



Indian Ocean Tuna Commission  
Commission des Thons de l'Océan Indien



# **DEVELOPMENT OF AN INFORMATION SYSTEM / WEB BASED APPLICATION ON PORT STATE MEASURES**

**e-PSM Application  
Feasibility Study Report & Technical Specifications**

**April-June 2014**

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## **e-PSM Application Feasibility Study Report & Technical Specifications**

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Region: Indian Ocean

Country: Comoros, France, Kenya, Madagascar, Maldives, Mozambique, Mauritius,  
Seychelles, Tanzania, South Africa and Yemen.

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IOTC CPCs (Including GPO/DGF beneficiary countries)  
Chairperson IOTC  
Chairperson IOTC Compliance Committee  
World Bank  
Indian Ocean Commission

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### 3 ABBREVIATIONS

<b>Acronym</b>	<b>Full name</b>
<b>AIS</b>	Automatic Identification System
<b>API</b>	Application Programming Interface
<b>API</b>	Application Programming Interface
<b>AREP</b>	Advance Request For Entry In Port
<b>ATF</b>	Authorized fishing vessel
<b>CGC</b>	Computer Generated Content
<b>CMF</b>	Content Management Framework
<b>CMM</b>	Conservation and Management Measures
<b>CMS</b>	Content Management System
<b>CPC</b>	Contracting Parties and Cooperating non-Contracting Parties
<b>CSS</b>	Cascaded Style Sheet
<b>CV</b>	Carrier Vessel
<b>DB</b>	Database
<b>DP</b>	Designated Ports
<b>EDF</b>	European Development Fund
<b>EEZ</b>	Exclusive Economic Zone
<b>ETL</b>	Extract Transform Load
<b>FAD</b>	Fish Aggregation Devices
<b>FAO</b>	Food and Agriculture Organization
<b>FV</b>	Fishing Vessel
<b>GT</b>	Gross Tonnage
<b>HTML</b>	Hyper Text Markup Language
<b>ICCAT</b>	International Commission for the Conservation of Atlantic Tunas
<b>ID</b>	Identification
<b>IMO</b>	International Maritime Organization
<b>IOTC</b>	Indian Ocean Tuna Commission
<b>IRCS</b>	International Radio Call Sign
<b>ISSCFG</b>	International Standard Statistical Classification of Fishing Gear
<b>ISSCFV</b>	International Standard Statistical Classification of Fishery Vessels
<b>IT</b>	Information Technology
<b>IUU</b>	Illegal, Unregulated and Unreported
<b>JSP</b>	Java Server Page
<b>LAN</b>	Landing
<b>LBP</b>	Length Between Perpendiculars

<b>LOA</b>	Length Overall of the vessel
<b>LSTV</b>	Large-Scale Tuna Vessel
<b>MCS</b>	Monitoring, Control and Surveillance
<b>MMSI</b>	Maritime Mobile Service Identify
<b>NFV</b>	Notification To Fishing Vessel
<b>OLAP</b>	Online Analytical Processing
<b>PAD</b>	Port Activity Dashboard
<b>PDF</b>	Portable Document File
<b>PHP</b>	Hypertext Preprocessor
<b>PIR</b>	Port Inspection Report
<b>PSM</b>	Port States Measures (and e-PSM stand for the PSM application)
<b>PSMR</b>	Port State Measures Resolution
<b>RAI</b>	Request for Additional Information
<b>RAV</b>	Record of authorized vessels
<b>RFMO</b>	Regional Fisheries Management Organization
<b>RFS</b>	Response Flag State
<b>SDK</b>	Software Development Kit
<b>TD</b>	Transshipment Declaration
<b>TOR</b>	Terms of Reference
<b>TRX</b>	Transshipment
<b>UGC</b>	User Generated Content
<b>UI</b>	User Interface
<b>URL</b>	Uniform Resource Locator
<b>VAIR</b>	Vessel Activity and Intelligent Report
<b>VMS</b>	Vessel Monitoring System

## **4 INTRODUCTION**

This document is the Feasibility Study report for "the development of an information system / web-based application accessible through the IOTC web site", further referred to as the e-PSM application.

The Feasibility Study Report is a conclusion document of a three months work of comprehensive analysis and evaluation for the design and the development of the e-PSM application.

The project started by a briefing at the IOTC Secretariat office in Mahé (Seychelles) in January 2014, and has unfolded its course for two months of inception, followed by a regional consultation/validation workshop held in Johannesburg in April 2014. It was finally concluded by an extensive investigation and research, drawing the conclusions detailed in this document, as of the end of April 2014.

The Feasibility Study Report contains important information describing the project functional and technical recommendations formulated by the development team for its actual implementation, and evaluate the project feasibility in terms of planning and technical solutions.

