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Process Ontology and Process Modelling Platform

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PROJECT DELIVERABLE

3.1.2 – Process Ontology and Process Modelling Platform

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LIST OF ABBREVIATIONS /GLOSSARY

D

Database

Abbreviation: DB

Source: N.A.

A set of data or information stored in a structured way in a computer or network system

P

Process Ontology

Abbreviation: none

Source: T.R. Gruber (31.11.2006)

A specification of a conceptualisation, or a description of the concepts and relationships that can exist for an agent or a community of agents



1 Introduction

The integrated project EFFORTS aims at improvement of the competitiveness of European Seaports by increased efficiency of the port processes and an enhanced range of services provided by the ports. During specification of the EFFORTS' objectives it became evident that a deep and comprehensive understanding of the underlying port processes is needed. Due to the large scope and size of the project it is important to have a common platform of understanding, terminology and a uniform approach for process modelling in order to ensure consistency between the different work packages of the project.

This deliverable contains results of work package 3.1 "Port Processes and Ship-Port Interface". The objectives of this work package are two-folded:

1. Provide a methodology to conduct process modelling which is customised to port operations
2. Develop a 'process ontology' describing the top-level processes relevant within the scope of EFFORTS.

In EFFORTS, the word 'process ontology' has derived the definition from T.R. Gruber that Ontology is a specification of a conceptualisation, or a description of the concepts and relationships that can exist for an agent or a community of agents¹. With this definition, ontology enables the effectiveness of the cooperation and work within EFFORTS in a consistent way and with the same understanding by following the unified approach as mentioned above.

The scope of this paper is to describe the process ontology and its implementation ("process modelling platform"). The general approach for process modelling applied within EFFORTS is documented in deliverable 3.1.1 "Handbook of Process Modelling".

A general problem of process modelling is that it requires involvement of numerous experts with different skills, e.g. business analysts, business experts, IT developers, modelling experts. In a highly distributed project like EFFORTS all these people are located in different companies situated in different countries. Therefore, a central platform is needed to allow distributed work during the modelling process.

However, this platform is not restricted to the project work. It must sustain in order to serve port and terminal stakeholders as an easy-to-understand platform and to use available tools to manage and improve their individual process.

The basic idea of the process ontology is to provide such a platform. The ontology shall particularly satisfy the following requirements:

- To give an overview of the EFFORTS key processes (port and terminal)
- To show all relevant stakeholders, processes and relations between the processes
- To allow 'horizontal' and 'vertical' navigation within the model

¹ Gruber, T.R (31.11.2006)



- To provide a central, easy accessible platform to view the model and to exchange information/comments amongst all involved parties.
- To support the process modelling approach and the procedure model to be applied within EFFORTS

Section 2 of this document describes the elements applied within the process ontology. Central element of the ontology is the 'scope map'. This is a map describing the domain of the project in a graphical way. The generation of this map follows the same rules as the principle of 'mind mapping'². Additional elements applied are:

- Use case diagrams to show the relations between stakeholders (actors) and processes
- Activity diagrams to document the behaviour of processes
- Class diagrams to show the attributes of objects to be modelled. This will be useful for later stage of project in designing the process model.

A crucial step during the analysis phase is to define the project scope. Therefore, the modelling of the scope within the process ontology is handled separately in section 3. This section explains how the project scope of EFFORTS has been defined by means of a scope diagram.

The following sections 4 and 5 show how the concept of the process ontology has been implemented by a web-interface. Section 4 contains the specification of the process ontology which has been used as basis to implement the ontology in the EFFORTS project web site. Section 5 documents this implementation and serves also as a user guide.

² Buzan, T. (1991). *The Mind Map Book*. New York: Penguin

2 Elements of the process ontology

This chapter includes a short description of the elements which are used in the Process Ontology. For detailed information please refer to the Process Modelling Handbook (Deliverable 3.1.1).

2.1 Mind maps/Scope Maps

A mind map is a graphical notation which demonstrates the relationship of several terms. The central topic is located in the centre of the map. Around this central topic there are main topics – i.e. the objectives - and sub topics. This kind of map can be used for collecting ideas, covering and structuring complex content, preparing of presentations etc. Mind maps represent complex information in an organised, easy-to-understand visual format. Furthermore, they enable you to easily grasp connections, obstacles, and paths so you can quickly choose the best course of action. Several map tools are available. Often they can enlarge the classical map with special branch with link to files or internet sources.

Within the context of EFFORTS, mind map technology is used to specify the scope of the system, i.e. to give a graphical representation of the elements being part of the system in view and the system boundaries. It can be used for brainstorming, completing the concepts and structures of process. This specific type of mind maps is called 'scope maps'.

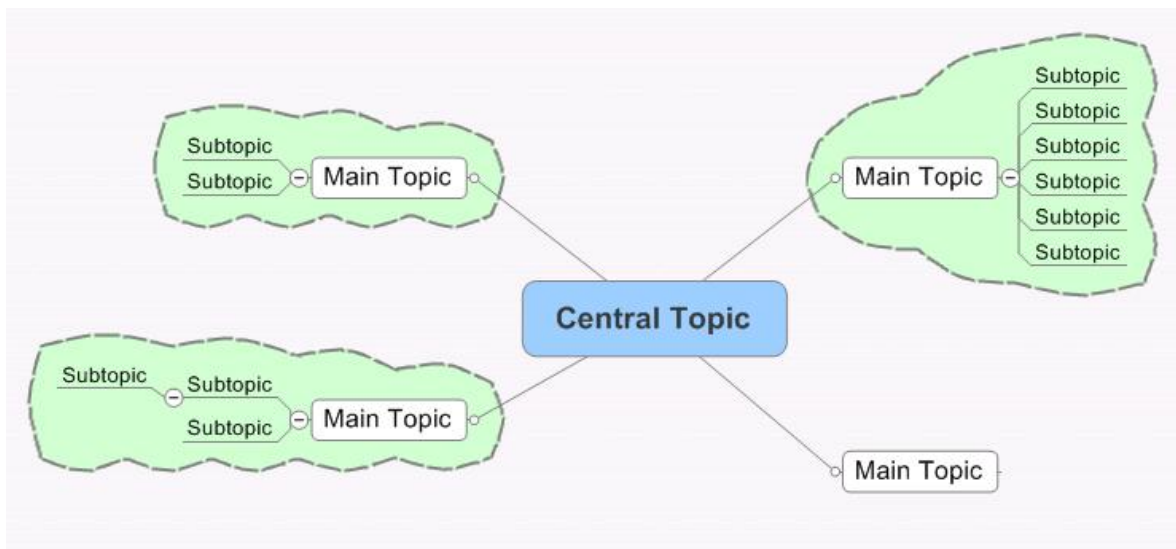


Figure 3.1: Mind Map /Scope Map – elements and structure

2.2 UML Elements

The Unified Modelling Language (UML) is a standard language for modelling software and other processes. UML defines a set of elements for modelling and relationships between elements. UML offers graphical notations for these elements to build models in a static structure or a dynamic flow. The diagrams explained within the following sections are used in the context of the EFFORTS process ontology.

2.2.1 Use case diagram with specification

The Use Case Diagram shows a specific view on the expected behaviour of a system. It describes use cases and actors with their interdependencies and relationships. Descriptions of information and activity flows are not part of a use case diagram.

