 diagram
- Removing project status in PV-2 diagram
- Deleting Milestones in PV-2 diagram

6.2.22.1 Creating PV-2 diagram

When you choose to create PV-2 diagram, **PV-2 Creation Wizard** opens.

To create a PV-2 diagram from the wizard

1. From the **Diagrams** menu, select **UPDM PV Diagrams** > **PV-2 Project Timeliness**.
2. In the **PV-2 Project Timeliness** dialog, click **Add**. **PV-2 Creation Wizard** opens.
3. Specify the diagram name and create or select the owner. Click **Next**.
4. Add the project(s). Click **Next**.
5. Set the chart properties.
6. Click **Finish**.

NOTE	If you do not wish to use the PV-2 Creation Wizard next time, clear the check box near “Show the wizard next time, when I create PV-2”. Also you can disable the wizard. Go to **Options** > **Environment**. In the **Environment Options** dialog go to **UPDM** tab. In the **General** properties, set **Show PV-2 / AcV-2 Creation Wizard each Time Creating New Chart** to false.

To create a PV-2 diagram manually:

1. From the **Diagrams** menu, select **UPDM PV Diagrams** > **PV-2 Project Timeliness**.
2. In the **PV-2 Project Timeliness** dialog click **Add**.
3. Specify the diagram name and create or select the owner of the diagram.

TIP!	You can select as a diagram owner a view or viewpoint that is already created in the UPDM project template.

4. Click **OK**. The blank PV-2 diagram is created.

Related DoDAF views

PV-2 Project Timelines

Related GUI

NEW! Diagram Creation Wizard

6.2.22.2 Adding projects in PV-2 diagram

You can add a new or an existing project to the PV-2 diagram.

To add a new project

1. On the PV-2 diagram toolbar, click **Add New** > **Project**. On the diagram pane, an empty line for the newly created project appears.
2. Specify a time frame for the project.

To add a new sub project

1. Select the project for which you want to create a sub project.
2. Do one of the following:
   - On the PV-2 diagram toolbar, click **Add New** > **Sub Project**.
   - On the shortcut menu of the selected project, click **Add new Sub Project**.
3. On the diagram pane, an empty line for the newly created project appears. Specify a time frame for the sub project.

To add an existing project

1. On the PV-2 diagram toolbar, click **Add Existing**. The **Select Project** dialog opens.
2. In the dialog, select a project (or several projects) and click the **+** button.
3. Click **OK** when you are done.

6.2.22.3 Deleting projects in PV-2 diagram

To delete a project from the chart

1. Select a project.
2. On the diagram toolbar, click **Delete From Chart**.

IMPORTANT!	Sub Projects can only be deleted from the model.

To delete a project from the model

1. Select a project.
2. On the diagram toolbar, click **Delete**.

6.2.22.4 Relating projects in PV-2 diagram

You can relate projects to a sequence using the following relation types:

- Finish to Start. Target project cannot start earlier than the source project finishes.
- Start to Start. The target project cannot start earlier than the source project starts.
- Finish to Finish. The target project cannot finish earlier than the source project finishes.
- Start to Finish. The target project cannot finish earlier than the source project starts.

You can change project dates by moving a project across the timeline. The Actual Project Sequence validation rule is executed while changing the related project dates. If dates in the project sequence violate the rule, the relation is highlighted in red.

To relate projects

1. Select two projects.
2. On the diagram toolbar, click **Relate**.
3. Select one of the available relation types:
   - **Finish to Start**
   - **Start to Start**
   - **Finish to Finish**
   - **Start to Finish**

To remove the relation between projects

1. Select two related projects.
2. On the diagram toolbar, click **Relate**.
3. Select None.

To resolve the incorrect project sequence

1. On the highlighted relation shortcut menu, click **Validate**.
2. Select one of the suggested solutions.

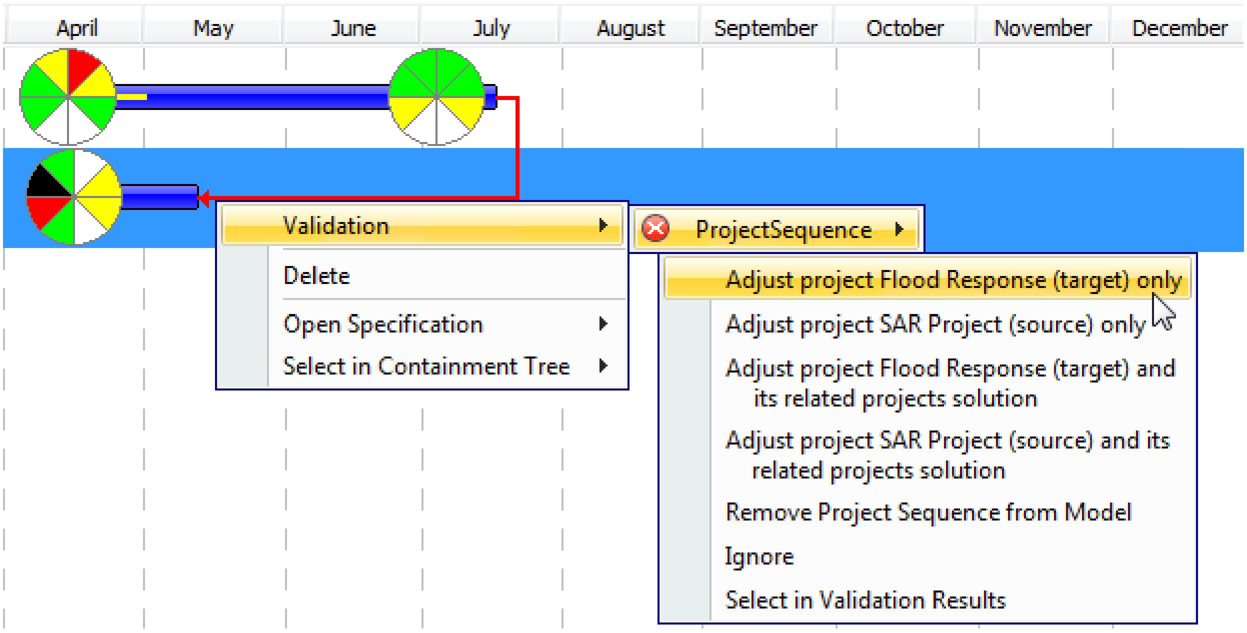


Figure 120 -- Available validation suggestions

NOTE	If you change dates of a project containing sub projects, sub project dates change correspondingly.

6.2.22.5 Adding Milestones in PV-2 diagram

To add a milestone

1. Select a project.
2. Do one of the following:
    - On the diagram toolbar, click **Add New** > **Milestone**.
    - On the selected project shortcut menu, click **Add new Actual Project Milestone**.
3. Select one of the available milestone kinds:
    - **Out Of Service Milestone**
    - **Increment Milestone**
    - **Deployed Milestone**
    - **No Longer Used Milestone**
    - **Actual Project Milestone**
4. The **Actual Project Milestone Creation Wizard** opens.
5. Specify milestone settings in the following wizard steps and click **Finish** when you are done.

Related GUI

NEW! Actual Project Milestone Creation Wizard

Related procedures

Deleting milestones in AcV-2 diagram

6.2.22.6 Applying project status in PV-2 diagram

To apply the project status to a new milestone

1. From the milestone shortcut menu, select **Apply Status**.
2. Specify the project status by following the steps of the **Project Status Application Wizard**.

To edit the project status

1. From the milestone shortcut menu, select **Edit Status**.
2. Edit the project status following the steps of the **Project Status Application Wizard**.

NOTE	If the milestones overlap, from the shortcut menu select **Specify Project Status** and then select the milestone you want to edit the status for.

Related DoDAF views

PV-2 Project Timelines

Related procedures

Removing project status in PV-2 diagram

Creating PV-2 diagram

Related GUI

NEW! Project Status Application Wizard

6.2.22.7 Removing project status in PV-2 diagram

To remove the project status

1. From the milestone shortcut menu, select **Edit Status**.
2. In the opened **Project Status Application Wizard**, click the Remove project status indicator mark button.
3. Click **Finish** when you are done.

Related DoDAF views

PV-2 Project Timelines

Related procedures

Creating PV-2 diagram

Applying project status in PV-2 diagram

Related GUI

NEW! Project Status Application Wizard

6.2.22.8 Deleting Milestones in PV-2 diagram

To delete a milestone

1. Select a milestone.
2. From the milestone shortcut menu, select **Delete**.

Related procedures

Creating PV-2 diagram

6.2.23 PV-3 procedures

These are the procedures of the PV-3 view:

- Building PV-3 matrix

6.2.23.1 Building PV-3 matrix

PV-3 Project to Capability Mapping describes the mapping of programs and projects to capabilities to show how the specific projects and program elements help to achieve a capability.

The rows of this matrix are Capabilities and the columns are Projects.

To build a PV-3 matrix

1. Specify **Row Scope** (Capabilities).
2. Specify **Column Scope** (Projects).
3. Click the **Rebuild** button.

Activity is part of Project (“Activity Part of Project” relationship and a part of Capability (“Activity Part of Capability”) relationship). This transitive structure of relations maps Capabilities to Projects.

Project owns Increment Milestones that are related to Resources exhibiting capabilities.

Both transitive structures of relations map Capabilities to Projects. The mapping is displayed in the Matrix.

Related DoDAF views

PV-3 Project to Capability Mapping

6.2.24 SOV-1 procedures

These are the procedures of the SOV-1 view:

- Creating SOV-1 diagram

6.2.24.1 Creating SOV-1 diagram

You can create SOV-1 just before finishing an OV-2 or in later stages of the architecture just before finishing the SV-1 or SV-2 views. It depends on the usage of Service and Request Ports in the architecture.

To create a SOV-1 diagram

1. Create Service Interfaces.
2. Connect Service Interfaces using generalizations (general-specific relationships).

The SOV-1 view also allows you to show the Capabilities and Service Interfaces mapping.

Related MODAF views

SOV-1 Service Taxonomy

6.2.25 SOV-3 procedures

These are the procedures of the SOV-3 view:

- Building SOV-3 matrix

6.2.25.1 Building SOV-3 matrix

The rows of this matrix represent Service Interfaces and the columns represent Capabilities.

To build a SOV-3 matrix

1. Specify the **Row Scope** (Service Interfaces).
2. Specify the **Column Scope** (Capabilities).
3. Click the **Rebuild** button.

To map a Service Interface to a Capability

- Click the intersection between the desired elements.

NOTE Click the intersection again and the relation will be deleted.

Related MODAF views

SOV-3 Capability to Service Mapping

6.2.26 SOV-4a procedures

These are the procedures of the SOV-4a view:

- Filling in SOV-4a table

6.2.26.1 Filling in SOV-4a table

To fill in a SOV-4a table, do one of the following

- Add a new Service Policy by clicking the **Add New** button and select a constrained Service Interface. Fill in the specification cell with an expression that can be written in natural or technical language (for example, English or OCL).
- Add an Existing Service Policy by clicking the **Add Existing** button and select a Service Policies.

NOTES
- You can add or edit constrained elements for every row in the table.
- You can remove Rows (Service Policy) from the model or only from the table, order and export them to a CSV or HTML format.
- Right-click on the cell to open more menus.

Related MODAF views

SOV-4a Service Constraints

6.2.27 SOV-5 procedures

These are the procedures of the SOV-5 view:

- Creating SOV-5 Service Functionality Description diagram
- Creating SOV-5 Service Functionality Flow diagram

6.2.27.1 Creating SOV-5 Service Functionality Description diagram

A SOV-5 view consists of these two diagrams:

1. Service Functionality Description diagram.
2. Service Functionality Flow diagram.

To create a SOV-5 Product, you need to create a Service Functionality Description diagram first.

To create a Service Functionality Description diagram

1. Create Service Functions.
2. Draw compositions or aggregations (whole-part relationships) between the Service Functions.

Related MODAF views

SOV-5 Service Functionality Flow

Related procedures

Creating SOV-5 Service Functionality Flow diagram

6.2.27.2 Creating SOV-5 Service Functionality Flow diagram

The SOV-5 view consists of these two diagrams:

1. Service Functionality Description diagram.
2. Service Functionality Flow diagram.

Before creating the Service Functionality Flow diagram, the Service Functionality Description diagram must be created first.

To create a Service Functionality Flow diagram

1. Create Service Function Actions.
2. Connect the Service Function Actions using the Service Function Edges.

Related MODAF views

SOV-5 Service Functionality Flow

Related procedures

Creating SOV-5 Service Functionality Description diagram

6.2.28 StV-1 procedures

These are the procedures of the StV-1 view:

- Creating StV-1 diagram

6.2.28.1 Creating StV-1 diagram

The StV-1 are the one of the firstly created products in MODAF architecture.

To create a StV-1 diagram

1. Create a Whole Life Enterprise.
2. Add Structural and Temporal parts to the Whole Life Enterprise by clicking the Temporal Part or Structural Part button and click on the Whole-Life Enterprise body.
3. Specify the Types for the created parts (the types for both parts are the Enterprise Phase elements).

Additionally Enterprise Goals and Visions can be created and added to the Enterprise Phase's or Whole Life Enterprise's goal and vision property.

To fully complete the StV-1, the StV-2 should be modeled in order to create Capabilities that Enterprise Phase and Whole Life Enterprise exhibit. To specify the relation between Capabilities and Enterprises, exhibits relationship.

Related MODAF views

StV-1 Enterprise Vision

6.2.29 StV-2 procedures

These are the procedures of the StV-2 view:

- Creating StV-2 diagram

6.2.29.1 Creating StV-2 diagram

The StV-2 should be modeled just before the StV-1 is completed.

To create a StV-2 diagram

1. Create Capabilities.
2. Connect the Capabilities using Generalizations (general - specific relationships) or aggregations (whole-part relationships).

You can also link Capabilities with the Operational and System elements using exhibits relationship. To specify environmental requirements for Capability exhibitionfill in the Exhibits relationship property *environmentConditions*.

Related MODAF views

StV-2 Capability Taxonomy

6.2.30 NEW! StV-3 procedures

These are the procedures of the StV-3 view:

- Creating StV-3 diagram
- Adding capabilities to StV-3 chart
- Removing capabilities from StV-3 chart

6.2.30.1 Creating StV-3 diagram

When you choose to create StV-3 diagram, **StV-3 Creation Wizard** opens.

To create a StV-3 diagram from the wizard

1. From the **Diagrams** menu, select **UPDM StV Diagrams** > **StV-3 Capability Phasing**.
2. In the **StV-3 Capability Phasing** dialog, click **Add**. **StV-3 Creation Wizard** opens.
3. Follow the steps of the wizard.
4. Click **Finish** when you are done.

NOTE	If you do not wish to use the StV-3 Creation Wizard next time, clear the check box near “Show the wizard next time, when I create StV-3”. Also you can disable the wizard. Go to **Options** > **Environment**. In the **Environment Options** dialog go to **UPDM** tab. In the **General** properties, set **Show CV-3/ StV-3 Creation Wizard each Time Creating New Chart** to false.

To create a StV-3 diagram manually

1. From the **Diagrams** menu, select **UPDM StV Diagrams** > **StV-3 Capability Phasing**.
2. In the **StV-3 Capability Phasing** dialog click **Add**.
3. Specify the diagram name and create or select the owner of the diagram.

TIP!	You can select as a diagram owner a view or viewpoint that is already created in the UPDM project template.

4. Click **OK**. The blank StV-3 diagram is created.

Related MODAF views

StV-3 Capability Phasing

Related GUI

NEW! Diagram Creation Wizard

6.2.30.2 Adding capabilities to StV-3 chart

To add a new capability

- On the StV-3 diagram toolbar, click **Add New** > **Capability**. On the diagram pane, an empty line for the newly created capability appears.

To add a new sub capability

1. Select the capability for which you want to create a sub capability.
2. Do one of the following:
    - On the StV-3 diagram toolbar, click **Add New** > **Sub Capability**.
    - On the shortcut menu of the selected capability, click **Add new Sub Capability**.
3. On the diagram pane, an empty line for the newly created capability appears.

To add a new capability provision

1. Select the capability for which you want to create a capability provision.
2. Do one of the following:
    - On the StV-3 diagram toolbar, click **Add New** > **Capability Provision**.
    - On the shortcut menu of the selected capability, click **Add new Capability Provision**.
3. Follow the steps of the **Capability Provision Creation Wizard**.
4. Click **Finish**, when you are done.

To add an existing capability

1. On the StV-3 diagram toolbar, click **Add Existing**. The **Select** element dialog opens.
2. In the dialog, select a capability (or several capabilities) and click the **+** button.
3. Click **OK** when you are done.

To add an existing sub capability

1. Select the capability for which you want to add a sub capability.
2. Do one of the following:
    - On the StV-3 diagram toolbar, click **Add Existing** > **Sub Capability**.
    - On the shortcut menu of the selected capability, click **Add existing Sub Capability**.
3. In the opened **Select Capability** dialog, select a capability (or several capabilities) and click the **+** button.
4. Click **OK** when you are done.

Related GUI

NEW! Capability Provision Creation Wizard

6.2.30.3 Removing capabilities from StV-3 chart

To delete a capability from the chart

1. Select a capability.
2. On the diagram toolbar, click **Delete From Chart**.

IMPORTANT!	Sub Capabilities can only be deleted from the model.

To delete a capability from the model

1. Select a capability.
2. On the diagram toolbar, click **Delete**.

Related procedures

Creating StV-3 diagram

Adding capabilities to StV-3 chart

6.2.31 StV-4 procedures

These are the procedures of the StV-4 view:

- Creating StV-4 diagram

6.2.31.1 Creating StV-4 diagram

The StV-4 is created just after the StV-2 is completed.

To create a StV-4 diagram

1. Create or reuse the Capabilities from StV-2 (recommended).
2. Connect the Capabilities using Dependencies.

Related MODAF views

StV-4 Capability Dependencies

6.2.32 NEW! StV-5 procedures

These are the procedures of the StV-5 view:

- Creating StV-5 table
- Modifying StV-5 table
- Manipulations in StV-5 table. These procedures are described in Section “Manipulations in generic table” of “MagicDraw UserManual.pdf”.

6.2.32.1 Creating StV-5 table

The content of the StV-5 table are Resources used by Actual Organizational Resources (Actual Organizations and Actual Posts) to realize Capabilities in a particular time period. Rows of the StV-5 table are Actual Organizational Resources, and columns are Capabilities.

A relationship between an Actual Organizational Resource and a Resource is expressed by the Deployed and No Longer Used Milestones. There can be one or more Resources related to the Actual Organizational Resource. The Deployed Milestone defines the time when the resource is started to use. The No Longer Used Milestone defines the time when the resource is no longer used.

A StV-5 table can be owned by an Enterprise Phase that will be the context element for this table. The Enterprise Phases are modeled in the StV-1 view.

A relationship between a Capability and a context element is represented by the Exhibits.

To create the StV-5 table you need to do the following:

1. Create an empty table for the selected Enterprise Phase.
2. Add Actual Organizational Resources as table rows.
3. Add resources in table cells as table content.

To create a StV-5 table

NOTE	The owner of the StV-5 table can be the Enterprise Phase.

- Use one of the cases described in Section Creating diagrams, tables, or matrixes.
  The empty table with the column number equal to exhibited Capabilities in the selected time frame will be created.

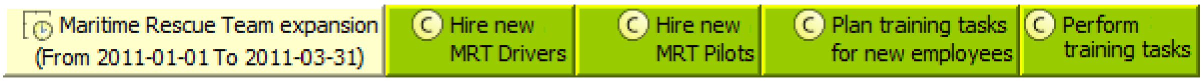


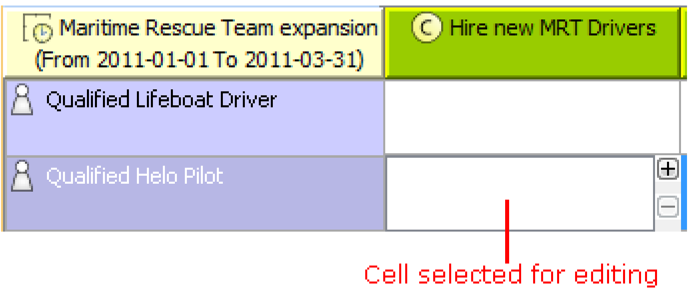
Figure 121 -- Example of empty StV-5 table

To add rows to a StV-5 table:

1. Click the **Add Rows** button in the table toolbar or press CTRL+INSERT. The element Selection dialog will open.
2. Select Actual Organizational Resources you need to add to the table. For the detailed information about the element Selection dialog see Section “Selecting an Element” in “MagicDraw UserManual.pdf”.
3. Click **OK** when you are finished.

To add resources to a StV-5 table:

1. Click the cell wherein you want to add a resource.
2. Click the **+** button that will appear at the right of the selected cell as it is shown in the following figure. The **Deployment Milestones** creation wizard will open.



3. Using the **Deployment Milestones** creation wizard select resources and specify both deployment and no longer used dates for them.
4. Click **Finish** when you are done.

Related MODAF views

StV-5 Capability to Organization Deployment Mapping

Related procedures

Creating diagrams, tables, or matrixes

Modifying StV-5 table

Related GUI

NEW! Deployment Milestones Creation Wizard

6.2.32.2 Modifying StV-5 table

Please refer to Section Handling tables, if you are looking for the following table handling features:

- Delete the selected row.
- Delete the selected row from the table.
- Move the selected row up.
- Move the selected row down.
- Export a table to a plain text file format (.cvs) or a Hypertext Markup Language format (.html).
- Generate a report.

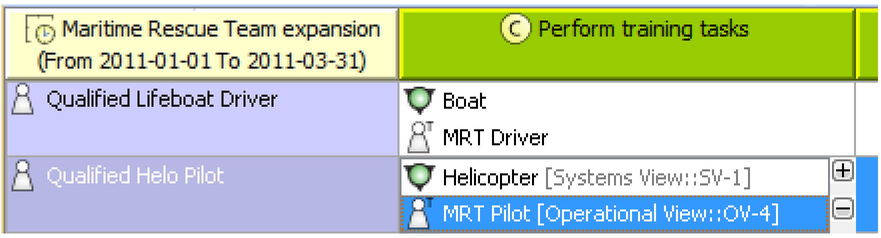
To add/ remove columns to a StV-5 table

1. In the table toolbar, click the **Add/ Remove Columns** button. The element Selection dialog will open.
2. Select capabilities to add or remove from a table. For the detailed information about the element Selection dialog see Section “Selecting an Element” in “MagicDraw UserManual.pdf”.
3. Click **OK** when you are finished.

NOTES
- Capabilities will be removed only from the table. They will not be removed from the model.
- An Exhibits relationship between the context element and a removed Capability will be removed from the model.
- An Exhibits relationship between the context element and an added Capability will be added in the model.

To add/ remove resources to a StV-5 table

1. Click the cell you want to edit.
2. The **+** and **-** buttons will appear at the right of the cell as it is shown in the following figure.



3. Do one of the following:
   - Click the **+** button to add a resource. The **Deployment Milestones** creation wizard will open.
   - Select a resource you want to remove and click the **-** button.

NOTE The Resource will be removed from the table, but not from the model.

Related MODAF views

StV-5 Capability to Organization Deployment Mapping

Related procedures

Creating StV-5 table

Handling tables

Related GUI

NEW! Deployment Milestones Creation Wizard

6.2.33 StV-6 procedures

These are the procedures of the StV-6 view:

- Building StV-6 matrix

6.2.33.1 Building StV-6 matrix

The Operational Activity to Capability Mapping (StV-6) describes the mapping between the capabilities required by an Enterprise and the operational activities that those capabilities support.

The rows of the matrix are Capabilities and the columns are Standard Operational Activities.

To build a StV-6 matrix:

1. Specify the rows scope (Capabilities).
2. Specify the columns scope (Standard Operational Activities).
3. Click the Rebuild button.

Standard Operational Activities maps to Capabilities using the Maps to Capability relationship.

To map Standard Operational Activity to Capability, click the intersection between the desired elements and click one more time, the relation will be deleted.

Related MODAF views

StV-6 Operational Activity to Capability Mapping

6.2.34 SV-1 procedures

These are the procedures of the SV-1 view:

- Creating SV-1 diagram
- Creating Resource Interaction in SV-1 diagram

6.2.34.1 Creating SV-1 diagram

SV-1 is the first Systems Viewpoint view to be developed. It requires OV-2 to be completed.

To create an SV-1 diagram:

1. Create Resources.
2. Associate Resources using Resource Interfaces.
3. Create Resource Interactions flowing via Resource Interfaces.

The SV-1 product also allows you to show the Capabilities and Resources mapping the provided and required services and Skills (DoDAF) or Competencies (MODAF) provided by the Resources. You can model each Resource internal structure using the **Resource Internal Interaction Specification** diagram or in a special structure compartment of this element shape.

You can proceed to create SV-4 view as soon as the SV-1 has been completed.

Related DoDAF views

SV-1 Resource Interaction Specification

Related MODAF views

SV-1 Resource Interaction Specification

Related procedures

Creating Resource Interaction in SV-1 diagram

6.2.34.2 Creating Resource Interaction in SV-1 diagram

To create a Resource Interaction in SV-1 diagram

1. Open the **Resource Interaction** creation wizard by doing one of the following:
    - Select the Resource Interface and on the smart manipulator, click **New Resource Interaction**.
    - Select the Association and on the smart manipulator, click **New Resource Interaction**.
    - In the diagram pallet, click the **Resource Interaction** and connect the resource elements on the diagram pane.
2. In the **Resource Interaction** creation wizard specify the Resource Interaction Item and choose either Select Existing or Create new Resource Interaction.
3. Specify the direction of the Resource Interaction.

Related DoDAF views

SV-1 Resource Interaction Specification

Related MODAF views

SV-1 Resource Interaction Specification

Related procedures

Creating SV-1 diagram

Related GUI

Resource Interaction Creation Wizard

6.2.35 SV-2 procedures

These are the procedures of the SV-2 view:

- Creating SV-2 diagram
- Creating Resource Interaction in SV-2 diagram

6.2.35.1 Creating SV-2 diagram

It is recommended to complete a SV-1 before creating SV-2.

To create a SV-2 diagram:

1. Create or reuse Resources created in SV-1.
2. Associate Resources using Resource interfaces.
3. Create Resource Ports.

4. Specify the types for the Resource Ports.

SV-2 product allows to show the provided and required services by particular Resources. You can model the structure of each Resource by using the Resource Internal Communications Description diagram or in a special structure compartment of this element shape.

Related DoDAF views

SV-2 Systems Communication Description

Related MODAF views

SV-2 Resource Communications Description

Related procedures

Creating Resource Interaction in SV-2 diagram

6.2.35.2 Creating Resource Interaction in SV-2 diagram

To create a Resource Interaction in SV-2 diagrams:

1. Open the **Resource Interaction** creation wizard by doing one of the following:
    - Select the Resource Interface and in the smart manipulator, click **New Resource Interaction**.
    - On the diagram pallet, click the **Resource Interaction** and then click the Resource Interface.
    - On the diagram pallet, click the **Resource Interaction** button and then connect the resource elements on the diagram pane.
2. In the **Resource Interaction** creation wizard specify the Resource Interaction Item and choose either Select Existing or Create new Resource Interaction.
3. Specify the direction of the Resource Interaction.

Related DoDAF views

SV-2 Systems Communication Description

Related MODAF views

SV-2 Resource Communications Description

Related procedures

Creating SV-2 diagram

Related GUI

Resource Interaction Creation Wizard

6.2.36 SV-3 procedures

These are the procedures of the SV-3 view:

- Building SV-3 matrix

6.2.36.1 Building SV-3 matrix

SV-3 is an editable matrix where cells of the matrix represent a Resource interactions and their headers represent Resources.

Arrow can be positioned on one side of the matrix or the other depending on the direction of the Resource interaction between resources. SV-3 matrix consists of as many rows and columns as there are Resources in the matrix data source.

