European Maritime Safety Agency

Annex A

of the Tender Specifications attached to the Invitation to tender N° EMSA/NEG/09/2014 for the Implementation of a Single Entry Point for Maritime Applications (MAP)

February 2014

Table of contents

Contents

Table of contents 1

Terms definitions & abbreviations 2

1. Introduction 3
1.1. Background 3
1.2. Objectives 3
1.3. Software development methodOlogy 3
1.4. Work breakdown 3
1.5. Requirements for the contractor 4
1.6. Applicable definitions 4

2. WP1 - Graphic design requirements 6
2.1. General requirements 6
2.2. Navigation requirements 8
2.3. Page structure 13

3. WP2 - Requirements concerning software implementation 15
3.1. General requirements 15
3.2. Configuration requirements 24
3.3. Non-Functional requirements 27
3.4. Testing 27

4. WP3 - Go Live and Migration 30

5. WP4 Maintenance requirements 31

6. Summary of deliverables (Informative) 33

Appendices to Annex (A) 34

Terms definitions & abbreviations

Abbreviation	Definition
COTS	Commercial off the self
EU	European Union
LDAP	Lightweight Directory Access Protocol
MAP	Maritime Operations Applications Portal (of EMSA)
MS	Member State
IdM	Oracle Identity Manager
SSO	Single Sign On

Term	Definition
Application	Application is a computer program or set of computer programs designed to help people perform a predefined set of activities. Applications could be implemented on custom-made code or commercial-off-the shelf software (COTS) such as Oracle database server, Oracle Identity management suite, Weblogic or Apache application servers, ArcGIS or Geoserver suites, Liferay portal server, Microsoft server, Active Directory, Open LDAP, etc. Maritime applications at EMSA include: CleanSeaNet, LRIT DC, LRIT Ship database, LRIT IDE, Thetis, STCW, IMDATE integrated services (MARSURV-1, MARSURV-3 and future VAS) and those included in the SSN system (currently EIS, STIRES, SSN Data warehouse).
Interface	The communication boundary between: • IT entities such as: IT systems, applications, software modules within an application, software or hardware devices, • Users and IT systems (i.e. graphical interface)
MAP application	MAP aims to be a fully configurable portal application, supported by a proven portal framework implementing a user interface allowing users of EMSA applications to seamlessly access components common for all EMSA applications (like those used for user login and logout and change password) and application-specific components they are authorised to access
Portlet	Portlets are pluggable user interface software components that are managed and displayed in a web portal. Portlets produce fragments of markup code that are aggregated into a portal. Typically, following the desktop metaphor, a portal page is displayed as a collection of non-overlapping portlet windows, where each portlet window displays a portlet. Hence a portlet (or collection of portlets) resembles a web-based application that is hosted in a portal. Portlets are defined in JSR-000168 and JSR-000268 standards.
Service	(OASIS definition) Service is a mechanism to enable access to one or more capabilities, where the access is provided using a prescribed interface and is exercised consistent with constraints and policies as specified by the service description
User	A human being or an Authority accessing one or more EMSA applications using a web – based interface. The "Authority", in terms of the MAP, could be understood as an account that allows a team of persons to access one or more applications via the MAP web portal.
User interface	User interface is everything designed into an IT system which includes one or more applications which a human being may interact with -- this includes, but is not restricted to: display screen, keyboard, mouse, light pen, desktop appearance, illuminated characters, help messages, and how an application program or a Web site invites interaction and responds to it.

1. Introduction

1.1. BACKGROUND

EMSA users have different access points and authentication mechanisms for EMSA maritime applications:

1. Regarding application access points:
   - THETIS, STCW, CSN, EU LRIT DC, RULECHECK, User Management and IMDatE
     Accessing these applications and their components is done through a single entry point based on a Corporate Portal technology (details in Appendices J and K). IMDatE is currently in its final development stages.
   - SSN
     Access is done through a dedicated page.
2. Regarding application authentication mechanisms:
   - THETIS, STCW, CSN, RULECHECK, LRIT DC, User Management and IMDatE. Authentication is delegated to the horizontal EMSA IdM platform which allows single-sign-on capabilities across these applications.
     When a user wants to login or tries to access a private page, EMSA IdM platform intercepts these actions and presents a specific but unique login form where user credentials are requested. Following a successful authentication the user is re-directed to his/her private home page where, among other functionalities, the user can select the application to which he/she wants to gain access.
   - *SSN*
     Currently, SSN uses an application specific login form and authentication mechanisms. Following a successful authentication, the user is re-directed to a specific application page. SSN is currently in the integration process with the Horizontal EMSA IdM Platform.

Please note that applications also have public functionalities, available to the general public that do not require authentication.

One may note that this approach even still partially following the single entry point for some applications and the integration of all the EMSA applications to the IdM (to enable single-sign-on) can be ergonomically and functionally enhanced in order to improve usability, user-friendliness and to promote the corporate image of EMSA to the desired level.

1.2. OBJECTIVES

The objective of the MAP project is the:

- The implementation of the single entry page and user pages based on the graphic and software design requirements included in this annex
- Migration of the current environments (in use, e.g. user home pages, user definitions, etc.) to the new implementation
- Maintaining and correcting, when needed, relevant MAP elements.

The detailed requirements for the MAP phase are defined in the subsequent sections 2 to 5.

1.3. SOFTWARE DEVELOPMENT METHODOLOGY

It is expected that the contractor will follow an agile-based approach for implementing the project, with multiple iterations of the solutions presented, to ensure that EMSA's staff can follow-up closely/review, comment and interact with the software and graphic design experts throughout all phases of project implementation. There will be one intermediate delivery of the MAP solution that will allow EMSA to define, test and tune the delivery process. There will be an acceptance test linked with each of the deliveries.

1.4. WORK BREAKDOWN

In this respect it is anticipated that the project plan shall include the following work-packages as per table 1. The offer should detail further the specific activities to be executed under each work-package and the milestone events associated with the activities. WP1, WP2 and WP3 concern implementation activities of MAP. WP4 is linked with the maintenance of the system.

Table 1 : Work-packages and key deliverables

Ref	Work package name	Work package description
WP1	Graphic design implementation	Implementation of the Graphic design.
WP2	MAP Software development	MAP Software development includes functional, non-functional and integration tests, documentation, user manuals, operation and maintenance manual, procedures.
WP3	Go Live and migration	This work package includes the deployment of MAP and migration of current configurations.
WP4	Maintenance	This work package includes work linked with the maintenance activities of MAP.

1.5. REQUIREMENTS FOR THE CONTRACTOR

After contract signature, the contractor of MAP shall follow, during the implementation and maintenance of the project, EMSA's standards in terms of project delivery requirements, working procedures and service requirements. These are included in Appendix I and Appendix J of this technical Annex.

1.6. APPLICABLE DEFINITIONS

Ref: MAP_DEF_1	**Nature: Informative**
Component	
A "component" is a set of functionality-grouping capabilities enabled by one or more applications that are made available to a user via the MAP. The capabilities integrated into components are subject to different configurations depending on the user accessing the component. In this respect, the "components" may include one or more "options" (refer to the definition of "options"). Some examples of components from SSN are: SSN "graphical" interface", SSN textual interface, SSN accident module. Depending on the way in which the applications are configured in MAP, access to a component is granted to a user either by a duly authorised administrator or "by default"	
Ref: MAP_DEF_2	**Nature: Informative**
Option	
A configurable option is a group of distinct features, a service or an interface that is made available by an application to enable a user to provide/update/cancel/delete data or retrieve/consult information. Some examples from SSN: "Find" console, "Send" console. These could be part of the SSN textual interface "component" The specific access rights of users for options to which he/she is granted access are application specific. The MAP application is not "aware" of the specific access rights/permissions of users. For custom behaviour applications, a web service is to be established on the application side that will interact with Liferay services allowing the change of the configuration of the component and the update of the MAP registry containing the details of the options to be accessed by the user.	
Ref: MAP_DEF_3	**Nature: Informative**
MAP entity model	
For the proper design of the MAP entity model (means of establishing the set of options/components available to users) the contractors should take a note of the following: • "Components" and "options" have an "operational" context. They should not be perceived as what engineers and software experts understand as an "application", a "service" or "interface". • The same configurable "option" might be utilised by one or more application "components". "Options"/"Components" cater for grouping application capabilities accessed via a url or a set of urls but do not specify the explicit access rights of users to these capabilities. In this sense, they should not be confused with access control related "roles" or "groups". Not all the users enabled to utilise a component or accessing an option would or should have the same access rights. The MAP application will control the urls to be presented to users for them to access application capabilities, and will not control what the user actually has access to by clicking on a specific url.	