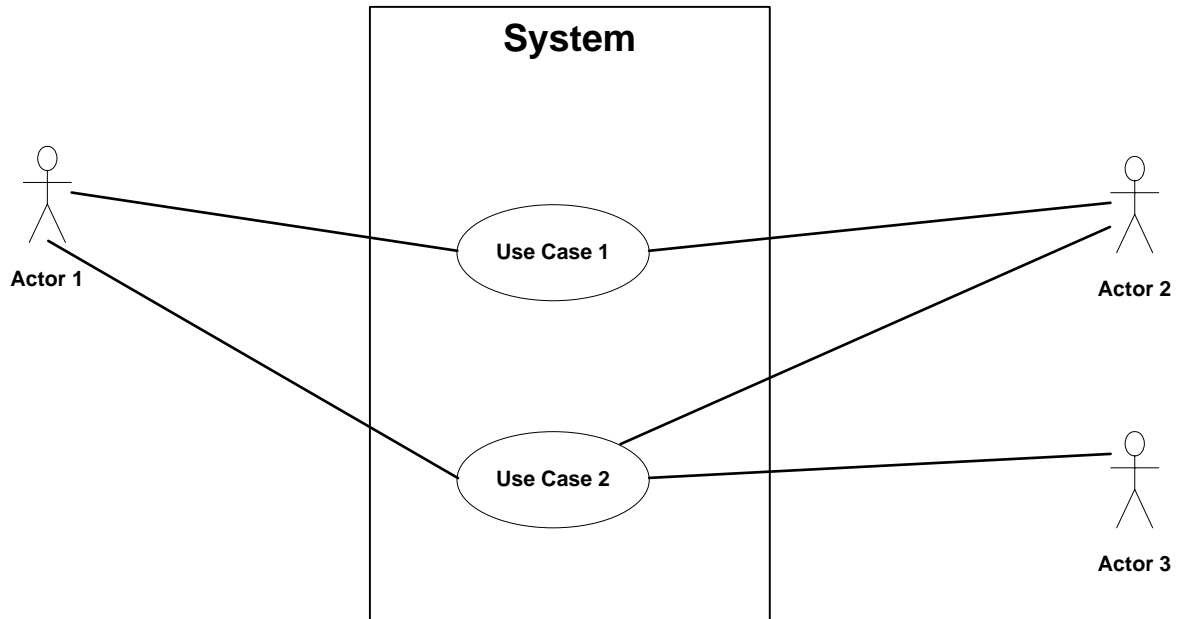


Figure 3.2: Use case diagram

Detailed information about a use case can be found in the specification of the particular use case. This describes all relevant aspects of a use case. The following table demonstrates the necessary content of a use case specification:

Category	Description	Information formatted as
1. No. of use case	Number to identify the use case	
2. Name of use case	Name to identify the use case	Verb(s) + Noun
3. Short description	Text to shortly explain the use case	Flow text of roughly 25 words
4. Actor(s)	Involved party/parties of the use case	Consecutively-numbered noun(s)
5. Pre-condition(s)	Text to define the significant condition(s) to enable action(s) in the use case	Consecutively-numbered sentence(s)
6. Input	Resource(s) to enable the action(s) in the use case	Consecutively-numbered noun(s)
7. Flow of events (standard flow)	Text to describe what normally happens in the	Consecutively-numbered conditional order or "if,



	use case	then" sentence(s) or specific action description(s)
8. Post-condition(s)	Text to define the significant condition(s) to check whether the use case is completed	Consecutively-numbered sentence(s)
9. Output	Expected result(s) from the use case	Consecutively-numbered noun(s)
10. Extension points	Text to define the alternative sequences of event and also the open issue(s) which will not be captured by this use case	Consecutively-numbered sentence(s)

Table 3.1: Use case specification

2.2.2 Activity diagram

An activity diagram demonstrates a specific view on the dynamic flows of the modelled system. It is a graphical description of a net from elemental actions, which are connected by control, and data flows. An activity diagram shows usually a course of events of a use case or an order of events of all use cases in a system.

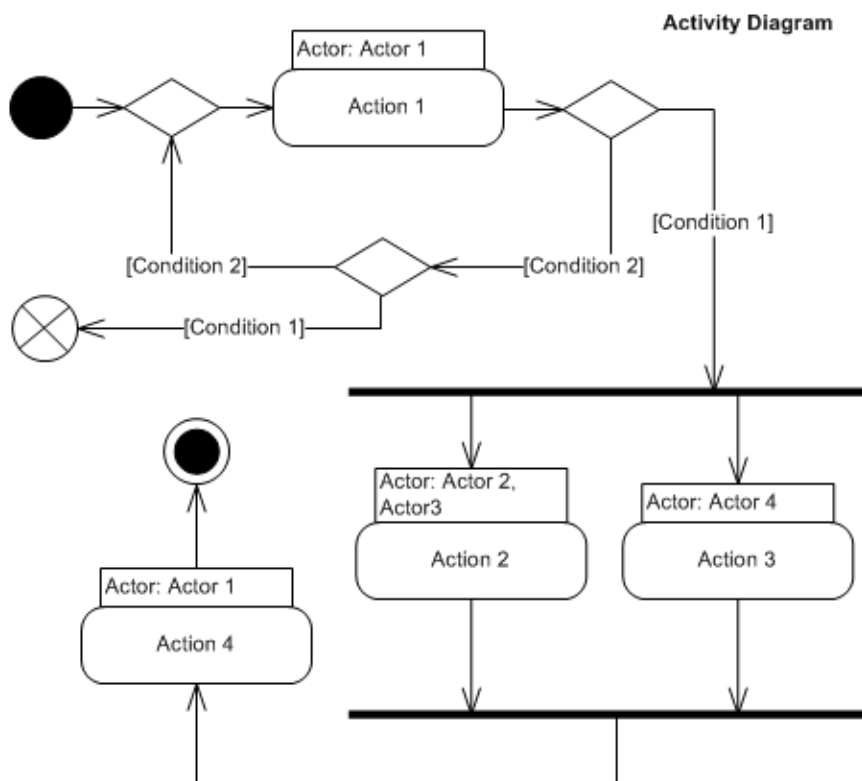


Figure 3.3: Activity diagram



2.2.3 Class diagram

A class diagram is a graphical notation of classes, their attributes, their operations and their relationships. A class in the object-oriented world is a generic term of the description of objects which have the same structure and behaviour. The use of that is to abstract objects. Therefore, in the first phase of the project, only two important elements from class diagrams will be applied, namely class name and its attributes. The associations or relationship between classes as well as the operations will be added in the second phase.

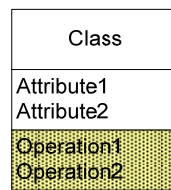


Figure 3.4: Class diagram



3 Modelling the Scope of EFFORTS

The first task during the modelling process is to identify the scope of the analysis. The main objective of this task is to identify the elements which are within the scope of the analysis and to define the boundary of the system to be analysed. It is obvious that this phase is extremely critical for the entire project because the issues covered by the project are defined in this very early phase. Therefore, it seems to be surprising that there is no structured methodology available to define the scope of a project. One possible explanation is that in most cases the field of study (also called the 'domain' of a system) is very evident. It is also the case for EFFORTS. However, due to the large number of project partner, a common method is needed to identify and document the project scope in a structured way. This method has to be intuitively understandable for every project member and will enable an effective communication amongst them.

3.1 Mind Mapping – a Method to Define the Scope of a Project

It became clear at the very beginning of the project that only a graphical representation of the project scope would give a comprehensive picture of the EFFORTS field of study. The basic idea was to provide a project 'map' of EFFORTS at the topmost level. Therefore, the attention to apply the concept of 'Mind Mapping' was concentrated already at a very early stage in order to identify and document the scope of EFFORTS.

As already explained in section 2.1, a Mind Map is a method of brainstorming visualised as a diagram, which groups related topics around a central keyword. Relations between topics are indicated by lines. The result is a network consisting of different branches with one common root (the central keyword). Topics near to the centre are general; dependent on the distance they become more specific.

3.2 The EFFORTS Scope Map

Below figure shows the Mind Map of the problem domain "Port Call". Around this central topic the following main phases during the call of a port by a vessel have been grouped:

- Approach
- Berthing
- Load/Discharge
- Unberthing
- Departure

Furthermore, four topics of a more general nature are shown:

- Waste Disposal/Environmental Protection
- Supply



-
- Administration/Clearance
 - Maintenance/Repair

Additionally, below figure shows the relation between the topics within the scope of EFFORTS. As will be shown in following sections, the scope map forms the entry into the process ontology of EFFORTS.