To build a SV-3 matrix:

1. Specify the **Row Scope** (System Resources).
2. Specify the **Column Scope** (System Resources).
3. Click the **Rebuild** button.

Related DoDAF views

SV-3 Resource Interaction Matrix

Related MODAF views

SV-3 Resource Interaction Matrix

6.2.37 SV-4 procedures

These are the procedures of the SV-4 view:

- Creating SV-4 Functionality Description diagram
- Creating SV-4 Functionality Description Flow diagram

6.2.37.1 Creating SV-4 Functionality Description diagram

To create SV-4, make sure there are OV-5 and SV-1 created in the architecture.

The SV-4 view consists of two diagrams:

1. Functionality Description diagram. This diagram represents Functionality Description hierarchies.
2. Functionality Description Flow diagram.This diagram represents Functionality Description flows.

You must create the Functionality Description diagram before creating the Functionality Description Flow diagram.

To create a SV-4 Functionality Description diagram:

1. Create Functions.
2. Create or reuse (recommended) Resources from SV-1, SV-2.
3. Draw Activity Performable by Performer (DoDAF) or Is Capable of Performing (MODAF) relationship between the Resources and Functions.
4. Draw Compositions (whole-part relationships) between the Functions if necessary.
5. Draw an Implements relationship between the Functions and Operational Activities from OV-5.

Related DoDAF views

SV-4 Systems Functionality Description

Related MODAF views

SV-4 Functionality Description

Related procedures

Creating SV-4 Functionality Description Flow diagram

6.2.37.2 Creating SV-4 Functionality Description Flow diagram

To create SV-4, make sure there are OV-5 and SV-1 created in the architecture.

The SV-4 view consists of two diagrams:

1. Functionality Description diagram. This diagram represents Functionality Description hierarchies.
2. Functionality Description Flow diagram.This diagram represents Functionality Description flows.

Before creating the Functionality Description Flow diagram, the Functionality Description diagram must be created first.

To create a SV-4 Functionality Description Flow diagram:

1. Either create Function Actions or drag the Functions from the Containment tree directly to the diagram.
2. Connect the Function Actions using the Function Edges.
3. Display the possible Resource Interactions (MODAF) or Data Exchanges (DoDAF) on every Function Edge (MODAF) or System Function Edge (DoDAF).

To display possible Resource Interactions on selected Activity Edge, just click smart manipulator named “Resource Interaction” that appears when Function Edge is selected. You will be able to select possible to realize Resource Interaction. Another way to invoke the Resource Interaction selection Dialog is to click on “Resource Interaction” button in the Diagram toolbar and to click on the Function Edge.

Related DoDAF views

SV-4 Systems Functionality Description

Related MODAF views

SV-4 Functionality Description

Related procedures

Creating SV-4 Functionality Description diagram

6.2.38 SV-5 procedures

These are the procedures of the SV-5 view:

- Building SV-5 matrix

6.2.38.1 Building SV-5 matrix

The rows of the SV-5 matrix represent Functions and the columns represent Operational Activities.

To build a SV-5 matrix:

1. Specify the **Row Scope** (Functions).
2. Specify the **Column Scope** (Operational Activities).
3. Click the **Rebuild** button.

Functions implements Operational Activities using the **Implements** relationship.

To map a Function to an Operational Activity:

- Click the intersection between the desired elements.

NOTE Click the intersection again and the relation will be deleted.

Related DoDAF views

SV-5a Operational Activity to Systems Function Traceability Matrix

SV-5b Operational Activity to Systems Traceability Matrix

Related MODAF views

SV-5 Function to Operational Activity Traceability Matrix

6.2.39 SV-6 procedures

These are the procedures of the SV-6 view:

- Adding New Resource Interaction to SV-6 table
- Adding Existing Resource Interaction to SV-6 table

6.2.39.1 Adding New Resource Interaction to SV-6 table

To add new Resource Interaction

1. Click **Add New**. **Realized Resource Interaction** wizard opens.
2. Follow the steps of the wizard.
3. Click **Finish** when you are done. The rows with created resource interactions are added to the table.

Related GUI

Resource Interaction Creation Wizard

6.2.39.2 Adding Existing Resource Interaction to SV-6 table

You need to add existing Resource Interactions to fill in an SV-6 table.

To add an existing Resource Interaction

1. Click the **Add Existing** and select **Resource Interactions**.
2. Click **OK**, when you are done. The rows with selected resource interactions are added to the table.

NOTE

- Resource Interaction identifier, Resource Interaction Item Name, Producing and Consuming Functions, and wide range of measurement cells are allowed to edit in the table. Sending Performer, Receiving Performer, and Implements cells are read only.
- You may use an SV-1 product to create or modify a Resource Interaction.
- You can remove the Rows (Resource Interactions) from the model or table, order, or export them to a CSV or HTML format.
- Right-click on a cell to see more menus.

Related DoDAF views

SV-6 Systems Resource Flow Matrix

Related MODAF views

SV-6 Systems Data Exchange Matrix

Related GUI

Resource Interaction Creation Wizard

6.2.40 SV-7 procedures

These are the procedures of the SV-7 view:

- Creating SV-7 Typical table
- Creating SV-7 Actual table
- Generating SV-7 Actual table from SV-7 Typical table

6.2.40.1 Creating SV-7 Typical table

The SV-7 Product consists of two tables:

1. SV-7 Typical table.
2. SV-7 Actual table.

You must create a SV-7 Typical table first before creating a SV-7 Actual table.

To create SV-7 Typical table, either:

- Add a new Measurement Set by clicking the **Create New Measurement Set** button and select an owning element for the Measure Type (DoDAF) or Measurement Set (MODAF), and then specify the Measurements and Resources to be measured in the table cells.
- Add the existing Measure Types (DoDAF) or Measurement Sets (MODAF) by clicking the **Add Existing Measurement Set** button and select existing Measure Types (DoDAF) or Measurement Sets (MODAF) from the model.

NOTES

- You can remove Rows (Measure Types (DoDAF) or Measurement Sets (MODAF)) from the model or table, order, or export them to a CSV or HTML format.
- Right-click on a cell to see more menus.

Related DoDAF views

SV-7 Systems Measures Matrix

Related MODAF views

SV-7 Resource Performance Parameters Matrix

Related procedures

Creating SV-7 Actual table

Generating SV-7 Actual table from SV-7 Typical table

6.2.40.2 Creating SV-7 Actual table

The SV-7 Product consists of two tables:

1. SV-7 Typical table.
2. SV-7 Actual table.

Before creating SV-7 Actual table, SV-7 Typical table must be created.

To create SV-7 Actual table, do either:

- Add a new measurable Resource by clicking the Create New Actual Property Set button and select one or more Resources that have at least one Measure Type (DoDAF) or Measurement Set (MODAF), defined (see SV-7 Typical), and then specify the values of each Actual Measurement in the table cells.
- Add the existing Measures (DoDAF) or Actual Property Sets (MODAF) or measurable Resources by clicking the Add Existing Actual Measurement Set... button and select the existing Measures (DoDAF) or Actual Property Sets (MODAF) or Resources.
- Add the missing Actual Measurements by clicking the Add Missing Actual Measurements button to update model changes to the table.

NOTES

- You can remove Rows (Actual Measurements) from the model or table, order, or export them to a CSV or HTML format.
- Right-click on a cell to see more menus.

Related DoDAF views

SV-7 Systems Measures Matrix

Related MODAF views

SV-7 Resource Performance Parameters Matrix

Related procedures

Creating SV-7 Typical table

Generating SV-7 Actual table from SV-7 Typical table

6.2.40.3 Generating SV-7 Actual table from SV-7 Typical table

SV-7 Typical table can be instantiated by creating SV-7 Actual table.

To generate a SV-7 Actual table from a SV-7 Typical table:

1. Create a SV-7 Systems Typical Measures Matrix (DoDAF) or SV-7 Resource Performance Typical Parameters Matrix (MODAF) with at least one measurable resource added.
2. On the diagram table toolbar, click the **Evaluate Measurements** button. A new SV-7 Actual table will be created.
3. Add actual values for all Actual Measurements in the SV-7 Actual Measures Matrix (DoDAF) or SV-7 Resource Performance Actual Parameters Matrix (MODAF).

For each Measurement in the SV-7 Typical table, an Actual Measurement is created and the row representing it is added into the SV-7 Actual table.

NOTE Evaluating the same measurements again, new SV-7 Actual Measures Matrix will be created.

Related DoDAF views

SV-7 Systems Measures Matrix

Related MODAF views

SV-7 Resource Performance Parameters Matrix

Related procedures

Creating SV-7 Typical table
Creating SV-7 Actual table

6.2.41 SV-9 procedures

These are the procedures of the SV-9 view:

- Creating SV-9 table

6.2.41.1 Creating SV-9 table

To create a SV-9 table:

1. Add Rows to the table by doing any of the following:
   - Adding a new Resource as the row Header: click the **Create New Resource...** button, select a Resource you want to create, and specify the owner of the selected Resource.
   - Adding an Existing Resource as the row Header: click the **Add Existing Resource...** button and select one or more existing Resources.
2. Add columns to the table by clicking the **Time Periods** button and specify the forecast Time Periods:
   - Select or create a Time Line Package to store the Forecast dates.
   - Select a forecast kind.
   - Specify additional options needed according to the selected Forecast Kind.
3. Click the **...** button on the cell to select the Resources, Standards, Protocols or Competencies to forecast, and then specify the date for the Forecast. By default the date will be the starting date of the selected Time Period.

NOTES	• You can remove Rows (Forecasted Resources) from the model or table, order, or export them to a CSV or HTML format. • Right-click on a cell to see more menus.

Related DoDAF views

SV-9 Systems Technology & Skills Forecast

Related MODAF views

SV-9 Technology & Skills Forecast

Related GUI

Time Periods Dialog

6.2.42 SV-10a procedures

- Creating SV-10a table

6.2.42.1 Creating SV-10a table

To create a SV-10a table, do either:

- Add a new Resource Constraint by clicking the **Create New Resource Constraint** button and select a constrained Systems Element (Resource Artifact (MODAF), System (DoDAF), Software, Capability Configuration, Organization Type (DoDAF), Organization (MODAF), Person Type (DoDAF), Post (MODAF), Function, Exchange Element, Entity Item, Resource Interaction), and then fill in the specification cell with an expression that can be written in natural or technical language (for example English or OCL).

- Add the Existing Resource Constraints by clicking the **Add Existing Resource Constraint** button and selecting **Resource Constraints**.

NOTES

- You can add and edit constrained elements for every Row in the table.
- You can remove Rows (Resource Constraints) from the model or table, order, or export them to a CSV or HTML format.
- Right-click on a cell to see more menus.

Related DoDAF views

SV-10a Systems Rules Model

Related MODAF views

SV-10a Resource Constraints Specification

6.2.43 SV-12 procedures

These are the procedures of the SV-12 view:

- Building SV-12 Service Provision matrix

6.2.43.1 Building SV-12 Service Provision matrix

The rows in a SV-12 matrix represent Service Interfaces and the columns represent Resources.

To build a SV-12 matrix:

1. Specify the Rows scope (Service Interfaces).
2. Specify the Columns scope (Resources).
3. Click the **Rebuild** button.

The cells in the matrix represent a Service or Request Port. If a resource provides a Service Interface, the Service Port icon will be displayed. If it requests a Service Interface, the Request Port icon will be displayed.

NOTES

- Click an empty cell to create a new Service Port.
- Click the cell again to delete the Service Port and create a new Request Port will.
- Click the cell again to delete the Request Port and clear the cell.

Related MODAF views

SV-12 Service Provision

6.2.44 SvcV-1 procedures

These are the procedures of the SvcV-1 view:

- Building SvcV-3a matrix

6.2.44.1 Creating SvcV-1 diagram

You can create an SvcV-1 just before finishing an OV-2 or in later stages of the architecture just before finishing the SV-1 or SV-2 views.

To create a SvcV-1 diagram:

1. Create Service Accesses.
2. Associate Service Accesses using Resource Interfaces.
3. Create Resource Interactions flowing via Resource Interfaces.

The SvcV-1 product also allows you to show the Capabilities and Service Accesses mapping and Service Accesses interactions with the System Resources. You can model each Service Access internal structure using the **SvcV-2 Services Resource Flow Internal Description** diagram or in a special structure compartment of this element shape.

You can proceed to create SvcV-4 view as soon as the SvcV-1 has been completed.

Related DoDAF views

SvcV-1 Services Context Description

6.2.45 SvcV-3a procedures

These are the procedures of the SvcV-3a view:

- Building SvcV-3a matrix

6.2.45.1 Building SvcV-3a matrix

To build a SvcV-3a matrix:

1. Right-click the Services View or the SvcV-3a package and on the shortcut menu, select **New Diagram** > **SvcV-3a Systems-Services Matrix**. A new SvcV-3a matrix diagram will be created.
2. Fill in the matrix:
   2.1 Specify the **Row Scope**. Rows of the matrix represent Service Accesses.
   2.2 Specify the **Column Scope**. Columns of the matrix represent System Resources.
   2.3 Click the **Rebuild** button.
3. Manage the matrix:
   - Create a new Resource Interaction. Click the cell and select **New Resource Interaction** from the shortcut menu, The **New Resource Interaction** creation wizard will open. Follow the wizard to add a new Resource Interaction. When the wizard closes, a new Resource Interaction will appear in the selected cell.
   - Remove an existing Resource Interaction. Click the filled cell and select **Delete Relation** from the shortcut menu. Then select the Resource Interaction you want to remove from the model.

Related DoDAF views

SvcV-3a Systems-Services Matrix

Related GUI

Resource Interaction Creation Wizard

6.2.46 SvcV-3b procedures

These are the procedures of the SvcV-3b view:

- Building SvcV-3b matrix

6.2.46.1 Building SvcV-3b matrix

SvcV-3a Services-Services Matrix describes the relationships among services in a given Architectural Description. The rows and the columns of this matrix are Service Accesses.

To build a SvcV-3b matrix:

1. Right-click the Services View or the SvcV-3b package and on the shortcut menu, select **New Diagram** > **SvcV-3b Services-Services Matrix**. A new SvcV-3b matrix diagram will be created.
2. Fill in the matrix:
   2.1 Specify the **Row Scope**. Rows of the matrix represent Service Accesses.
   2.2 Specify the **Column Scope**. Columns of the matrix represent Service Accesses.
   2.3 Click the **Rebuild** button.
3. Manage the matrix:
   - Create a new Resource Interaction. Click the cell and select **New Resource Interaction** from the shortcut menu, The **New Resource Interaction** creation wizard will open. Follow the wizard to add a new Resource Interaction. When the wizard closes, a new Resource Interaction will appear in the selected cell.
   - Remove an existing Resource Interaction. Click the filled cell and select **Delete Relation** from the shortcut menu. Then select the Resource Interaction you want to remove from the model.

Related DoDAF views

SvcV-3b Services-Services Matrix

Related GUI

Resource Interaction Creation Wizard

6.2.47 SvcV-5 procedures

These are the procedures of the SvcV-5 view:

- Building SvcV-5 matrix

6.2.47.1 Building SvcV-5 matrix

SvcV-5 Operational Activity to Services Traceability Matrix describes the mapping of services back to operational activities. The rows of this matrix are Service Accesses and the columns are Operational Activities.

To build a SvcV-5 matrix:

1. Specify the **Row Scope** (Service Accesses).
2. Specify the **Column Scope** (Operational Activities).
3. Click the **Rebuild** button.

Service Accesses maps to Operational Activities through transitive relationship. It consists of mapping between Operational Activities and Functions using Implements relationship and mapping between Service Accesses and Functions using Activity Performed by Performer relationship.

Matrix is non editable.

Related DoDAF views

SvcV-5 Operational Activity to Services Traceability Matrix

6.2.48 SvcV-6 procedures

These are the procedures of the SvcV-6 view:

- Adding New Resource Interaction to SvcV-6 table
- Adding Existing Resource Interaction to SvcV-6 table

6.2.48.1 Adding New Resource Interaction to SvcV-6 table

To add a new Resource Interaction

1. Click **Add New**. **Realized Resource Interaction** wizard opens.
2. Follow the steps of the wizard.
3. Click Finish when you are done. The rows with created resource interactions are added to the table.

Related GUI

Resource Interaction Creation Wizard

6.2.48.2 Adding Existing Resource Interaction to SvcV-6 table

To add an existing Resource Interaction

1. Click the **Add Existing** and select Resource Interactions.
2. Click OK, when you are done. The rows with selected resource interactions are added to the table.

NOTE

- Resource Interaction identifier, Resource Interaction Item Name, Producing and Consuming Functions, and wide range of measurement cells are allowed to edit in the table. Sending Service, Receiving Serice, and Implements cells are read only.
- You may use an SV-1 product to create or modify a Resource Interaction.
- You can remove the Rows (Resource Interactions) from the model or table, order, or export them to a CSV or HTML format.
- Right-click on a cell to see more menus.

Related DoDAF views

SvcV-6 Services Resource Flow Matrix

Related GUI

Resource Interaction Creation Wizard

6.2.49 SvcV-7 procedures

These are the procedures of the SvcV-7 view:

- Creating SvcV-7 Typical table
- Creating SvcV-7 Actual table

6.2.49.1 Creating SvcV-7 Typical table

SvcV-7 view consists of these two tables:

1. SvcV-7 Typical table.
2. SvcV-7 Actual table.

The SvcV-7 Typical table must be created first.

To create a SvcV-7 Typical table, do any of the following

- Add new Measure Type. Click the **Add New** button and select the owning element for Measure Type. Specify Measurements to the Measure Type and Service Accesses to be Measured - directly in the table cells.
- Add existing Measure Types. Click the **Add Existing** button and select Existing Measurement Types.

NOTES

- You can remove Rows (Measure Types) from the model or table, order, or export them to a CSV or HTML format.
- Right-click on a cell to see more menus.

Related views

SvcV-7 Services Measures Matrix

Related procedures

Creating SvcV-7 Actual table
Generating SvcV-7 Actual table from SvcV-7 Typical table

6.2.49.2 Creating SvcV-7 Actual table

SvcV-7 view consists of these two tables:

1. SvcV-7 Typical table.
2. SvcV-7 Actual table.

Before creating a SvcV-7 Actual table, a SvcV-7 Typical table must be created first.

To create a SvcV-7 Actual table, do any of the following

- Add new measurable Service Access. Click the **Add New** button and select one or more Service Accesses that have at least one Measure Type defined (see SV-7 Typical). Specify values for each Actual Measurement - directly in the table cells.
- Add existing Actual Property Sets or measurable Service Accesses. Click the **Add Existing** button and select Existing Actual Property Sets or Service Accesses.
- Add missing Actual Measurements. Click the **Add the Missing Actual Measurements** button to update table to model changes.

NOTES

- You can remove Rows (Actual Measurements) from the model or table, order, or export them to a CSV or HTML format.
- Right-click on a cell to see more menus.

Related views

SvcV-7 Services Measures Matrix

Related procedures

Creating SvcV-7 Typical table

Generating SvcV-7 Actual table from SvcV-7 Typical table

6.2.49.3 Generating SvcV-7 Actual table from SvcV-7 Typical table

SvcV-7 Typical table can be instantiated by creating SvcV-7 Actual table.

To generate a SvcV-7 Actual table from a SvcV-7 Typical table

1. Create a SvcV-7 Services Typical Measures Matrix with at least one measurable Service Access added.
2. On the diagram table toolbar, click the **Evaluate Measurements** button. A new SvcV-7 Actual table will be created.
3. Add actual values for all Actual Measurements in the SvcV-7 Actual Measures Matrix.

For each Measurement in the SvcV-7 Typical table, an Actual Measurement is created and the row representing it is added into the SvcV-7 Actual table.

NOTE	Evaluating the same measurements again, new SvcV-7 Actual Measures Matrix will be created.

Related DoDAF views

SvcV-7 Services Measures Matrix

Related procedures

Creating SvcV-7 Typical table

Creating SvcV-7 Actual table

6.2.50 SvcV-9 procedures

These are the procedures of the SvcV-9 view:

- Creating SvcV-9 table

6.2.50.1 Creating SvcV-9 table

To create a SvcV-9 table

1. Add Rows to the Table. There are two ways to add a row to this table:
   - Add new Service Access as a row Header. Click the **Add New** button and specify owner for the created Service Access.
   - Add Existing Service Access as a row Header. Click the **Add Existing** button and select one or more existing Service Accesses.
2. Add columns to the table by clicking the **Add/Remove forecast** button and specify the forecast Time Periods:
   - Select or create a Time Line Package to store the Forecast dates.
   - Select the forecast kind.
   - Specify additional options needed according to the selected Forecast Kind.

3. Fill in the cells with the Subjects of Forecast. Click the **...** button on the cell you want to fill in, select Service Accesses to forecast. Specify a date for the Forecast. By default this date will be the starting date of the selected Time Period.

NOTES
- You can remove Rows (Service Accesses) from the model or table, order, or export them to a CSV or HTML format.
- Right-click on a cell to see more menus.

Related views

SvcV-9 Services Technology and Skills Forecast

Related GUI

Time Periods Dialog

6.2.51 TV-1 procedures

These are the procedures of the TV-1 view:

- Creating TV-1 table

6.2.51.1 Creating TV-1 table

To create a TV-1 table, do either

- Add a new UPDM Element by clicking the **Add new UPDM Element** button and select any UPDM Element (this term means any of the UPDM available elements). Specify the owner for the selected element.
- Add the Existing UPDM elements by clicking the **Add Existing UPDM Element** button and select the UPDM elements.
- Assign one or more Standards or Protocols to each row that the particular UPDM element must conform to by clicking the **...** button on any cell in the **Standard/Policy** column.

NOTE
- You can remove Rows (UPDM Elements) from the model or table, order, or export them to a CSV or HTML format.
- Right-click on a cell to see more menus.

Related MODAF views

TV-1 Standards Profile

6.2.52 TV-2 procedures

These are the procedures of the TV-2 view:

- Creating TV-2 table

6.2.52.1 Creating TV-2 table

To create a TV-2 table

1. Add Rows to the table by doing any of the following:
    - Adding a new Standard or Protocol as the row Header: click the **Add New** button, select a Standard or Protocol and specify the owner for selected element.

- Adding an Existing Standard or Protocol as the row Header: click the **Add Existing** button and select one or more existing Standards or/and Protocols.

2. Add columns to the table by clicking the **Add/Remove forecast** button and specify the forecast Time Periods:
    - Select or create a Time Line Package to store the Forecast dates.
    - Select the forecast kind.
    - Specify additional options needed according to the selected Forecast Kind.
3. Enter the Subjects of Forecast by clicking the **...** button on the cell you want to fill in and select the Standards and Protocols to forecast. Specify the date of the Forecast. By default the date will be the starting date of the selected Time Period.

NOTES

- You can remove Rows (Standards and Protocols). from the model or table, order, or export them to a CSV or HTML format.
- Right-click on a cell to see more menus.

Related MODAF views

TV-2 Standards Forecast

Related GUI

Time Periods Dialog

6.2.53 StdV-1 procedures

These are the procedures of the StdV-1 view:

- Creating StdV-1 table

6.2.53.1 Creating StdV-1 table

To create a StdV-1 table, do either

- Add a new UPDM Element by clicking the **Add new UPDM Element** button and select any UPDM Element (this term means any of the UPDM available elements). Specify the owner for the selected element.
- Add the Existing UPDM elements by clicking the **Add Existing UPDM Element** button and select the UPDM elements.
- Assign one or more Functional and Technical Standards or Protocols to each row that the particular UPDM element must conform to by clicking the **...** button on any cell in the **Standard/ Policy** column.

NOTE

- You can remove Rows (UPDM Elements) from the model or table, order, or export them to a CSV or HTML format.
- Right-click on a cell to see more menus.

Related DoDAF views

StdV-1 Standards Profile

6.2.54 StdV-2 procedures

These are the procedures of the StdV-2 view:

- Creating StdV-2 table

6.2.54.1 Creating StdV-2 table

To create a StdV-2 table

1. Add Rows to the table by doing any of the following:
   - Adding a new Standard or Protocol as the row Header: click the **Add New** button, select a Standard or Protocol and specify the owner for selected element.
   - Adding an Existing Standard or Protocol as the row Header: click the **Add Existing** button and select one or more existing Standards or/and Protocols.
2. Add columns to the table by clicking the **Add/Remove forecast** button and specify the forecast Time Periods:
   - Select or create a Time Line Package to store the Forecast dates.
   - Select the forecast kind.
   - Specify additional options needed according to the selected Forecast Kind.
3. Enter the Subjects of Forecast by clicking the **...** button on the cell you want to fill in and select the Standards and Protocols to forecast. Specify the date of the Forecast. By default the date will be the starting date of the selected Time Period.

NOTES	• You can remove Rows (Standards and Protocols) from the model or table, order, or export them to a CSV or HTML format. • Right-click on a cell to see more menus.

Related DoDAF views

StdV-2 Standards Forecast

Related GUI

Time Periods Dialog

6.2.55 Implementation Matrix procedures

These are the procedures of the Implementation Matrix:

- Building Implementation Matrix

6.2.55.1 Building Implementation Matrix

The Rows of the Implementation Matrix represent the implementation elements and the Columns represent the specification elements.

To build an Implementation Matrix

1. Specify the **Rows scope** (implementation elements).
2. Specify the **Columns scope** (specification elements).
3. Click the **Rebuild** button.

The implementation elements map to the specification elements by using the Implements relation.

To map the implementation elements to the specification elements, click the intersection between the desired elements (click the intersection again to delete the relation).

The Implements relationship can be created according to the implementation rules:

- A System Resource can implement a Node/Performer.
- A Function can implement an Operational Activity.

- A Resource Interaction can implement an Operational Exchange.
- A Service Function can implement an Operational Activities
- A Service Function can implement a Function.

6.2.56 Service Channel Summary Table procedures

These are the procedures of the Service Channel Summary Table:

- Creating Service Channel Summary Table

6.2.56.1 Creating Service Channel Summary Table

To create a Service Channel Summary Table

1. On the main menu click **Diagrams**, point to **UPDM Other Diagrams**, and then click **Service Channel Summary Table**.
2. Fill in the table:
    - Create a new Service Channel. Click the **Add New** button. The **New Service Channel** creation wizard opens. Follow the wizard steps to add a new Service Channel.
    - Add an existing Service Channel. Clicking the **Add Existing** button. The **Element selection** dialog opens. Only Service Channels are filtered.

Related views

Service Channels Summary Table

Related GUI

Service Channel Creation Wizard

6.2.57 Service Channel Summary Matrix procedures

These are the procedures of the Service Channel Summary Matrix view:

- Building Service Channel Summary Matrix

6.2.57.1 Building Service Channel Summary Matrix

Service Channel Summary Matrix describes the relationships among services in a given Architectural Description. The rows and the columns of this matrix are Service Interfaces.

To build a Service Channel Summary Matrix:

1. Specify the **Row Scope** (Service Interfaces).
2. Specify the **Column Scope** (Service Interfaces).
3. Click the **Rebuild** button.

Services are connected with Resources using Service Channel connector. Both Service and Resource is type of Service Interfaces that are displayed as rows and columns of the Matrix. Rows are the types of Services and the columns are the types of Requests.

Related views

Service Channels Summary Matrix

7 CAMEO ENTERPRISE ARCHITECTURE GUI

Cameo Enterprise Architecture dialogs are described in the following sections:

- Environment Selection Dialog
- Date and Time Settings Dialog
- NEW! Deployment Milestones Creation Wizard
- NEW! Diagram Creation Wizard
- NEW! Actual Project Milestone Creation Wizard
- NEW! Capability Provision Creation Wizard
- NEW! Project Status Application Wizard
- Model Conversion Options Dialog
- Operational Exchange Creation Wizard
- Operational Exchange Manager Dialog
- Producing and Consuming Activities Dialog
- Producing and Consuming Functions Dialog
- Resource Interaction Creation Wizard
- Resource Interaction Manager Dialog
- Select Symbol Dialog
- Service Channel Creation Wizard
- Time Periods Dialog
- Automatic Instantiation Wizard

7.1 Environment Selection Dialog

The **Environment Selection** dialog opens when starting Cameo Enterprise Architecture for the first time.