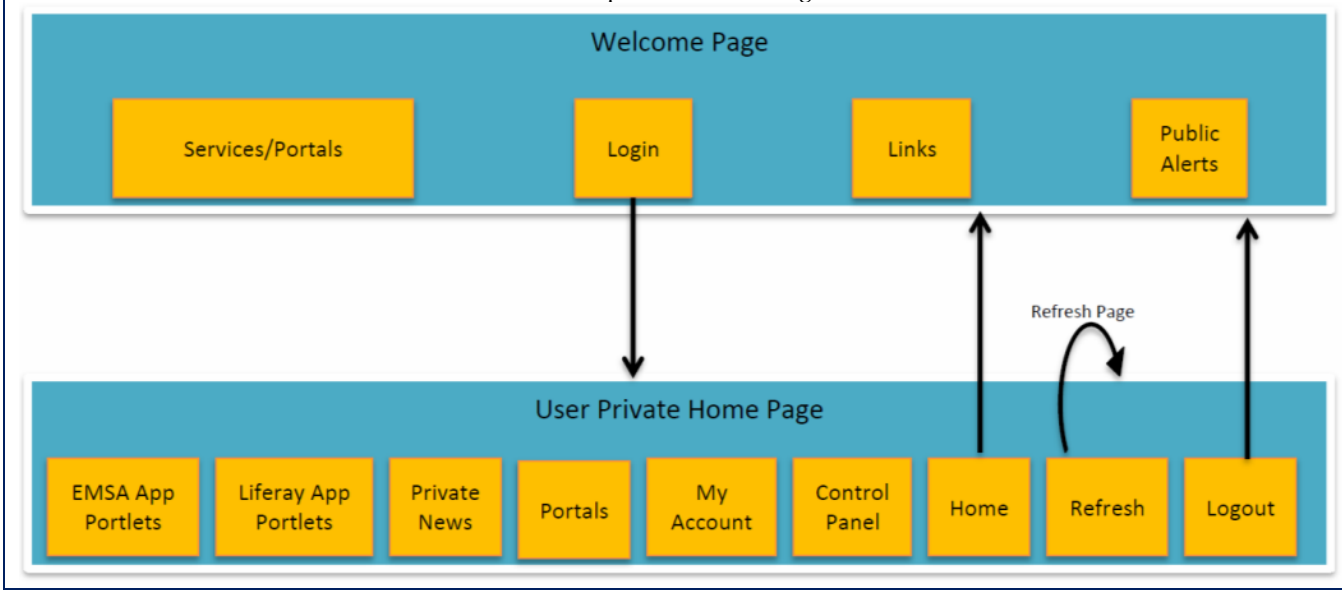
Ref: MAP_DEF_4	**Nature: Informative**
Liferay User Group	
In Liferay a User Group allows the portal administrator to create groups of users that traverse the organizations hierarchy. They can be used to create arbitrary groupings of users who don't necessarily share an obvious hierarchical attribute, and can be assigned to multiple user groups. User Groups are most often used to achieve one of the following goals: ▪ To simplify the assignment of several roles to a group of users; ▪ To simplify membership to one or more sites by specifying a group of users; ▪ To provide predefined public or private pages to the users who belong to the user group.	
Ref: MAP_DEF_5	**Nature: Informative**
Liferay Roles	
Roles are used to define access to a particular function or functions (ex: portlet applications) within the portal, according to a particular scope. As an example, a role named INSPECTOR is likely to have access definitions relevant to the specific options delegated to it. Users who are placed in this role will inherit these permissions Roles can be scoped by portal, site or organization. The differences between the three types of roles can be described as follows: ▪ Regular role: Access is defined at the portal level and applied to the full portal; ▪ Site role: Access is defined at the portal level and applied to one specific site; ▪ ◎ Organization role: Access is defined at the portal level and applied to one specific organization.	

2. WP1 - Graphic design requirements

2.1. GENERAL REQUIREMENTS

Ref: MAP_WP1_00	**Nature: Informative**
MAP structure overview	
All the images depicting the different pages that are part of MAP, as well as respective elements that are contained in each of the pages, are examples of possible implementations and are included to clarify the concepts associated with each of the requirements. It is not expected that the implemented version of MAP will look exactly as the examples provided.	

Ref: MAP_WP1_01	**Nature: Mandatory**
MAP structure overview	
The overall structure of MAP shall follow the structure presented in the figure bellow:	



Ref: MAP_WP1_02	**Nature: Mandatory**
MAP structural elements – Welcome page	
The welcome page shall have 4 primary elements: ▪ Login; ▪ Services/Portals; ▪ Links; ▪ Public Alerts;	

Ref: MAP_WP1_03	**Nature: Mandatory**
MAP structural elements – User private page – Primary elements	
There are 3 primary elements in the User Private Home Page: ▪ EMSA Applications Portlets; ▪ Liferay Applications Portlets; ▪ Private News;	

Ref: MAP_WP1_04	**Nature: Mandatory**
MAP structural elements – User private page – Secondary elements	
There are 6 secondary elements in the User Private Home Page: ▪ Control Panel; ▪ My Account; ▪ Portals; ▪ Home; ▪ Refresh; ▪ Logout;	

2.2. NAVIGATION REQUIREMENTS

Ref: MAP_WP1_05	**Nature: Mandatory**
Overall navigation requirements	



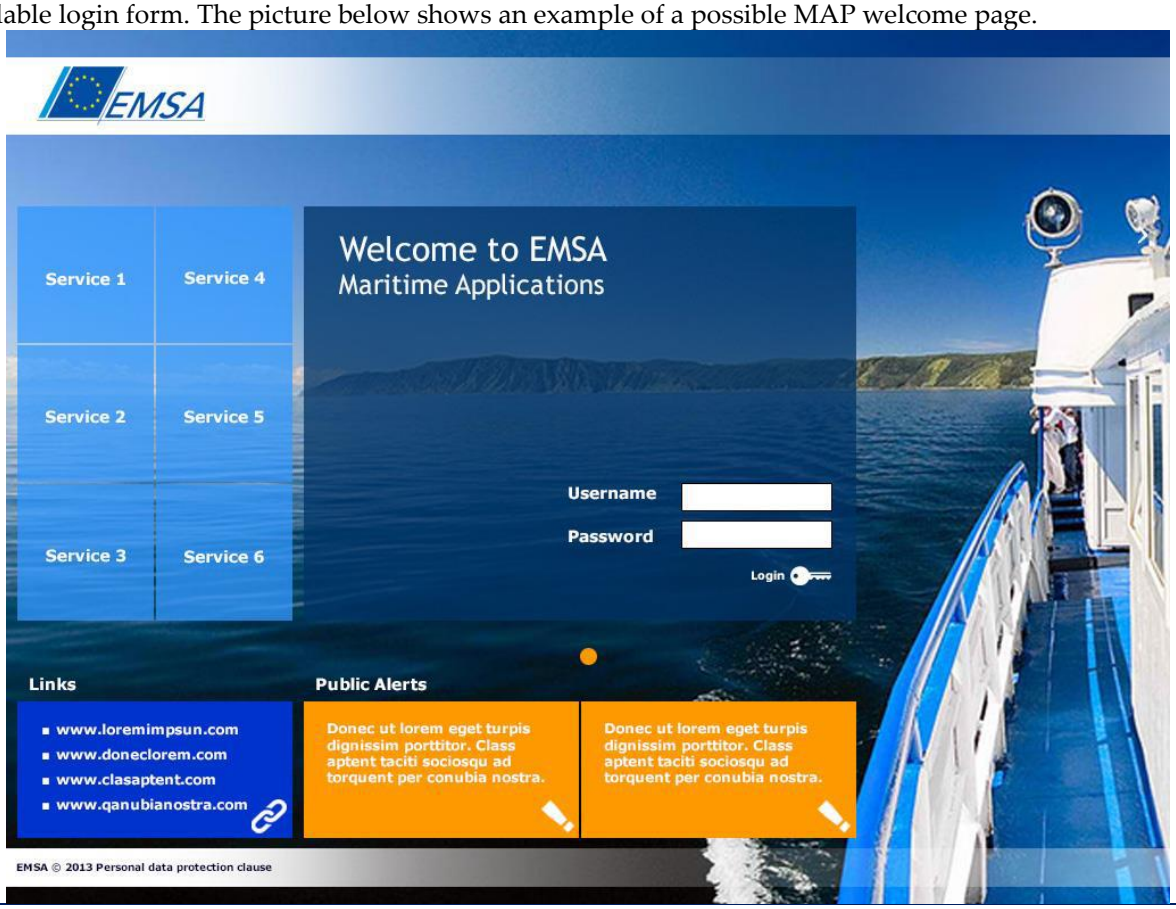
Pages shall be displayed in a single browser window with horizontal scroll (shown the bottom of the page when more information is available on the right of the main screen). There shall be also "screen dots" that show the number of available screens.
The picture above shows an example of a possible MAP user private page.
Note: All the information shall be displayed without vertical scrolling.