4 Process Modelling Platform – Specification

4.1 Objectives

One of the main purposes of the project EFFORTS is to develop a process model for port operations. To demonstrate this model, the process modelling platform needs to fulfil following objectives:

- Display the key processes in ports as a “Process Map”
- Illustrate sub-systems, relevant processes and their actors with “Use Case Diagrams”
- Provide use case specifications (tables specifying characteristics of the use cases)
- Describe detailed process behaviour with “Activity Diagrams”
- Specify information exchanged by means of “Class Diagrams”

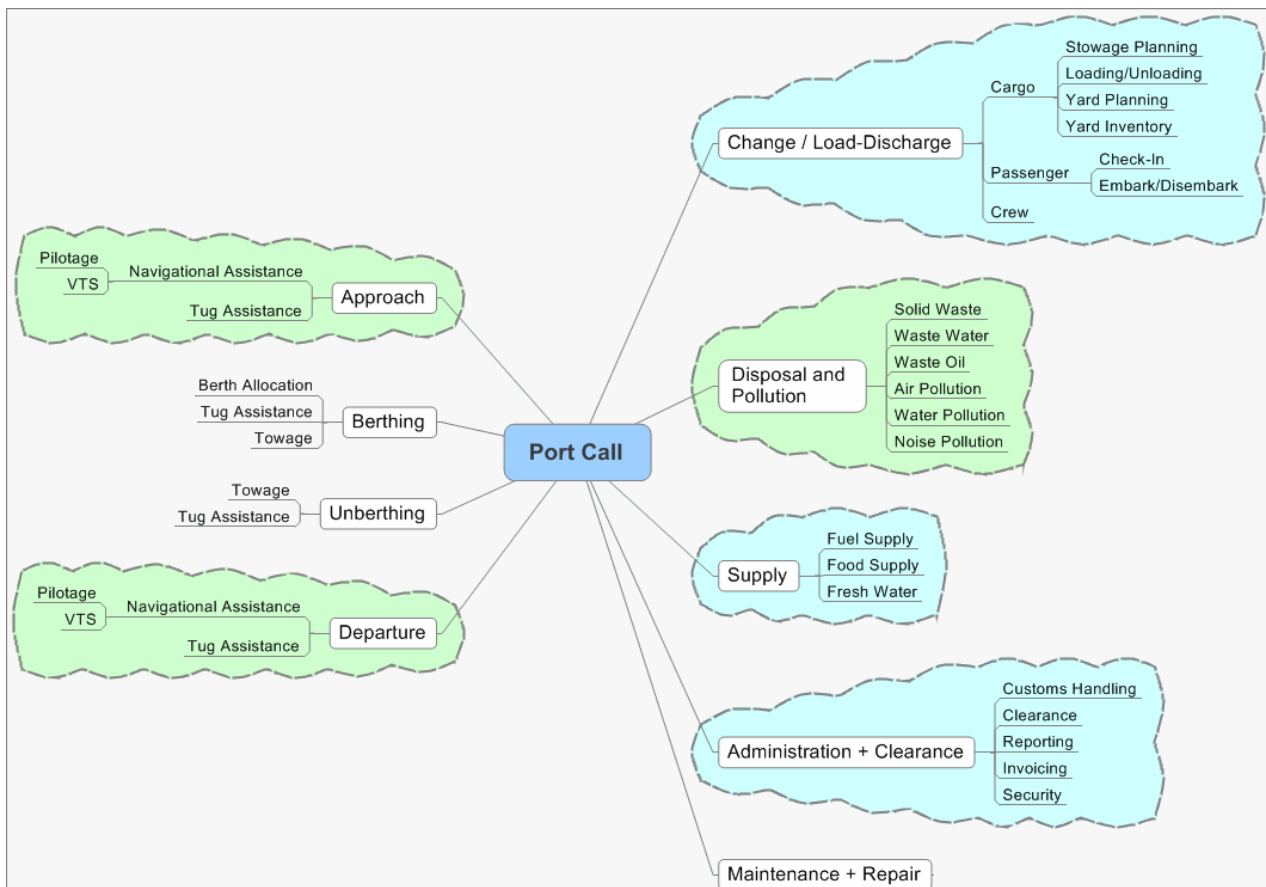


Figure 4.1: Scope Map of EFFORTS (to be replaced)



Besides the visualisation, the web interface should allow and enable the experts and/or evaluators to give comments on the modelled objects presented in each diagram. The comments will be stored together with commentator's name and his/her organisation in a database.

It also offers the navigating possibility within the model vertically and horizontally. The interface must be applicable by the most popular web-browsers.

4.2 Use cases of process modelling platform

The main considered use cases or abilities of this process modelling platform include:

- Create / Modify / Delete a key process
- Create / Modify / Delete a use case diagram
- Links from use case diagram to corresponding key processes
- Create / Modify / Delete a use case specification
- Create / Modify / Delete an activity diagram
- Links from activity diagram to corresponding use cases
- Enter a comment to each element of the model
- Horizontal and vertical navigation within the model

This web-interface should serve as a platform for documentation and communication among the project partners. In this regards, four levels of user-authorisation are required:

- Administrator
- Model analyst: ability to read, create, modify, add, or delete of all elements of the model is permitted.
- Commentator: ability to read the model and to enter comments to all elements is permitted.
- Read Only: only ability to read is permitted.

4.3 System Functions

The process model serves as a central communication tool. The visualisation of key processes allows the clear boundaries between the sub-projects as well as their positioning within the project in overall view. Moreover, it also shows the dependencies between the sub-projects. The process model is structured in vertical aspects to present the levels of abstraction and in horizontal aspects to present its different views.

Following main functions are required to apply the process ontology:

- Visualisation of process modelling elements
- Horizontal and vertical navigation within the model



- Entry of comments to each element of the model

Remark: Please note that all screenshots in this document refer to a draft version of the process modelling platform used during the specification phase. The design and "Graphic User Interface" for productive usage will be modified in the next phase.

4.4 Data Model

This section explains how the database is structured and how its tables are linked to each other so that the functionalities specified in 4.3 and 4.5 can be realised.

Four main database tables must be generated:

1. Comment_DB
2. Specification_DB
3. Change_DB
4. Diagram_DB

Following describes the components of each database table and their short descriptions.

4.4.1 Comment_DB

This table contains all relevant information of comments made by project partners or reviewers. It is the basis of "View and search for comment page" explained in 4.5.2.1. The mandatory components are listed as below:

- **Number or ID** is a consecutive number and defined as "Primary Key" for the table.
- **DiagramType** is a pick-up list of all possible diagrams used in EFFORTS. No entry of free text is allowed.
- **Domain** is a text field with maximum 50 characters.
- **Version** is an auto-number field with pre-defined format.
- **Commentator** is a text field with maximum 50 characters.
- **Organisation** is a pick-up list of all partners in EFFORTS plus others for institutes supporting the project in process modelling.
- **Email** is a text field with maximum 50 characters.
- **Date** is a date/time field with format "dd.mm.yyyy" and automated generation.
- **CommentText** is a memo field to enable free text of comments.
- **FilePath** is a hyperlink with automated generation where the documents or diagrams are stored.
- **Change** is a hyperlink as a reference to "Change_DB"

4.4.2 Specification_DB

This table contains all entries and changes of specifications. Following components are mandatory to create as database:

- **Number or ID** is a consecutive number and specified as "Primary Key".



- **DiagramNo** is an auto-number created for every new diagram generated or modified.
- **NumberOfUseCase** is a combination of number and domain name pre-defined by modeller in a specific format to identify the use case and its domain.
- **NameOfUseCase** is a text field with maximum 50 characters.
- **Version** is a number pre-defined by modeller in a specific format (please also see *version control* for more information).
- **Domain** is a text field with maximum 50 characters.
- **ShortDescription** is a text field with maximum 255 characters.
- **Actor** is a text field with maximum 255 characters.
- **Pre-Condition** is a memo field to enable free text of pre-conditions of the use case.
- **Input** is a memo field to enable free text of inputs of the use case.
- **FlowOfEvent** is a memo field to enable free text of flow of events occurring in the use case.
- **Post-Condition** is a memo field to enable free text of post-conditions of the use case.
- **Output** is a memo field to enable free text of outputs of the use case.
- **ExtensionPoints** is a memo field to enable free text of extension points or open issues.
- **Date** is a date/time field with format "dd.mm.yyyy" and automated generation.