To select the enterprise architecture framework environment

1. Select the environment according to the architecture you are going to build:
   - DoDAF 2.0
   - MODAF
   - DoDAF 1.5

   Read the brief descriptions of each enterprise architecture framework provided in the dialog (see the following figure). This information may help you decide what to choose.
2. Click to select the **Expert** check box, if you want the user interface to be complex and have all details exposed. And if you are a new user, leave the **Expert** check box unselected.
3. Click the **Continue** button. The sample project corresponding the selected enterprise architecture framework will be opened (only if using Cameo Enterprise Architecture tool).

You can change the selected environment and its mode via the **Select Perspective** dialog. For more information please refer to Section “Customizing and Selecting Perspective” in “MagicDraw UserManual.pdf”.

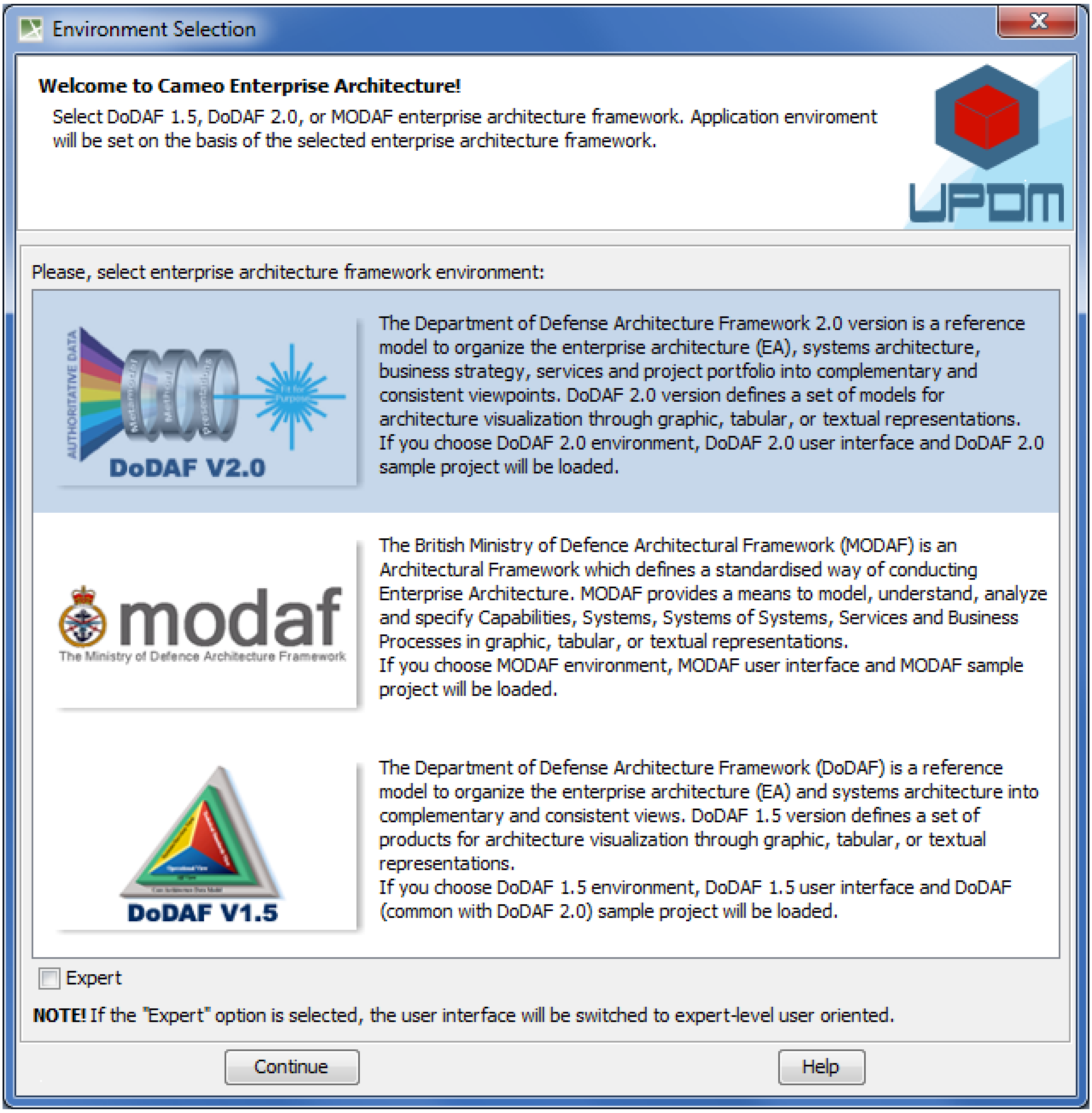


Figure 122 -- Environment Selection dialog

7.2 Date and Time Settings Dialog

The **Date and Time Settings** dialog is provided for defining a particular date and time. The dialog supports ISO8601, the International Standard for the representation of date and time.

The dialog can be used for elements or views that have date and time properties.

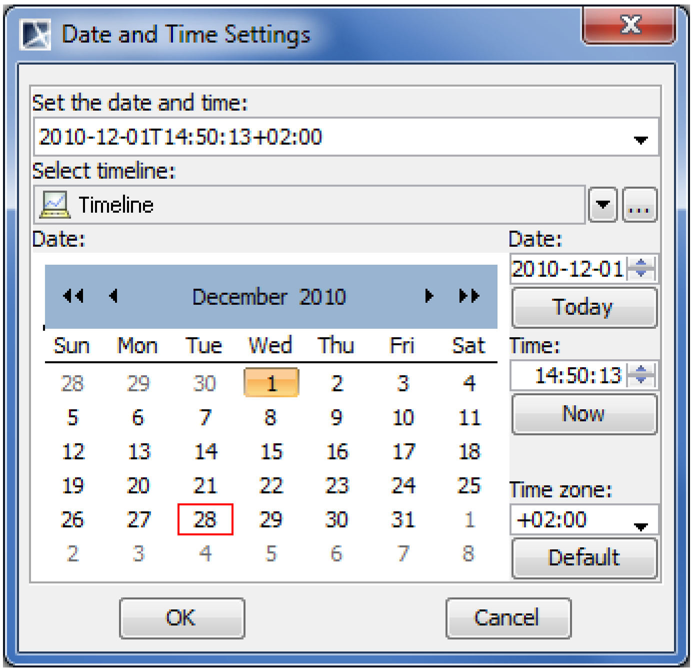


Figure 123 -- Date and Time Settings dialog

Dialog element	Element type	Description
Set the date and time	Drop-down list	A date and time value that exists in the model. Select a new date and time value from the drop-down list.
Select timeline	Text box	A package for the data grouping.
Date	Visual calendar	A date value in the visual calendar. To select a day, click the day on the calendar. To move through months, use arrows on the left and on the right in the title section of the calendar. To move through years, use double-arrows on the left and on the right in the title section of the calendar.

Dialog element	Element type	Description
Date	Spin box	A date value in the text format ("YYYY-MM-DD"). To change the time value you can do one of the following: • Type a new valid date value. • Click up and down arrows to increase or decrease the current value.
Time	Spin box	A time value in the text format ("hh-ss-mm"). To change the time value you can do one of the following: • Type a new valid time value. • Click up and down arrows to increase or decrease the current value.
Time zone	Drop-down list	A time zone value. Select a new time zone value from the drop-down list. **NOTE:** The default time zone value is the one of your computer regional settings.

Button	Description
[...] (by the **Select timeline** box)	Click to select or create a new Timeline element. The element Selection dialog will open. For more information about the element selection please refer to Section "Selecting an Element" in "MagicDraw UserManual.pdf".
Today	Click to set the **Date** box value to the current date of your computer.
Now	Click to set the **Time** box value to the current time of your computer.
Default	Click to set the **Time zone** box value to the value that is set in your computer.

Related DoDAF views

SV-9 Systems Technology & Skills Forecast

SvcV-9 Services Technology and Skills Forecast

StdV-2 Standards Forecast

Related MODAF views

SV-9 Technology & Skills Forecast

TV-2 Standards Forecast

Related GUI

NEW! Deployment Milestones Creation Wizard

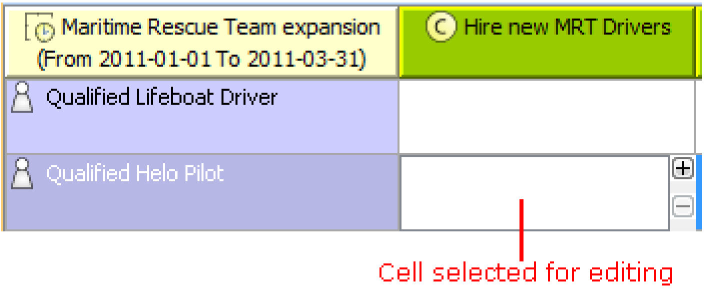
Time Periods Dialog

7.3 NEW! Deployment Milestones Creation Wizard

The purpose of the Deployment Milestones creation wizard is to define Capability deployment in a particular time frame of the enterprise life cycle.

To open the **Deployment Milestones** creation wizard do the following

1. Open a CV-5 (DoDAF) or Stv-5 (MODAF) table.
2. Click a cell wherein you want to add a Capability Deployment.
3. Click the **+** button that has appeared on the right side of the cell.



The input data for the wizard is the Capability to be deployed and the Actual Organizational Resource responsible for that Capability deployment

The wizard consists of three steps:

1. Select Resources.
2. Set the start date and time for the selected Resources to be used by the Actual Organizational Resource in deploying the Capability.
3. Set the end date and time for the selected Resources to be no longer used by the Actual Organizational Resource in deploying the Capability.

Elements that can be Actual Organizational Resources are listed in the following table.

	DoDAF	MODAF
Actual Organizational Resources	[Organization (MODAF)](#) [Individual Person Role](#)	[Actual Organization](#) [Actual Post](#)

An Actual Organizational Resource uses assigned Resources to deploy a Capability in a specified time period. On the basis of the data specified in the wizard the following actions are taken:

1. Resources are linked to the Actual Organizational Resource through a pair of Deployment and No Longer Used Milestones.
2. Start and end dates are set for a Resource usage through a pair of Deployment and No Longer Used Milestones.
3. Capability of Performer (DoDAF) or an Exhibits (MODAF) relationship is created between Resources and the Capability.

IMPORTANT!	The relationships will not be duplicated. If a relationship already exists, it will be reused.

The wizard suggests you default start and end dates for the Resource usage. The dates matches start and end dates of an Enterprise Phase. As soon as the dates are defined Yukon finish the wizard while being in the first.

NOTE	The Resource and its Deployed and No Longer Used Milestones are created in the same package that already contains the Enterprise Phase (the time frame of the Capability deployment).

STEP #1: Resources selection

In this step you are defining Resources required for the deployment of Capability. You can search for existing Resources or create a new one. You can find more information about selecting and creating elements in Section “Selecting an Element” of “MagicDraw UserManual.pdf”.

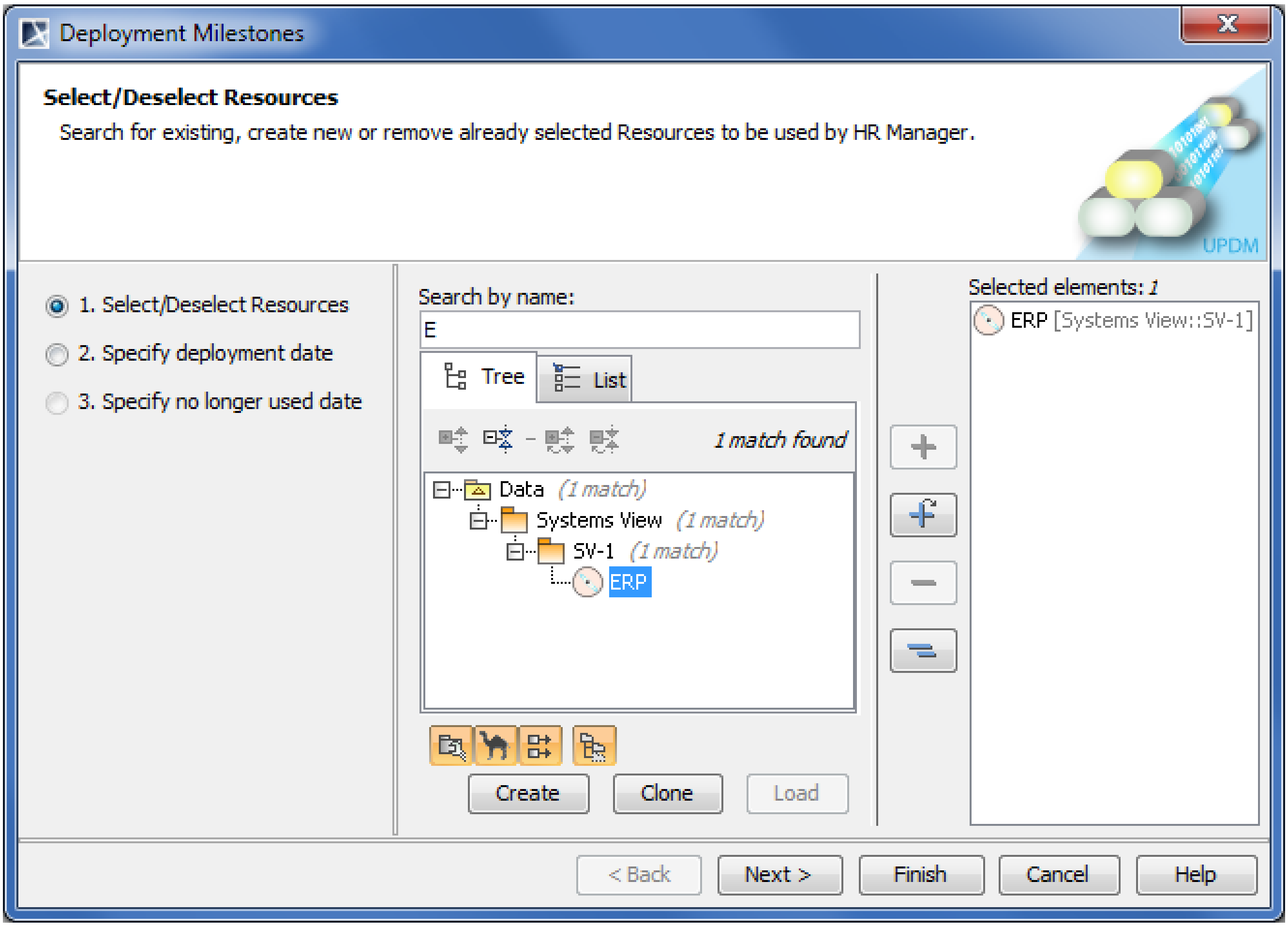


Figure 124 -- Deployment Milestones creation wizard. Selecting / Deselecting Resources

You can finish the Deployment Milestones creation after the wizard’s first step, if you do not need to set other than default start and end dates.

STEP #2: Resources deployment date specification

In this step you can specify the start date and time for the Capability Deployment with selected Resources. For the date and time specification the wizard provides you with the **Date and Time Setting** dialog. By default selected start date and time are the same as corresponding dates of the table context (Enterprise Phase).

NOTE	The start date for the Resource usage can not be later than the end date of the table context. You will be able to finish the **Deployment Milestones** creation wizard only if start date is specified.

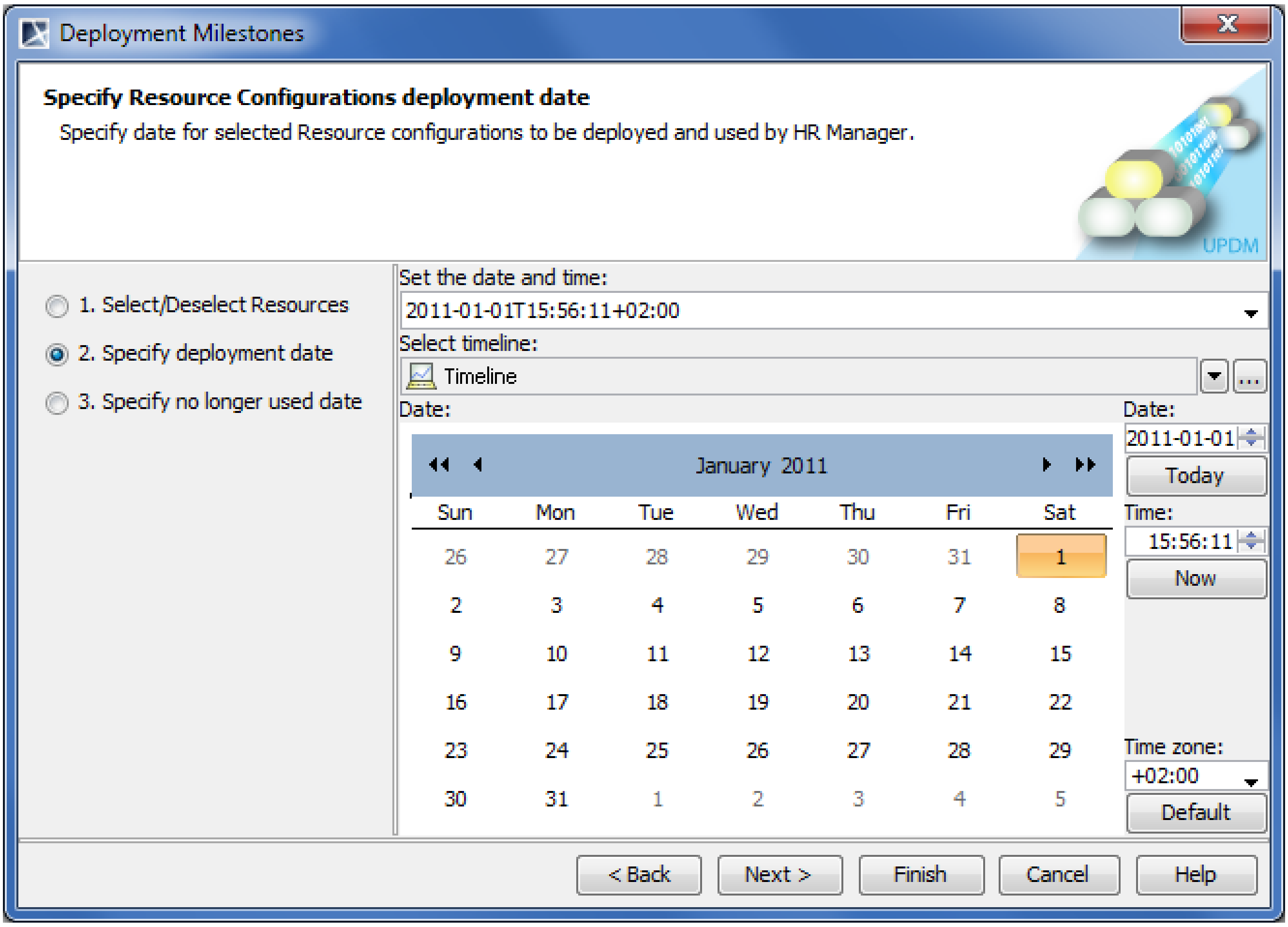


Figure 125 -- Deployment Milestones creation wizard. Specifying Resource deployment date

STEP #3: Resources no longer used dates specification

In this step you can specify the end date and time for the Capability Deployment with selected Resources. For the date and time specification the wizard provides you with the **Date and Time Setting** dialog. By default selected end date and time are the same as corresponding dates of the table context (Enterprise Phase).

NOTE	The end date for the Resource usage can not be earlier than the start date of the table context. You will be able to finish the **Deployment Milestones** creation wizard if the end date is not specified.

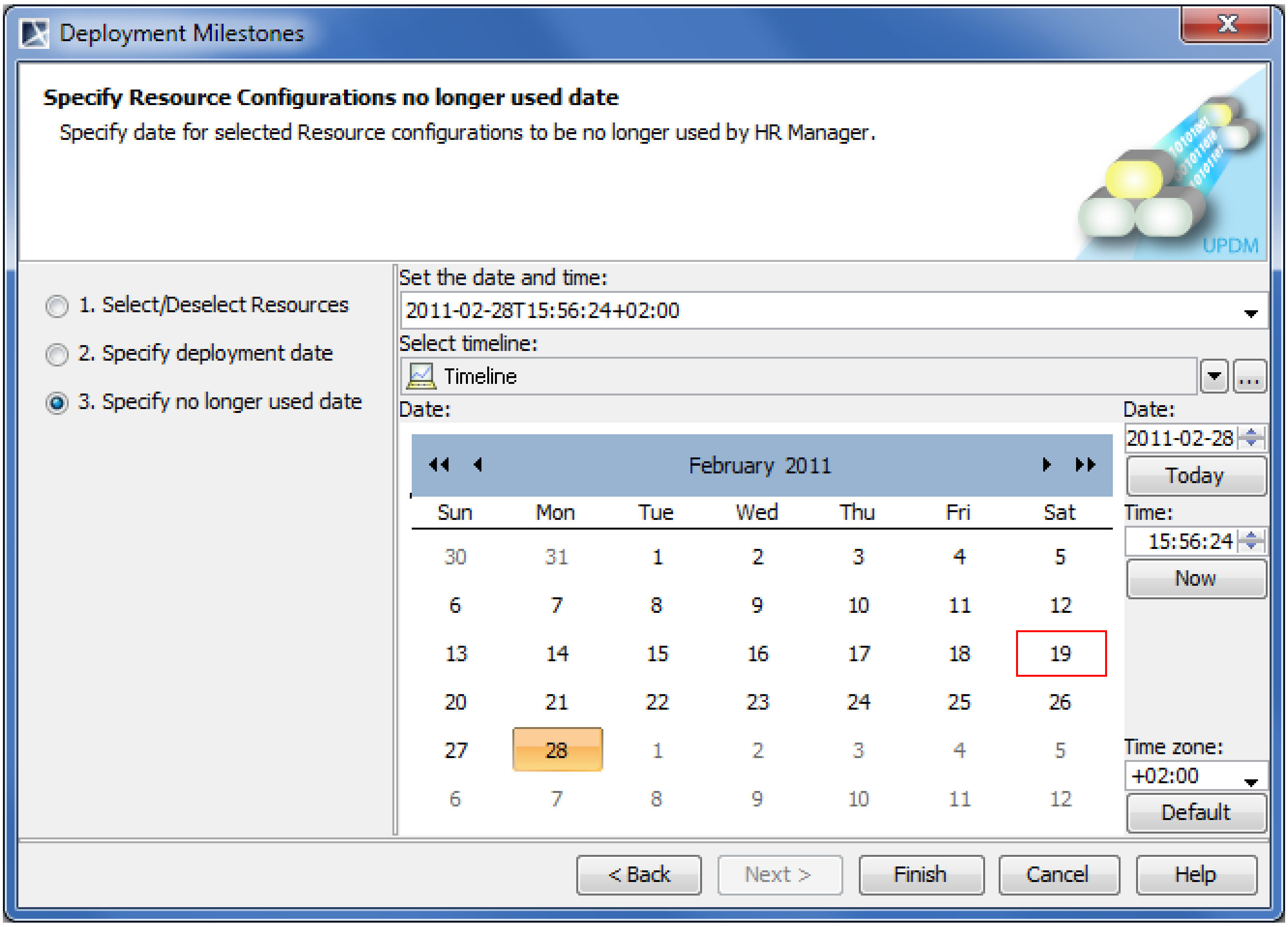


Figure 126 -- Deployment Milestones creation wizard. Specifying Resource no longer used date

Related views

[CV-5 Capability to Organizational Development Mapping]

[StV-5 Capability to Organization Deployment Mapping]

Related procedures

[Creating CV-5 table]

[Modifying CV-5 table]

[Creating StV-5 table]

[Modifying StV-5 table]

Related GUI

[Date and Time Settings Dialog]

7.4 NEW! Diagram Creation Wizard

The diagram creation wizard is used to create the following diagrams:

- DoDAF model:
    - [CV-3 Capability Phasing]

- PV-2 Project Timelines
- MODAF model:
    - AcV-2 Programme Timelines
    - StV-3 Capability Phasing

To open the diagram creation wizard

1. From the **Diagrams** menu, select **UPDM <viewpoint name> Diagrams** and then select the diagram you want to create.
2. In the selected diagram dialog, click **Add <viewpoint name> Creation Wizard** opens.

The wizard consists of three steps:

1. Specify name and owning package.
2. Select Capabilities.
3. Set the chart properties.

Step #1: Name an owning package specification

In this step of the diagram creation wizard, you can specify the diagram name and select or create the owning package. If you want to create a new owning package, use **Create Owner** button. Also, you can clone an existing package by clicking the **Clone** button.

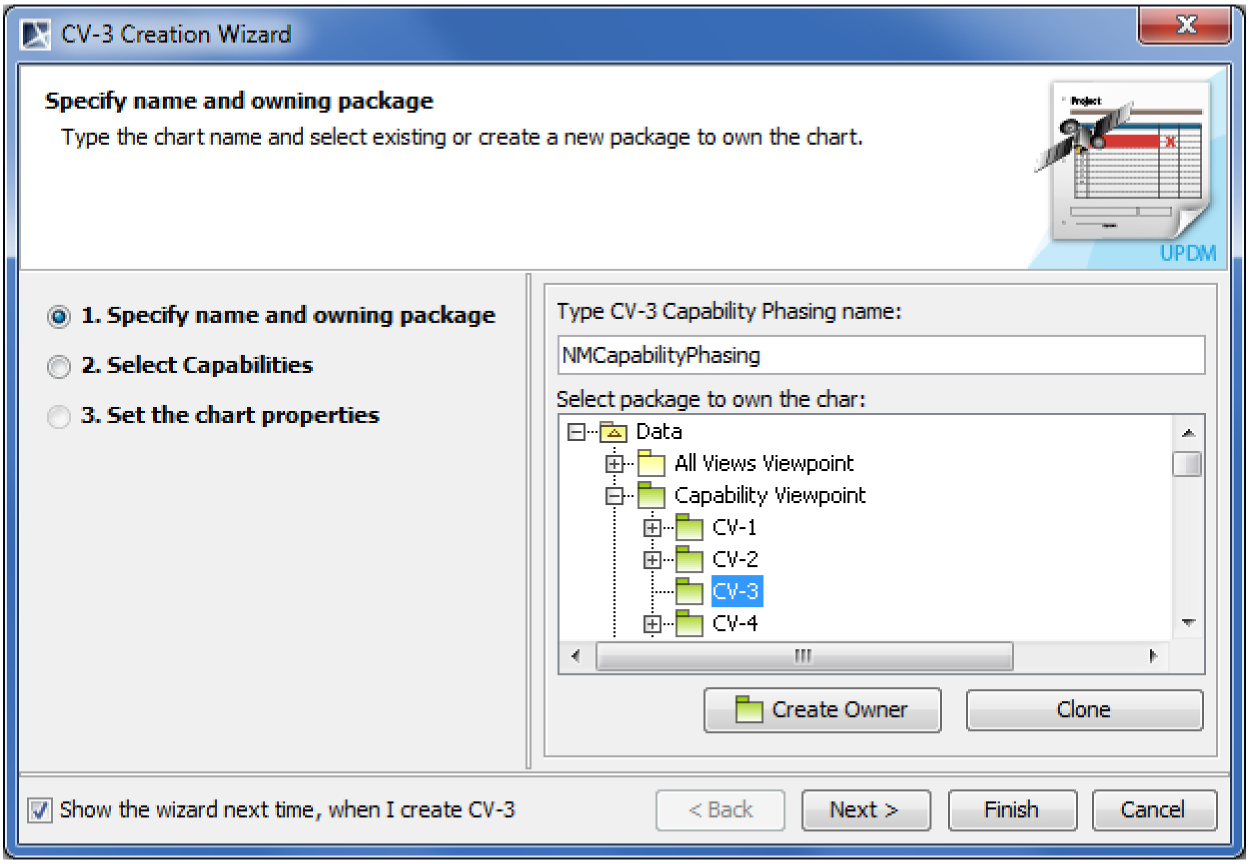


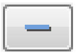
Figure 127 -- Creation Wizard. Specifying name and owning package

Step #2:Capability selection

In this step you can select capabilities from the list.