Ref: MAP_WP1_06	**Nature: Mandatory**

Welcome page

The welcome page shall have a background picture, related to maritime activities, will be used to enhance visual aesthetic and appealing. In order to minimize scrolling, the design is prepared to have a fixed dimension and when more screen is needed the scroll will be limited to the horizontal one using a Metro approach (similar to the Windows 8 start screen).

Besides a Links and Public Alerts content that are always visible, the welcome page shall be designed to be user friendly giving to the guest user rapid access to links to EMSA services or applications and an easily available login form. The picture below shows an example of a possible MAP welcome page.



Ref: MAP_WP1_07	**Nature: Mandatory**
Welcome page – Services / Portals	
This module provides an access to the Services/Portals. If the user is not logged, a page with Public Information about the Service/Portal is shown. If the user is logged, he enters in the Private Page of the Service/Portal.	



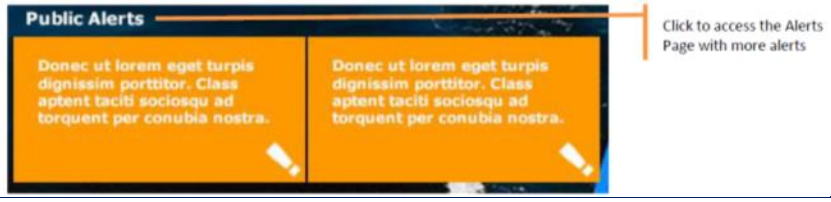
Ref: MAP_WP1_08	**Nature: Mandatory**
Welcome page – Login	
Login access is provided after the authentication (Username and Password) process	

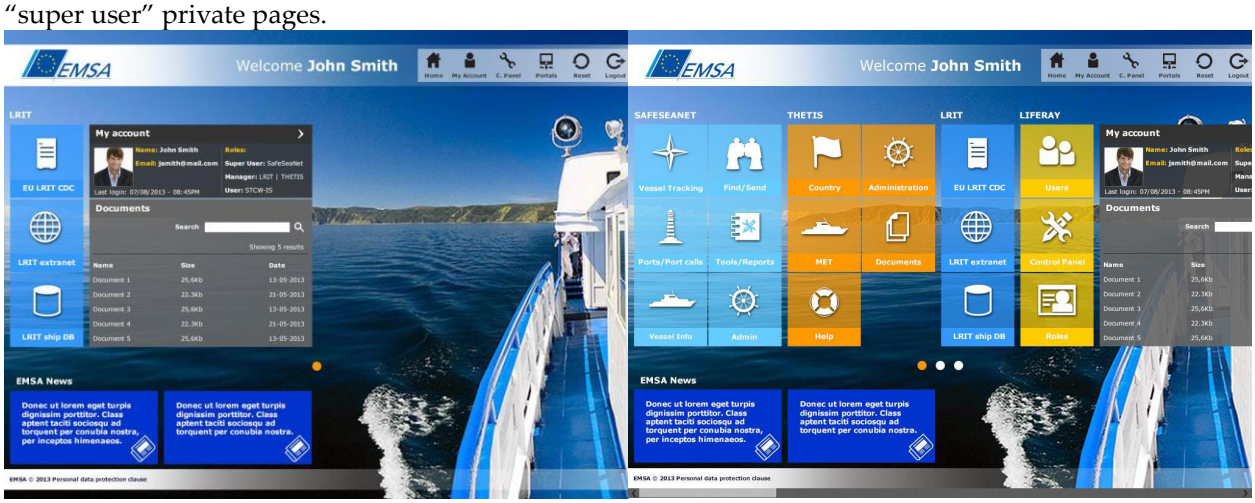


This module shall provide an access to the User Private Pages. The user should enter the Username and Password and then should click on the Login Key.
This module shall also include a "Forgot password" functionality.

Ref: MAP_WP1_09	**Nature: Mandatory**
Welcome page – Links	
This module shall provide information about Public Links. For more links, the user should click in the title of the module (area) "Links".	



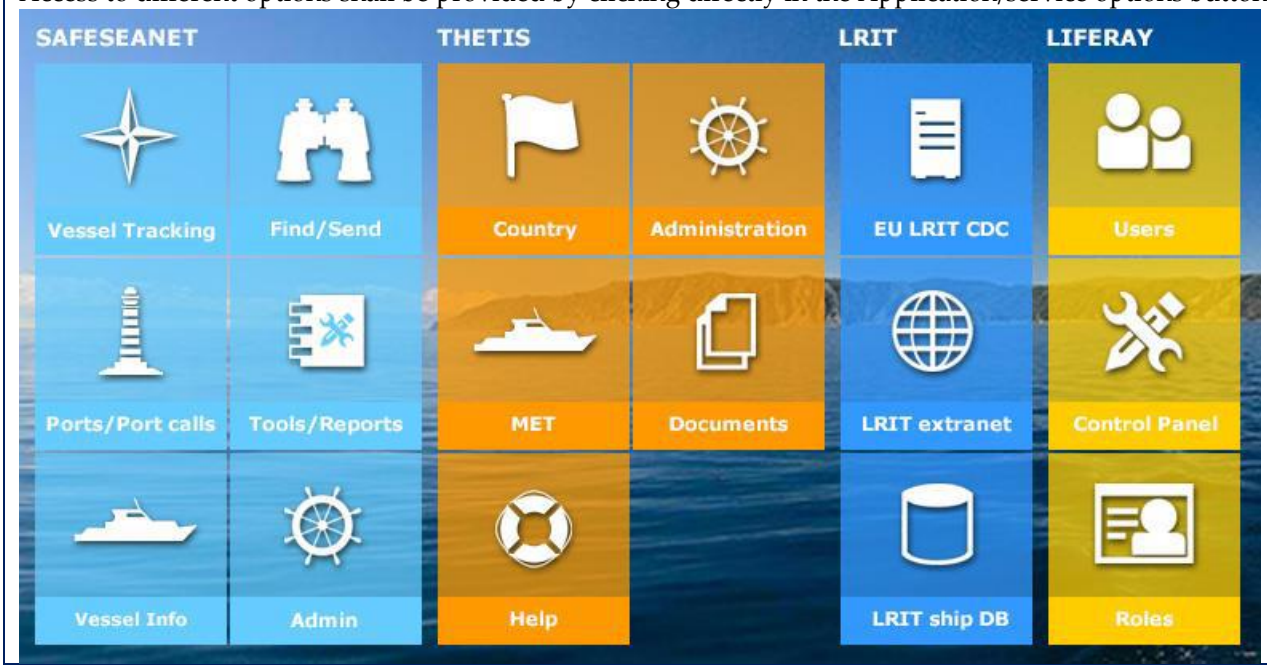
Ref: MAP_WP1_10	**Nature: Mandatory**
Welcome page – Public alerts	
This module shall provide information about Public Alerts. For more alerts, the user should click in the title of the module (area) "Public Alerts". 	

