

# STM Voyage- management use cases and F.A.T. Procedure handbook

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use cases and F.A.T. Procedure handbook*

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## DOCUMENT STATUS

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### Document History

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2.0	2016-11-17		HH	Used for specifying F.A.T. and as usecases for STM Testbed. Updated with Ship-Port Synch., Non Functional Requirements
2.1	2019-03-15		HH	Updated for EF Procurement

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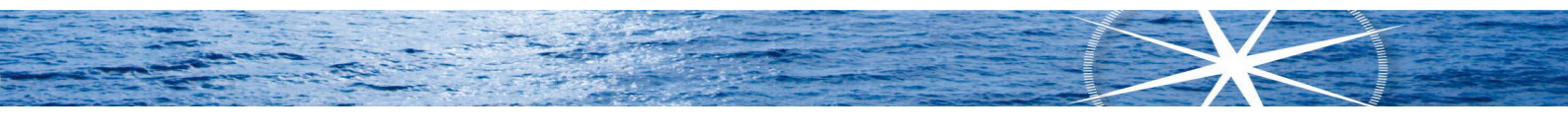


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## Purpose of this Document:

- To assist suppliers when preparing for Factory Acceptance Test (FAT)
- This document shall be filled in as complete as possible and submitted amongst other relevant documentation (see below), for the SDR, a final version shall be submitted 14 days before FAT
- To be used during FAT
- To be used as Use Cases for STM Testbed (For Procurement this document is only meant to describe the use cases, **it does NOT have to be filled in for tendering documentation**)

## Design

- The design that was chosen builds upon the “*STM Voyage Management use cases*” - (*Appendix 5*) and the “*STM Ship system technical specification and tendering form*” - (*Appendix 1*), provided for the procurement.
- The Document (in Final version) will be used at FAT.

## Remarks

- Use case #4 Flow Management is not complete, it will be updated by SMA during November, so there is no need for suppliers to complete these use cases yet. When they are updated, suppliers will be informed.
- The Pass & Fail Comments in the Tables are for SMA, to be used at FAT.
- See red and blue text for instructions how to fill in the tables.
- The “greyed out” (e.g. Event 4.3) Tables shall not be filled in.



# 1. Route exchange ship-ship

## 1.1.1. Description

Introducing route exchange ship-ship, will give the intentions of other ships. Nothing in the current “navigational process” will be changed and the master is still responsible. The route exchange will solely introduce a new tool which helps the OOW to plan ahead, foresee possible dangerous situations and reduce route detours due to traffic conditions.

The route exchange should be used to avoid collision situations and close quarter situations. When in close quarter situations COLREGs are always in force.

## 1.1.2. Information needs/prerequisites

- New route message (AIS-ASM)
- Information from AIS (POS, Speed etc)

## 1.1.3. Use case/functions to be supported

1. Route Exchange Ship-Ship Ship-Shore via AIS ASM				
Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
1.1. Indication what ship is part of STM test bed to separate them	A graphical symbol (colour/text/flag/log) should mark STM ships on STM compatible onboard system	3.2.6	<i>To be filled in by Supplier (Specific Page and Bullet)</i>  <i>For examples see blue text in Use case event 1.2, 1.11 and 2.14</i>	<i>To be filled in by Supplier (Specific Page and Bullet, when applicable)</i>

<b>from non STM ships</b>				<i>For examples see blue text in Use case event 1.2, 1.11 and 2.14</i>
<b>Test Case</b>				
<b>Pass Criteria</b>	<b>Test Mode</b>	<b>Note(s)</b>		
<i>To be filled in by Supplier. A short description of the purpose of the Test Case. For examples see blue text in Use case event 1.2, 1.11 and 2.14</i>	<i>To be filled in by Supplier, e.g. Inspection, Demonstration, Analysis, Measurement. For examples see blue text in Use case event 1.2, 1.11 and 2.14</i>	<i>To be filled in by Supplier, e.g. Preconditions for this test case (if any), additional information to run the tests are stated here. If necessary, also state essential equipment (e.g. modules, interfaces, etc.) here. For examples see blue text in Use case event 1.2, 1.11 and 2.14</i>		
<b>Test Procedure</b>				
<b>Step</b>	<b>Action (operator)</b>	<b>Expected Result</b>	<b>Pass/Fail</b>	<b>Comment</b>
<i>1 To be filled in by Supplier. Each step is numbered consecutively. For examples see blue text in Use case event 1.2, 1.11 and 2.14</i>	<i>To be filled in by Supplier. The action of this step is described here. For examples see blue text in Use case event 1.2, 1.11 and 2.14</i>	<i>To be filled in by Supplier. The expected reaction/result of the system is stated here. For examples see blue text in Use case</i>	<i>To be filled in during test. System was reacting as described or not. For examples see blue text in Use case event 1.2, 1.11 and 2.14</i>	<i>To be filled in during test. Additional comments to this test step can be stated here. For examples see blue text in Use case event 1.2, 1.11 and 2.14</i>