Also you can create new capabilities. For more information about selecting and creating elements, see section “Selecting an Element” in “MagicDraw UserManual.pdf”.

To select a capability double-click it or use  button.

To deselect one capability at a time, use  button.

To deselect all selected capabilities, use  button.

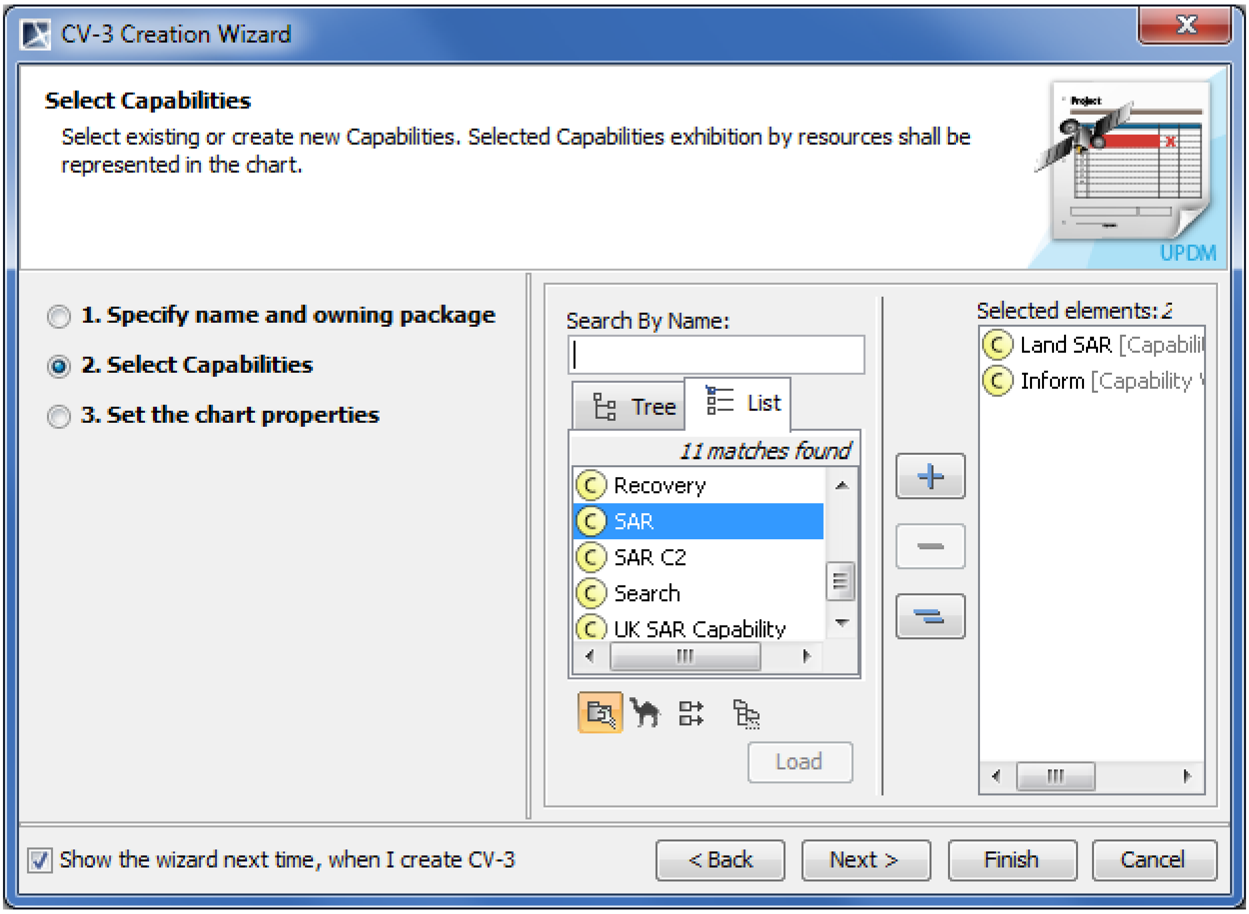


Figure 128 -- Creation Wizard. Selecting Capabilities

Step #3: The chart property setting

In this step, you can set the display style of the chart.

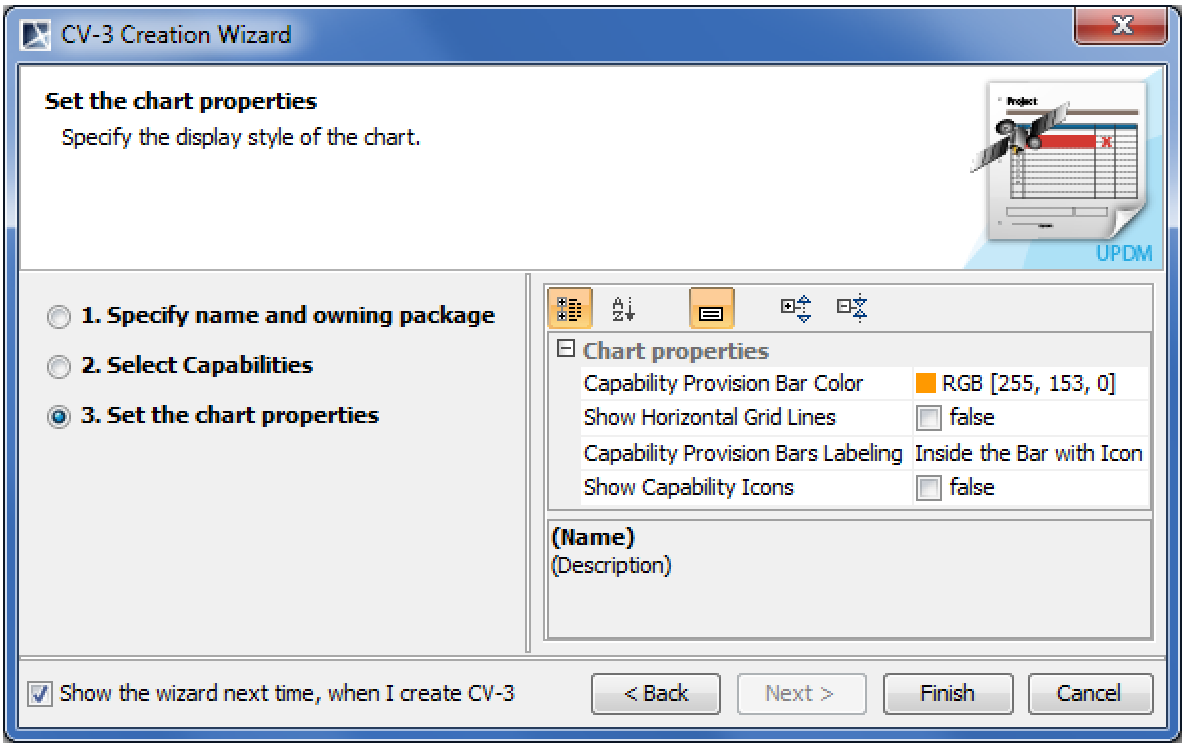


Figure 129 -- Creation Wizard. Setting the chart properties

NOTE	If you do not wish to use the diagram **Creation Wizard** next time, clear the check box near “Show the wizard next time, when I create <viewpoint name>”. Also you can disable the wizard. Go to **Options** > **Environment**. In the **Environment Options** dialog go to **UPDM** tab. In the **General** properties, set **Show <viewpoint name> Creation Wizard each Time Creating New Chart** to false.

7.5 NEW! Actual Project Milestone Creation Wizard

The Actual Project Milestone Creation Wizard is used to define a new milestone for the selected project.

To open the Actual Project Milestone Creation Wizard

1. Select a project.
2. Do one of the following:
   - On the diagram toolbar, click **Add New** > **Milestone**.
   - On the selected project shortcut menu, click **Add new Actual Project Milestone**.
3. Select one of the available milestone kinds:
   - **Out Of Service Milestone**
   - **Increment Milestone**
   - **Deployed Milestone**

- **No Longer Used Milestone**
- **Actual Project Milestone**

4. The **Actual Project Milestone Creation Wizard** opens.

The wizard consists of three steps:

1. Specify Name, Kind, and Date.
2. Select Actual Project Milestone Type.
3. Specify Project Status at a particular Milestone.

Step #1: Milestone name, kind, and date specification

In this step, you can specify a name of a new milestone you are creating.

You can select one of the milestone kinds, which are:

- Out Of Service Milestone
- Increment Milestone
- Deployed Milestone
- No Longer Used Milestone
- Actual Project Milestone

Also you can set the milestone date and time. Date and time indicates the position of the milestone in the project timeframe. For more information on setting date ant time, see Date and Time Settings Dialog.

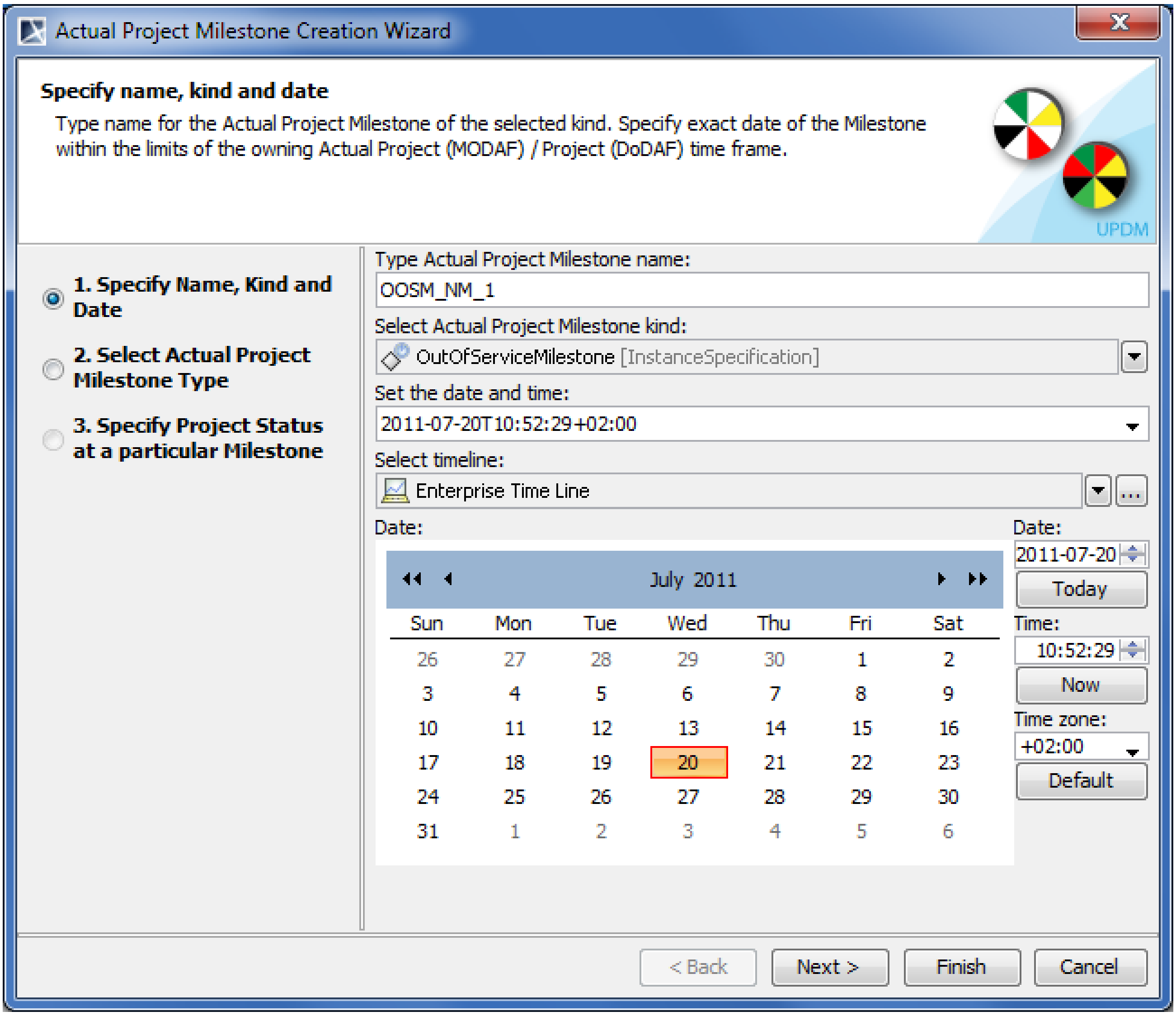


Figure 130 -- Actual Project Milestone Creation Wizard. Specifying name, kind, and date

Step #2: Project milestone type specification

You can select one (or both) of the given milestone types:

- DLOD Milestone
- DOTMLPF Milestone

You can create your own milestone type as well. For more information about selecting and creating elements, see section "Selecting an Element" in "MagicDraw UserManual.pdf".

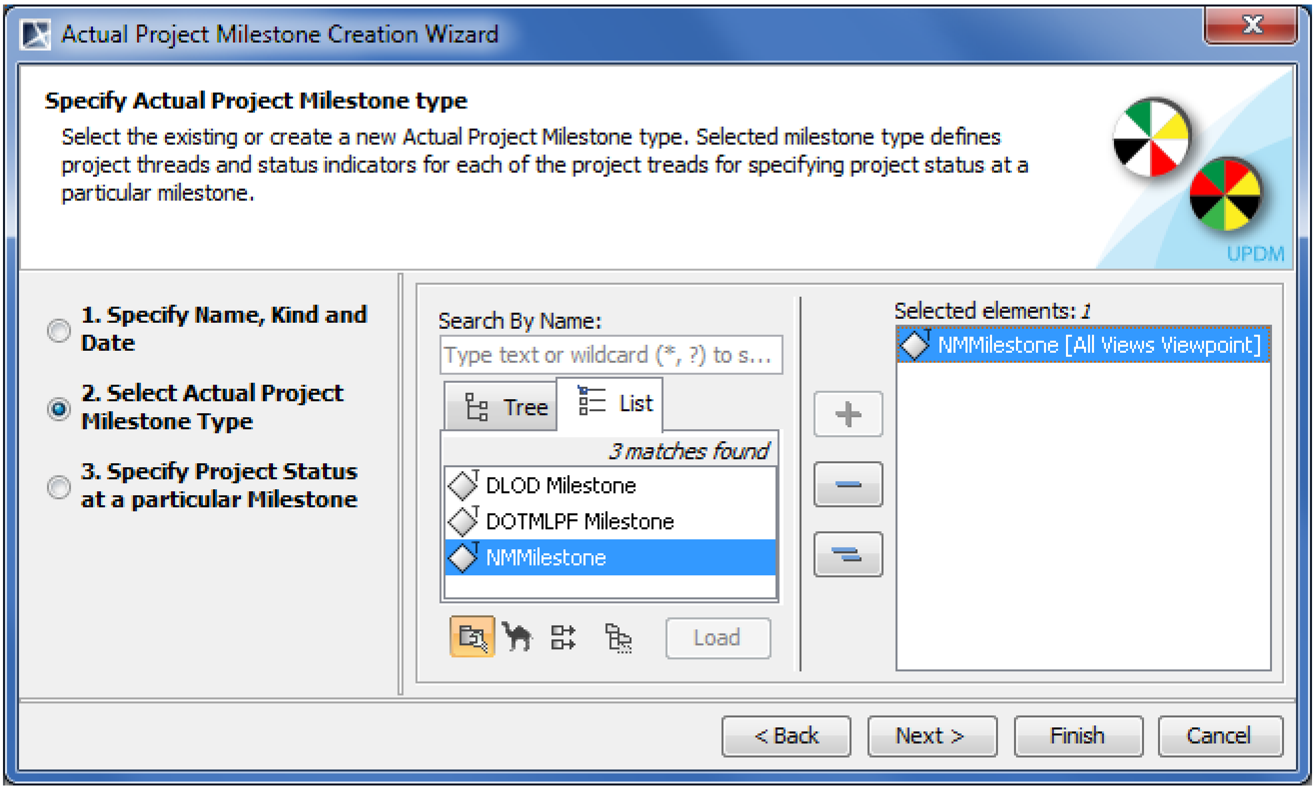


Figure 131 -- Actual Project MIlestone Creation Wizard. Selecting actual project milestone type

Step #3: Project status specification at a particular milestone

After creating a new milestone, you can apply the project status according to the selected milestone type. Each milestone type can have specific project threads and status indicators.

DLOD Milestone type

There are 8 project threads:

- Equipment
- Logistics
- Infrastructure
- Organization
- Doctrine/Concepts
- Information
- Personnel
- Training

Status indicators:

- DLOD Absent
- Not Required
- No Outstanding Issues
- Manageable Issues
- Critical Issues

DOTMLPF Milestone type

There are 7 project threads:

- Doctrine
- Organization
- Training
- Materiel
- Leadership
- Personnel
- Facilities

Status indicators:

- Materiel Solution Analysis
- Technology Development
- Engineering and Manufacturing Development
- Production & Deployment
- Operations & Support

You can also define you own milestone type with a custom set of project threads and status indicators.

To create project threads and status indicators

1. In the Project Thread area, click **Add** button.
2. Specify the thread name.
3. In the Status Indicator area, click **Add** button.
4. Specify the indicator name.
5. Click **Fill Color** button.
6. In the **Color** dialog select the color and click **OK**.

TIP!	To create a second thread with the same status indicators, select a previously created thread and click **Clone**. A new thread with previously defined status indicators will be created.

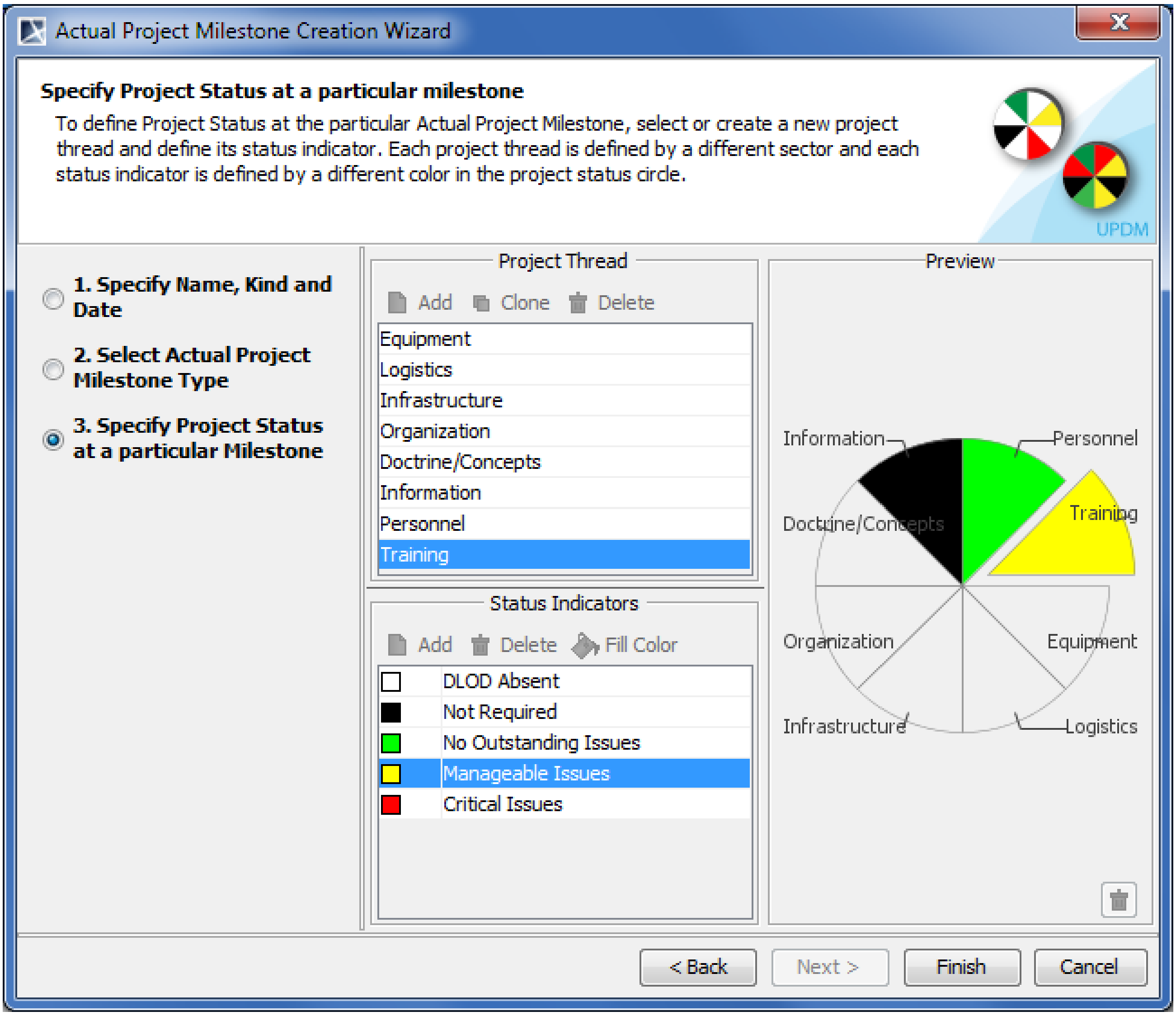


Figure 132 -- Actual Project MIlestone Creation Wizard. Specifying project status at a particular milestone

Related MODAF views

AcV-2 Programme Timelines

Related DoDAF views

PV-2 Project Timelines

Related procedures

Adding Milestones in PV-2 diagram

Adding milestones in AcV-2 diagram

Related GUI

Date and Time Settings Dialog

7.6 NEW! Project Status Application Wizard

The Project Status Application Wizard is used to apply the DLOD Milestone, DOTMLPF Milestone, or custom milestone type to the selected element, which can be one of the following:

- Out Of Service Milestone
- Increment Milestone
- Deployed Milestone
- No Longer Used Milestone
- Actual Project Milestone

DLOD Milestone type

There are 8 project threads:

- Equipment
- Logistics
- Infrastructure
- Organization
- Doctrine/Concepts
- Information
- Personnel
- Training

To each thread you can apply one of five different status indicators:

- DLOD Absent
- Not Required
- No Outstanding Issues
- Manageable Issues
- Critical Issues

To open the Project Status Application Wizard

1. From the milestone shortcut menu, select **Apply Status**.
2. The **Project Status Application Wizard** opens.

The wizard consists of two steps:

1. Select Actual Project Milestone Type.
2. Specify Project Status at a particular Milestone.

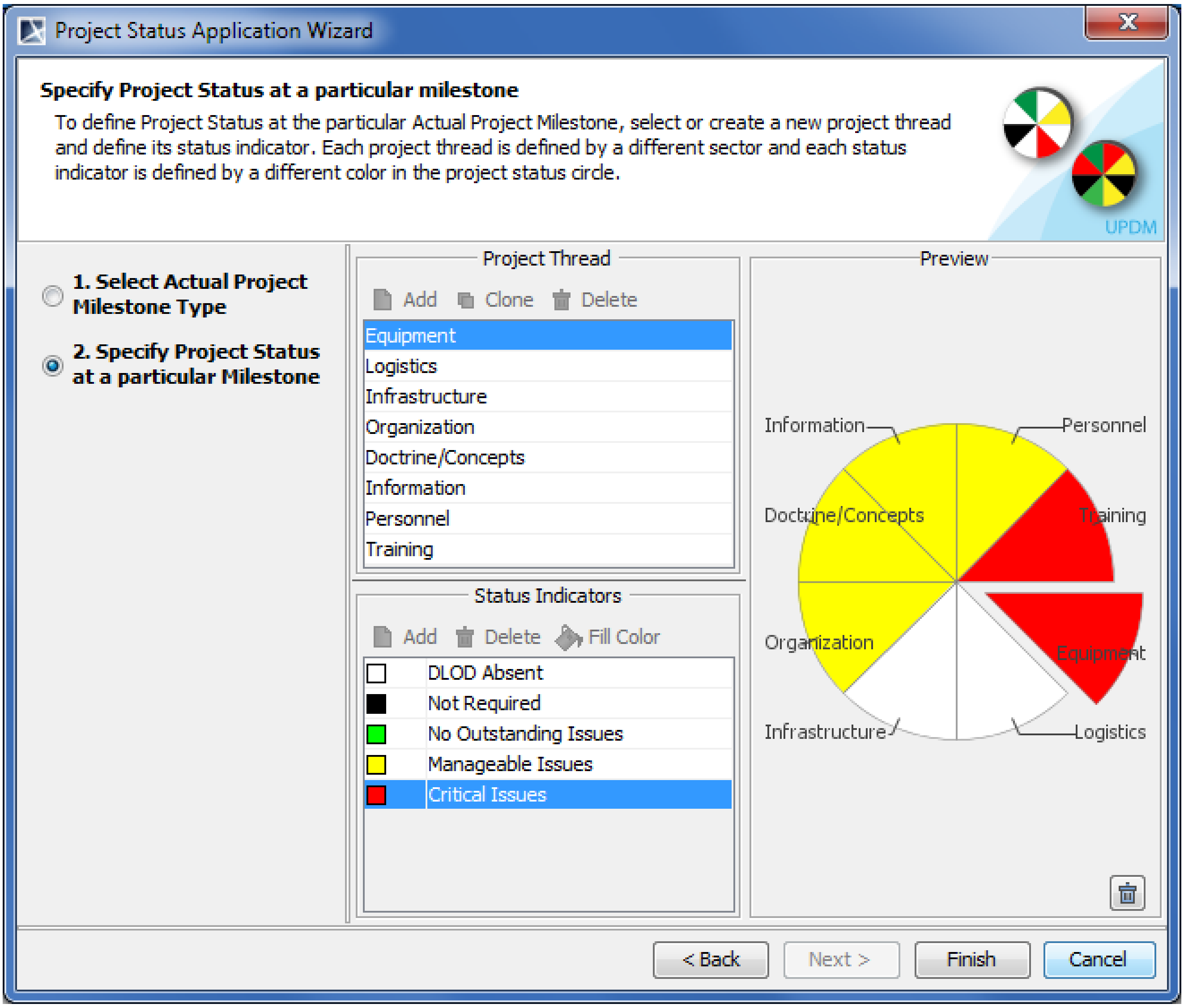


Figure 133 -- Project status application wizard. DLOD Milestone type

DOTMLPF Milestone type

There are 7 project threads:

- Doctrine
- Organization
- Training
- Materiel
- Leadership
- Personnel
- Facilities

To each thread you can apply one of five different status indicators:

- Materiel Solution Analysis
- Technology Development
- Engineering and Manufacturing Development

- Production & Deployment
- Operations & Support

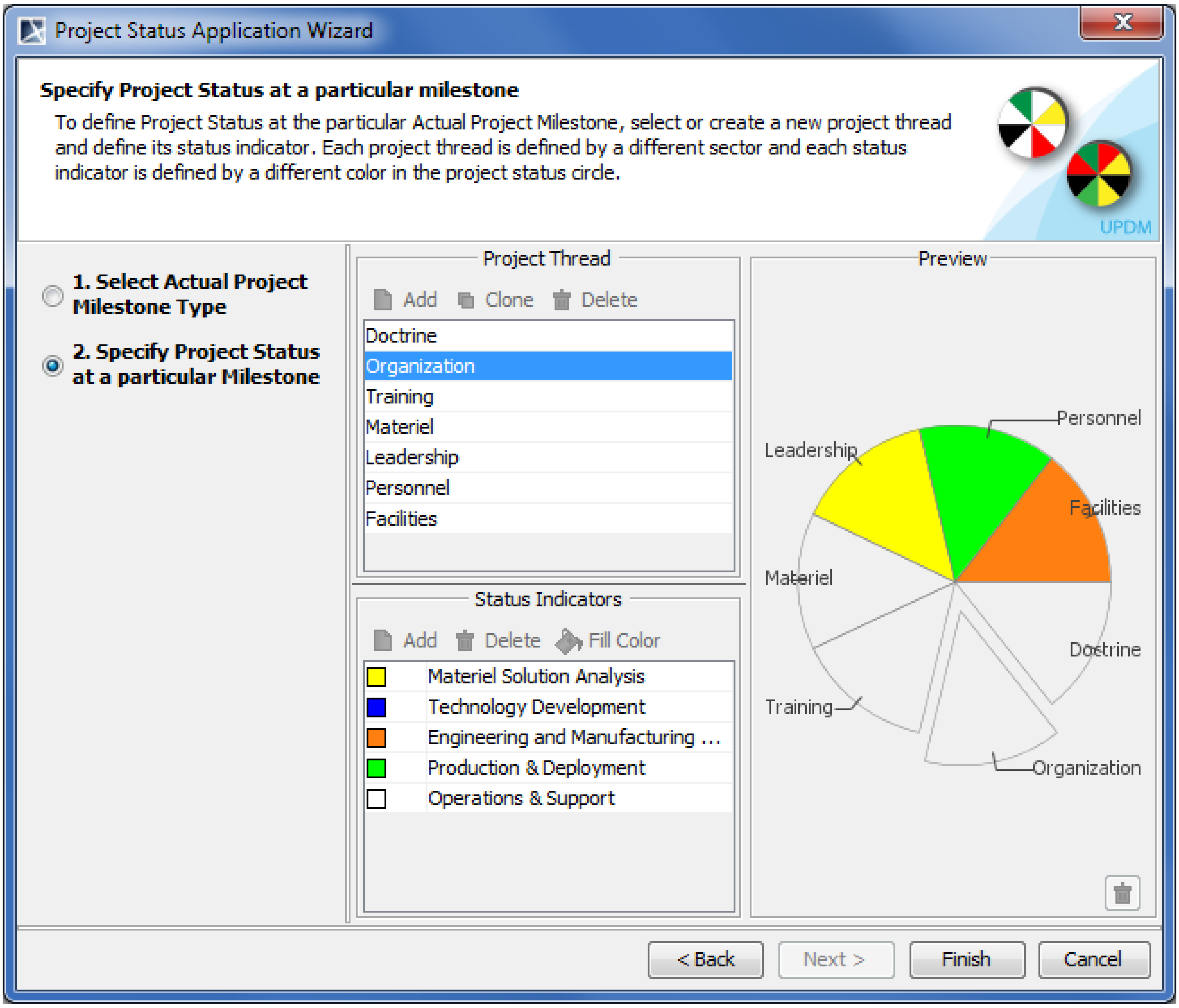


Figure 134 -- Project status application wizard. DOTMLPF Milestone type

Also you can create your own milestone type. For more information about selecting and creating elements, see section “Selecting an Element” in “MagicDraw UserManual.pdf”.