4.4.3 Change_DB

This table is the basis information of View and search function as same as the Specification_DB. The relevant interface of this database table is "View and search for changes" explained in 4.5.2.4. All entries and changes of diagrams and specifications are stored in this database. Followings components of this database table are mandatory to realise the functionality of the interface.

- **Number or ID** is a consecutive number and specified as "Primary Key"
- **UserName** is a text field with maximum 50 characters. It is released by administrator only for modelling team or model analyst.
- **DiagramType** is a pick-up list of all possible diagrams used in EFFORTS. No entry of free text is allowed.
- **Domain** is a text field with maximum 50 characters.
- **Version** is a number pre-defined by modeller in a specific format (please also see *version control* for more information).
- **Date** is a date/time field with format "dd.mm.yyyy" and automated generation.
- **TypeOfChange** is a pick-up list of all possible types of changes made to the diagram. Pre-defined are "New" or "Add", "Modified" and "Deleted".
- **ReasonForChange** is a memo field to enable free text of reasons for changes made to the diagrams.
- **Comment** is a hyperlink as a reference to "Comment_DB".



-
- **Commentator** is the information automatically derived from "Comment_DB" from whom the comment is made.

4.4.4 Diagram_DB

This table contains all possible diagrams applied in EFFORTS. It is created to enable the m-n relationship of the database. Only two mandatory components are required for this table. They are

- **Number** is a consecutive number of diagram input in the table and specified as "Primary Key"
- **DiagramType** is a list of 13 diagram types used in EFFORTS and pre-defined in Deliverable 3.1.1.

To demonstrate how the database tables are linked and their relationship is structured, figure 4.1 is created.

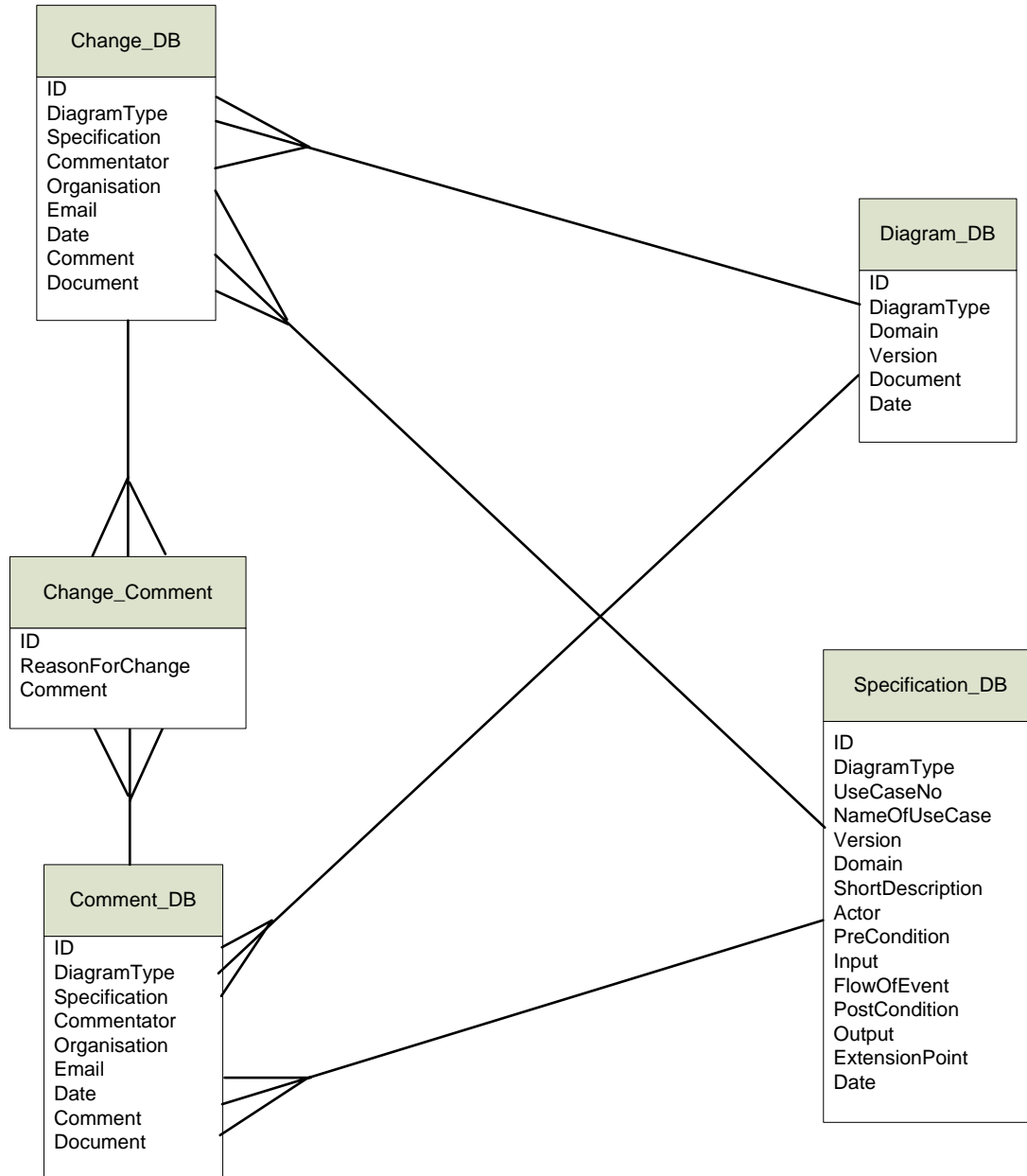


Figure 4.1: Database Tables and their relationships as data model

4.5 User Interface

Within this web-interface specification, two main user-groups are defined:

1. Reviewer meaning project partners acting as model-commentator/ -evaluator; and
2. Working group of WP 3.1 as modelling team and model analysts.

Therefore, the description of the specifications will be structured to correspond with these user-groups.