		<i>event 1.2, 1.11 and 2.14</i>		
2	<i>e.g. Choose "Show STM Targets" For examples see blue text in Use case event 1.2, 1.11 and 2.14</i>			
3				





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>1.2. A choice is made to allow others (vessels and shore centres) to see new route message (AIS ASM).</b>	It should be possible to choose, made once as a default setting, to show or not to show own route message. The idea to have it as a default is to not add an extra work step that can be missed out unintentionally.	3.2.5	e.g. See page 11 bullet 2.3.2	e.g. See page 10 bullet 3.2.2
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
e.g. It shall be possible to make a general choice if route message should be broadcasted or not	e.g. Demonstration	e.g. Will be done in STM module in the ECDIS		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1	e.g. Select "On"	e.g. On receiving STM		



		Module the route segments will be visible		
2	e.g. Select "Off"	e.g. On receiving STM Module the route segments will not be visible		
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>1.3. Voyage is loaded for monitoring</b>	Standard ECDIS voyage planning procedure			
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>1.4. Ship broadcasts route message</b>	If 1.2 and 1.3 is yes route message is transmitted with defined updating frequency/when passing waypoint	3.2.1		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
1.5. Own ship route message should be visualized on other ships ECDIS/ STM module	NA	3.2.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>1.6. Other ship acquires own ships route and displays it on ECDIS/ STM module</b>	It should be possible to select which ships routes to display and also to hide them again. The routes should not be showed automatically (If not triggered by certain events/limits e.g. CPA)	3.2.10		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>1.7. Not Use Case Event driven functionality</b>	STM ship systems should be able to calculate CPA and intersection points between own/other-ships route segments (including leg speed), even if the routes are not crossing each other	3.2.7		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
1.8. Not Use Case Event driven functionality	It Should be possible to do some kind of "Trial Manoeuvre" including own and other ships routes (including leg speed)	3.2.9		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>1.9. Ship Passes a waypoint</b>	Updated route is broadcasted (i.e. one more waypoint is added in the end of the broadcasted route)	From Route Message standard		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>1.10. Ship sailing between two waypoints (long distance between these waypoints)</b>	In order for ship "arriving" into AIS coverage area to receive own ships route it should be broadcasted according to updating frequency in route message format	From Route Message standard		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>1.11. Other ship is deviating from its voyage plan (in time or geographically)</b>	Ownship's ECDIS STM Module should be able to adjust settings that triggers "notification" about that another ship is not following it's voyage plan (e.g. other ships route changes colour)	3.2.8	e.g See page 14 bullet 5.5.5	e.g. See page 15 bullet 3.2.4
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
e.g. Test if user is made aware if other ship is not following it's route (in time and geographically)	e.g. Demonstration	e.g. Two STM modules will be used, no AIS will be used message will be sent via IP., XTD setting=1.0M, dTime=+/- 7min)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1	e.g. Set dTime limit to +/- 7min	e.g. dTime limit=+/- 7min		



2	e.g. Simulate “other” ship slowing down	e.g. When “other” ship is more than 7 min late to next WP, user will be notified by route segments changes colour		
3	e.g. Set XTD limit=1.0M	e.g. XTD limit=1.0M		
4	e.g. Simulate “other” ship leaving the route more then set XTD limit	e.g. When “other” ship is more than 1.0M off route, user will be notified by route segments changes colour		



## 2. Sharing of Voyage Plan

### 2.1.1. Description.

Ships in test bed will share Voyage Plans (VP) with Shore Centres (SC), ports and service providers. The ship/shipping company is the information owner of the VP and as such chooses which actors that should be granted access to the voyage plan. This is part of the access management functionality in Sea SWIM. Another prerequisite is that ships voyage plans can be identified and that the identification is unique, therefore the Unique Voyage ID (UVID) concept is a cornerstone in STM and the future usage is to act as a pointer to other information that is related to a voyage such as cargo, crew reporting information etc. Below “Sub-use case” (2.1 to 2.15) describes the technical steps regarding sharing of voyageplan.