You can create your own projects threads and status indicators to the created milestone type as well.

To create project threads and status indicators

1. In the Project Thread area, click **Add** button.
2. Specify the thread name.
3. In the Status Indicator area, click **Add** button.
4. Specify the indicator name.
5. Click **Fill Color** button.

6. In the **Color** dialog select the color and click **OK**.

TIP!	To create a second thread with the same status indicators, select a previously created thread and click **Clone**. A new thread with previously defined status indicators will be created.

Use the Remove project status indicator mark button in the right bottom corner of the **Project Status Application Wizard** Step #2, to remove the applied project status.

Related MODAF views

AcV-2 Programme Timelines

Related DoDAF views

PV-2 Project Timelines

Related procedures

Applying actual project status in AcV-2 diagram

Removing actual project status in AcV-2 diagram

Applying project status in PV-2 diagram

Removing project status in PV-2 diagram

7.7 NEW! Capability Provision Creation Wizard

The Capability Provision Creation Wizard is used to define a capability provision by one or more resources at ta specific period of time.

To open the Capability Provision Creation Wizard

1. Select a capability.
2. Do one of the following:
   - On the <viewpoint name> diagram toolbar, click **Add New** > **Capability Provision**.
   - On the shortcut menu of the selected capability, click **Add new Capability Provision**.
3. The **Capability Provision Creation Wizard** opens.

The wizard consists of three steps:

1. Select Resources.
2. Specify capability increment date.
3. Specify out of service date.

Step #1:Resources selection

In this step, you can select the existing or create new resources.

For more information on selecting elements, see NEW! Diagram Creation Wizard, Step #2.

For more information about selecting and creating elements, see section “Selecting an Element” in “MagicDraw UserManual.pdf”.

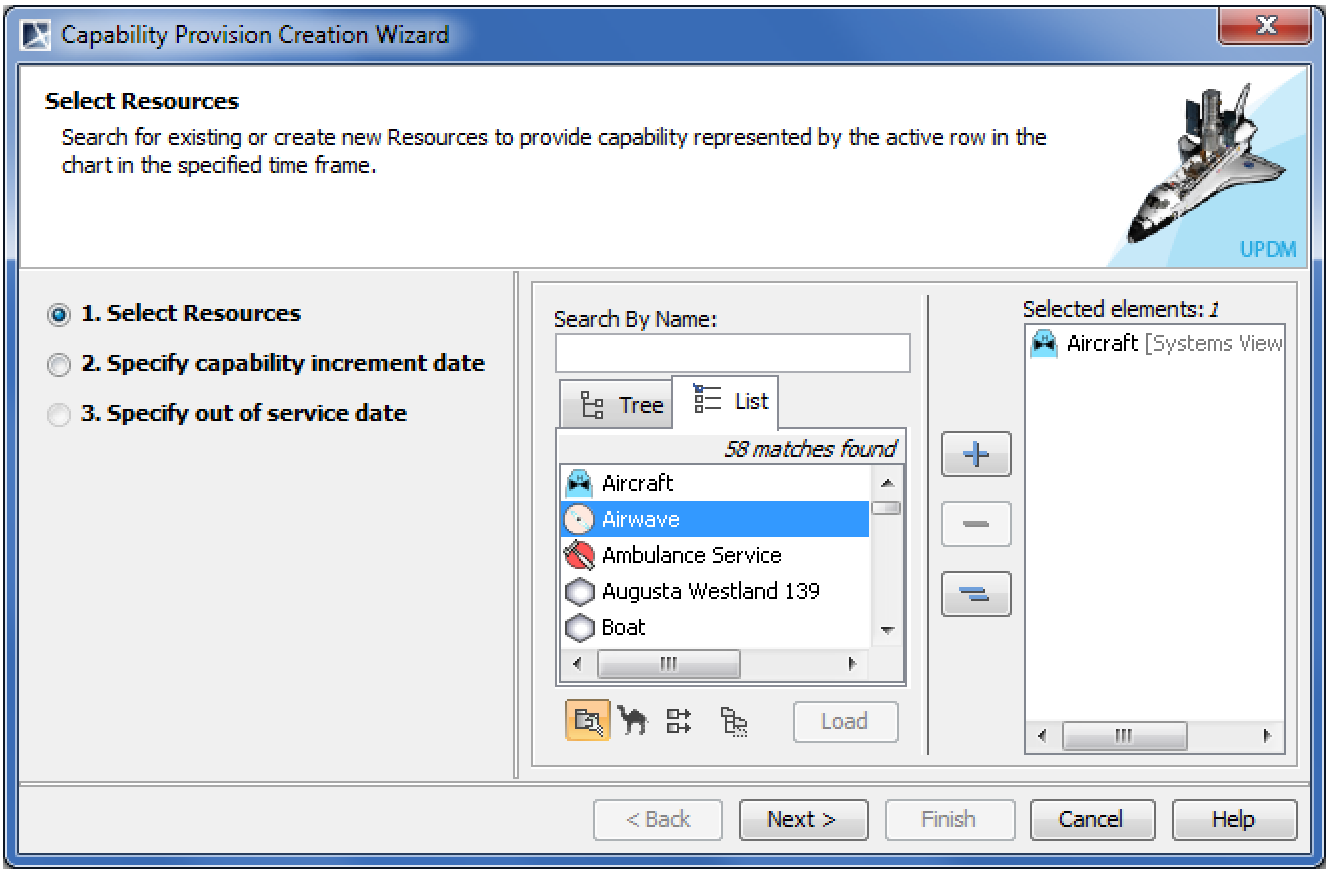


Figure 135 -- Capability Provision Creation Wizard. Selecting resources

Step #2:Capability increment date specification

In this step, you can set the date and time, when the resource should begin provisioning the capability. The increment milestone is created.

For more information on setting the day and time, see Date and Time Settings Dialog.

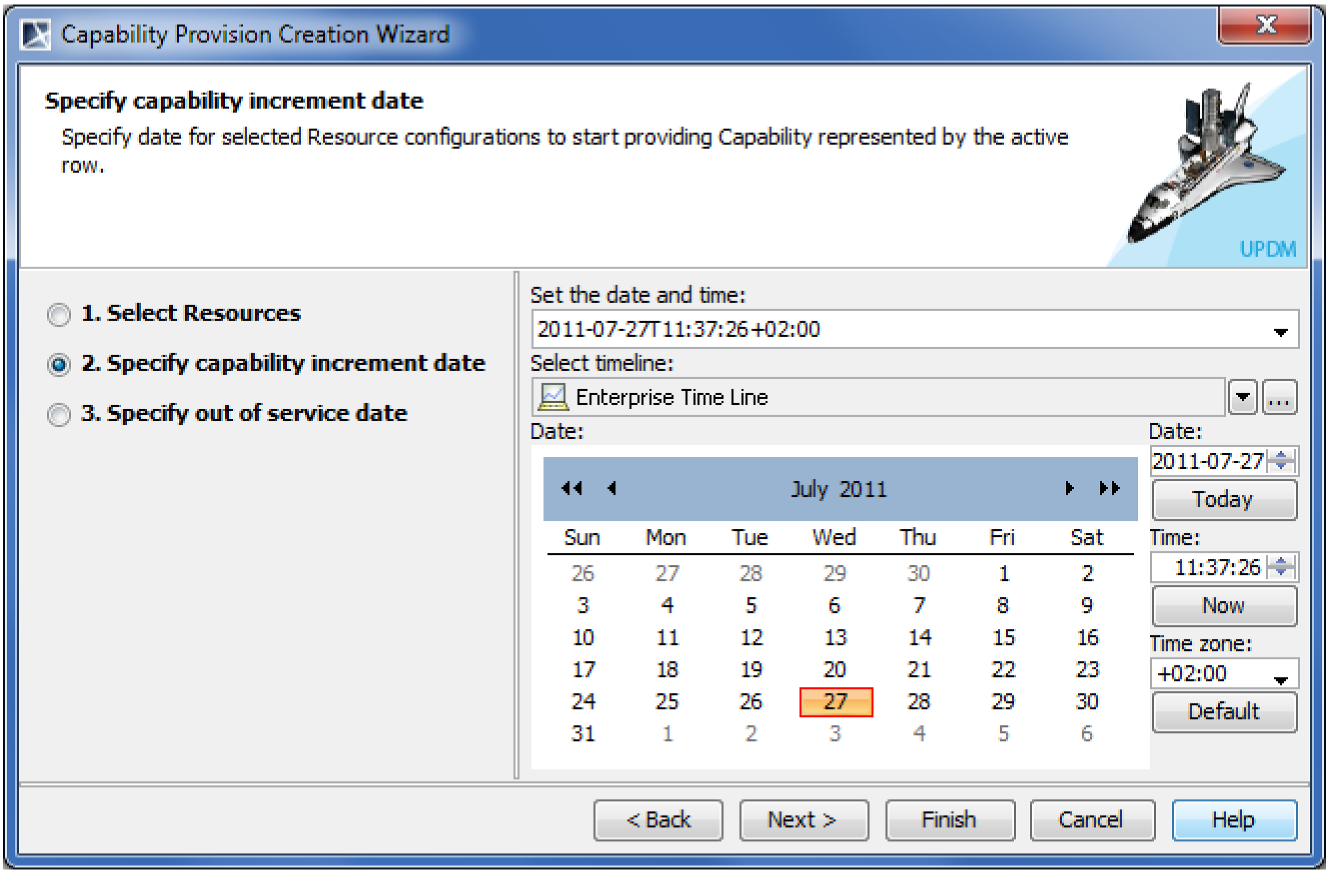


Figure 136 -- Capability Provision Creation Wizard. Specifying capability increment date

Step #3: Out of service date specification (Optional)

In this step, you can specify when the resource should stop provisioning the capability. The out of service milestone is created.

This step is optional. If you skip this step, the capability exhibition bar on the chart will have the triangle ending.

For more information on setting date ant time, see Date and Time Settings Dialog.

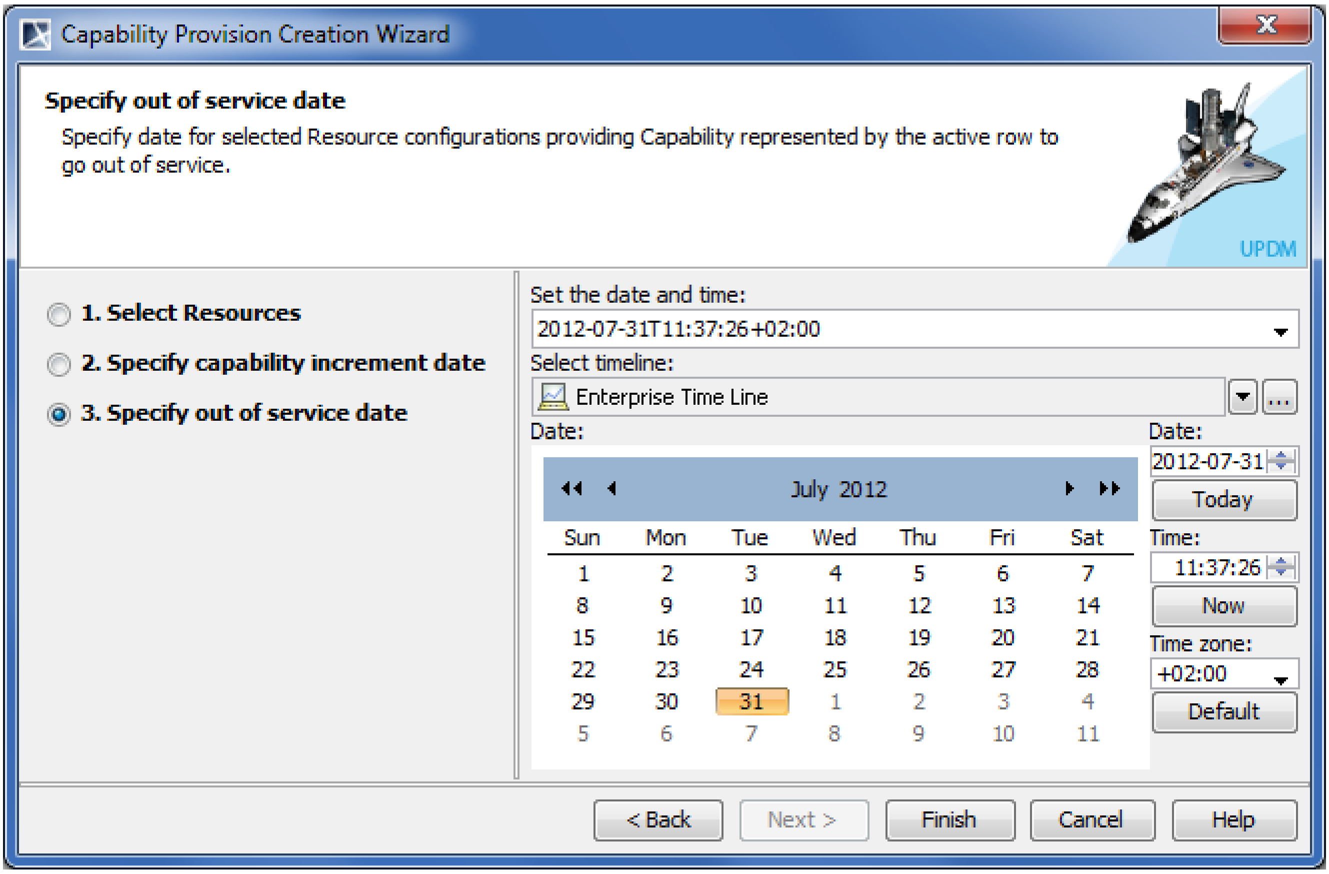


Figure 137 -- Capability Provision Creation Wizard. Specifying out of service date

Related DoDAF views

[CV-3 Capability Phasing]

Related MODAF views

[StV-3 Capability Phasing]

Related procedures

[Adding capabilities to CV-3 chart]

[Adding capabilities to StV-3 chart]

7.8 Model Conversion Options Dialog

This dialog opens when converting a model to an alternate Enterprise Architecture Framework. The dialog asks the user whether he/ she wants to convert the model according to specified options or not.

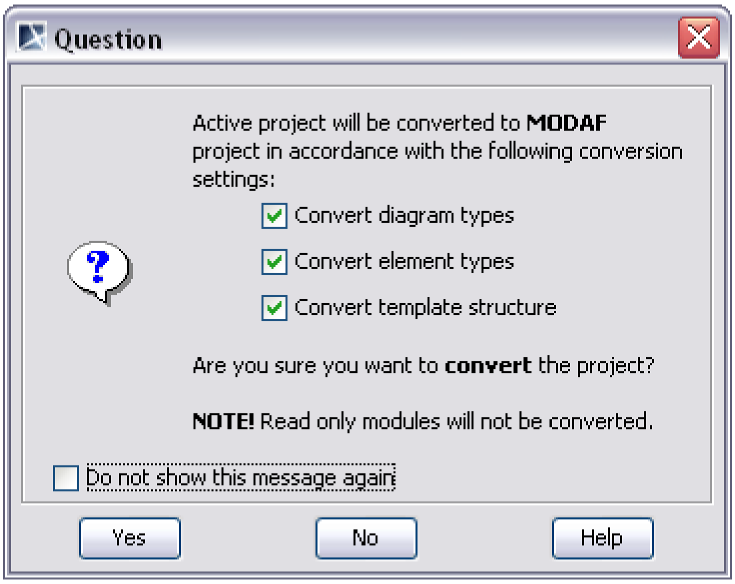


Figure 138 -- Model Conversion Options dialog

Check box	Description
Convert diagram types	Select to convert all diagram types to corresponding diagram types in the selected framework.
Convert element types	Select to convert all element types to their aliases in the selected framework.
Convert template structure	Select to convert the template structure to the template structure in the selected framework.
Do not show this message again	Select to hide the dialog the next time when performing the model conversion. **TIP!** To show the dialog again, open the **Project Options** dialog (on the main menu, click **Options** > **Project**) and in the **General Project Options** group, click the **Display project conversion confirmation question** property value to set it to *true* (see the figure below).

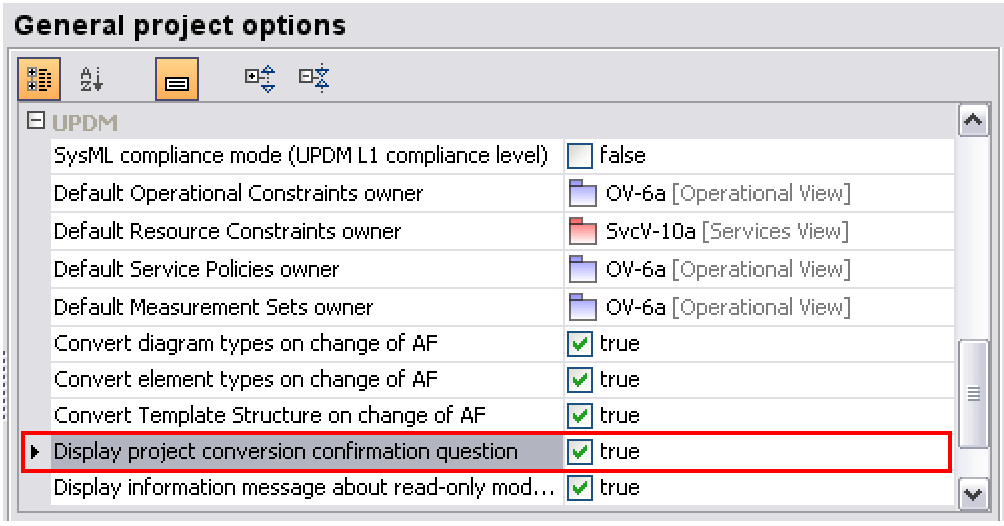


Figure 139 -- Option for showing or hiding the Model Conversion Options dialog

Button	Description
Yes	The button is active, if there is at least one conversion option selected. Click to convert a model to the selected enterprise architecture framework according to specified options.
No	Click to close the dialog canceling the model conversion. **NOTE:** If the dialog is opened when changing the perspective, perspective will be changed without converting a model.

Related procedures

[Converting model between Enterprise Architecture Frameworks]

7.9 Operational Exchange Creation Wizard

The **Operational Exchange** creation wizard gives the instructions to follow, when adding a new Operational Exchange or selecting one of the existing Operational Exchanges to:

- A Needline between a pair of Performer usages in OV-2 diagrams.
- An Operational Activity Edge between a pair of Operational Activities in OV-5 behavioral diagram.
- An Operational Message between a pair of two lifelines of Performers in OV-6c diagram.

Related DoDAF views

OV-2 Operational Resource Flow Description
OV-3 Operational Resource Flow Matrix
OV-5 Operational Activity Model
OV-2 Operational Resource Flow Internal Description
OV-6c Operational Event-Trace Description

Related MODAF views

OV-2 Operational Node Relationship Description
OV-3 Operational Information Exchange Matrix
OV-5 Operational Activity Model
OV-6c Operational Event-Trace Description

Related procedures

Creating Operational Exchanges in OV-2 diagram
Displaying possible Operational Exchanges on the selected Operational Activity Edge

Related GUI

Operational Exchange Manager Dialog

7.10 Operational Exchange Manager Dialog

The Operational Exchange Manager dialog enables to analyze and manage the Operational Exchanges data. You can edit existing Operational Exchanges by adding new Operational Exchange Items, realizing or ignoring existing Operational Exchanges on selected relationship, specifying producing and consuming Operational Activities.

Related DoDAF views

OV-2 Operational Resource Flow Description
OV-3 Operational Resource Flow Matrix
OV-5 Operational Activity Model
OV-2 Operational Resource Flow Internal Description
OV-6c Operational Event-Trace Description

Related MODAF views

OV-2 Operational Node Relationship Description
OV-3 Operational Information Exchange Matrix
OV-5 Operational Activity Model
OV-6c Operational Event-Trace Description

Related procedures

Displaying possible Operational Exchanges on the selected Operational Activity Edge

Related GUI

Operational Exchange Creation Wizard

7.11 Producing and Consuming Activities Dialog

The Producing and Consuming Activities dialog allows you to specify or modify producing and consuming Activities for a selected Operational Exchange.

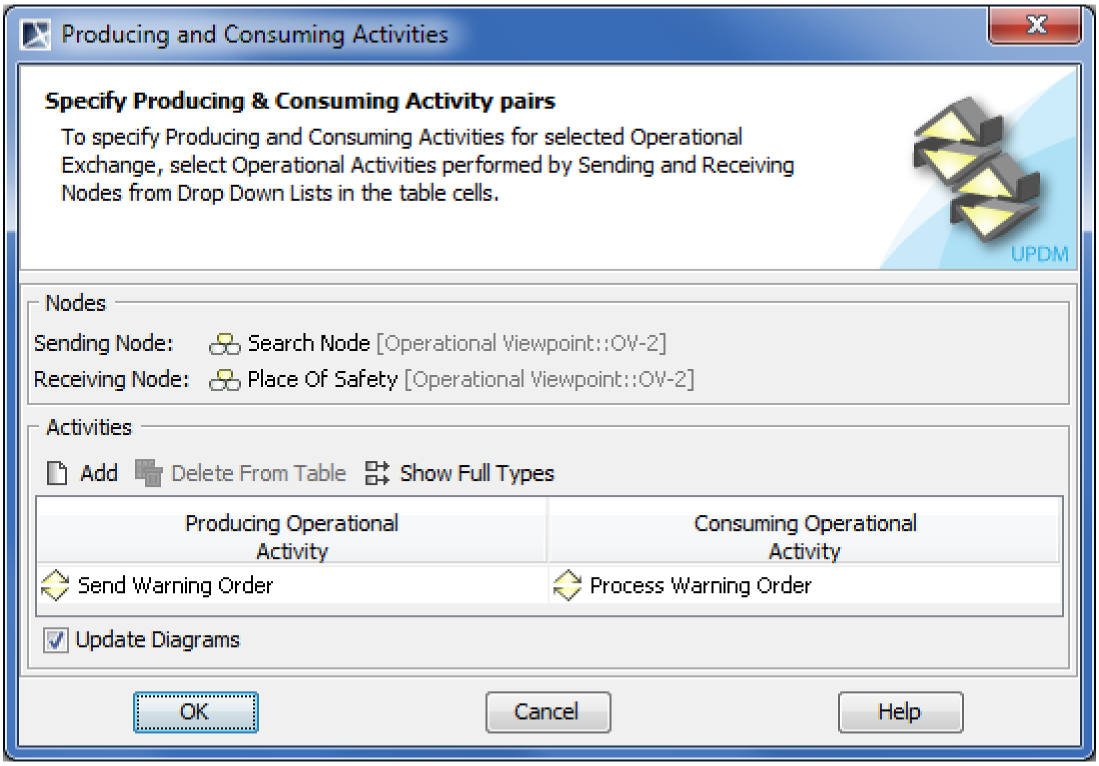


Figure 140 -- Producing and Consuming Activities dialog

To open the **Producing and Consuming Activities** dialog

- In the Specification window of the Operational Exchange, click the Edit (**...**) button in the selected **Producing Activity** or **Consuming Activity** property value cell.
- In the OV-3 Operational Resource Flow Matrix, click the Edit (**...**) button in the selected **Producing Operational Activity** cell.
- In the **Operational Exchange Manager** dialog:
    - Click the Edit (**...**) button in the selected **Producing Operational Activity** or **Consuming Operational Activity** cell.
    - Click the **Activities** button.

Elements of the dialog are described in the following tables.