4.5.1 User interface for reviewers

4.5.1.1 The entrance page: Mind Map

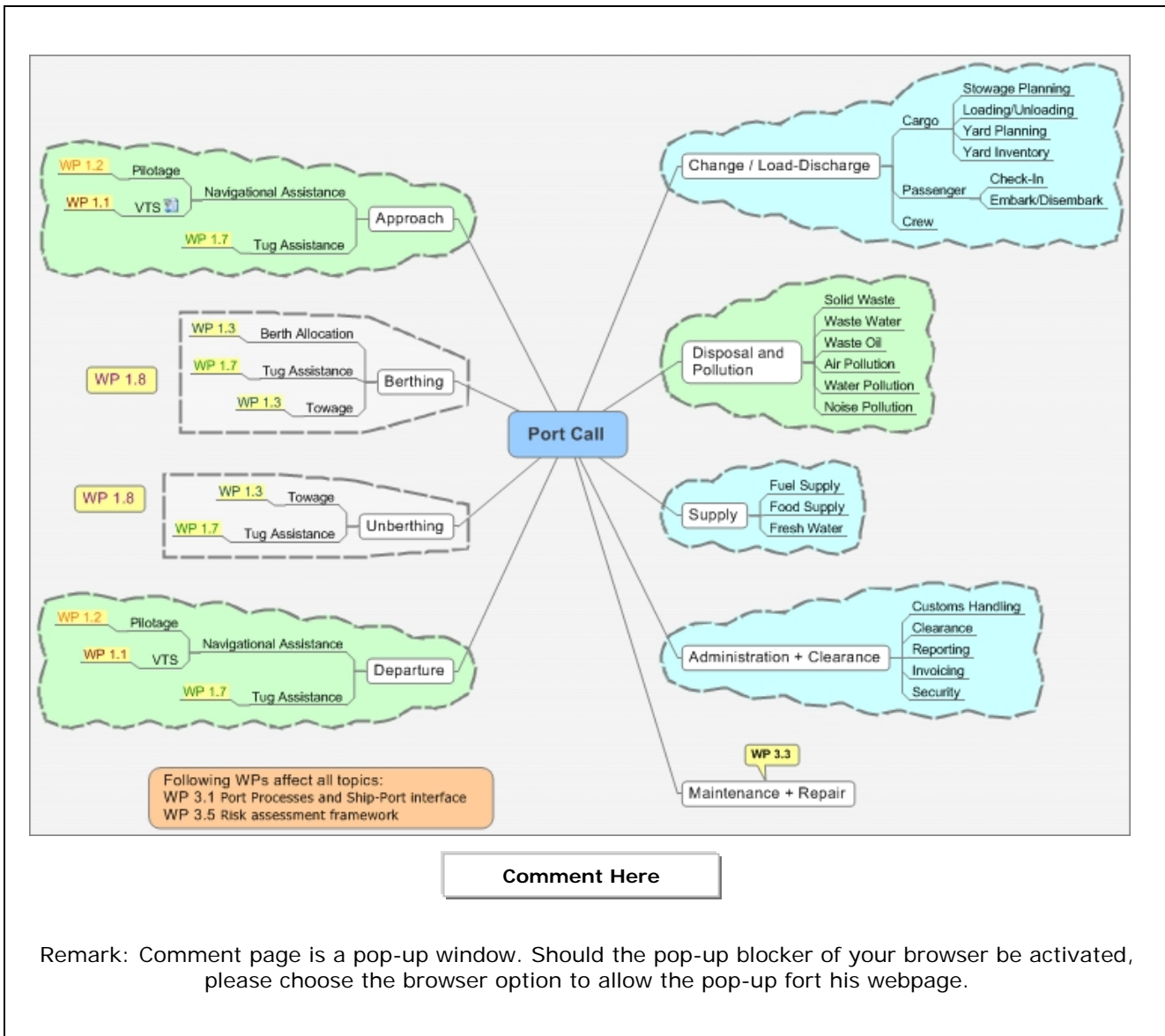


Figure 4.2: The entrance page of process modelling platform – The Mind Map

Within the Mind Map the modelling domains at each arc-end are clickable. This is a hyperlink which connects it to the diagram overview page (see 4.5.1.2). The evaluators and project partners have a possibility to submit their comments to the Mind Map. These comments will be sent to the process modelling team for further modification to the model. The details of the comment page will be described in 4.5.1.5.



4.5.1.2 Diagram overview page

The diagram overview page displays various types of diagrams which have been generated according to each key process domain selected from the Mind Map. In the first phase, three diagram types are applicable: use case-, activity- and class diagram. So, they are to be found in this page.

These diagram images are clickable and work as hyperlinks to the selected diagram type corresponding to the previously selected process domain. This page serves as the platform navigator to the next sub-level of the diagrams; therefore no comment possibility is needed and the diagram images are fixed.

Please select a diagram type to review

Use Case Diagramm

Back

Activity Diagramm

Next

Class Diagramm

Actors	Information
Vessel vessel no storage draught color cargo beam length rig speed loading list	VTB name responsible area ShippingAgent name agent code TerminalOperator name
Reports IncidentReport VesselInfo CauseOfIncident DateOfIncident TimeOfIncident DamageDetails LossDetails InvolvedParties	Hydro. Info. Current Meteor. Info. Temperature Wind Speed Pressure Notifications pilgrage demand storage demand log incident demand changes incident TrafficInformation berthing position ETA/ETD ATA/ATD pilgrage schedule
PositionReport VesselInfo PositionInfo	Communication Devices Display VHF Phone Pager
Pre-EntryReport VesselInfo ETA PortOfCall	

Figure 4.3: Diagram overview page

4.5.1.3 Diagram view page

This page shows the single diagram which has been selected in “Diagram overview page”. The partners and evaluators have a possibility to submit their comments through a comment button in regards with the diagram currently displayed on the screen if any changes should be made.

Vessel Traffic Service (VTS) v2.0

Comment Here

Remark: Comment page is a pop-up window. Should the pop-up blocker of your browser be activated, please choose the browser option to allow the pop-up fort his webpage.

Back **Next**

Figure 4.4: Diagram view page

On this page the diagram is converted to an image with clickable area on each element of the use case diagram which links to its use case specification (see 4.5.1.4)



4.5.1.4 Specification page

The specification of each use case will be displayed as a table in HTML-format (see figure 4.5). The details of this use case specification are derived from a specification database. Also, the partners and evaluators can give their comments to each element of specification through the comment button below the specification. A new window for comment entry will pop up as shown in figure 4.6.

Use Case No.	VTS.1
Name	Inform about arrival
Actors	Terminal Operator, Shipping Agent, Port VTS
Aim (Why is it done?) (Short Description)	Identify significant information for arrival of the vessel so that the Port Administration and Port VTS can prepare the navigational assistance
Pre-Condition	1. The vessel has been scheduled to call the port. 2. The vessel has reached the identified port territory line.
Required Input	Ship particular, Berthing position, ETA/ETD, Cargo details, Pilotage Demand, Tugging Demand, Towage Demand, Crews
Flow of Events (What is done ?)	<u>Basic Flow</u> 1. Shipping Agent send information of the arriving vessel to Port Administration and Port VTS
Post-Condition	Port VTS are informed
Resulting Output	Arrival information
Extension Points	<u>Alternative:</u> none

Remark: Comment page is a pop-up window. Should the pop-up blocker of your browser be activated, please choose the browser option to allow the pop-up for this webpage.

Figure 4.5: Specification page



4.5.1.5 Comment page

The comment page is a pop-up window linked from single diagrams or diagram elements shown in the diagram view page. This window is activated when the comment button is selected.

Subject:	<input type="text"/>	
Name:	<input type="text"/>	
Organisation:	<input type="text"/>	
Email:	<input type="text"/>	
Date / Time:	<input type="text"/>	
Document:	<input type="text"/>	<input type="button" value="Browse"/>
Comment Field:	<div style="border: 1px solid black; height: 100px; width: 100%;"></div>	

Remark: If any change to the diagram is required, please also keep in mind of the dependency of this diagram with other diagrams or relevant specification. In this case, the changes corresponding to the relevant diagram or specification must be provided.

<input type="button" value="Reset"/>	<input type="button" value="Send"/>	<input type="button" value="Close"/>
--------------------------------------	-------------------------------------	--------------------------------------

Figure 4.6: Comment page

Followings describe each element of comment page:

- **Subject** composes of *Domain, Diagram Type and its Version*. This information must be automatically stored and retrieved from the database.
- **Name** of commentator must be filled out.
- **Organisation** of commentator must be selected from provided pick-up list.
- **E-Mail** of commentator must be filled out to enable feedback and question possibility.
- **Date / Time** should be automatically generated by the tool and stored in the database.



Note: These above-mentioned elements are mandatory fields. Shall any field be left empty, the comment cannot be submitted.

- **Document(s)** related to the comment diagram or specification can be uploaded. This function is very useful in case that the commentator has documents additional to his/her comment which the modeller can directly apply to modify the model.
- **Comment Field** is for entry of comment as free text.

Not only the file path will be submitted, but also all information regarding the comments will be stored in the database. The modelling team will receive an e-mail for every comment submitted. Moreover, after the comment is sent the comment page will be automatically closed.

4.5.2 User Interface for modelling team or model analyst

In the previous section, a part of process modelling platform is described for which partners of the project are relevant to key process domains and willing to comment the process modelled by modelling team.

This interface is for administrators and will be accessible only for ISSUS and NundP. It includes following functionalities:

- View and search for comments
- Upload page for diagrams and comments with their hyperlinks
- Entry and change of specifications
- View and search for changes

4.5.2.1 View and search for comments

Every comment submitted by partners will be stored in a database. Once the window of "View and search for comments" is selected, the last comments will be displayed chronographically.