### 2.1.2. Information needs

- Rtz.
- UVID
- ID registry
- VIS
- Access management functionality

### 2.1.3. Use case/functions to be supported



## 2. Sharing of Voyage Plan - Technical

Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.1. Ship prepare voyage plan i.e. Route and Schedule.</b>	Sending the Route to/Receiving from the STM module  STM ship system should support route status (part of .rtz)	3.2.11, 3.4.9		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.2. Not Use Case Event driven functionality</b>	The communication between the STM Module and ECDIS Shall have Information consistency (e.g. ship receives a VP in the STM module, accepts it, then the operator shall be able to choose it for monitoring in ECDIS, it shall then be identical to the one in the STM module).	3.3.1		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				



3				
Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.3. Not Use Case Event driven functionality</b>	Events in the system <b>should</b> be stored and logged for later evaluation. Events could include, but are not limited to: system downtime (excluding communication), operator actions such as: Number of STM Module - VIS exchanges.	3.6.6		
Test Case				
Pass Criteria	Test Mode	Note(s)		
Test Procedure				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				





3				
Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
Test Case				
Pass Criteria	Test Mode	Note(s)		
Test Procedure				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.4. Not Use Case Event driven functionality</b>	The online access point shall hold a service instance that is the internet connected representation of the ship, the service instance shall represent the ship towards other actors via a SSC (service instance shall be based on latest service design VIS)	3.6.1		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.5. Not Use Case Event driven functionality</b>	Online access point <i>should be able to exchange PCM-format with other STM actors (See SeaSWIM specification)</i>	3.6.4		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.6. Not Use Case Event driven functionality</b>	Online access point shall be able to expose and consume (to other STM actors) RTZ-format, S124-format and text format using VIS (See SeaSWIM specification).	3.6.3		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.7. Ship assigns access rights to VP</b>	<i>Operator shall in the STM module be able to assign/remove access rights on information objects (VP) to services</i>	3.4.19		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.8. Not Use Case Event driven functionality</b>	The STM ship system <b>shall</b> automatically give the VP a Unique Voyage ID (UVID) using the maritime resource name (mrn) structure (see SeaSWIM specification)	3.4.27		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.9. Not Use Case Event driven functionality</b>	<i>Operator shall in the STM module be able to assign/remove access rights on information objects (VP) to services</i>	3.4.19		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.10. Not Use Case Event driven functionality</b>	<i>STM module shall be able to present for the operator which actors that have been given access rights to VP</i>	3.4.20		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.11. Not Use Case Event driven functionality</b>	<i>Operator shall be able to search for service instances in STM module according to SeaSWIM specification, based on attributes available in service registry</i>	3.4.10	e.g See page 33 bullet 12.5.5	e.g. See page 25 bullet 12.2.4
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
e.g. Test if operator can search for services	e.g. Demonstration	e.g. Search will be done in STM Module in ECDIS, VIS and SSC are prerequisites		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1	e.g. Login to STM Module	e.g. Access Granted		
2	e.g. Go to "service search page"	e.g. Search window will open		
3	e.g. Search for Route Optimizing services	e.g. List of Route Optimizing		



		services will be displayed		
--	--	----------------------------	--	--



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.12. Not Use Case Event driven functionality</b>	STM module shall be able to store lists of services (for offline purposes)	3.4.14		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.13. Voyage plan is made available for authorised stakeholders</b>	Voyage Information Service (VIS) and SeaSWIM Connector (SSC)	3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



#### **2.1.4. Description.**

Below “Sub-use case” (2.14 to 2.20) describes the operational steps regarding sharing of voyageplan.

Below “Sub Use Case” (2.21 to 2.22) describes the operational steps regarding sharing of voyageplan with regards to when editing a voyageplan.