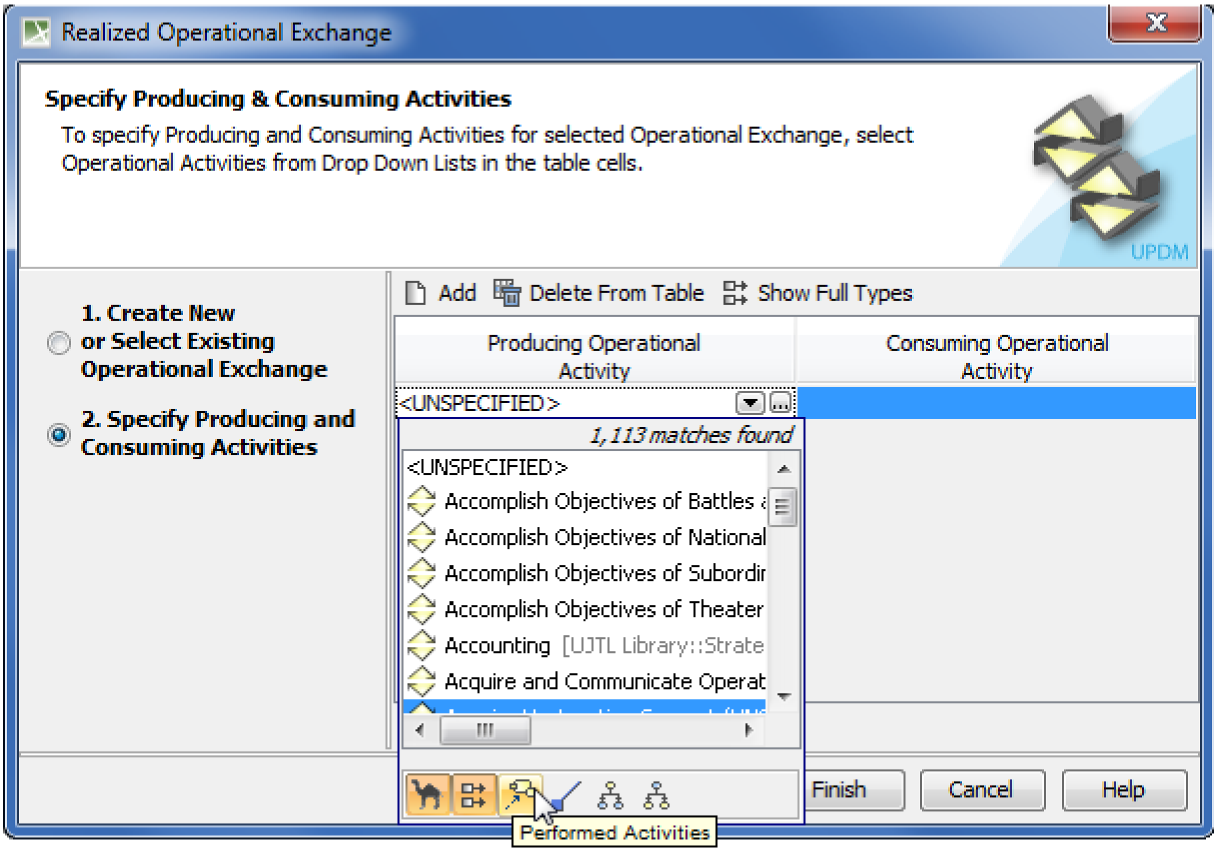
Box	Description
Update Diagrams	Select to update all related diagrams. Existing diagrams will be updated by displaying a particular operational exchange as a triangle on every Operational Activity Edge connecting producing and consuming activity actions. If the specified Producing and Consuming Activities does not exist in any diagram, you will be suggested to create a new OV-5 Operational Activity Flow Model (DoDAF) or OV-5 Operational Activity Flow Model (MODAF) diagram. Producing and Consuming Activity actions and the Operational Exchange will be represented in this new diagram.

Button	Description
Add	Click to add a new row for assigning a pair of Producing and Consuming Activities.
Delete From Table	Click to delete a selected Producing and Consuming Activities pair.
Show Full Types	Click to show views containing specified activities (see the following figure). Click once again to hide this information.

To specify a pair of producing and consuming activities

1. In the **Producing Operational Activity** column of a selected row, create a new value:
   - Click the drop-down arrow to open a list of available activities and select one.

NOTE If you do not see the list of available functions, click the Performed Activities button in the filtering options area as it is shown in the following figure.



   - Click the "..." button to create a new or select an existing activity from the model. The element Selection dialog will open, wherein you will be able to select or create activities. For more information about selecting and creating elements please refer to Section "Selecting an Element" in "MagicDraw UserManual.pdf".
2. Perform the same action described above for the **Consuming Operational Activity** column of the same row.

Related DoDAF views

OV-2 Operational Resource Flow Description

OV-2 Operational Resource Flow Internal Description

OV-3 Operational Resource Flow Matrix
OV-5 Operational Activity Model

Related MODAF views

OV-2 Operational Node Relationship Description
OV-2 Operational Node Internal Relationship Description
OV-3 Operational Information Exchange Matrix
OV-5 Operational Activity Model

Related procedures

Filtering Operational Activities and Functions

Related GUI

Operational Exchange Creation Wizard
Operational Exchange Manager Dialog

7.12 Producing and Consuming Functions Dialog

The **Producing and Consuming Functions** dialog allows you to specify or modify producing and consuming Functions for a selected Resource Interaction.

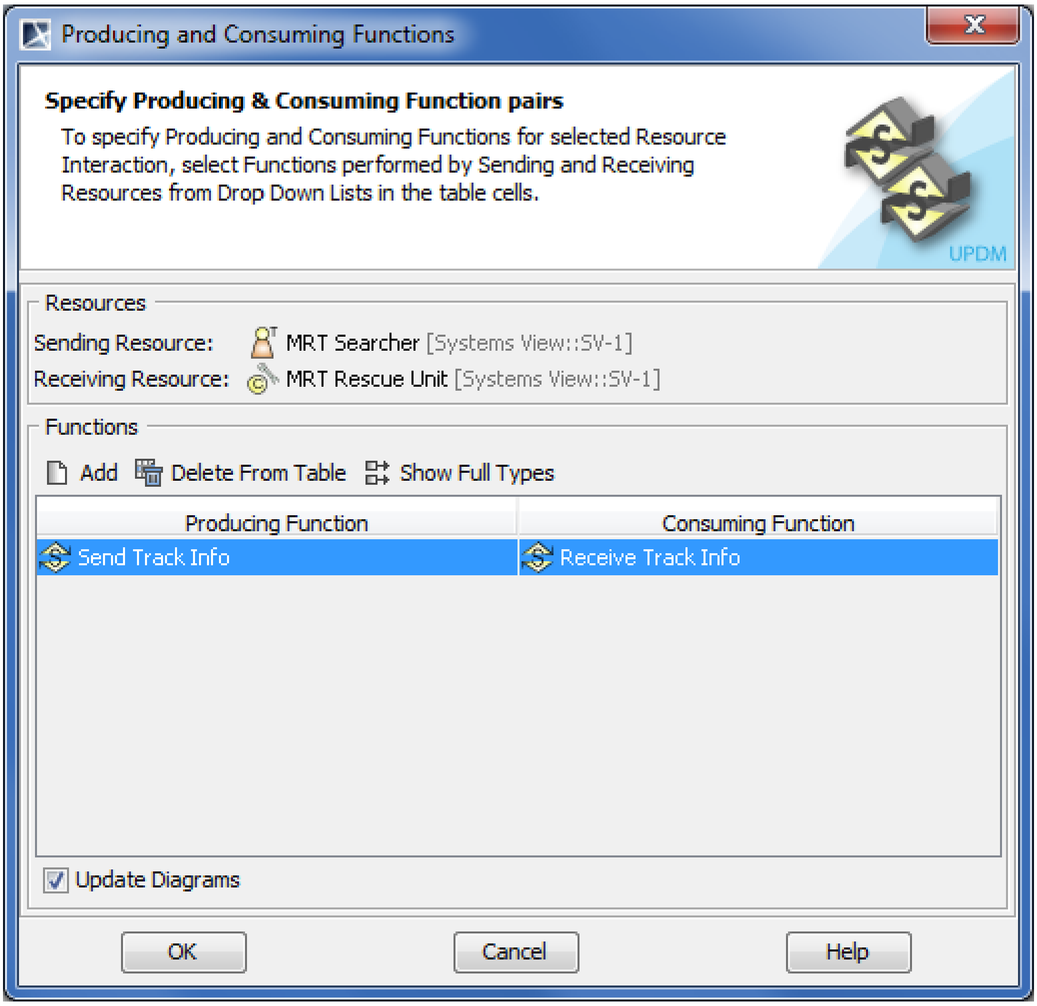


Figure 141 -- Producing and Consuming Functions dialog

To open the **Producing and Consuming Functions** dialog

- In the Specification window of the Resource Interaction, click the Edit (**...**) button in the selected **Producing Function** or **Consuming Function** cell.
- In the SV-6 Systems Data Exchange Matrix, click the Edit (**...**) button in the selected **Producing Function** or **Consuming Function** cell.
- In the **Resource Interaction Manager** dialog:
    - Click the Edit (**...**) button in the selected **Producing Function** or **Consuming Function** cell.
    - Click the **Functions** button.

The **Producing and Consuming Functions** dialog is embedded in the Resource Interaction Creation wizard as a step #2.

Elements of the dialog are described in the following tables.

Box	Description
Update Diagrams	Select to update all related diagrams. Existing diagrams will be updated by displaying a particular resource interaction as a triangle on every Function Edge connecting producing and consuming function actions. If the specified Producing and Consuming Functions does not exist in any diagram, you will be suggested to create a new SV-4 System Functionality Description Flow (DoDAF) or SV-4 Functionality Description Flow (MODAF) diagram. Producing and Consuming Function actions and the Resource Interaction will be represented in this new diagram.

Button	Description
Add	Click to add a new row for assigning a pair of Producing and Consuming Functions.
Delete From Table	Click to delete a selected Producing and Consuming Functions pair.
Show Full Types	Click to show views containing specified functions (see the following figure). Click once again to hide this information.

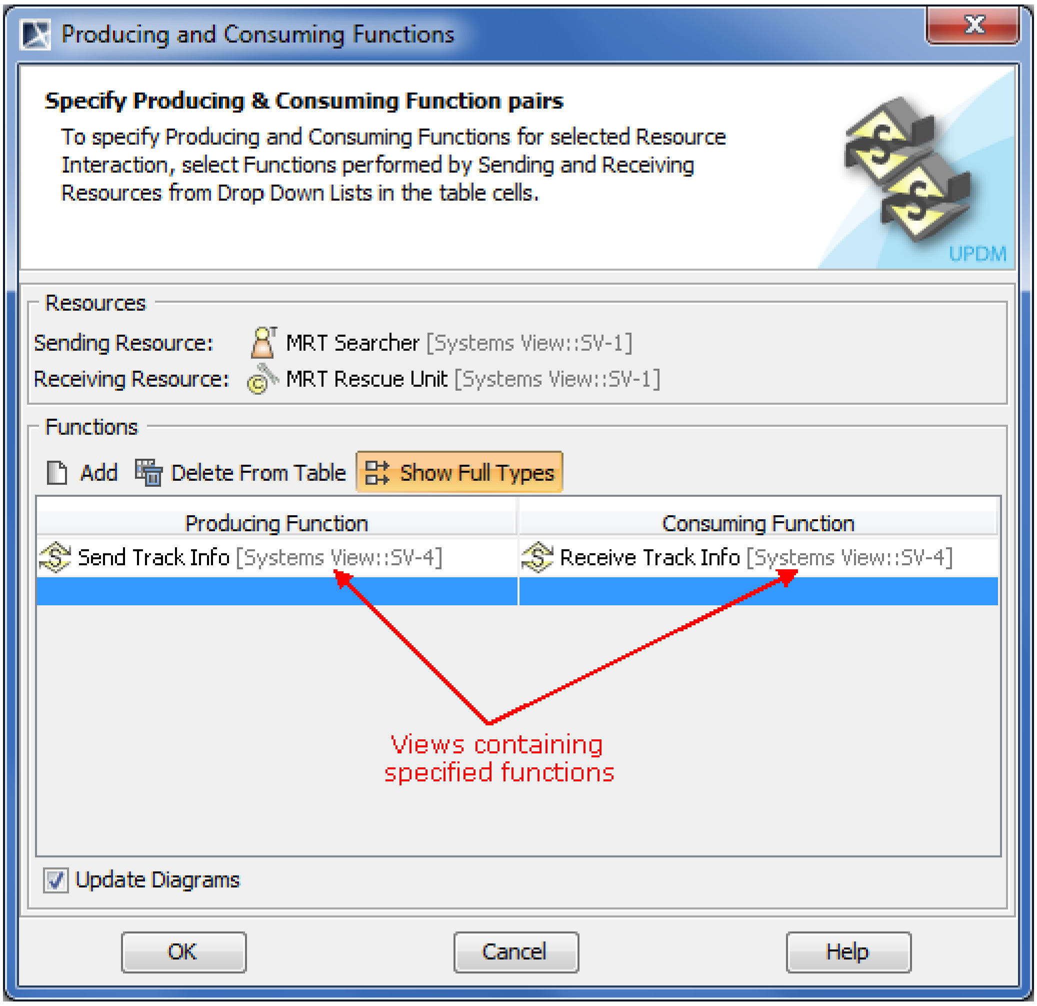
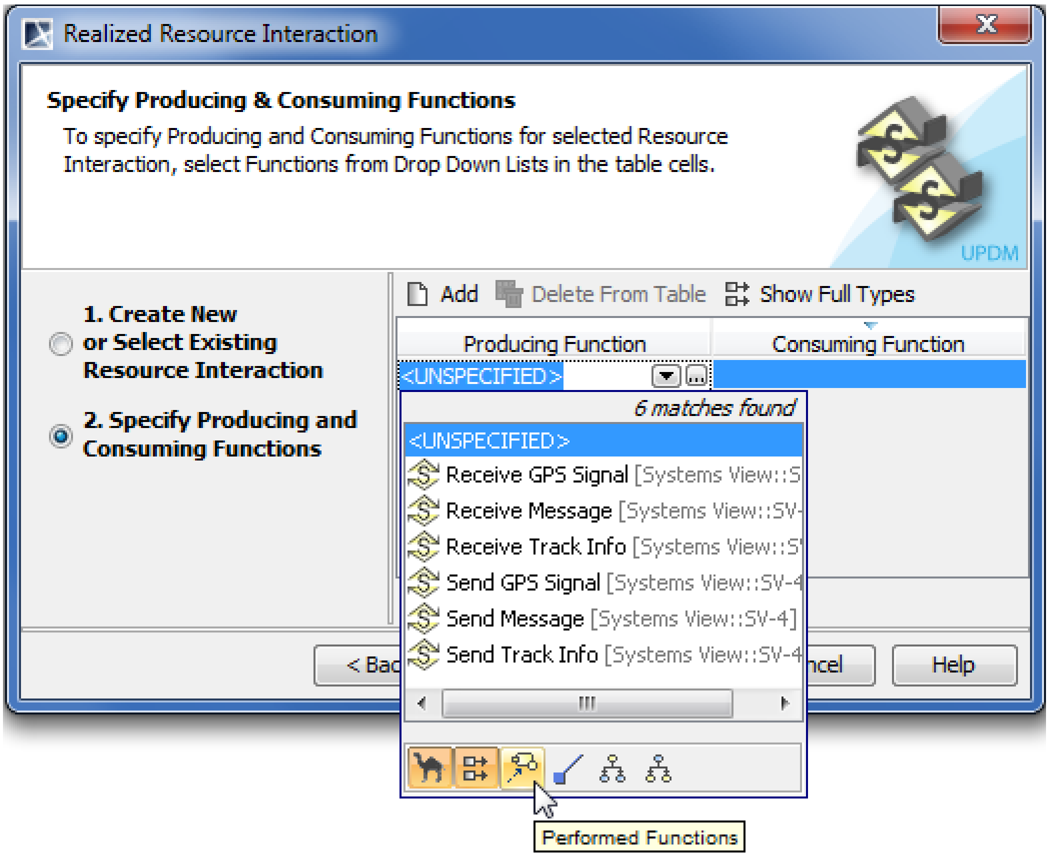


Figure 142 -- Displaying full types of producing and consuming functions

To specify a pair of producing and consuming functions

1. In the **Producing Function** column of a selected row, create a new value:
   - Click the drop-down arrow to open a list of available functions and select one.

NOTE	If you do not see the list of available functions, click the Performed Functions button in the filtering options area as it is shown in the following figure.



- Click the "..." button to create a new or select a function existing in the model. The element Selection dialog will open, wherein you will be able to select or create functions. For more information about selecting, creating, and removing elements please refer to Section "Selecting an Element" in "MagicDraw UserManual.pdf".

2. Perform the same action described above for the **Consuming Function** column of the same row.

Related DoDAF views

SV-1 Systems Interface Description
SV-1 Systems Interface Internal Description
SV-2 Systems Communication Description
SV-2 Systems Communication Internal Description
SV-4 Systems Functionality Description
SV-6 Systems Resource Flow Matrix
SV-10c Systems Event-Trace Description

Related MODAF views

SV-1 Resource Interaction Specification
SV-1 Resource Internal Interaction Specification
SV-2 Resource Communications Description
SV-2 Resource Internal Communications Description
SV-4 Functionality Description
SV-6 Systems Data Exchange Matrix
SV-10c Resource Event-Trace Description

Related procedures

Filtering Operational Activities and Functions

Related GUI

Resource Interaction Creation Wizard

Resource Interaction Manager Dialog

7.13 Resource Interaction Creation Wizard

The **Resource Interaction** creation wizard provides you with the instructions to follow when adding a new Resource Interaction to:

- A Resource Interface between a pair of Resource Roles in the SV-1, SV-2 diagrams.
- A Function Edge (Function Control Flow and Function Object Flow) between a pair of Functions in the SV-4 Flows diagram.
- A Resource Message between a pair of two lifelines of Resources in the SV-10c diagram.

The Resource Interaction creation wizard includes of two steps:

1. Resource Interaction creation (mandatory).
2. Producing and Consuming Functions specification (optional).

To open the **Resource Interaction** creation wizard do one of the following:

View	Action
DoDAF: • SV-1 Systems Interface Description • SV-2 Systems Communication Description • SV-4 Systems Functionality Description MODAF: • SV-1 Resource Interaction Specification • SV-2 Resource Communications Description • SV-4 Functionality Description	Draw the Resource Interaction relationship between System Resources.
DoDAF: • SV-1 Systems Interface Internal Description • SV-2 Systems Communication Internal Description MODAF: • SV-1 Resource Internal Interaction Specification • SV-2 Resource Internal Communications Description	• Select a Resource Connector or a Resource Interface and click the New Resource Interaction button on the Smart Manipulator toolbar. • On the diagram pallet, click **Resource Interaction** and select a Resource Connector or a Resource Interface.
DoDAF: • SV-4 Systems Functionality Description MODAF: • SV-4 Functionality Description	• Select a Function Edge and click the New Resource Interaction button on the Smart Manipulator toolbar. • In the diagram pallet, click **Resource Interaction** and select a Function Edge.
DoDAF: • SV-6 Systems Resource Flow Matrix MODAF: • SV-6 Systems Data Exchange Matrix	On the table toolbar, click the **Add New** button.
DoDAF: • SV-10c Systems Event-Trace Description MODAF: • SV-10c Resource Event-Trace Description	• Select a Resource Message and click the New Resource Interaction button on the Smart Manipulator toolbar. • In the diagram pallet, click **Resource Interaction** and select a Resource Message.

STEP #1: Resource Interaction creation

This step is designed to create a new Resource Interaction by specifying a conveyed Resource Interaction Item, both sending and receiving Resources, and a direction of a Resource Interaction. Depending on a fact, if selected resources are known or not, requested information differs:

- If sending and receiving resources are unknown form the wizard invocation context, you need to specify both.

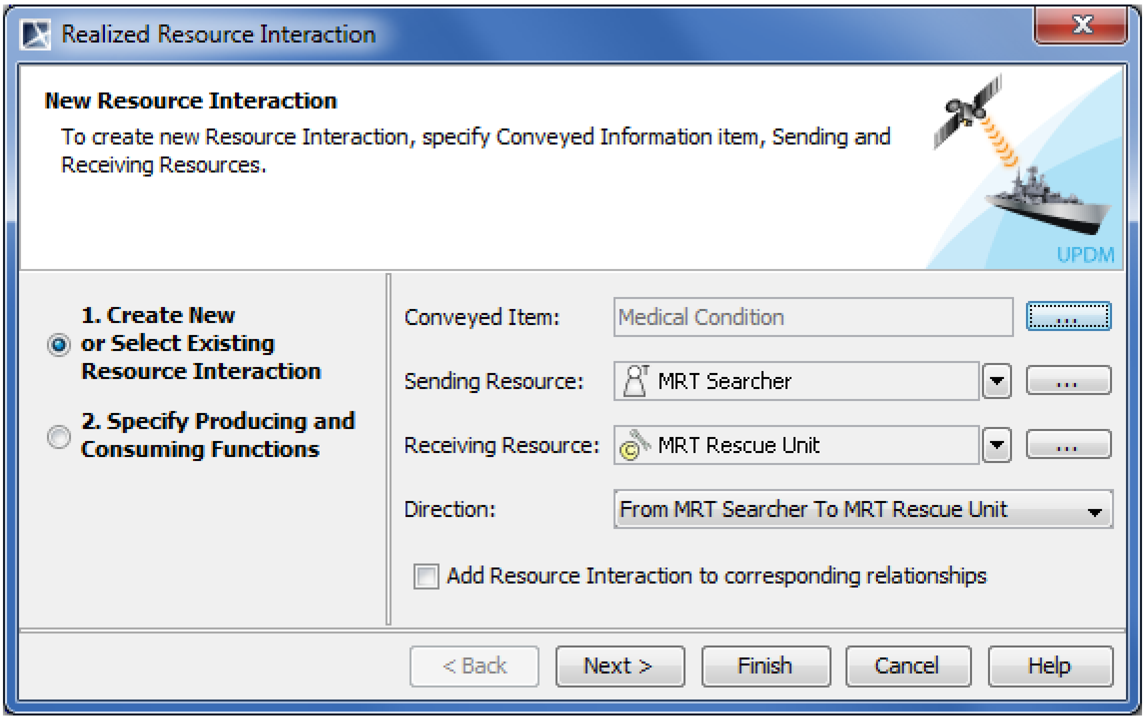


Figure 143 -- Resource Interaction creation wizard. Creating a new Resource Interaction when Resources are not known from the wizard invocation context

- If sending and receiving resources are known, they will be added to a Resource Interaction Creation wizard automatically.

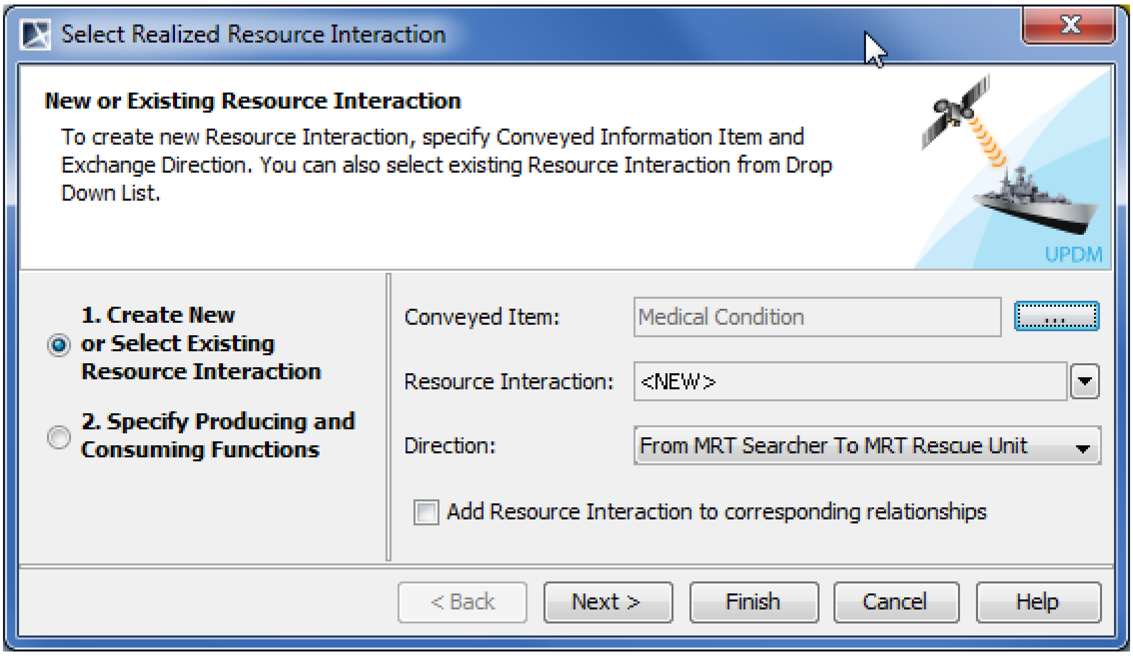
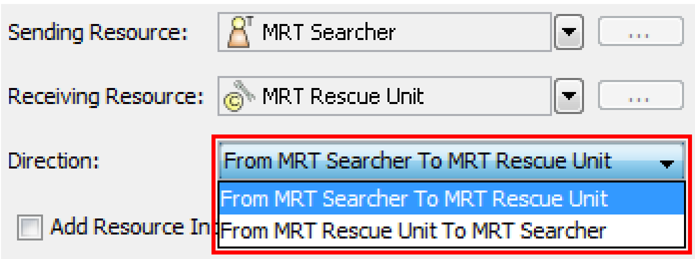


Figure 144 -- Resource Interaction creation wizard. Creating new Resource Interaction when resources are known from the wizard invocation context.

<table>
<tr><th>Box</th><th>Description</th></tr>
<tr><td>Conveyed Item</td><td>One or more Resource Interaction Items that are conveyed by the information flow from the sending Resource to receiving Resource.</td></tr>
<tr><td>Resource Interaction</td><td>Resource Interaction that specifies an information flow for specified conveyed items.
If you select an existing Resource Interaction from the drop-down list, Conveyed Item and Direction boxes will be filled with corresponding information automatically. You will be able to edit values of conveyed items. The direction of the information flow won’t be editable.
NOTE: Available if sending and receiving Resources are known from the wizard invocation context.</td></tr>
<tr><td>Sending Resource</td><td>Resource that sends the specified conveyed information.
NOTE: Available if a Resource is unknown from the wizard invocation context.</td></tr>
<tr><td>Receiving Resource</td><td>Resource that receives the specified conveyed information.
NOTE: Available if a Resource is unknown from the wizard invocation context.</td></tr>
<tr><td>Direction</td><td>Direction of the information flow.



After changing the direction from the default one, the sending resource will be switched with the receiving resource. The direction of the Resource Interaction will be changed accordingly.</td></tr>
<tr><td>Add Resource Interaction to corresponding relationships</td><td>Select the check box, if you want to add the Resource Interaction to corresponding relationships existing in other related diagrams. These are the relationships that can realize the Resource Interaction:

System Connector (SV-1 Systems Interface Internal Description, SV-2 Systems Communication Internal Description)
Resource Connector (DoDAF)/ Resource Interface (MODAF) (SV-1 Systems Interface Internal Description, SV-2 Systems Communication Internal Description)
Function Edge (SV-4 Systems Functionality Description)
Resource Message (SV-10c Systems Event-Trace Description)
</td></tr>
</table>

Button	Description
[...] (by the **Conveyed Item** box)	Click to open the element Selection dialog to select or create a conveyed item. You can specify more than one conveyed item. **TIP!** You can find more information about selecting, creating, and removing elements in Section "Selecting an Element" of "MagicDraw UserManual.pdf".
[...] (by the **Sending Resource** box)	Click to open the element Selection dialog. **TIP!** You can find more information about selecting, creating, and removing elements in Section "Selecting an Element" of "MagicDraw UserManual.pdf".
[...] (by the **Receiving Resource** box)	Click to open the element Selection dialog. **TIP!** You can find more information about selecting, creating, and removing elements in Section "Selecting an Element" of "MagicDraw UserManual.pdf".

STEP #2: Producing and Consuming Function specification

This step is designed to specify Producing and Consuming Functions for the created or selected Resource Interaction. Resource Interactions are produced and consumed by Activities acting under the Resource (System Function (DoDAF) or Function (MODAF)). In terms of UPDM, Resources perform System Functions (DoDAF) or Functions (MODAF).