The search function should be flexible and offer many possibilities to search from many single queries or a combination of queries. These queries include:

- Diagram Type
- Domain
- Commentator
- Organisation
- Period (from dd.mm.yyyy to dd.mm.yyyy)

Through a selection of any comments, the comment details will be shown with above-mentioned elements in another pop-up window. In case that any document relating to the comment is uploaded, its link will be also displayed in this window so that the modeller can open the document stored on the server.

Shall any changes from the comment be made to a diagram, the reference between comments and changes must be linked by a hyperlink.



4.5.2.2 Upload page for diagrams and comments with their hyperlinks

This page is structured in two folds. First, it allows an upload possibility of modified diagrams as illustrated below:

Diagram Type:	<input type="text"/>
Domain:	<input type="text"/>
Version :	<input type="text"/>
Type of change:	<input type="text"/>
Reasons for change:	<input type="text"/>
Commentator:	<input type="text"/>
Date / Time:	<input type="text"/>
Document:	<input type="text"/>
Comment Field:	<input type="checkbox"/> Admin-Info

Figure 4.7: Upload page for diagram and comments with their hyperlinks

For this change request form, a database will be generated in which changes are stored. This database also contains information of all diagram types and their modifications. The main purpose of this database is to centralise the ability of retracing all modifications and progress of diagrams throughout the project.

The page content of "View and search for changes" will be generated by information from the details in "Upload page" and "entry and changes of specifications".

After sending any changes and the check-box of "Admin-Info" is activated, an e-mail will be automatically sent to the administrator with information for any upload diagrams to the server and request on image conversion to a clickable diagram. Then, the new image of diagram will be posted on the web-platform for next review.



4.5.2.3 Entry and changes of specifications

In this page, all entries and changes of specifications are possible. The template for entry is similar to one explained in 4.5.1.4. Additionally, for every modification completed, a new version of diagrams will be given and stored as a new record, so that all changes will be searchable and traceable.

4.5.2.4 View and search for changes

This page serves as View and search functions for any changes made in diagrams and specification of the modelled process domains throughout the project. Similar to the page of "View and search for comments", the last modifications should be chronologically listed as overview once the search is completed. Additionally, following queries must be allowed for single and combined search.

- User Name (name of modeller or model analyst who has made changes)
- Diagram Type
- Domain
- Version
- Period (from dd.mm.yyyy to dd.mm.yyyy)
- Type of changes
- Free Text (search from any words in the specification by entry of searching key word)

Shall any entry of changes be referring to a comment; a link will be shown in this page as well so that the comment will be displayed automatically.



5 Process Modelling Platform – Implementation –

5.1 The User Guide

The following user guide is created during the specification of the web-interface. For this reason the user guide currently includes only modelled screenshots.

5.1.1 Part for reviewer

5.1.1.1 Entrance page

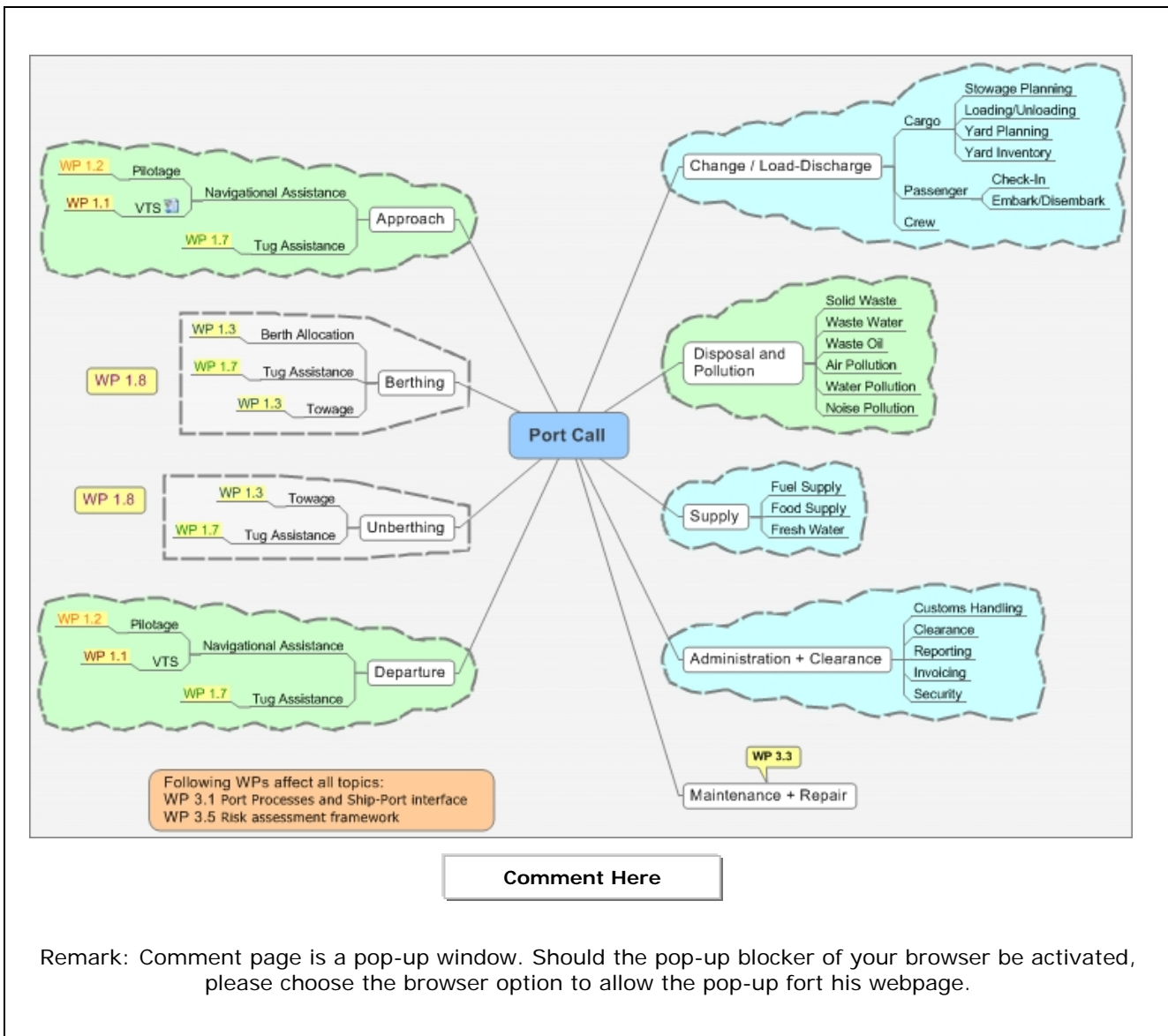


Figure 5.1: Entrance page – Mind Map



The entry page for reviewer interface of the project is the mind map. On this page the “Reviewer” has two possibilities:

1. After review of the content of the mind map there is the possibility to provide a comment or ask a question. To do this you have to press the Comment-Button and a pop-up will be opened.
2. If you are interested in detailed information about a process domain from the mind map you can click on the name of the process domain. Then you will reach the next page with the diagram overview.

5.1.1.2 Diagram overview page

Please select a diagram type to review

Use Case Diagramm

Back

Activity Diagramm

Next

Class Diagramm

Actors	Information
Vessel vessel id vessel name vessel type vessel status vessel length vessel width vessel height vessel draft vessel beam vessel depth vessel speed vessel heading vessel list	VTB name responsible area ShippingAgent name agent code TerminalOperator name
Reports IncidentReport VesselInfo CauseOfIncident TimeOfIncident DamageDetails LoadDetails InvolvedParties PositionReport VesselInfo PositionInfo	Hydro. Info. Current Meteor. Info. Temperature Wind Speed Pressure Notifications portage demand storage demand high assisted demand changes incident TrafficInformation berthing position ETA/ETD ATA/ATD plottage schedule
Pre-EntryReport VesselInfo ETA PortOfCall	Communication Devices Display VHF Phone Pager

Figure 5.2: Diagram overview page

The diagram overview is a signpost and shows which diagrams are available for the process domain from what you want to get detailed information. To get more information you have to click on one of the presented diagrams.