#### **2.1.5. Information needs**

- Rtz.
- UVID
- SR registry
- VIS
- Access management functionality

#### **2.1.6. Use case/functions to be supported**



## 2 Sharing of Voyage Plan Operational

Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
2.14. Ship prepare voyage plan i.e. Route and Schedule		3.2.11, 3.4.9		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
2.15. Voyage plan is safety checked		NA		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>2.16. Voyage plan is saved in Navigation System</b>		NA		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
2.17. Possibly, Voyage plan is shared with selected actors for cross checking, route optimisation etc.		3.2.11, 3.4.9		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
2.18. If/when Voyage plan is received from actors in 2.17, voyage plan is saved in Navigation system		3.2.11, 3.4.9		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
2.19. Voyage plan is chosen for monitoring in navigation system (including schedule), and shared with chosen actors		3.2.11, 3.4.9		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
2.20. Voyage is completed (when destination is reached or voyage cancelled) Voyage plan is shared with actors in 2.19 with status "Inactive"		NA		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
2.21. Ship unloads VP from monitoring for editing		NA		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
2.22. When VP is unloaded for monitoring it shall not be shared in status inactive, but in status planned		NA		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



## 3. Route Cross-check

### 3.1.1. Description

The intended voyage plan is sent to a shore based service provider for cross-checking. The purpose is to include updated regional area information that could affect ships voyage plan. The cross-checking can be done before the vessels departure or before arrival at a certain geographical area. The cross-check can include, but is not limited to, Under Keel Clearance (UKC), air draught, no violation of no-go areas, MSI and compliance with mandatory routeing. No optimization service as such is included in the route validation.

### 3.1.2. Information needs

- Rtz.
- AIS

### 3.1.3. Use case/functions to be supported





### 3. Route cross-check

Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
3.1. Voyage Plan is shared according to Sharing of VP (use-case 2)		3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>3.2. Ship requests a route Cross-Check</b>	Shore centres check route and send back confirmation by text message or new proposal	3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>3.3. SC checks the route and want to suggest a different route</b>	SC should be able to confirm to the ship that the route is checked and is ok or have errors (alternatively send a route suggestion). SC should get (automatic) acknowledgement when the suggested VP is available at the STM Module	3.4.2 SC Functionality		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>3.4. Ship accepts or rejects suggested route</b>	When/If the route suggestion is loaded for monitoring all actors with access rights shall be notified	3.4.6		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



## 4. Flow Management

### 4.1.1. Description

*To be updated by SMA during November, this use case will not pose any additional requirements on STM Ship systems.*

A shore-based operator is performing flow optimization through advice to the ships within a defined sea area using an enhanced traffic image, consisting of AIS targets, radar targets and with the planned routes for the STM ships. As a part of the route schedule, the operator has access to the ship's ETA to some key waypoint, denoted Flow point (FPT). Based on the above information, the operator is continually assessing the overall maritime traffic situation within his sector of responsibility. If a developing traffic situation is identified, the operator can recommend a new ETA for the FPT in order to resolve the situation at an early stage. In case of a MSI receipt, e.g. a fairway or traffic lane is closed; the operator can use both re-scheduling and suggested route/s, which is a proposed new route segment. In the case of a port approach the approach could be synchronized with the port call.

### 4.1.2. Information needs

- Rtz
- AIS
- Flow points

### 4.1.3. Use case/functions to be supported



## 4. Flow Management

Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
4.1. Voyage Plan is shared according to Sharing of VP (use-case 2)		3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>4.2. Necessary flow points along the VP to be inserted</b>	Shore centres check route for FPT and send back confirmation or new proposal including FPT (Might include text message)	3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>4.3. Ship enters SC-monitored area and enhanced monitoring<sup>1</sup> is commenced used for flow management</b>	When SC detects a STM ship (AIS symbol) on AIS it should be possible to automatically connect AIS signal to ships .rtz route in order to conduct enhanced monitoring including ships FPT schedule	Shore Centre Functionality		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				

<sup>1</sup> See chapter "Enhanced Monitoring"