Ref: MAP_WP1_11	**Nature: Mandatory**
MAP User private page – Underlying concepts	
After login the user shall be redirected to its private page designed to enable access to information and services in a fastest, simplest and intuitive manner. The picture below depicts examples of a regular user and "super user" private pages.  **Regular user** **Super User** On the screen the user shall have square buttons, grouped by applications, which link to existing EMSA applications/services functionalities. The design shall be prepared to support a service oriented approach in the near future, where the grouping will be made by service instead of application. Like the login page, the user private page has the *Links* and *Public Alerts* content always visible.	

Ref: MAP_WP1_12	**Nature: Mandatory**

User private home page – Primary navigation

Access to different options shall be provided by clicking directly in the Application/service options button



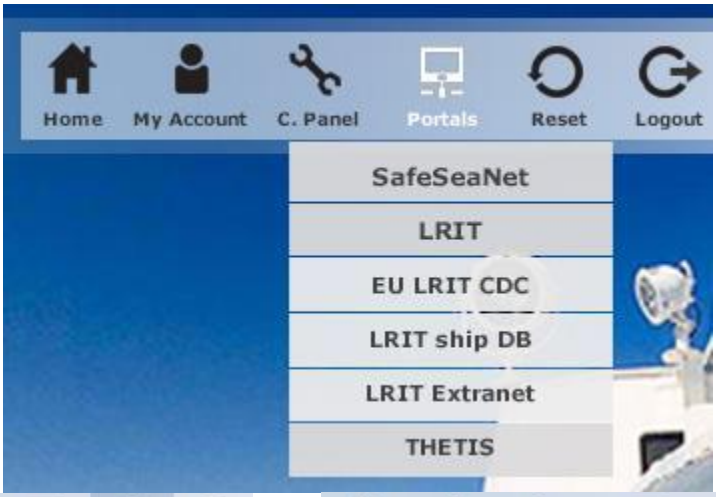
Ref: MAP_WP1_13	**Nature: Mandatory**

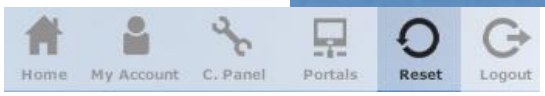
User private home page – secondary navigation

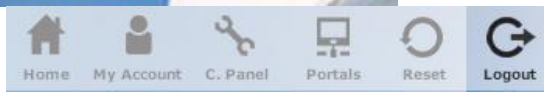
Secondary navigation is provided on the top of the screen, in a horizontal list of graphical links:
An access is provided by clicking directly in the Application button



Access to a Individual Application / Service Portals shall be provided by clicking directly in the Portal sub menu button







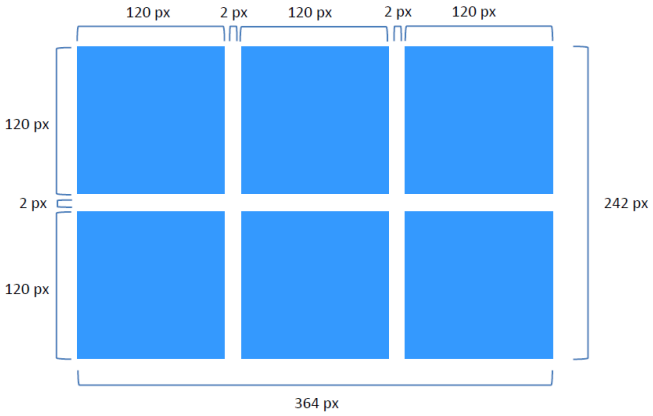
A reset of the User Private Home Page (restore all the items of a default configuration) is provided by clicking directly in the Reset button. Logout from this page is provided by clicking directly in the Logout button. The user shall be redirected to the Welcome Page.

Ref: MAP_WP1_14	**Nature: Mandatory**
User private home page – My Account	
The my account tab shall show the details on the user account, including the roles the user has within each service / pplication and the last time the user logged in. My account module shall also provide the possibility to change the users password.	



2.3. PAGE STRUCTURE

Ref: MAP_WP1_15	**Nature: Mandatory**
Overall MAP Layout	
The main layout of MAP is based on a square matrix. The minimum unit is a square with 120x120 pixels. All the modules (areas) are multiples of these squares with 2 pixels space between them.	



All the modules (areas) shall be configured with this rule.

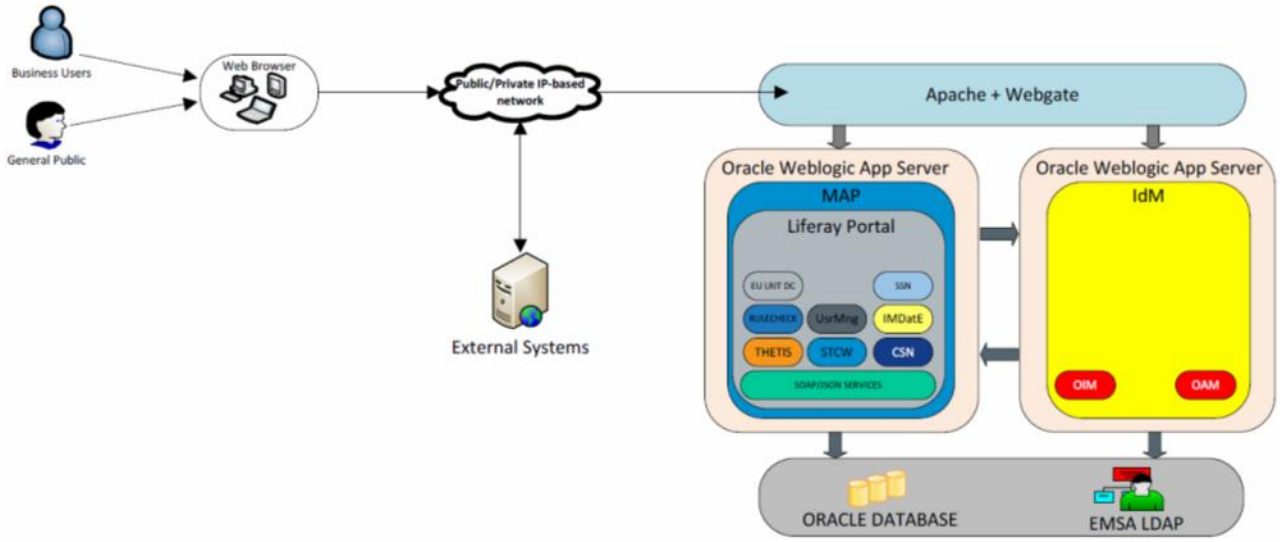
Ref: MAP_WP1_16	**Nature: Mandatory**
Portlets visibility	
The Liferay applications portlets shall be collapsed to save space in the screen but they can be expanded in order to show immediately the information inside. EMSA Administrator shall be able to configure which portlets can be collapsable, removable or made invisible by the user.	

Ref: MAP_WP1_17	**Nature: Mandatory**
Technical Elements	
The contractor shall follow the technical design elements present in Appendix H of to this Annex. Deviations during the implementation have to be agreed upon by EMSA.	

Ref: MAP_WP1_18	**Nature: Mandatory**
Development methodology	
The contractor shall follow an agile methodology for the graphic design process. This process should include at least 3 sprints to allow EMSA to betterguide the graphic design process. .	

3. WP2 - Requirements concerning software implementation

3.1. GENERAL REQUIREMENTS

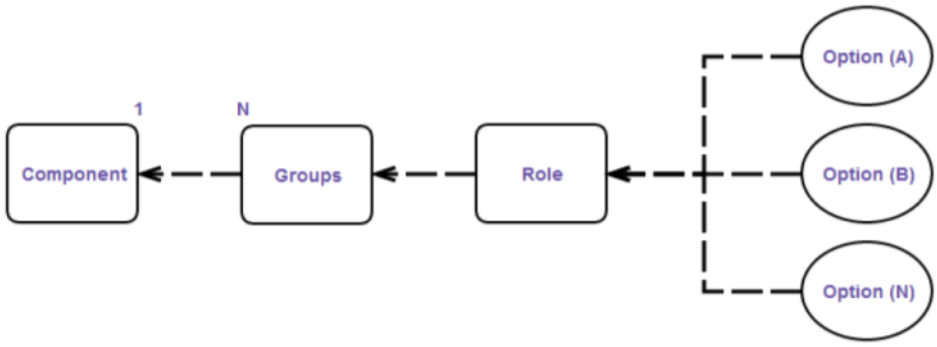
Ref: MAP_WP2_00	**Nature: Informative**
Conceptual Architecture overview	
The bellow picture shows the context architectural and the position of MAP within this architecture. The blocks shown in the figure inside the MAP rectangle are in the scope of the MAP project. The MAP system is composed of a portal application deployed into a distributed server application. The server application is a clustered Oracle Weblogic Application Server hosting the portal and all components developed for the portal. The server application uses a persistence layer of Oracle database repositories for portal data as well as for media data.  	