5.1.1.3 Diagram view page

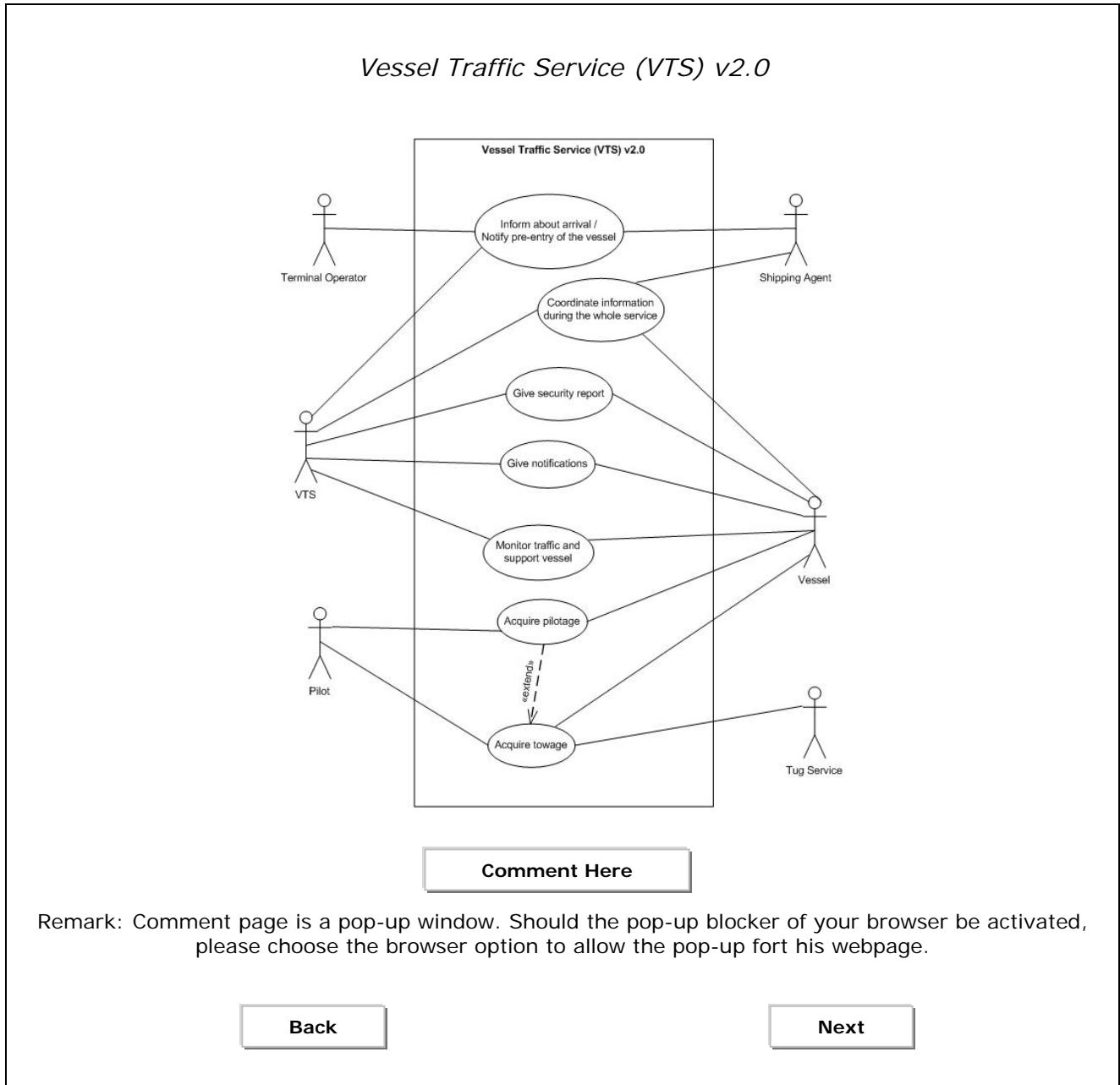


Figure 5.3: Diagram view page

This page shows for example a use-case-diagram for the process domain VTS (Vessel Traffic Service). On this page the Reviewer has two possibilities:

1. After reviewing the content of the diagram there is the possibility to give a comment or ask a question. To do this you have to press the Comment-Button and a pop-up will be open.



2. If you are interested in detail Information about a use-case of the diagram you can click on use-case (use-cases are presented by the circular fields). Behind this you will reach the next page with the diagram overview (see Chapter X). In other types of diagrams exist also the possibility to get detailed information. Please move the mouse pointer over the diagram and look for clickable areas.

5.1.1.4 Specification page

Use Case No.	VTS.1
Name	Inform about arrival
Actors	Terminal Operator, Shipping Agent, Port VTS
Aim (Why is it done?) (Short Description)	Identify significant information for arrival of the vessel so that the Port Administration and Port VTS can prepare the navigational assistance
Pre-Condition	1. The vessel has been scheduled to call the port. 2. The vessel has reached the identified port territory line.
Required Input	Ship particular, Berthing position, ETA/ETD, Cargo details, Pilotage Demand, Tugging Demand, Towage Demand, Crews
Flow of Events (What is done ?)	<u>Basic Flow</u> 1. Shipping Agent send information of the arriving vessel to Port Administration and Port VTS
Post-Condition	Port VTS are informed
Resulting Output	Arrival information
Extension Points	<u>Alternative:</u> none

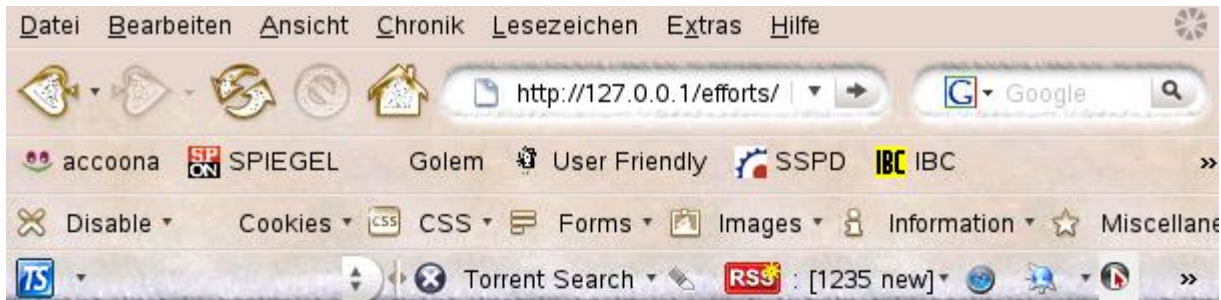
Remark: Comment page is a pop-up window. Should the pop-up blocker of your browser be activated, please choose the browser option to allow the pop-up for this webpage.

Figure 5.4: Specification page

On this page you can see a table with the specifications of a use-case. After reviewing the specifications there is the possibility to give a comment or ask a question. To do this you have to press the Comment-Button and a pop-up will be open (see 5.1.1.5)



5.1.1.5 Comment page



Kommentar zu Diagramm/ Spezifikationen abgeben

Betreff: Port Call/Approach/Navigational Assitance/VTs Aktivitätsdiagramm 1.0
Name: Nicolai Glatz
Organistaion: TTI
Email: glatz@tutech.de
Datum: 20.12.2006
Dokument:
Kommentar:

Hinweis: Bei Änderungswünschen bzw. Kommentaren achten Sie bitte immer auch darauf, ob der Sachverhalt mit anderen Diagrammen/Spezifikationen/Inhalten in Verbindung steht und ob sich dort ebenfalls Änderungen ergeben, die beschrieben werden müssten!

Figure 5.5: Comment page

In different pages you have the possibility to click a comment-button. Behind this you will reach the comment page which is shown in figure 5.5. The field subject and Date/Time will be filled in automatically. In the other fields the reviewer/commentator has to enter the following:

- Name: Please enter your name
- Organisation: Please select the organisation you are working for.



- Document: If you have a document containing information important for your comment please attach it with this option.