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>4.4. VTS/SC want to suggest a different route schedule using FPT</b>	VTS/SC should be able to send a RTA to a FPT by means of a text message or a VP schedule	Shore Centre Functionality		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>4.5. Ship accepts or rejects suggested route</b>	When/If VP (with new FPT schedule) is loaded for monitoring all actors with access rights shall be notified	3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>4.6. Not Use Case Event driven functionality</b>	The STM ship systems should handle real time calculation (including schedule) of ETA and or STG (Speed To Go to reach a WP at a given time) to one or more selected WP(s) (e.g. arrival traffic area or Pilot Boarding Position) along the route, a Flow Point (FP), not necessarily the last waypoint in the route	3.4.26		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				



3				
---	--	--	--	--



## **5. Enhanced Monitoring**

### **5.1.1. Description**

Enhanced monitoring will be supported by adding route information and a monitoring service can be provided in previously unmonitored areas. SC will be able to detect if planned schedule is not kept or if ship deviates from planned route. Thus SC can monitor that ships are following their planned route and also foresee possible dangerous situations and suggest route modifications (geographic and/or speed) due to traffic or other impeding conditions. These tools can also enhance current VTS services.

### **5.1.2. Information needs/prerequisites**

- AIS
- rtz.
- Info on what ships are STM compatible
- Connection to SeaSWIM by means of SSC

### **5.1.3. Use case/functions to be supported**



## 5. Enhanced Monitoring

Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>5.1. Voyage Plan is shared according to Sharing of VP (use-case 2)</b>		3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>5.2. Ship requests Enhanced monitoring (in service registry)</b>	Enhanced monitoring functionality in the SC			
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>5.3. Ship enters SC monitored area and enhanced monitoring is commenced</b>	When SC detects a STM ship (AIS symbol) on AIS it should be possible to automatically connect AIS signal to ships .rtz route in order to conduct enhanced monitoring	3.4.2, Shore Centre Functionality		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>5.4. Ship deviates from VP (in time or geographically)</b>	SC operator should be supported and alerted by existing alarm engines (schedule and geographical deviation from route) in SC software (after that it is SC SOP how to act)	Shore Centre Functionality		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>5.5. SC suggests a changed route by sending route proposal</b>	SC should be able to send a route proposal where part of route geometry or schedule is changed SC should get (automatic) acknowledgement when the suggested VP is available at the STM Module	3.4.3 and Shore Centre Functionality		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>5.6. Ship receives route proposal</b>	The changed part of the route should be clearly marked/distinguished to make it clear what is the difference from currently monitored route	3.4.3		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>5.7. Ship accepts or rejects suggested route</b>	When/if the route suggestion is loaded for monitoring all actors with access rights shall be notified	3.4.19, 3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>5.8. Ship leaves enhanced monitored area and/or enters another SC area</b>	Enhanced monitoring of ship should be deactivated in SC software	Shore Centre Functionality		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



## 6. Ship-Port Synchronisation

### 6.1.1. Description

*PortCDM will provide a basis for collaboration between key actors within the port and towards its surroundings based on shared situational awareness enabling increased predictability. To enable just-in-time arrivals of ships, Ship-Port Synchronisation is necessary for just-in-time operations and further on integration with hinterland transportation leading to optimized turn-around processes; and to enable improved resource utilization for all involved port actors and optimized operations.*

### 6.1.2. Information needs

- rtz
- Optional, Port Call message format

### 6.1.3. Use case/functions to be supported



## 6. Port Synchronisation (Ship to Port, Arrival)

Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>6.1. Arrival port identified and PTA shared with port.</b>	<i>Search for port using UN/Locode to find the Service.</i>	3.6.2 and 3.6.4		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>6.2. Ship receives ports recommended time of arrival (RTA), updates (either to meet RTA or best possible arrival time) its PTA.</b>	See Use case #2	3.6.2 and 3.6.4		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>6.3. New PTA is used for monitoring and speed settings.</b>	See Use case #2	3.6.2 and 3.6.4		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>6.4. Updated PTA is shared with port.</b>		3.6.2 and 3.6.4		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



## 6 Port Synchronisation (Ship - Port, Departure)

Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>6.5. Departure port shares ETD with ship</b>	<i>Search for port using UN/Locode to find the Service.</i>	3.6.2 and 3.6.4		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>6.6. Ship shares ETD with port</b>		3.6.2 and 3.6.4		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
6.7. Ship accepts departure port's ETD (by sharing VP with ports ETD) or updates VP with new ETD, and share with port		3.6.2 and 3.6.4		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>6.8. Port receives ship's updated ETD</b>		3.6.2 and 3.6.4		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



## 7. Winter Navigation

### 7.1.1. Description

Information regarding best route, waiting positions, preparations for assistance, position in convoy, time for departures from port is important for the Icebreaking services. The information should preferably be transmitted directly to ships navigation system.