Ref: MAP_WP2_01	**Nature: Informative**

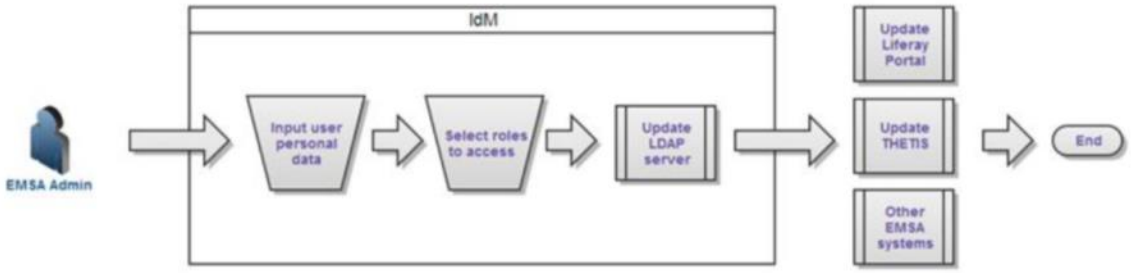
MAP Default application behaviour

MAP portal shall all support two distinct behaviours regarding EMSA maritime applications: the default and the custom.

For the **default application behaviour** one particular *Role* can give access to one or many application options for a particular *User Group* that belongs to a *Component*. From Liferay perspective the *Component* is a *Site* and the *Option* is a *Page* of type *Portlet*.



The picture below describes briefly the current procedure taken on IdM to configure a new user for an application with the default behaviour.



Typically the application administrator (or any other user with the right IdM privileges) accesses the user management console and navigates to the user creation page.

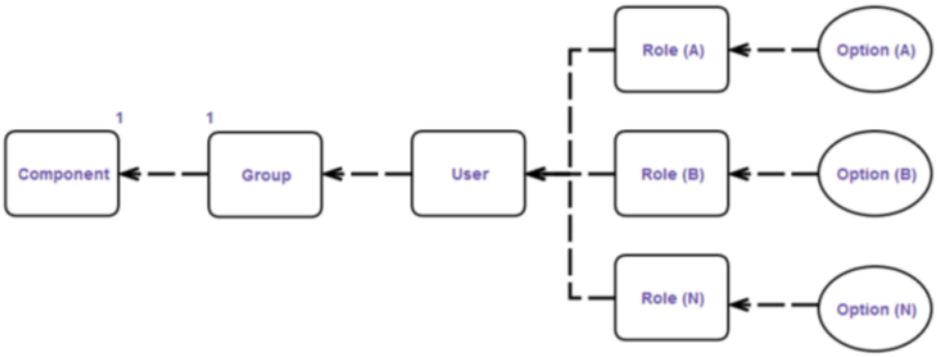
Within this page the administrator is able to input the user personal data and choose which roles the user will have access to. Once this data is saved the IdM will automatically update the LDAP server.

If LDAP is updated successfully IdM will then begin an asynchronous process to replicate the new data to the remaining EMSA applications within its landscape (e.g. Liferay portal, THETIS, and others): configure the new user and add him to the user group or groups that the administrator selected on the IdM user management console.

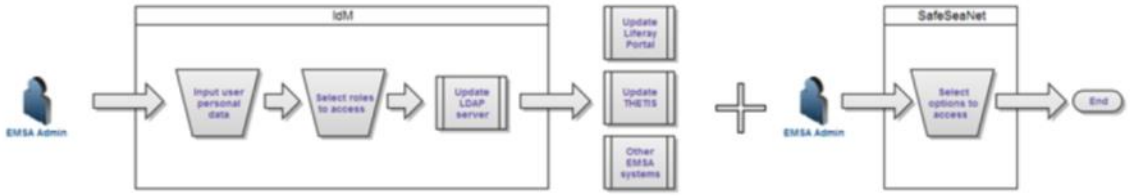
Ref: MAP_WP2_02	**Nature: Informative**

MAP Custom application behaviour

For the custom application behaviour access to application options is managed through direct associations between *Role* and *Page*. For the User to be granted access to the application options it is necessary to have as many Roles as Options that he will have access to (1 to 1 association). The *User* is assigned to a particular *User Group* that belongs to a *Component*. From Liferay perspective the *Component* is a *Site* and the *Option* is a *Page* of type *URL*.



The procedure is slightly different from those with the default behaviour as shown in the picture below.



In this case the maintenance procedure is a two-step process in which the EMSA administrator starts in the IdM system and finishes it in the maritime application, i.e. SSN.

Typically the application administrator with the right IdM privileges accesses the user management console and navigates to the user creation page. Within this page the administrator is able to input the user personal data and choose which components the user will have access to. This last configuration is specific to custom behaviour applications, as the default behaviour what is configured is the access to the application options.

Once this data is saved the IdM will automatically update the LDAP server. If LDAP is updated successfully IdM will then begin an asynchronous process to replicate the new data to the remaining EMSA applications within its landscape (e.g. Liferay portal, THETIS, and others): configure the new user and add him to the user group or groups that the administrator selected on the IdM user management console.

The second step in this process is also specific to the custom behaviour application. The EMSA administrator with the right SSN privileges must manually access the administration console and chooses which options the user will have access to.

Ref: MAP_WP2_03	**Nature: Informative**
System Core components	
Web Browser Human users access MAP using a web-browser which provides a unique web interface. It is composed of HTML, CSS Javascript and images in a Web 2.0 environment. **Apache+Webgate** A single access point to all EMSA applications. Here a distinction is made between public requests and private ones, through verification that the accessing user is already authenticated or not. **Portal** Liferay Portal is the component that interfaces with human end-users, whether they are internal EMSA users, or external, having private or public access to any EMSA application. The portal must provide users any type of access in line with the multiple features of EMSA applications according to user access permissions. With an ergonomic, aesthetically pleasing design, this portal will be the single entry point to all users that want to access any EMSA maritime application or services. MAP will expose, through Liferay, SOAP/JSON Services to provide other applications the default Liferay functionalities as well as customized ones using Liferay Service Builder. **Identity Management** Identity Management functionalities will be available in MAP portal either by direct access or through links, and user authentication accessing the portal will be made through Access Management. **Data Repositories** Oracle Database is the software tool proposed for satisfying the storage requirement. It will be used for Liferay Portal as well as for media gallery repository. **LDAP** The LDAP server hosts and organizes the data for user authentication and authorisation. Working side by side with the Oracle Access Management and its access policies, the LDAP acts as the repository for user and services credentials for accessing EMSA resources.	

Ref: MAP_WP2_04	**Nature: Mandatory**
Base technology	
Liferay is the portal framework to be utilised for the development of MAP.	

Ref: MAP_WP2_05	**Nature: Mandatory**
Default Liferay implementation	
MAP configuration and implementation/configuration shall not limit or constrain any Liferay functionality from the functional and technical point of view. It is mandatory that Liferay functionalities and portlets continue to run as delivered in the default Liferay distribution. MAP implementation/configuration shall not impose, limit or constrain any new application integration.	

Ref: MAP_WP2_06	**Nature: Mandatory**
Liferay Versions	
Liferay EE 5.2 SP5 is currently the version used in PRODUCTION environments of certain EMSA applications. EMSA is in the process of migrating from **Liferay EE 5.2 SP5** currently used to **Liferay EE 6.2** MAP shall be compliant with both Liferay EE versions. Should the bidder consider essential to utilise specific features of Liferay EE 6.2 that are not present in Liferay EE 5.2, these features should be clearly indicated in the bid.	

Ref: MAP_WP2_07	**Nature: Mandatory**
Configuration Utility/Utilities	
Configuration Utilities shall be implemented taking advantage and/or extending the Liferay framework or fully and transparently integrated on the solution proposed.	