5.1.2 Part for Modeller

The access and use of this part of the platform is only authorised for Modeller.

5.1.2.1 View and Search for comments



Kommentar Suche

Diagrammtyp:

Domain:

Kommentator:

Organisation:

Tag (dd.mm.yyyy): von bis

Freitext:

17.12.2006 Nicolai (TTI) [testtest](#)
17.12.2006 (ISSUS)
18.12.2006 testest () [hm](#)
18.12.2006 testest () [hm](#)
18.12.2006 testest () [hm](#)

Figure 5.6: View and search for comments page

Every comment that is sent by a Reviewer will be saved in a database. The page above shows the last comments in a list. These comments are clickable for getting detailed information. If you are interested in a comment which is not in that list you can use the offered search function. You can search for each field or for several combinations of the fields.



5.1.2.2 Upload page for diagrams and comments with their hyperlinks

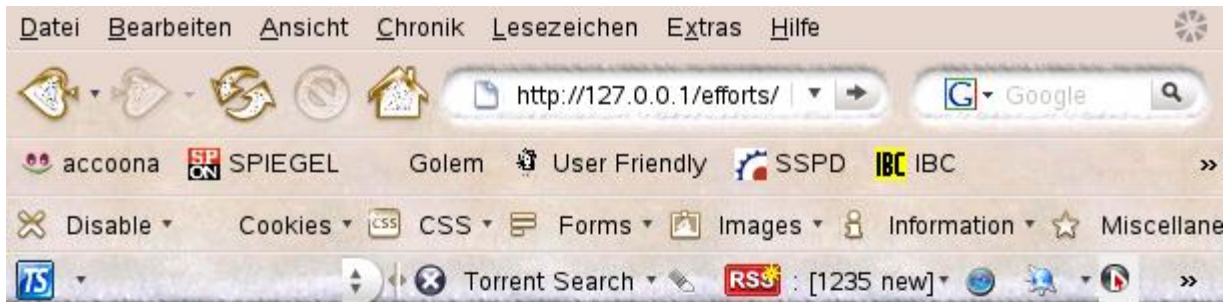


Diagramm upload

Benutzername:

Diagrammtyp:

Domain:

Version:

Änderungsart:

Änderungsgrund:

Dokument:

Admin informieren:

Kommentar:

Figure 5.7: Diagram Upload page

With this page the modeller has the possibility to upload a diagram. He has to fill the fields as follows:

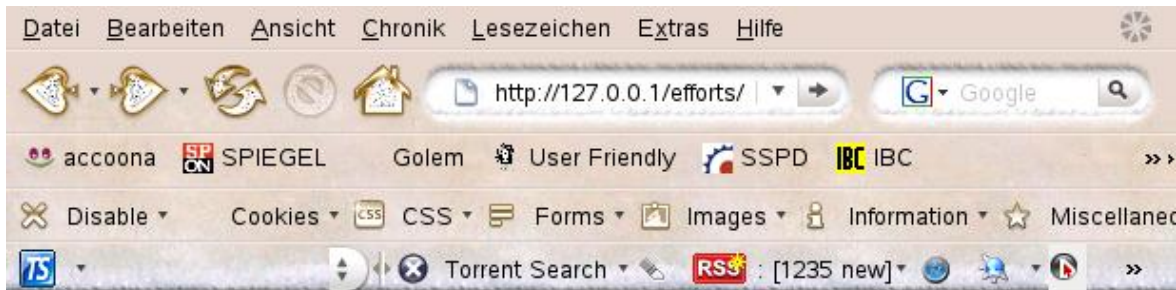
- Name: Name of the Modeller.
- Diagram Type: Type of the Diagram which will be uploaded.



-
- Domain: The diagram is part of this Domain.
 - Version: The version of the diagram.
 - Type of change: 1. New 2. Modified 3. Deleted
 - Reasons for change: What is the reason for this upload?
 - Document: Picture of the diagram what will be uploaded
 - Admin-Info : If this check-box is activated, the administrator will get a mail with a note of this upload
 - Comment field: The Modeller can give special information for linking.

5.1.2.3 Input and change for specifications

If the modeller likes to add new specifications or change existing ones he can use the page below. The necessary information is clearly represented by the line title. Every change of a specification will be saved as a separate entry in the database with a new version number. This allows you to search for every change how it is described in the next chapter.



Spezifikationen verändern / hinzufügen

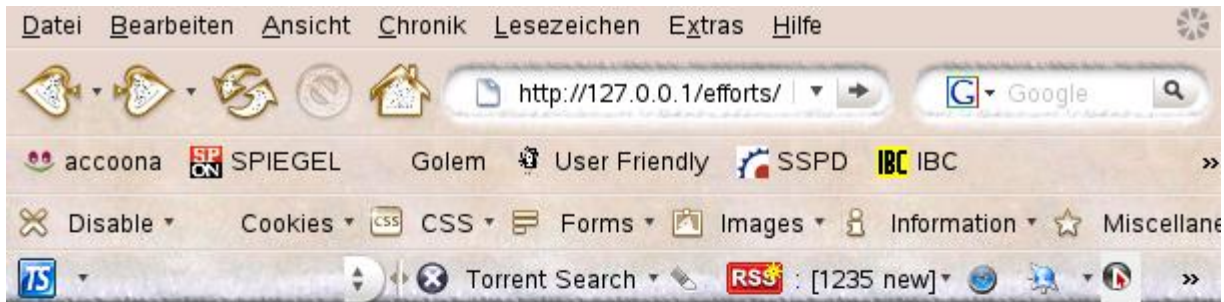
Use Case No.	4
Name	Portcall/Approach/Navigational Assistance
Version	1.0
Actors	Terminal Operator, Shipping Agent, Port VTS
Aim (Why is it done?) (Short description)	Identify significant information for arrival of the vessel so that th
Pre-Condition	1. The vessel has been scheduled to call the port. 2. The vessel has reached the identified port territory line.
Required Input	Ship particular, Berthing position, ETA/ETD, Cargo details, <u>Pilotage Demand</u> , <u>Tugging Demand</u> , <u>Towage Demand</u> , Crews
Flow of Events (What is done?)	Basic Flow 1. <u>Shipping Agent</u> send information of the arriving vessel to Port Administration and Port <u>VTS</u>
Post-Condition	Port <u>VTS</u> are informed
Resulting Output	Arrival information
Extensions Points	Alternative: none

Zurücksetzen | **Speichern** | Schließen

Figure 5.8 Change Request form for specification



5.1.2.4 View and search for changes



Änderungen Suche

Benutzername:

Diagrammtyp:

Domain:

Version:

Tag (dd.mm.yyyy): von bis

Änderungsart:

17.12.2006 Nicolai (TTI) [testtest](#)
17.12.2006 (ISSUS)
18.12.2006 testest () [hm](#)
18.12.2006 testest () [hm](#)
18.12.2006 testest () [hm](#)

In this page the modeller can see the last changes that are done and can click these entries to get detailed information. If the changes, you are looking for, are not in the list you can start a search for it. You can search for by filling out one or a combination of the following fields:

- Name: Name of the modeller who did the change.
- Diagram Type: This field includes the different UML-diagrams and also the specification.
- Domain: Process domain of the mind map.
- Version: The version who you are looking for.
- Date: You can search for Changes in a specific time period.



-
- Type of change: You can also search for the first, the last or changing versions.

5.2 Versions

Each change of a diagram or specification gets an own version number. Its reason is that old versions can be saved in the database and the modeller has the opportunity to see the progress of each object.

The version numbers are dependent on the previous workshop according to the EFFORTS procedure for process modelling (see D. 3.1.1). After the first workshop every version number starts with v1.0 and after the second workshop with v2.0. Each change between this workshops increment the number after the point.

For example: The second version after the first workshop is V1.2.



6 Reference

Buzan, T. (1991): *The Mind Map Book*, New York: Penguin, 2004

Gruber, T.R: What is ontology?

<http://www-ksl.stanford.edu/kst/what-is-an-ontology.html>