Introducing route exchange will give both Icebreaker services and assisted ships better information in more automated procedures reducing workload and risk for misunderstandings.

### 7.1.2. Information needs

- rtz.
- Text message

### 7.1.3. Use case/functions to be supported

Note. The ability to send and receive messages is related to several services but the use case and functionality for this is included in the winter navigation table.



## 1. Winter Navigation

Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>1.1. Voyage Plan is shared according to Sharing of VP (use-case 2)</b>	See Use Case 2	See Above UseCases regarding sharing of voyage plan.		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>1.2. Icebreaker (IB) need to get the ship about to be assisted to a certain position at a certain time</b>	Send text message regarding arrival time to the ship to be assisted	3.4.1, 3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>1.3. Ship about to be assisted updates VP acc. To IB's text message regarding arrival time</b>	Ship about to be assisted updates VP, all actors with access rights shall be notified	3.4.1		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
1.4. IB need to get the ship about to be assisted to follow a recommended route from the IB (e.g. Open waters acc. to latest Ice information that IB has)	IB to Send suggested VP to the ship about to be assisted	3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				



3				
Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
Test Case				
Pass Criteria	Test Mode	Note(s)		
Test Procedure				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>1.5. Ice-Breaker (IB) need to relay information to ship regarding IB-Assistance, such as Towing arrangement , convoy information</b>	Text about such information should be possible to send to ship from Ice-Breaker and vice versa (Including automatic confirmation of that messages is received). Ship and IceBreaker should be able to reply to incoming message, in a "communication-thread"	3.4.1, 3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>1.6. Ship being assisted by IB need to send Updated PTA to port (received via text from IB)</b>	IB to send PTA via text to assisted ship  Ship to Update VP, all actors with access rights shall be notified	3.4.1, 3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



## 8. Area management

### 8.1.1. Description

Introducing area management tool into the maritime domain will give a more graphic overview on areas where ships are not allowed to pass due to e.g. whale nursery areas, military exercises or SAR operations. The areas should be attached with a date attribute so that they disappear when they are obsolete.

### 8.1.2. Information needs

- New area exchange format. (S-124)
- Date/time of enforcement
- Date/time of expiry
- Text Information regarding the area

### 8.1.3. Use case/functions to be supported using S-124 format

Note. Areas of interest is not limited to sail race. This is just an example given. Other areas of interest could be SAR Areas, MSI Areas, MSP Areas, Protected Areas. All of these areas could be used as clarification when SC needs to inform ships about situations/events that concerns safe passage in the area alternatively be a clarification to a proposal if SC chooses to send a route proposal to the ship.



## 8 Area Management S-124

Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
8.1.3.1. Sail Race taking place in an Area between 2 dates	NA			
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
8.1.3.2. SC creates area	An area with attributes describing activity in area, geography and validity period should be possible to create and display	Shore Centre Functionality		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
8.1.3.3. Shore Centre send out the Area including attributes to ships	Send areas	Shore Centre Functionality		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>8.1.3.4. Ship receives area</b>	Automatic Confirmation from STM Module that Area is received	3.4.2, 3.4.8		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
8.1.3.5. Area displayed onboard	Ship to be able to display area in STM Module	3.6.3		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
8.1.3.6. Area deleted	Area should be deleted automatically when it's obsolete	3.6.3		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



#### **8.1.5. Use case/functions to be supported using Text format**

In STM text format, there is possible to “attach” an area to the text message. One application for this might be that a VTS is sending out navigational information concerning the fairway within the VTS area.

Example in events given below could as well be concerning an SAR area.