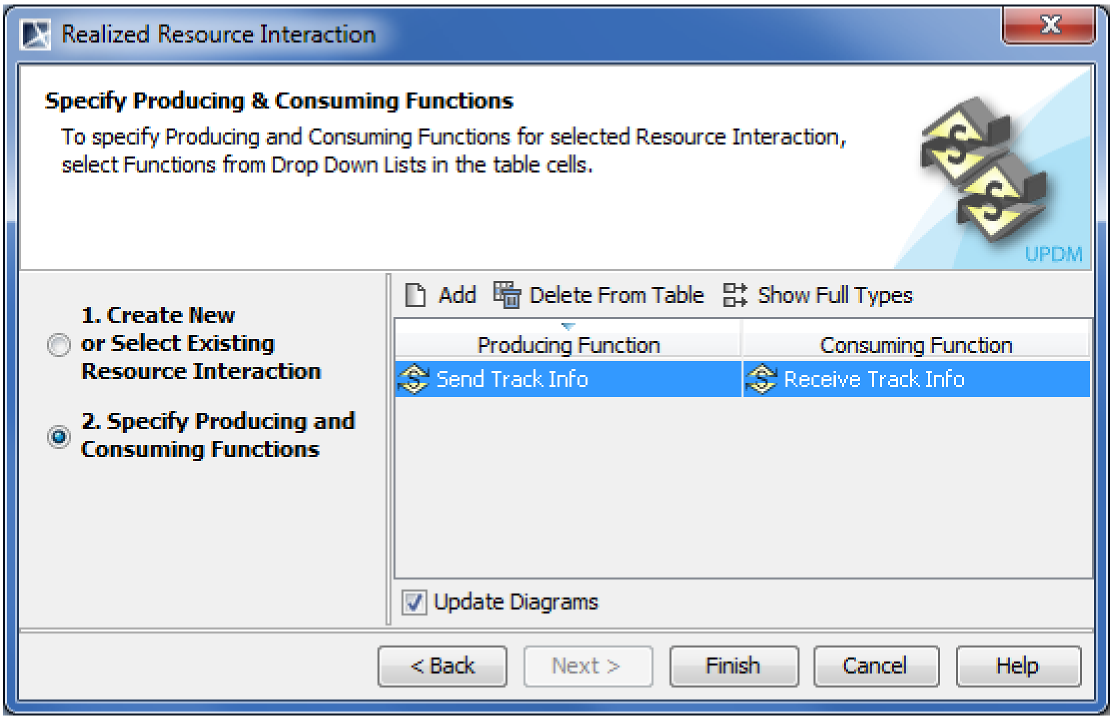


Figure 145 -- Realized Resource Interaction creation wizard. Specifying Producing and Consuming Functions

For Producing and Consuming Function specification the wizard provides you with the **Producing and Consuming Functions** dialog.

IMPORTANT!	There should always be a pair of functions: one to produce and other to consume information flow.

Related DoDAF views

SV-1 Systems Interface Description

SV-1 Systems Interface Internal Description
SV-2 Systems Communication Description
SV-2 Systems Communication Internal Description
SV-4 Systems Functionality Description
SV-6 Systems Resource Flow Matrix
SV-10c Systems Event-Trace Description

Related MODAF views

SV-1 Resource Interaction Specification
SV-1 Resource Internal Interaction Specification
SV-2 Resource Communications Description
SV-2 Resource Internal Communications Description
SV-4 Functionality Description
SV-6 Systems Data Exchange Matrix
SV-10c Resource Event-Trace Description

Related procedures

Creating Resource Interaction in SV-2 diagram

Related GUI

Producing and Consuming Functions Dialog
Resource Interaction Manager Dialog

7.14 Resource Interaction Manager Dialog

The Resource Interaction Manager dialog enables to analyze and manage the Resource Interactions data. You can edit existing Resource Interactions by adding new Resource Interaction Items, realizing or ignoring existing Resource Interactions on selected relationship, specifying producing and consuming Functions.

Related DoDAF views

SV-1 Systems Interface Description
SV-1 Systems Interface Internal Description
SV-2 Systems Communication Description
SV-2 Systems Communication Internal Description
SV-4 Systems Functionality Description
SV-6 Systems Resource Flow Matrix
SvcV-10c Services Event-Trace Description

Related MODAF views

SV-1 Resource Interaction Specification
SV-1 Resource Internal Interaction Specification
SV-2 Resource Communications Description
SV-2 Resource Internal Communications Description
SV-4 Functionality Description
SV-6 Systems Data Exchange Matrix
SV-10c Resource Event-Trace Description

Related GUI

Resource Interaction Manager Dialog

7.15 Select Symbol Dialog

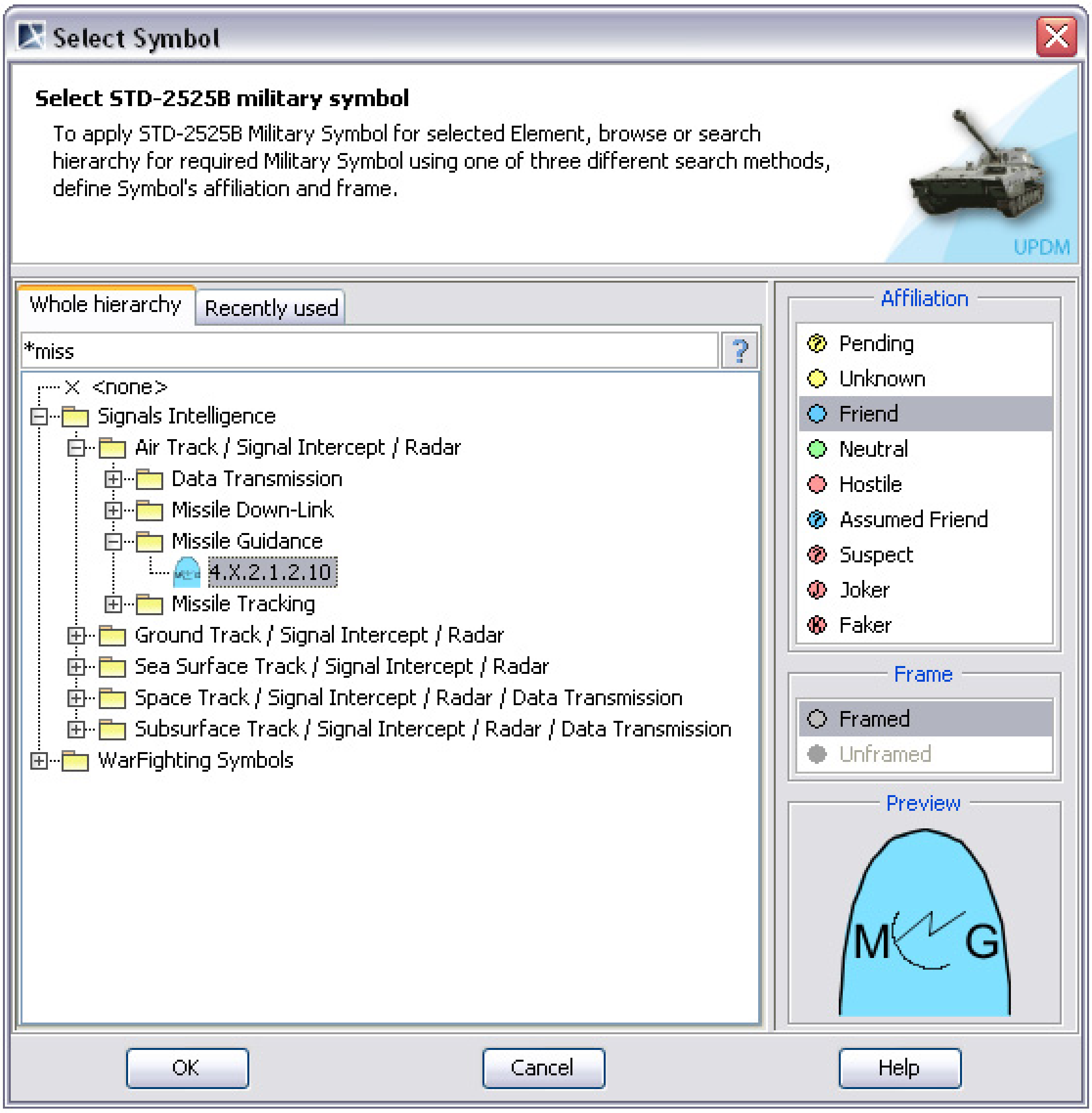


Figure 146 -- Defining the affiliation and frame styles in the Select Symbol dialog

Related DoDAF views

SV-1 Systems Interface Description

SV-2 Systems Communication Description

SV-4 Systems Functionality Description

Related procedures

Applying Military symbols

7.16 Service Channel Creation Wizard

The **New Service Channel** creation wizard supports the automated Service Oriented modeling in Cameo Enterprise Architecture. On the basis of input data, the wizard:

- Creates a Service Channel and its required prerequisites.
- Synchronizes Service Parameters with Operational Exchange/ Resource Interaction Items.
- Creates the SV-1 internal diagram to visualize a Service Channel and connected parties.

To open the **New Service Channel** wizard, do one of the following

- Select a Needline and on the Smart Manipulator toolbar, click the New Service Channel button.
- Select a Resource Interface and on the Smart Manipulator toolbar, click the New Service Channel button.
- Select a Service Channel and on the Smart Manipulator toolbar, click the New Service Channel button.
- On the Service Channels Summary table toolbar, click the **Add New** button.
- On the Service Channels Summary matrix, click the intersection and from the shortcut menu, select **New Service Channel**.

Dependent on the way the wizard has been opened, it either knows about the Service Provider and the Service Receiver or does not.

The wizard consists of these three steps:

1. Service Channel specification.
2. Provided Operational Exchange/ Resource Interaction item specification.
3. Required Operational Exchange/ Resource Interaction item specification.

The first step is mandatory and the other steps are optional.

STEP #1: Service channel specification

This step allows you to specify participating parties, service and request ports, and service interfaces.

By default Service Provider and Service Requester are required, if you want to finish the wizard in the step #1. You can also choose an existing Service Channel, existing Service and Request points, and Service Interfaces.

Service Interfaces can be left undefined. In this case you will not be allowed to proceed further, but you will be able to finish the wizard.

Box	Description
Service Provider	Performer/ Resource providing a service for a service requester. If Service Provider is known (the wizard is opened using the smart manipulator on a Needline/ Resource Interface/ System Connector/ Service Channel), it can not be changed. Otherwise, if Service Provider is unknown, it can be selected from the model.
Service Requester	Performer/ Resource requesting a service from a service provider. If Service Requester is known (the wizard is opened using the smart manipulator on Needline/ Resource Interface/ System Connector/ Service Channel), it can not be changed. Otherwise, if Service Requester is unknown, it can be selected from the model.
Service Channel	Connector expressing a communication channel between Service Provider and Service Requester. A new Service Channel can be created or the existing one can be selected. Only Service Channels connecting existing and selected Service and Request points can be selected.
Service	An offer of the Service by Service Provider to Service Receivers. Only Services owned by Service Provider can be selected. If there are none, new Service will be created by default.
Request	The use of a Service by the Service Requester. Only Requests owned by Service Requester can be selected. If there are none, new Request will be created by default.
Provider's Service Interface	The type of the Service port, which describes interfaces the Service port provides and/or Requires. Any of Service Interfaces can be selected from the model using the drop down list. The field can also be left unspecified. It means you will not be able to specify data/information provided by Service Provider.
Requester's Service Interface	The type of the Request Point, which describes interfaces the Request Point provides and/or Requires. Any of Service Interfaces can be selected from the model using the drop down list. The field can also be left unspecified. It means you will not be able to specify data/information required by Requester.

Button	Description
Switch Service Provider with Service Requester	The button is visible only if both Service Provider and Service Requester are known (the wizard is opened using the smart manipulator on a Needline/ Resource Interface/ System Connector/ Service Channel). Click to switch Service Provider with Service Requester.
[...] (by the **Service Provider** box)	The button is visible only if Service Provider is unknown. Click to open the element Selection dialog.

Button	Description
[...] (by the **Service Requester** box)	The button is visible only if Service Requester is unknown. Click to open the element Selection dialog.
[...] (by the **Provider's Service Interface** box)	Click to open the element Selection dialog for Provider's Service Interface search/selection/creation.
[...] (by the **Requester's Service Interface** box)	Click to open the element Selection dialog for Requester's Service Interface search/selection/creation.

STEP #2: Provided/ required exchange item specification

These steps allow you to specify provided/ required exchange items that are required by Service Provider and provided by Service Requester in exchange.

Check box	Description
Use Existing Operational Exchanges/ Resource Interactions	If selected, application searches for and reuses compatible with provided Data/Information Elements exchanges flowing via Service Provider and Service Requester. Otherwise new exchanges are created instead of reusing existing ones.

Related DoDAF views

OV-2 Operational Resource Flow Description
SV-1 Systems Interface Description
SV-2 Systems Communication Description

Related MODAF views

OV-2 Operational Node Relationship Description
SV-1 Resource Interaction Specification
SV-2 Resource Communications Description

Related procedures

Building SvcV-3a matrix
Adding Existing Resource Interaction to SvcV-6 table
Instantiating Structures

7.17 Time Periods Dialog

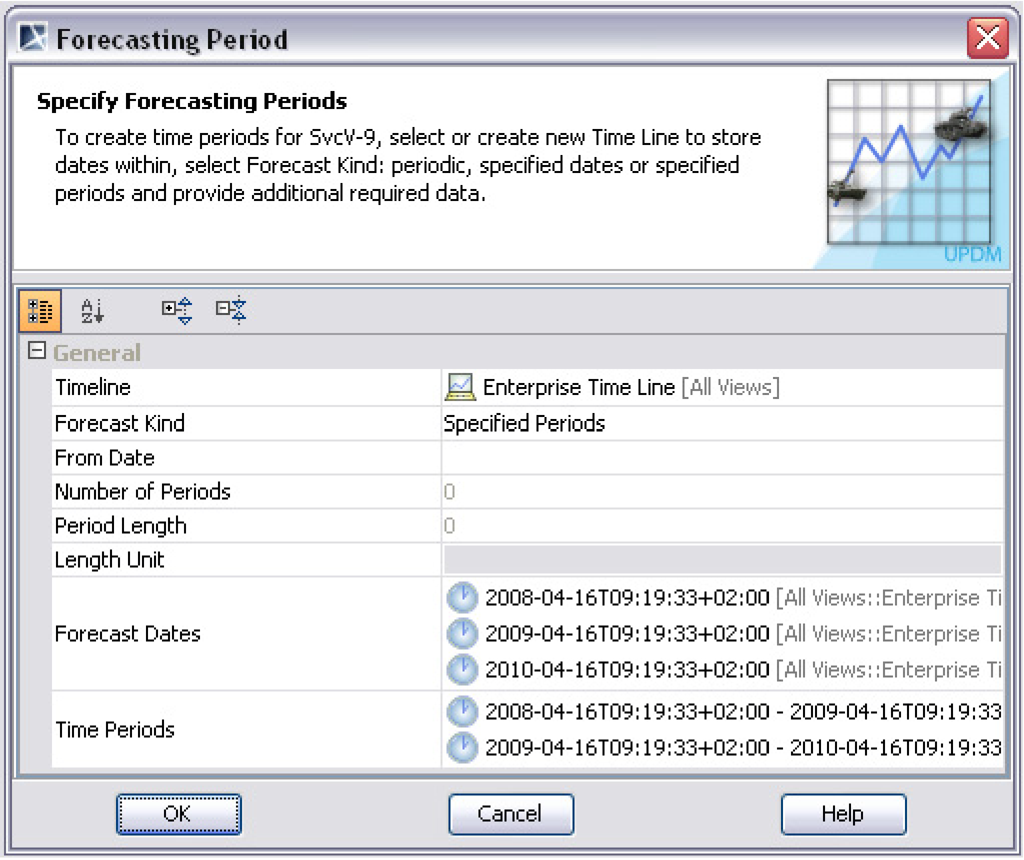


Figure 147 -- Time Periods dialog

Related DoDAF views

SvcV-9 Services Technology and Skills Forecast

Related MODAF views

SV-9 Technology & Skills Forecast

TV-2 Standards Forecast

Related procedures

Creating SV-9 table

Creating SvcV-9 table

Creating TV-2 table

Related GUI

Date and Time Settings Dialog

7.18 Automatic Instantiation Wizard

The **Automatic Instantiation Wizard** is used to automatically instantiate any typical structure of UPDM architecture.

To open the Automatic Instantiation Wizard

1. Select any number of instantiable UPDM elements.
2. On the shortcut menu, click **Create Instance**. The **Automatic Instantiation Wizard** opens.

Step #1: Parts selection

In this step, select elements and their internal parts to instantiate.

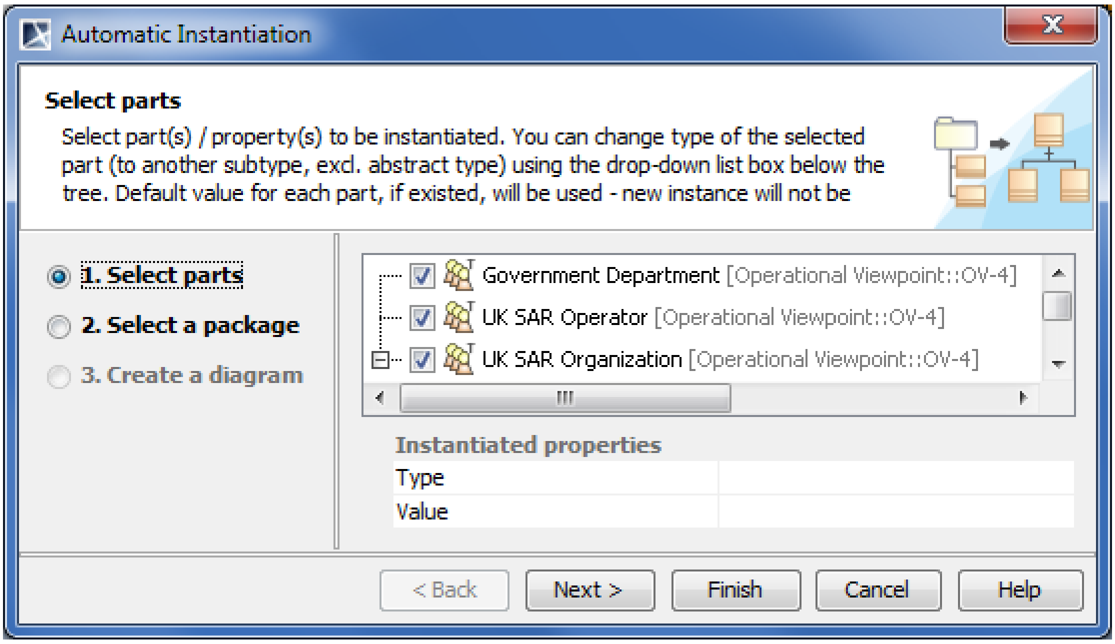


Figure 148 -- Automatic Instantiation. Selecting parts

Step #2: Package selection

In this step, select, create or clone the package to store the created actual structure.

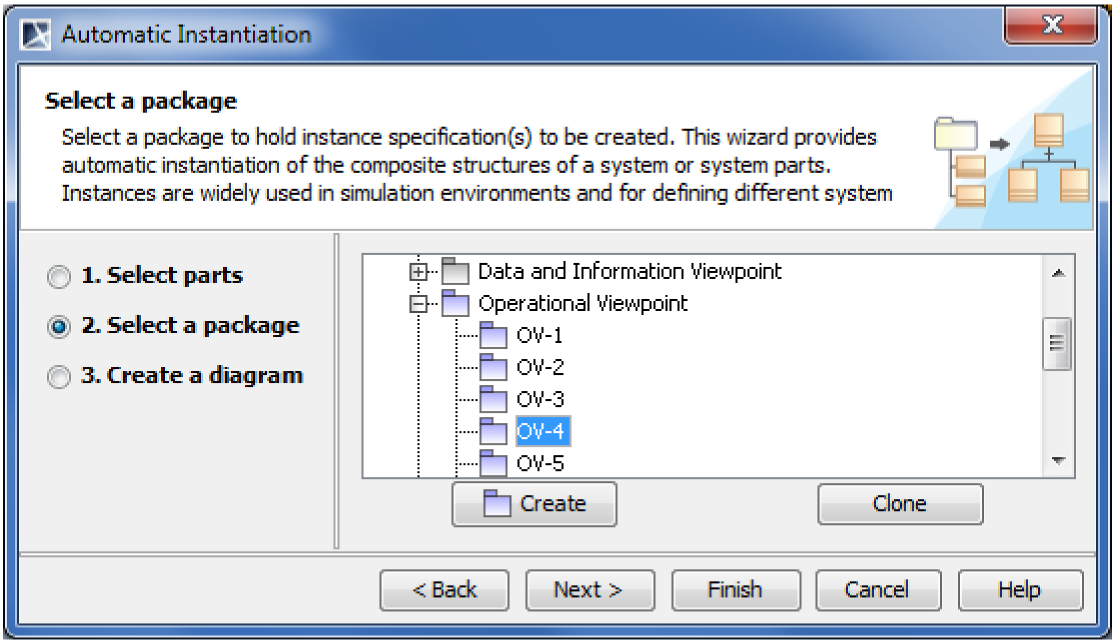


Figure 149 -- Automatic Instantiation. Selecting a package

Step #3: Diagram creation

In this step, specify diagram name, select diagram type to visualize the actual structure and the package to store the diagram.

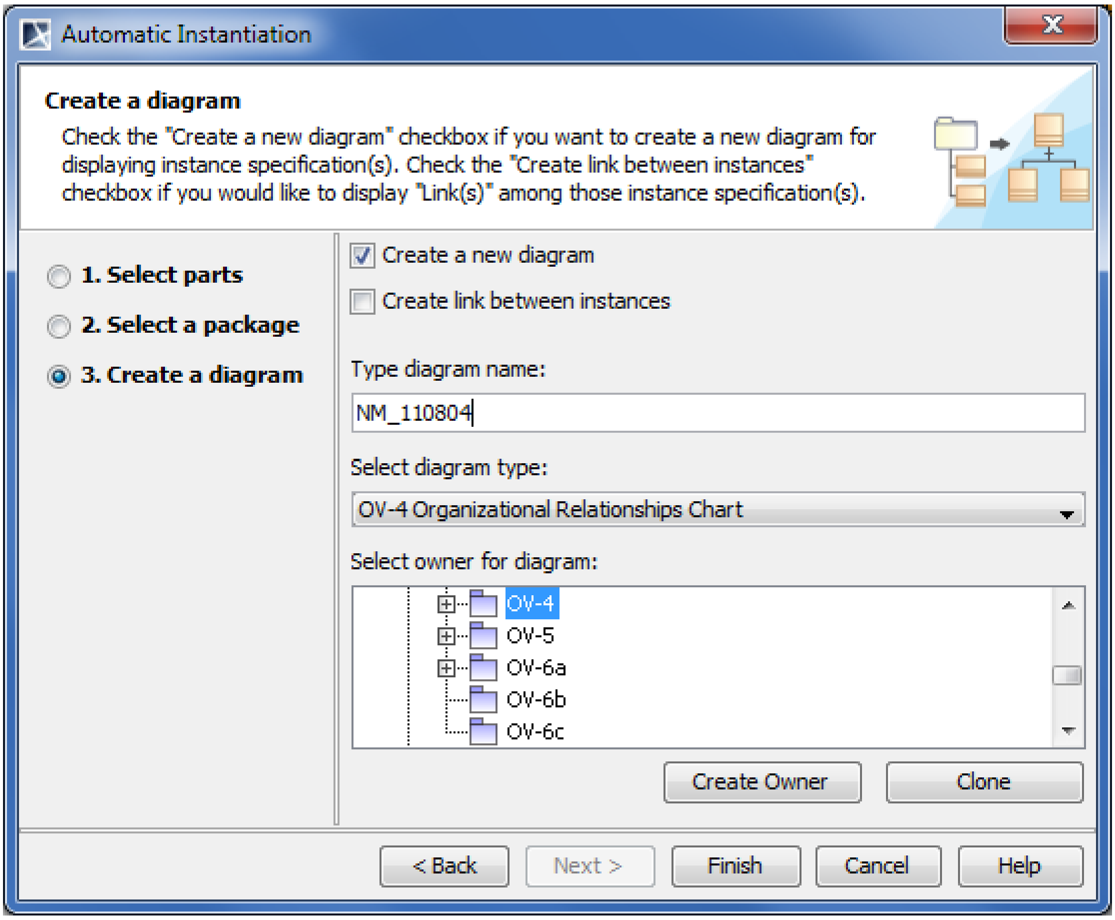


Figure 150 -- Automatic Instantiation. Creating a diagram

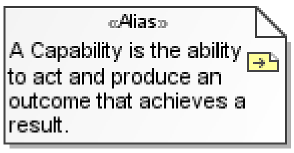
Related procedures

Instantiating Structures

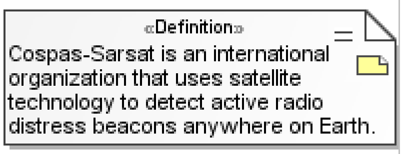
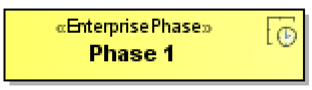
8 APPENDIX I: ELEMENT LIST

The following table lists the elements that are used in DoDAF and/or MODAF architecture frameworks.