Ref: MAP_WP2_08	**Nature: Mandatory**
MAP Technical solutions	
MAP shall take advantage of the following technical solutions to deliver EMSA's requirements: ▪ The use of Liferay objects to provide functionalities like Wiki, FAQ and similar; ▪ The use of iFrames to have external sites embedded on the MAP system; ▪ The use of hyperlinks using appropriately designed function buttons for functionalities related to the user account and / or private personal page.	

Ref: MAP_WP2_09	**Nature: Mandatory**
MAP implementation approach - general	
The single entry point through MAP portal shall enable an authenticated user to have access to a private User Page, where EMSA maritime applications components and options are exposed dynamically, according to the user profile that is logged on. By exposing the components and options through MAP, a common identity, consistency and coherence is achieved.	

Ref: MAP_WP2_10	**Nature: Mandatory**
MAP implementation approach – application behaviour	
MAP development shall take into account the default and custom application behaviour (described in MAP_WP2_02 and MAP_WP2_03) in its implementation.	

Ref: MAP_WP2_11	**Nature: Mandatory**

Identity Management

The Oracle IdM is EMSA's enterprise identity management system designed to manage user access privileges across all of the organization's resources, throughout the entire identity management lifecycle.
EMSA is using IdM to have a centralized user management console for all EMSA maritime applications. The IdM was customized to EMSA user management and application management needs with the goal of having only one place where the information is kept and updated, and simultaneously, have it automatically replicated to the maritime application or applications to which the user being managed will interact with.

IdM logical data	Description
User personal data	The personal data that IdM user management console holds regarding users is: • User Id; • First / Middle / Last Name; • Email; • Password / Password confirmation; • Authority type; • Country; • Organization.
Application components	In IdM the EMSA administrator is able to select one or more maritime application roles that the user will have access to. Typically this information maps directly to Liferay user groups

When IdM replicates the user and access data over to EMSA maritime applications, it does so by following an established set of rules. These rules enable IdM to automatically parameterize the Liferay portal without human intervention besides the one that is done on IdM user management console.
MAP shall allow the configuration of these mapping rules on Liferay portal to be performed either manually or automatically by invoking Liferay Services. The rules outlines the Liferay structure to the IdM data that is inputted on the user management console and enables the automatic parameterization described. This parameterization typically is done once. In case in the near future changes to the user groups are needed this parameterization must be changed and involve manual effort.

Ref: MAP_WP2_12	**Nature: Mandatory**
Authentication process	
Authentication is delegated to the horizontal EMSA IdM platform currently in use which allows single-sign-on capabilities across the maritime applications, MAP portal included. Whenever a request to a private page is done and the user credentials are not yet defined the MAP shall redirect the user to the portal login page. By logging in the MAP portal this user shall be automatically logged in every system of EMSA that he has access to, using the single-sign-on capabilities of IdM.  Naturally, when signing off the MAP portal, this user shall also be signed off of every system of EMSA using the same single-sign-on capabilities of IdM. Despite the layout customization this portlet will also be technically customized to be integrated with IdM using its API to request user authentication based on the data that the user will input in the portal login form. This integration is already available on the Testing environment and can be reused during the development of the MAP portal. IdM will process this form data and will invoke the Liferay login process differently accordingly to the success or not of the credentials validation. User interaction will be made only through MAP UI which means a coherent and single entry point to EMSA users. Upon valid authentication the user shall be redirected to the MAP private user page loaded with only the options that his user profile was configured to have access to.	

Ref: MAP_WP2_13	**Nature: Mandatory**
MAP Portal theme	
MAP shall be implemented the Portal Theme in accordance to the graphic design requirements defined in WP2. The layout of MAP is based on a square matrix, which means that modules (areas) have a minimum size of 120x120 pixels. The portal will have a standard 1024x768px in size, but it can easily be grown or shrink proportionally by applying multiples of the 120px squares. The portal theme shall be configurable to allow have variations of background images so that the portal administrator can use images pre-approved by EMSA communication office.	

Ref: MAP_WP2_14	**Nature: Mandatory**
MAP Portal – Welcome page	
The MAP welcome page shall contain the following functional elements: 1. Login 2. Services / Portals 3. Links 4. Public Alerts	

Ref: MAP_WP2_15	**Nature: Mandatory**
MAP Portal – Welcome page – Portlet login	
The portlet login shall be customized to be integrated with IdM.. This portlet shall have a multiple functionality: 1. To allow the user to login to its private page 2. To deliver a "Forgot password" function 3. As soon as the user is logged on the form is replaced with the standard message that Liferay uses and the logoff button.	

Ref: MAP_WP2_16	**Nature: Mandatory**
MAP Portal – Welcome page – Service / Portals	
The Service / Portals area shall be a Liferay web content with a structure and template associated, so that 6 links can be configured as specified in the design. If more links are needed the structure can be changed so that the area of each link is divided proportionally. As an example if EMSA needs 12 links, every link area would be divided in two.	

Ref: MAP_WP2_17	**Nature: Mandatory**
MAP Portal – Welcome page – Links	
The links portlet shall be a Liferay web content with a structure and template associated.	

Ref: MAP_WP2_18	**Nature: Mandatory**
MAP Portal – Welcome page – Public alerts	
The Public Alerts shall use the *Liferay Alerts* portlet customized to the portal theme.	

Ref: MAP_WP2_19	**Nature: Mandatory**
MAP Portal – User Private Page	
The MAP user Private Page shall contain the following functional elements: 1. Top Menu 2. Application / Service Options 3. EMSA Announcements 4. Portal Portlets 5. Scroll bar	

Ref: MAP_WP2_20	**Nature: Mandatory**
MAP Portal – User Private Page – Top Menu	
The Top Menu shall provide navigation in with easy access to some important features. In order to keep them available along the platform they are placed in the top of the page, and will replace the portal Dockbar. This module provides a menu with direct access to some useful areas in the MAP portal: ▪ Home, access to the homepage is provided by clicking directly in the Home button; ▪ My Account, link to the My Account portlet loaded with common user data available on IdM. To change this data (it is read-only on the MAP portal) this portlet will have a link to a page inside IdM where changes to this data can be made. These changes shall include "change password". ▪ Control Panel, link to Liferay Control Panel, which is available or not depending on the user's access level; ▪ Portals (with a sub menu to the various EMSA Portals and its application options), restricted according to the user's access level; ▪ Reset, by clicking on this link the standard page layout is again applied to this user's private page, resetting any changes that were previously made; ▪ Logout from the private portal area and through IdM from any system that the user is logged in is provided by clicking in this button.	

Ref: MAP_WP2_21	**Nature: Mandatory**
MAP Portal – User Private Page – Application / Service Options	
A portlet shall be developed based on the logic of the default Liferay portlet *My Sites* in order to support this module. This implementation shall follow the matrix specified on in the WP1 Graphic design requirements. To enable the configuration of colours and icons the portlet shall have a configuration screen where the portal admin can chose for every site its colour and for every application/service option its icon, ensuring that the WP2 graphic requirements can be met..	

Ref: MAP_WP2_22	**Nature: Mandatory**
MAP Portal – User Private Page – EMSA Announcements	
The Announcements portlet shall support this module, and shall be customized to the approved design.	

Ref: MAP_WP2_23	**Nature: Mandatory**
MAP Portal – User Private Page – Portal Portlets	
The My Account module shall be customized to fully support the requirements specified in WP1. The portlet Documents and Media can be used to support the Documents module, and shall be customized to the approved design.	

Ref: MAP_WP2_24	**Nature: Mandatory**
MAP Portal – User Private Page – Scroll bar	
MAP shall display the user how many pages are available to scroll. This display shall be implemented using "screen dots" that show the number of available screens. This module requires a custom portlet to be fully supported, which by default will be attached to the portal theme to the correct position as shown on WP1 requirements	

3.2. CONFIGURATION REQUIREMENTS

Ref: MAP_WP2_25	**Nature: Informative**
MAP Portal – General configuration requirements	
MAP configuration interface is intended to be used by users with a non-technical background. This requirement of simplicity and usage by non-technical personnel shall be reflected in the design and implementation of any custom portlet/interface specifically implemented for MAP.	