#### **8.1.6. Information needs**

- STM Text format



## 8 Area Management STM Text format

Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>8.1.6.1.</b> Reduced speed in a part of the fairway is requested. VTS sends out STM text message including an area covering the area where reduced speed is requested	NA	NA		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		



<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
8.1.6.2. Ship receives text message and display area in Navigation system		3.4.2, 3.6.3		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
8.1.6.3. VTS sends out cancellation of above message		3.4.2, 3.6.3		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
8.1.6.4. Area is deleted from navigation system by operator		3.4.2, 3.6.3		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



## 9. Route Optimisation

### 9.1.1. Description

The route optimisation tools will be different in nature with a common purpose to provide more information for the navigator on board. The STM concept will provide the means to get the ships route optimised from different service providers in a standardised way. The service providers have different focus including best route regarding; the weather forecast, surface currents, fuel consumption, no-go areas regarding draft, areas with sensitive nature, conflicts with other ships routes etc.

### 9.1.2. Information needs

- Ships identification/UVID
- rtz
- Ship specific information, different attributes needed for different services. (No standard exists.)

### 9.1.3. Use case/functions to be supported



## 9 Route Optimisation

Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>9.2. Voyage Plan is shared according to Sharing of VP (use-case 2)</b>	See use case 2	See Above UseCases regarding sharing of voyage plan.		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
9.3. Vessel request optimization (this can happen daily during long voyage)				
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
9.4. <b>Service provider receives VP to be optimised</b>		3.4.1, 3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
9.5. <b>Optimized voyage plan is returned to ship</b>	Sending the VP to ship.	3.4.2		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





Event	Functionality needed	Related Requirements	Reference to System Description	Operator Action Reference
<b>9.6. If ship accepts voyage plan and it is set for monitoring.</b>	All actors with access rights shall be notified	3.4.6		
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





## 10. Non Functional Requirements

### 10.1.1. Description

The official definition of ‘a functional requirement’ is that it essentially specifies something the system should do. Typically, functional requirements will specify a behaviour or function, for example: “Display the name, total size, available space and format of a flash drive connected to the USB port.” Other examples are “add customer” and “print invoice”. Non-functional requirements describe how the system works, while functional requirements describe what the system should do. The definition for a non-functional requirement is that it essentially specifies how the system should behave and that it is a constraint upon the systems behaviour. One could also think of non-functional requirements as quality attributes for of a system.

### 10.1.2. Information needs

NA

### 10.1.3. Events to be supported



## 10 Non Functional Requirements

Event	Description	Reference to System Description	Operator Action Reference	
<b>10.2. Recoverability</b>	Verify the possibility to recover application configuration and data consistency following a power outage (shore and shipside)			
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Description	Reference to System Description	Operator Action Reference	
<b>10.3. Accessibility</b>	Verify the ability to access the functionality of the application.			
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Description	Reference to System Description	Operator Action Reference	
<b>10.4. Audit and control</b>	Verify how easily it's possible to check the historic workflow and audit trail. (logging), (according to "Technical Requirement" R-3.4:8 in "Appendix 1 - STM Ship system technical specification and tendering form")			
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Description	Reference to System Description	Operator Action Reference	
<b>10.5. Availability</b>	Verify how the STM Ship system will meet the uptime as stipulated in the “Technical Requirement” R-2.1:10 in “Appendix 1 - STM Ship system technical specification and tendering form”)			
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Description	Reference to System Description	Operator Action Reference	
<b>10.6. Interoperability</b>	Verify if STM Ship system will be able to import and read a VP (in RTZ-format) from another supplier of STM Ship system and/or from other STM service providers.			
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





Event	Description	Reference to System Description	Operator Action Reference	
<b>10.7. Load/Volume</b>	Verify if the application processes a certain number of transactions/volume in a reasonable time.			
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Description	Reference to System Description	Operator Action Reference	
<b>10.8. Performance</b>	Verify if criteria like reasonable response time, throughput, concurrency. With regards to STM module internally, VIS and SeaSWIM environment (SR, ID).			
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Description	Reference to System Description	Operator Action Reference	
<b>10.9. Reliability</b>	Verify that the application works if stressed in production-like environment. (resending, communication failure)			
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Description	Reference to System Description	Operator Action Reference	
10.10. Security	Verify if the STM Ship System has enough security to protect information.			
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				



Event	Description	Reference to System Description	Operator Action Reference	
10.11. Usability	Verify that the application is usable from an end-user perspective.			
<b>Test Case</b>				
Pass Criteria	Test Mode	Note(s)		
<b>Test Procedure</b>				
Step	Action	Expected Result	Pass/Fail	Comment
1				
2				
3				





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