Notation	Name	Description
	Capability	
Gain = "60" «ActualMeasurement» **NOTE:** The notation (symbol) is available only in the Model Browser.	Actual Measurement	UPDM: An actual value of the Measurement. MODAF: NA DoDAF: NA
Artifact Receiver Actual Measurement Set... «ActualMeasurementSet» Gain = "60" «ActualMeasurement» Signal To Noise Ratio = "20" «ActualMeasurement» **NOTE:** The notation (symbol) is available only in the Model Browser.	Actual Property Set	UPDM: A set or collection of ActualMeasurement(s). A date of measurement can be set. An intent of ActualMeasurementSet can be “Result”, “Required”, or “Estimate”. MODAF: NA DoDAF: NA
	Actual Organization	MODAF: An actual specific organization, an instance of an organization class, e.g., “The US Department of Defense”. DoDAF: [DoDAF::Organization]: A specific real-world assemblage of people and other resources organized for an on-going purpose.
	Actual Organization Relationship	UPDM: A relationship between two ActualOrganization-Resources. MODAF: NA DoDAF: NA
= MoDSAR Lead «ActualOrganizationRole» **NOTE:** The notation (symbol) is available only in the Model Browser.	Actual Organization Role	UPDM: Relates an actual specific organization to an actual specific organizational resource that fulfills a role in that organization. MODAF: NA DoDAF: NA
	Actual Person	UPDM: Named individual that fulfills an ActualPost. An individual human being (vs Person which is a type), that is recognized by law as the subject of rights and duties. MODAF: NA DoDAF: NA

Notation	Name	Description
	Actual Post	UPDM: An actual, specific post, an instance of a Post-Type class, e.g., “President of the United States of America”. MODAF: NA DoDAF: NA
	Actual Project	MODAF: (MODAF::Project): A time-limited endeavour to create a specific set of products or services. DoDAF: (DoDAF::Project): A temporary endeavor undertaken to create Resources or Desired Effects.
	Actual Project Milestone	MODAF: (ProjectMilestone): An event in a ActualProject (MODAF::Project) by which progress is measured. **NOTE:** In the case of an acquisition project, there are two key types of milestones which shall be represented using subtypes - IncrementMilestone (MODAF::CapabilityIncrement) and OutOfServiceMilestone (MODAF::OutOfService). DoDAF: N/A
 **NOTE:** The notation (symbol) is available only in the Model Browser.	Arbitrary Relationship	
	Alias	A UPDM Artifact used to define an alternative name for an element as used by DoDAF or MODAF.
	Arbitrary Relationship	UPDM: Represents a visual indication of a connection used in high level operational concept diagrams. The connections are purely visual and cannot be related to any architectural semantics.
	Architectural Description	MODAF: A specification of a system of systems at a technical level which also provides the business context for the system of systems. DoDAF: Information describing architecture.
	Architectural Reference	MODAF: Asserts that one architectural description (referrer) refers to another (referred). DoDAF: NA
	Architecture Metadata	UPDM: Information on ArchitecturalDescription. It states things like what methodology was used, notation, etc. MODAF: A Metadata element that applies to the whole architecture. DoDAF: NA

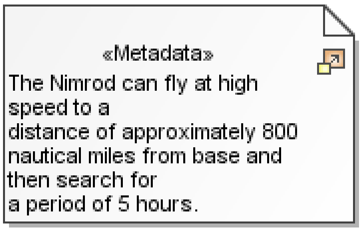
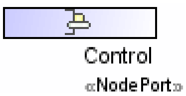
Notation	Name	Description
	Capability	MODAF: A high level specification of the enterprise's ability. DoDAF: The ability to achieve a desired effect under specified [performance] standards and conditions through combinations of ways and means [activities and resources] to perform a set of activities.
	Capability Configuration	MODAF: A composite structure representing the physical and human resources (and their interactions) in an enterprise. A CapabilityConfiguration is a set of artifacts or an organization configured to provide a capability, and should be guided by [doctrine] which may take the form of Standard or OperationalConstraint stereotypes. DoDAF: NA
	Increment Milestone	MODAF: (MODAF::CapabilityIncrement): An ActualProjectMilestone (MODAF::ProjectMilestone) that indicates the point in time at which a project is predicted to deliver or has delivered a Capability. DoDAF: NA
	Climate	MODAF: A type of weather condition, or combination of weather conditions (e.g., high temperature & dry). DoDAF: The state of an environment or situation in which a Performer performs.
	Command	MODAF: Asserts that one OrganizationalResource (source) commands another (target) DoDAF: NA
	Competence	MODAF: (MODAF::RequiredNodeLocation): Relates a node to a location to assert that the operational node is required to be situated at that location. DoDAF: The relationship that describes the location of a performer.
	Competence	MODAF: A specific set of abilities defined by knowledge, skills and attitude. DoDAF: (DoDAF::Skill): The ability, coming from one's knowledge, practice, aptitude, etc., to do something well.
	Concept Role	UPDM: A relationship which asserts that a ConceptItem forms part of the high level operational concept.
	Deployed Milestone	MODAF: Asserts that an ActualOrganisationResource started to use, or is slated to start using a Capability-Configuration from a specific point in time. This is used to describe capabilities going into service with specific organisations or posts. DoDAF: NA
	No Longer Used Milestone	

Notation	Name	Description
	No Longer Used Milestone	MODAF: 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.
	Control	MODAF: A type of ResourceInteraction where one Resource (source) controls another (target). For example, the driver of a tank, one organisation having operational control of another, a fire control system controlling a weapons system. DoDAF: NA
	Fielded Capability	MODAF: A formalized representation of data which is managed by or exchanged between systems. DoDAF: (DoDAF::Data): Representation of information in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means.
	Defines Architecture	UPDM: An ArchitecturalDescription describes the architecture for an EnterprisePhase. The DefinesArchitecture stereotype establishes a relationship between ArchitecturalDescription and EnterprisePhase.
	Definition	UPDM: A definition of an element in the architecture.
	Desired Effect	
	Enduring Task	MODAF: A type of behavior recognized by an enterprise as being essential to achieving its goals, i.e., a strategic specification of what the enterprise does. DoDAF: NA
	Energy	UPDM: Energy to be exchanged between Nodes. MODAF: NA DoDAF: NA
	Enterprise Goal	MODAF: A specific, required objective of the enterprise that the architecture represents. TBD DoDAF: (DoDAF::IndividualDesiredEffect): A desired change in the state as a result of some activity.
	Enterprise Phase	MODAF: A specific, required objective of the enterprise that the architecture represents. DoDAF: NA

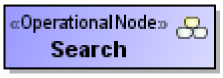
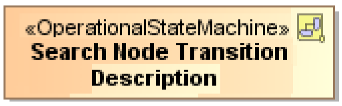
Notation	Name	Description
	Enterprise Vision	MODAF: The overall aims of an enterprise over a given period of time. DoDAF: (DoDAF::Vision): An end that describes the future state of the enterprise, without regard to how it is to be achieved; a mental image of what the future will or could be like.
	Environment	MODAF: 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.). DoDAF: An object that encompasses meteorological, geographic, and control features mission significance.
 **NOTE:** The notation (symbol) is available only in the Model Browser.	Environment Property	MODAF: EnvironmentalProperty: Asserts that an Environment has one or more properties. These may be Climate, LocationType, or LightCondition. DoDAF: NA
	Exhibits	UPDM: Relationship between a Node and a capability the node provides. MODAF: (MODAF::CapabilityForNode): An assertion that a Node is required to have a Capability. DoDAF: A couple that represents the capability that a performer manifests.
	Expose	A dependency between a service interface and a capability. The service interface exposes the capability.
	NEW! Implements	MODAF: A type defined by an external ontology. DoDAF: NA
	Fielded Capability	MODAF: An actual, fully-realized capability. A FieldedCapability must indicate its configuration CapabilityConfiguration. DoDAF: NA
	Fills Post	UPDM: Asserts that ActualPerson fills an ActualPost. MODAF: NA DoDAF: NA
	Forecast	MODAF: A statement about the future state of one or more types of system or standard. DoDAF: NA
	Function	MODAF: An activity which is specified in context of the resource (human or machine) that performs it. DoDAF: Activity: Work, not specific to a single organization, weapon system or individual that transforms inputs (Resources) into outputs (Resources) or changes their state.

Notation	Name	Description
Send TDM:Send TDM NOTE: The notation (symbol) is available only in the Model Browser.	Function Action	UPDM Artifact: The FunctionAction is defined as a call behavior action that invokes the function that needs to be performed. This concept is required for mapping the architecture with UML and does not have a DoDAF or MoDAF equivalent.
Function Edge:Control NOTE: The notation (symbol) is available only in the Model Browser.	Function Edge	UPDM: An extension of «ActivityEdge» that is used to model the flow of control/objects through a Function. MODAF: A FunctionEdge (MODAF::FunctionFlow) is a UML::ObjectFlow between Functions. **NOTE:** This has been extended in UPDM to additionally include UML::ControlFlows.
«FunctionParameter» **: Updated Condition**	Function Parameter	UPDM: Represents inputs and outputs of Function. It is typed by ResourceInteractionItem.
{G} =Satellite communications exten... «Guidance» NOTE: The notation (symbol) is available only in the Model Browser.	High-Level Operational Concept	
«HighLevelOperationalConcept» **: Scenario Description**	High-Level Operational Concept	MODAF: A generalized model for operations. DoDAF: NA
«InformationElement» **Medical Condition**	Known Resource	MODAF: A relationship specifying the need to exchange information between nodes. DoDAF: NA - this is a specialization of OperationalExchange (DoDAF::Interface).
-Equipment «KnownResource» **NOTE:** The notation (symbol) is available only in the Model Browser.	Known Resource	MODAF: Asserts that a known Resource plays a part in the architecture. DoDAF: NA – covered by the more general temporalWholePart element.
«Light Condition» **Night**	Light Condition	MODAF: A specification of environmental lighting conditions. DoDAF: NA – this is a specialization of EnvironmentalType (DoDAF::GeoFeature).
«Location» **Desert**	NEW! Location	MODAF: A general specification of the surroundings / scenario in which an operation may take place. Examples would be: "desert", "arctic", "at sea", etc. DoDAF: A point or extent in space that may be referred to physically or logically. Includes concepts such as: Facility, Installation, RealProperty, Site, and instances of conditions such as underwater (as specified in UJTLs).

Notation	Name	Description
	Logical Architecture	MODAF: A CompositeStructureModel whose parts are either NodeRoles (MODAF::Node), ProblemDomains, or KnownResources. DoDAF: NA
	Logical Data Model	MODAF: 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. DoDAF: A Logical Data Model allows analysis of an architecture's data definition aspect, without consideration of implementation specific or product specific issues.
	Manifests	
	Maps to Capability	MODAF: Asserts that a StandardOperationalActivity is in some way part of a capability. DoDAF: MapsToCapability (DoDAF::ActivityPartOfCapability) is a disposition to manifest an Activity. An Activity to be performed to achieve a desired effect under specified [performance] standards and conditions through combinations of ways and means.
	Request	
	Mission	UPDM: Materiel that is exchanged between Nodes. MODAF: A MaterialExchange (MODAF::MaterielFlow) a relationship specifying the need to exchange materiel between nodes. DoDAF: NA – this is a specialization of OperationalExchange (DoDAF::Interface).
	Measurement	A DoDAF alias for ActualMeasurement.
	Measurement Set	A set or collection of measurements.
 **NOTE:** The notation (symbol) is available only in the Model Browser.	Measure Type	A DoDAF alias for ActualMeasurement.

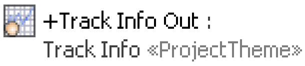
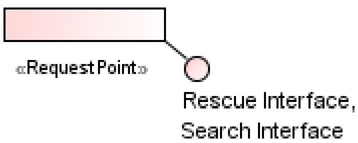
Notation	Name	Description
	Metadata	MODAF: Annotation that can be applied to any element in the architecture. DoDAF: NA
	Milestone Sequence	MODAF: A MilestoneSequence (MODAF::MilestoneRelationship) is a relationship between two milestones. DoDAF: NA
	Mission	MODAF: A purpose to which a person, organization or autonomous system is tasked. DoDAF: The task, together with the purpose, that clearly indicates the action to be taken.
	Needline	UPDM: MODAF alias for OrganizationalExchange. MODAF: A relationship specifying the need to move people between nodes. DoDAF: NA – a MODAF alias for a specialization of OperationalExchange (DoDAF::Interface).
	Needline	MODAF: NA DoDAF: A needline documents the requirement to exchange information between nodes. The needline does not indicate how the information transfer is implemented.
	Node	MODAF: A Node (MODAF::NodeType) is a logical entity that performs operational activities. **NOTE:** Nodes are specified independently of any physical realization. DoDAF: A Node (DoDAF::OperationalNode) is an element of the operational architecture that produces, consumes, or processes information. **NOTE:** This is also a specialization of Performer.
	Node Port	UPDM: A port is a property of a Node that specifies a distinct interaction point between the node and its environment or between the (behavior of the) node and its internal parts. It is the “entry/exit” point where resources (e.g., energy, information/data and people, etc.) flow in and out of a node.
 **NOTE:** The notation (symbol) is available only in the Model Browser.	Node Role	MODAF: A NodeRole (MODAF::Node) is used to link a parent Node to its sub-nodes. DoDAF: NA

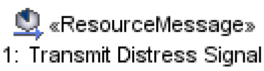
Notation	Name	Description
«OperationalActivity» **Find Victim**	Operational Activity	MODAF: A logical process, specified independently of how the process is carried out.DoDAF: An activity is an action performed in conducting the business of an enterprise. It is a general term that does not imply a placement in a hierarchy (e.g., it could be a process or a task as defined in other documents and it could be at any level of the hierarchy of the OV-5). It is used to portray operational actions not hardware/software system functions. **NOTE:** This is also a specialization of Activity.
«OperationalActivityAction» **Send Distress Signal**	Operational Activity Action	UPDM The OperationalActivityAction is defined as a call behavior action that invokes the activity that needs to be preformed. MODAF: Used to relate an OperationalActivity to its sub-activities.
Operational Activity Edge [Medical assistance needed? -] «OperationalActivityEdge» **NOTE:** The notation (symbol) is available only in the Model Browser.	Operational Activity Edge	UPDM An extension of «ActivityEdge» that is used to model the flow of control/objects through an OperationalActivity. MODAF: An OperationalActivityEdge (MODAF::OperationalActivityFlow) is a flow of information, energy or materiel from one activity to another.
{o}=Respond to emergencies 24 hour «OperationalConstraint» **NOTE:** The notation (symbol) is available only in the Model Browser.	Operational Constraint	UPDM: An abstract Class that is extended by OperationalConstraint (a rule governing an operational behavior or property) and ResourceConstraint.
: OperationalEventTrace	Operational Event Trace	MODAF: An OperationalEventTrace (MODAF::OperationalInteractionSpecification) is a specification of the interactions between nodes in an operational architecture. DoDAF: The Operational Event-Trace Description (OV-6c) DoDAF- described View provides a time ordered examination of the resource flows as a result of a particular scenario. Each event- trace diagram will have an accompanying description that defines the particular scenario or situation.
Operational Exchange:Recover Victim[Search & Rescue -] «OperationalExchange» **NOTE:** The notation (symbol) is available only in the Model Browser.	NEW! Operational Exchange	
«OperationalMessage» 5: Helth Condition()	Operational Message	UPDM: Message for use in an Operational Event-Trace which carries any of the subtypes of OperationalExchange. This is used to provide additional information about OperationalMessages for display on an OV-6c.

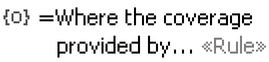
Notation	Name	Description
	Operational Parameter	An alias for Node in the DoDAF environment.
	Operational Parameter	UPDM Represents inputs and outputs of an OperationalActivity. It is typed by OperationalExchangeItem.
{o} =Satellite communications extend... «OperationalRule» **NOTE:** The notation (symbol) is available only in the Model Browser.	Operational State Description	UPDM: A DoDAF v1.5 alias for OperationalConstraint. Required for backward compatibility with DoDAF v1.5.
	Operational State Description	UPDM: A state machine describing an operational behavior or property. MODAF: An OperationalStateMachine (MODAF::OperationalStateDescription) is a rule governing an operational behavior or property. DoDAF: The Operational State Transition Description (OV-6b) DoDAF-described View is a graphical method of describing how an Operational Activity responds to various events by changing its state. The diagram represents the sets of events to which the Architecture will respond (by taking an action to move to a new state) as a function of its current state. Each transition specifies an event and an action.
	Organization (MODAF)	MODAF: A group of persons, associated for a particular purpose. DoDAF: A type of Organization.
Organizational Exchange:flow for Control Order[Tactical C2 Node - Rescue Node] «OrganizationalExchange» **NOTE:** The notation (symbol) is available only in the Model Browser.	Owns Process	UPDM: A relationship specifying flow of people across organizations. MODAF: An OrganizationExchange (MODAF::MovementOfPeople) relationship specifies the need to move people between nodes. DoDAF: Interface: An overlap between Performers for the purpose of producing a Resource that is consumed by the other.
	Out Of Service Milestone	MODAF: An OutOfServiceMilestone (MODAF::OutOfService) is a ProjectMilestone that indicates a project's deliverable is to go out of service. DoDAF: NA

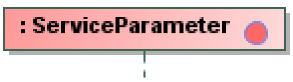
Notation	Name	Description
	Owns Process	MODAF: The OwnsProcess (MODAF::ProcessOwner) relationship asserts that an ActualOrganizationalResource has responsibility for an OperationalActivity. **NOTE:** This does not imply the resource conducts the activity, merely that it has managerial responsibility for it. DoDAF: NA
 **NOTE:** The notation (symbol) is available only in the Model Browser.	NEW! Measure	UPDM A DoDAF alias for Measurement. DoDAF: A category of quality measures that address how well a Performer meets Capability needs.
	Performer	
	Person	
	Same As	UPDM: Links a Performer to the behavior that it can perform. DoDAF: The Performs (DoDAF::ActivityPerformedByPerformer) relationship is an overlap between a Performer and a PerformedActivity (DoDAF::Activity) wherein the activity is performed by the Performer.
	Person	UPDM: A type of a human being that is recognized by law as the subject of rights and duties. This is used to define the characteristics that require capturing for ActualPersons (e.g., properties such as address, rank, telephone number, etc.). MODAF: NA DoDAF: NA
	Physical Data Model	MODAF: A PhysicalDataModel is an implementable specification of a data structure. A PhysicalDataModel realizes a LogicalDataModel, taking into account implementation restrictions and performance issues whilst still enforcing the constraints, relationships and typing of the logical model. DoDAF: A Physical Data Model defines the structure of the various kinds of system or service data that are utilized by the systems or services in the Architecture.

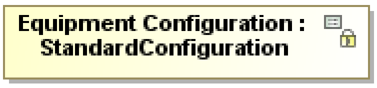
Notation	Name	Description
	Resource Artifact	MODAF: A PhysicalLocation (MODAF::ActualLocation) is a location anywhere on the earth. The means of describing the location is a string (locationDescription). The information contained in that string is governed by the taxonomy reference, e.g., if the PhysicalLocation is a “GPS reference”, the string will contain the GPS coordinates. **NOTE:** This has been extended in UPDM to include non-earth locations. DoDAF: All subtypes of «IndividualType» Location, such as Facility, Site, etc.
	Post	MODAF: A Post (MODAF::PostType) is 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. DoDAF: A Post (DoDAF::PersonType) is a category of persons defined by the role or roles they share that are relevant to an architecture.
 **NOTE:** The notation (symbol) is available only in the Model Browser.	Problem Domain	MODAF: The boundary containing those Nodes which may be realized by functional 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. DoDAF: NA – covered by the more general temporalWholePart element.
	Project	MODAF: A Project (MODAF::ProjectType) is used to define a category of project: For example, "Program”, “Acquisition Project” or “Training Program". DoDAF: NA (only Individual Project in DoDAF).
	Project Milestone	UPDM: An element representing a collection of themes (e.g., DLOD or DOTMLPF) which is connected to a Project as part of a Project’s definition. This is used as a template for ActualProjectMilestones. MODAF: An event in a Project by which progress is measured.
	Project Sequence	MODAF: Asserts that one ActualProject (MODAF::Project) follows from another, i.e., the target ActualProject cannot start until the source ActualProject has ended. DoDAF: NA
 **NOTE:** The notation (symbol) is available only in the Model Browser.	Project Status	MODAF: A ProjectStatus (MODAF::StatusAtMilestone) is a relationship between a Status and a milestone that asserts the status (i.e., level of progress) of a ProjectTheme for the project at the time of the ActualProjectMilestone (MODAF::Milestone). DoDAF: NA

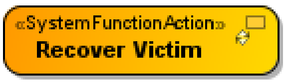
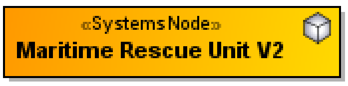
Notation	Name	Description
 **NOTE:** The notation (symbol) is available only in the Model Browser.	Project Theme	MODAF:An aspect by which the progress of various Projects may be measured. In UK MOD, this could be one of the defense lines of development (DLOD), or DOTMLPF in the US. DoDAF: NA
	Protocol	MODAF: A Standard for communication. Protocols may be composite (i.e., a stack). DoDAF: NA, See Technical Standards Viewpoint.
	Protocol Layer	MODAF: Asserts that a Protocol (upperLayer) uses another Protocol (lowerLayer) (MODAF::ProtocolStack).
	Provides Competence	UPDM: Asserts that a Resource type provides a competence. MODAF: Asserts that a Role requires a Competence (MODAF::CompetenceForRole). DoDAF: An overlap between a Personnel Type and the Skills it entails (DoDAF::SkillPartOfPersonType).
	Skill Of Person Type	
	Standard Operational Activity	UPDM: Asserts that a Resource type provides a Capability. DoDAF: A couple that represents the capability that a performer manifests (DoDAF ::CapabilityPerformerManifestation). MODAF: Asserts that a CapabilityConfiguration is capable of achieving a Capability (MODAF::CapabilityRealization).
	Request	A RequestPoint models the use of a service by a participant and defines the connection point through which a Participant makes requests and uses or consumes services.
	Requires Competence	MODAF: Asserts that an Role requires a Competence (MODAF::CompetenceForRole). DoDAF: An overlap between a Personnel Type and the Skills it entails (DoDAF::SkillPartOfPersonType).
	Resource Artifact	UPDM: A combination of physical element, energy, and data that are combined used to accomplish a task or function. MODAF: A type of man-made object. Examples are "car", "radio", "fuel", etc. (MODAF::Artifact).

Notation	Name	Description
	Resource Connector	UPDM: A well defined resource that is used by a CapabilityConfiguration to accomplish a capability. MODAF: Usage of an Artifact as a component of a ResourceConfiguration (MODAF::PhysicalAsset).
	Resource Connector	UPDM: A physical connection between two resources that implements protocols through which the source resource can transmit items to the destination resource. MODAF: Asserts that a connection exists between two ports belonging to parts in a system composite structure model (MODAF::SystemPortConnector). DoDAF: NA
 **NOTE:** The notation (symbol) is available only in the Model Browser.	Resource Constraint	MODAF: A rule governing the structural or functional aspects of an implementation - this may also include constraints on OrganizationalResources that are part of an implementation. DoDAF: The range of permissible states for an object (DoDAF::Constraint).
	Resource Event Trace	UPDM: A UPDM artifact that extends a UML Interaction.
	Resource Interaction	UPDM: ResourceInteraction represents data that is exchanged between the resources. MODAF: An assertion that two FunctionalResources interact. For example, data exchange between systems, conversations between people, people using systems. DoDAF: NA
	Resource Interface	UPDM: ResourceInterface is a contractual agreement between two resources that implement protocols through which the source resource to the destination resource. MODAF: NA DoDAF: An overlap between Performers for the purpose of producing a Resource that is consumed by the other (DoDAF::Interface).
	Resource Message	UPDM: Message for use in a Resource Event-Trace, implements a ResourceInteraction. MODAF: A specification of the interactions between aspects of a Resources architecture (MODAF::ResourceInteractionSpecification). DoDAF: An overlap of an Activity with a Resource, in particular a consuming or producing Activity that expresses an input, output, consumption, or production Activity of the Resource (DoDAF::ActivityResourceOverlap).

Notation	Name	Description
	Resource Port	UPDM: Port is an interaction point for a resource through which it can interact with the outside environment. MODAF: An interface (logical or physical) provided by a System. A SystemPort may implement a PortType though there is no requirement for SystemPorts to be typed (MODAF::SystemPort). DoDAF: An interface (logical or physical) provided by a System (DoDAF::Port).
	Resources State Machine	UPDM: Artifact that extends a UML StateMachine applied to Resources.
 **NOTE:** The notation (symbol) is available only in the Model Browser.	Rule	
	Same As	MODAF: Asserts that two elements refer to the same real-world thing.
	Service Attribute	UPDM: A property of a ServiceInterface that allows performance, reliability and cost values, etc., to be captured. This allows a user to choose between different ServiceInterfaces providing the same Capabilities. MODAF: A property of Service. DoDAF: NA
	Service Channel	A communication path between ServicePoints and RequestPoints within an architecture.
	Service Function	UPDM: A ServiceFunction describes the abstract behavior of ServiceOperations, regardless of the actual implementation. MODAF: A type of activity describing the functionality of a service. DoDAF: Information necessary to interact with the service in such terms as the service inputs, outputs, and associated semantics. The service description also conveys what is accomplished when the service is invoked and the conditions for using the service.
	Service Function Action	UPDM: A call behavior action that invokes the ServiceFunction that needs to be preformed. This concept is required for mapping the architecture with UML and does not have a DoDAF or MoDAF equivalent.

Notation	Name	Description
	Service Interaction	UPDM: Interaction for a service interface. MODAF: A model representing how a set of Service classes interacts with one another (MODAF::ServiceInteractionSpecification).
	Service Interface	UPDM: A contractual agreement between two resources that implement protocols through which the source service interacts to the destination resource. A physical connection between two resources that implements protocols through which the source resource can transmit items to the destination resource. MODAF: The mechanism by which a Service communicates. DoDAF: An overlap between Performers for the purpose of producing a Resource that is consumed by the other (DoDAF::Interface). SOAML: Defines the interface to a Service Point or Request Point and is the type of a role in a service contract.
	Service Message	UPDM: Message for use in a Service Interaction Specification, implements a resourceInteraction or any of the subtypes.
	Service Operation	UPDM: A ServiceOperation provides the access point for invoking the behavior of a provided service. The ServiceOperations are defined on ServiceInterfaces and mirrored on the providing Resource to handle calls forwarded on by the interface. MODAF: A function or procedure which enables programmatic communication with a Service via a ServiceInterface (MODAF::ServiceInterfaceOperation).
	Service Operation Action	UPDM Artifact: A call action that represents a Resource or Service Function invoking a ServiceOperation. This is used by a consuming Resource to model the call into the service. This concept is required for mapping the architecture with UML and does not have a DoDAF or MoDAF equivelent.
	Service Parameter	UPDM: Represents inputs and outputs of Service. It is typed by ResourceInteractionItem. MODAF: A constant or variable passed into or out of a ServiceInterface as part of the execution of a ServiceInterfaceOperation (MODAF::ServiceInterfaceParameter). DoDAF: NA
	Service	A ServicePoint is the offer of a service by one participant to others using well defined terms, conditions and interfaces. A ServicePoint defines the connection point through which a Participant offers its capabilities and provides a service to clients.

Notation	Name	Description
 **NOTE:** The notation (symbol) is available only in the Model Browser.	Service Policy	UPDM: A constraint governing the consumers and providers of services. MODAF: A constraint governing one or more services. DoDAF: Agreement: A consent among parties regarding the terms and conditions of activities that said parties participate in.
	Service State Machine	UPDM: Artifact that extends a UML StateMachine.
	Skill	
	Software	MODAF: An executable computer programme. DoDAF: Materiel: Equipment, apparatus or supplies that are of interest, without distinction as to its application for administrative or combat purposes.
	Standard	MODAF: 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. DoDAF: A formal agreement documenting generally accepted specifications or criteria for products, processes, procedures, policies, systems, and/or personnel.
	Standard Configuration	MODAF: A UML::Comment that when attached to a CapabilityConfiguration indicates that it is a standard pattern for re-use in the architecture. DoDAF: NA
	Standard Operational Activity	MODAF: An OperationalActivity that is a standard procedure that is doctrinal. **NOTE:** This is equivalent to what some defense organizations call JETLs. DoDAF: Work, not specific to a single organization, weapon system or individual, that transforms inputs into outputs or changes their state (DoDAF::Activity).
	Structural Part	UPDM: An EnterprisePhase can be sub-divided into structural and temporal parts. StructuralPart describes the EnterprisePhase elements that describe the structure. MODAF: Asserts that one EnterprisePhase is a spatial part of another, (MODAF::EnterpriseStructure). **NOTE:** This is a topological structuring relationship, hence the EnterprisePhase may be physically disjoint.
	NEW! Trustline	MODAF: Asserts that one type of organization is typically the parent of another, e.g., a squadron may be part of a battalion. DoDAF: NA

Notation	Name	Description
	System	UPDM: Indicates that a (sub)system is part of another system. MODAF: Usage of an Artifact (UPDM::ResourceArtifact) as a part of another Artifact (UPDM::ResourceArtifact), equates to a MODAF::Part DoDAF: NA
	Systems Viewpoint Elements	MODAF: An assertion that a Service in some way contributes or assists in the execution of an OperationalActivity (MODAF::ServiceSupportsActivity).
	System	A DoDAF alias for ResourceArtifact.
	System Function	A DoDAF alias for Function.
	System Function Action	A DoDAF alias for FunctionAction.
System Function Edge[- Reported Condition] «SystemFunctionEdge» **NOTE:** The notation (symbol) is available only in the Model Browser.	System Function Edge	A DoDAF alias for FunctionEdge.
	Standards Viewpoint and Technical Standards Viewpoint Elements	UPDM: DoDAF v1.5 alias for CapabilityConfiguration. Required for backward compatibility with DoDAF v1.5.
	Temporal Part	UPDM Artifact: An EnterprisePhase can be sub-divided into structural and temporal parts. TemporalPart describes the EnterprisePhase elements that have a time based nature. MODAF: Asserts that one EnterprisePhase is a temporal part of another. **NOTE:** This means that both EnterprisePhases have the same spatial extent, i.e., this is only a temporal structure (MODAF::EnterpriseTemporalPart).
	Vision	

Notation	Name	Description
	Vision Statement	MODAF: A high-level textual description of an EnterpriseVision. DoDAF: An end that describes the future state of the enterprise, without regard to how it is to be achieved; a mental image of what the future will or could be like (DODAF::Vision).
	Whole-Life Enterprise	UPDM: A WholeLifeEnterprise is a purposeful endeavor of any size involving people, organizations and supporting systems (including physical systems and/or processes). MODAF: An EnterprisePhase that represents the whole existance of an enterprise. DoDAF: NA