Ref: MAP_WP2_26	**Nature: Mandatory**
MAP Portal – Options requirements	
The Liferay control panel shall enable administrators (to choose which options (considered as a pair of Page + Role) are available. Besides this, each option shall have a configuration menu to individually configure the embedding behaviour of the option. The configuration page shall have the functionality to configure user access option by option and also application by application (or service by service).	

Ref: MAP_WP2_27	**Nature: Mandatory**
MAP Portal – configuration items	
The configuration of an option for a MAP web page using the MAP configuration utilities shall allow the following: 1. Defining the name of the option (which shall be used as its label and associated with a tooltip that could be shown when a user "hovers" on top of a function button) 2. Defining a short description for the option 3. Defining an option type indicating how the option is to be embedded in a web page 4. Defining the application or service "offering" the option 5. Defining a small and a big icon for the option 6. Defining the method for configuring an "option" for a user. In this respect in the configuration utility should allow a distinction between "Default configuration" of an option and "Web-service based" configuration taking into account the following: a. If the option belongs to the "Default configuration" category, the option is normally offered by an application whose roles are identical to those defined in IdM and Liferay. For this category, a list box should be provided to allow linking the "option" to one or more pre-defined Liferay "roles". b. If the option belongs to the "custom configuration" category, its configuration for a user depends on the user account configuration within an EMSA application. In this case a web service should be used to provision options for a user to the MAP (further elaborated in MAP_WP2_28) 7. Defining the url (s) of the application web pages related to an option or a placeholder/portlet indicating where the option shall be embedded in a web page 8. The configuration of a "component" for a MAP web page will allow the following: a. Defining a name for the component b. Defining if the component shall be visible or invisible and its order of appearance.	

Ref: MAP_WP2_28	**Nature: Mandatory**
MAP Portal – Manage the application options by invoking Liferay web services	
MAP shall allow that application options are managed by custom behaviour applications by externally invoking the Liferay WSDL. The custom behaviour application can invoke Liferay web services to parameterize these automatically whenever changes occur at application level. This management shall include, but not be restricted, to the following functionalities: a) Add Option (by creating the configuration of a pair page-role) b) Change Option (delete or update a certain option) c) Manage Option (giving or removing user access to specific option)	

Ref: MAP_WP2_29	**Nature: Mandatory**
MAP Portal – configuration – online help	
The configuration of MAP shall include online help with relevant and detailed information on its usage.	

Ref: MAP_WP2_30	**Nature: Mandatory**

MAP Portal – configuration – News and announcements

MAP shall be implemented taking into account the following requirements:

1. There should be a possibility to discriminate the news and announcements into specific categories. For the topics categorised as technical announcements there should be a possibility to record, a-posteriori (refer below), a "down-time" value.
2. The application dependent functions to be implemented should include the following configurable options.
   a. *(to be made available to all the authorised user of applications accessed via the User Private home page)* "Active news/Announcements";
   b. *(to be made available to all the authorised user of applications accessed via the User Private home page)* "News/Announcements Archive"; and,
   c. *(to be made available to all the authorised administrators)* "Create/update" news/announcements"
3. When a user accesses the "Active news/Announcements" related link, he/she will be provided with a list of warnings concerning interventions taking place at the same day of the user login at central or national level. The news that are application/service specific must relate only the maritime application/services the user is authorised to access.
4. When an administrator accesses the "Create/update" news/announcements" link, he/she will be introduced to a specific module of the MAP enabling him/her to report/update a topic. When a topic categorised as "technical intervention" is created and submitted, an email will be automatically generated and added to the Numara system of EMSA. The title/email address/content of this email will be provided to the MAP contractor by EMSA's MSS given that the message has to be formatted in a very specific way in order to be introduced in Numara. It is important to note that the events to be reported here may apply simultaneously to one or more of the application components configured via the MAP.
5. When a user accesses the "News/Announcements Archive" link he/she will be provided with a list of all the private news previously published and the events taking place in the current year.
6. The application shall allow to export the "monthly records" in an excel file as well as to print them.
7. When a user logs in to his/her home page at the time a technical intervention is taking place, he/she should be alerted via the banner or embedded portlets provided in the MAP about the execution of this intervention.
8. The create/update page would allow application administrators to create a distribution list in order to proactively warning users about a scheduled intervention. The format of the message to be sent out as well as the way the distribution list shall be formulated have to be agreed with EMSA. It is however anticipated that the user reporting an intervention would be provided with the following options:
   a) Sending no warning (default value)
   b) Sending a global warning to all the users of a specific application/service
   c) Sending a warning to selected users
   d) Sending a warning to those users belonging to a specific group/role
9. Publication and display of these types of Announcements shall use the "News and Announcements" functionality previously described in this document.

This implementation shall maintain as much as possible the functionalities that Liferay brings out-of-the-box. If the customization level is very complex new portlet maybe that is based on the original announcement portlet. Regarding the scheduling of interventions, Liferay calendar shall be parameterized to have this data, and the portlet Event Display to have it shown on the user home page or similar.

3.3. NON-FUNCTIONAL REQUIREMENTS

Ref: MAP_WP2_31	**Nature: Mandatory**
Generic non-functional requirements	
MAP will be one of the most critical EMSA system components. As it will be the single entry point to **all** EMSA Maritime Applications, MAP shall be fully scalable, resilient and providing a very high level of availability. MAP architectural design and implementation shall be fully in-line with requirements included in the technical landscape document in Appendix A.	

Ref: MAP_WP2_32	**Nature: Mandatory**
Sizing requirements	
MAP architectural design and implementation shall take into consideration that EMSA's user are growing at a moderate yearly rate (less than 10%) and that the following sizing requirements should be met since the go-live of the project: ▪ Expected maximum number of users: 5000 ▪ Expected maximum number of private pages: 5 000 ▪ Expected maximum number of public pages: 5 000 ▪ Number of concurrent users: 500 **Bidders shall consider** the current EMSA PRODUCTION infrastructure as a baseline. If justified, **Bidders shall present** a realistic and justified upgrade to the current architecture, design, server's characteristics and sizing for a possible PRODUCTION infrastructure based on the above information and in line with EMSA's technical landscape document in Appendix A. During the project implementation, the contractor shall assess and confirm architecture and sizing of the PRODUCTION environment. If the current PRODUCTION infrastructure is considered "not suitable" for handling the requirements, the contractor shall present in the assessment documentation, at least: • The limits of the current PRODUCTION environment Detailed architecture and sizing for the PRODUCTION infrastructure upgrade.	

Ref: MAP_WP2_33	**Nature: Mandatory**
Scalability, Resilience and High Availability	
Bidders shall address how the system responds to the several non-functional characteristics, namely: ▪ Scalability, ▪ Availability ▪ Resilience.	

Ref: MAP_WP2_34	**Nature: Mandatory**
Security	
High Level Security principles shall be considered in MAP architectural design and shall be fully in line with requirements included in the technical landscape document in Appendix A.	

3.4. TESTING

Ref: MAP_WP2_35	**Nature: Mandatory**
Test plan	
The contractor should present, for each release of the MAP solution a comprehensive test plan to EMSA. This test plan should include functional and non-functional tests. EMSA reserves the right to request changes to the proposed test plan	

Ref: MAP_WP2_36	**Nature: Mandatory**
Corrections	
The contractor of MAP project shall perform all the essential corrections to the software delivered taking into account the reports of the functional and non-functional site acceptance tests.	

Ref: MAP_WP2_37	**Nature: Mandatory**
Releases	
The contractor shall provide during the implementation two releases: 1) one intermediary roughly half way across the development 2) One final version of MAP, towards the end of the implementation phase Each release should abide to all testing requirements (functional and non-functional) as well the relevant requirements defined the Project Delivery Appendix linked with development and testing (2.3 Appendix G)	

Ref: MAP_WP2_38	**Nature: Mandatory**
Functional testing	
Functional tests shall be designed, implemented, executed and the results documented by the contractor within the context of factory acceptance tests prior to any delivery to ensure compliance with requirements here-in. **Bidders shall describe** in detail how they plan to execute Functional Tests and what tools will be used. The Contractor shall deliver a complete set of Test Documentation, including Test Strategy, Test Cases, Test Scripts, Test Data, and Test Results. The Contractor shall deliver a full and working test environment (including tools, configurations, test scripts, test data, execution instructions); This Test environment shall be deployed at EMSA and will be used during Site Acceptance and in any for future runs. Further technical details on the test environment will be provided at K.O.	

Ref: MAP_WP2_39	**Nature: M**
Functional testing - Detailed test plan	
Upon delivery of a release, a detailed test plan shall be provided to be approved by EMSA. The test plan shall include complete description of the test and details on the necessary actions to perform it. The plan should also specify the category of each test. Categories include: ▪ Regression test of previous approved functional elements ▪ Corrected bugs and defects from previous versions ▪ New functionalities ▪ Known bugs / errors in release (if any)	

Ref: MAP_WP2_40	**Nature: Mandatory**
Non-Functional testing	
Non-functional tests shall be designed, implemented, executed and the results documented by the contractor within the context of factory acceptance tests prior to any delivery to ensure compliance with requirements here-in. Site acceptance non-functional tests shall be executed in the scope of the project by a test contractor chosen by EMSA as well as by EMSA staff. Non-functional tests shall include (but not limited to): ▪ Load Tests ▪ Stress Tests, ▪ Availability/Resilience Tests ▪ Security Tests, **Bidders shall describe** in detail how they plan to execute Non-Functional Tests and what tools will be used. The Contractor shall deliver a complete set of Test Documentation, including Test Strategy, Test Cases, Test Scripts, Test Data, and Test Results for the tests types specified above. The Contractor shall deliver a full and working test environment (including tools, configurations, test scripts, test data, execution instructions); This Test environment shall be deployed at EMSA and will be used during Site Acceptance and in any for future runs	

4. WP3 - Go Live and Migration

Ref: MAP_WP3_01	**Nature: Mandatory**

Migration

The **current Portal implementation shall be migrated** to MAP with the minimum impact possible for the end users.
Bidders shall propose a migration strategy that takes EMSA from the current implementation to MAP. The following topics shall be addressed (but not limited to):

- User, Roles and User Groups Migration
- User Home Page Migration
- Web Content Migration
- Document Library content Migration
- Portlets Migration
- Migration Steps
- Migration Planning
- Foreseen impacts and unavailability

Ref: MAP_WP3_02	**Nature: Mandatory**

Go Live

The contractor shall be responsible for defining the Go Live strategy to be applied in PRODUCTION and PRE-PRODUCTION.
Go Live strategy shall address MAP deployment, Migration (MAP_WP3_01), all configurations and post-Production support

Bidders shall propose the Go Live strategy and Planning.

Ref: MAP_WP3_03	**Nature: Mandatory**

General requirements

The contractor shall adhere to the general EMSA requirements linked with project delivery and service requirements, presented in Appendix G and Appendix H, when it concerns to Go Live and Migration issues.

5. WP4 Maintenance requirements

Ref: MAP_WP4_01	**Nature: Mandatory**
Warranty	
The contractor shall provide warranty support to all elements of MAP that are part of the requirements in WP1, WP2 and WP3. Any defects linked with functionalities that are part of the abovementioned requirements shall be promptly rectified by the contractor as part of the warranty support. There shall not be any cost to EMSA linked with warranty related actions. Warranty shall be provided up to 2 years after WP3 is delivered.	

Ref: MAP_WP4_02	**Nature: Mandatory**
Maintenance – General requirements	
Maintenance is deemed to comprise of all operations necessary to maintain the system in perfect working order, or to restore a defective system or one of its components to perfect working order, inclusive of the costs of travelling and labour, if necessary. Corrective maintenance is the reactive modification of a software product performed after delivery to correct discovered problems. Preventive maintenance is the modification of a software product after delivery to detect and correct latent faults in the software product before they become effective faults. The system has to be updated to the most recent versions of the underlying software implemented. Once WPI, WP2 and WP3 are concluded the Contractor will provide the corrective and preventive maintenance of the system necessary to ensure the required level of operational performance. Maintenance shall be provided up to two years after WP3 is delivered. The contractor shall adhere to the general EMSA requirements linked with project maintenance, presented in Appendix H.	

Ref: MAP_WP4_03	**Nature: Mandatory**
Maintenance – main deliverables	
The main deliverables that are to be produced in the context of maintenance activities are: ▪ Monthly Maintenance Reports and Statistics on maintenance activities described in the context of Service Level Management. ▪ Change Management Documents for each change submitted to the Change Management Process. It must include at least, Change Request Form, Evaluation of the Change, Planning and Acceptance ▪ Updated versions of the system deliverables (design documentation, test documentation, user documentation, system documentation, software releases and release notes) for each change implemented and submitted to the Release Management Process.	

Ref: MAP_WP3_05	**Nature: Mandatory**
Service levels for maintenance	

Occurrences (Incidents/Defects or Findings) considered as blocking (no service being provided) will have **Priority = Highest.** A dedicated phone line shall be available 24x7 for handling this type of occurrences.
Occurrences (Incidents/Defects or Findings) significantly impacting the one or more components causing a partial loss of the service provided or foreseen to be blocking during the next 2 days will have **Priority = High.**
Occurrences (Incidents/Defects or Findings) significantly impacting the one or more components with reduction of service provided (e.g. affecting performance) or foreseen to be blocking during the next week will have **Priority = Medium.**

Service levels for corrective maintenance (Incidents/Defects) shall be:

Priority	Acknowledge time	Solve time
Highest	**Immediately**, 24/7 basis	**Immediately**
High	**3** working **hours**, 7/5 basis	**1** working **day**
Medium	**2** working **days**, 7/5 basis	**7** working **days**

6. Summary of deliverables (Informative)

This chapter summarizes the main deliverables expected from the contractor during the implementation of the project, linked with each of the work packages. Details on the content of each of the deliverables are provided in the above requirements or respective Appendices.

1) WP1 Graphic Design
    a. Wireframes produced, describing all the above mentioned elements.
    b. Graphical elements, organized per page, used in the implementation of the MAP (including version excluded during sprints)
2) WP2 Software Development
    a. After Kick-off
        i. Functional design specifications
        ii. Technical design specifications
        iii. Draft software test approach
    b. For intermediary release
        i. Full system documentation
        ii. User documentation
        iii. Test documentation (including software test plan)
        iv. Intermediary version of the system to be deployed in all 3 environments.
        v. Updated versions of functional and technical specifications
    c. For final release
        i. Full system documentation (updated)
        ii. User documentation (updated)
        iii. Test documentation (including software test plan)
        iv. final version of the system to be deployed in all 3 environments
        v. Updated versions of functional and technical specifications
3) WP3 Go Live and Migration
    a. (documentation included in the software development work package)
4) WP4 Maintenance
    a. Monthly Maintenance Reports and Statistics on maintenance activities described in the
    b. Change Management Documents
    c. Updated versions of the system deliverables

Appendices to Annex (A)

Ref	Content	Attached as document
(A)	EMSA technical landscape	Appendix_A_TechLansdcape_vf.pdf
(B)	Provisional lists of application configurable components and options	Appendix_B_ApplicationOptions_vf.pdf
(C)	Access Management User Manual	Appendix_C_AccManUM_vf.pdf
(D)	IdM Technical document	Appendix_D_IdM_vf.pdf
(E)	Default navigation / configuration in Liferay	Appendix_E_LiferayConfig_vf.pdf
(F)	Graphic Design technical elements	Appendix_F_Graphic_Design_technical_elements.pdf
(G)	EMSA requirements for Project delivery	Appendix_G_Project_delivery
(H)	EMSA requirements for Service delivery and working procedures	Appendix_H_Service_delivery

European Maritime Safety Agency

Appendix (A) to Annex A
EMSA technical landscape
(Informative)

European Maritime Safety Agency

Appendix (B) to Annex A
Provisional lists of application configurable components and options
(Informative)

European Maritime Safety Agency

Appendix (C) to Annex A
Access Management User Manual
(Informative)

European Maritime Safety Agency

Appendix (D) to Annex A
IdM Technical document
(Informative)

European Maritime Safety Agency

Appendix (E) to Annex A
Liferay configuration
(Informative)

European Maritime Safety Agency

Appendix (F) to Annex A
Graphic Design technical elements
(Mandatory)

European Maritime Safety Agency

Appendix (G) to Annex A
Project Delivery Requirements
(Mandatory)

Appendix (H) to Annex A
Service Delivery requirements
(Mandatory)