## **5 PROJECT BACKGROUND**

### **5.1 Beneficiary**

#### **5.1.1 Indian Ocean Tuna Commission**

The Indian Ocean Tuna Commission (IOTC) is an intergovernmental organization established under Article XIV of the FAO constitution, and is mandated to manage tuna and tuna-like species in the Indian Ocean and adjacent seas.

Membership is opened to Indian Ocean coastal countries and to countries/regional economic organizations, which are members of the United Nations (or one of its specialized Agencies) and are fishing for tuna in the Indian Ocean.

The IOTC is established with the objective of promoting cooperation among its members to ensure the conservation and optimum utilization of stocks covered by the Agreement and encouraging sustainable development of fisheries based on these stocks. In order to achieve its objectives, the Commission has a number of functions and responsibilities, which are in line with the UN Convention on the Law of the Sea.

Since 1998, the IOTC Secretariat has dedicated most of its efforts to support the scientific component of the IOTC. Since 2008, as the number of adopted CMMs increases, more emphasis has been dedicated to the compliance component. A Compliance Section was created to assess and review all compliance aspects related to the implementation of the IOTC Conservation and Management Measures (CMMs) and provide support to Contracting and Cooperating Parties (CPCs) in the implementation of Monitoring, Control and Surveillance (MCS) tools adopted by the IOTC Members, including:

In 2010, aware of the power and cost effectiveness of Port States measures as a compliance tool to combat IUU fishing activities in the Indian Ocean, the IOTC adopted a resolution on port State measures to prevent, deter and eliminate illegal, unreported and unregulated (IUU) fishing (IOTC Resolution 10/11). The resolution, which entered into force on 1<sup>st</sup> March 2011, is inspired by the 2009 FAO Agreement on Port State Measures, but placed in the context of the IOTC mandate. The fisheries administrations of the coastal CPCs of the IOTC, where foreign fishing vessels offload tuna and tuna-like species, are responsible for the implementation of the resolution.

The effective implementation of the PSMR by coastal CPCs requires a variety of aspects to be considered, developed and/or strengthened, to improve the implementation capacity of the IOTC Resolutions by the concerned CPCs, including the Port State Measures Resolution (PSMR).

With regards to the PSMR, those aspects were identified during the port State measures Workshop organized in 2011 by the ACP FISH II Program, financed by the European Union (9th EDF), in collaboration with the IOTC secretariat. At the national level, the most relevant aspects relate to the policy, legal, institutional, human resources and operational framework and at the international/regional level the resolution calls for cooperation between the port State, the flag State and the coastal State and others tuna RFMOs (which is the objective of this assignment).

#### 5.1.2 Functions of the IOTC

In accordance with Article V of the IOTC Agreement, the main functions of the IOTC are:

- to keep under review the conditions and trends of the stocks and to gather, analyze and disseminate scientific information, catch and effort statistics and other relevant data;
- to encourage, recommend and coordinate research and development activities in respect of the stocks and fisheries covered by the Agreement;
- to adopt conservation and management measures on the basis of scientific evidence;
- to keep under review the economic and social aspects of the fisheries, bearing in mind, in particular, the interests of developing coastal states.

#### 5.1.3 Area of competence

The Indian Ocean (defined for the purpose of the Agreement as being FAO Statistical Areas 51 and 57), and adjacent seas, north of the Antarctic Convergence, insofar as it is necessary to cover such seas for the purpose of conserving and managing stocks that migrate into or out of the Indian Ocean. In 1999, the Commission extended the western boundary of the IOTC statistical area from 30°E to 20°E, thus eliminating the gap in between the areas covered by the IOTC and ICCAT.

#### 5.1.4 Members

The IOTC is an autonomous organization that is fully funded by its member States.

##### *Current membership*

Membership in the Commission is open to Members and Associate Members of FAO that are: (i) coastal States or Associate Members situated wholly or partly within the Area; (ii) States or Associate Members whose vessels engage in fishing in the Area for stocks covered by the Agreement; or (iii) regional economic integration organizations of which any State referred to in subparagraphs (i) or (ii) above is a member and to which that State has transferred competence over matters within the purview of the Agreement. Parties qualified to accede to the Commission may do so by depositing with the Director-General of FAO an instrument formally accepting to be bound by the conditions of the IOTC Agreement.

##### *Members*

There are 31 Contracting Parties: Australia, Belize, China, Comoros, Eritrea, European Union, France, Guinea, India, Indonesia, Iran (Islamic Rep. of), Japan, Kenya, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Oman, Pakistan, Philippines,

Republic of Korea, Seychelles, Sierra Leone, Sri Lanka, Sudan, Thailand, United Kingdom, United Rep. of Tanzania, Vanuatu, Yemen.

#### *Cooperating Non-Contracting Party*

There are 2 Cooperating Not Contracting Parties: Senegal and South Africa.

#### 5.1.5 Contacts

The IOTC Secretariat is based in Victoria, Mahé Island (Seychelles) and the coordinators of the e-PSM application and its entire implementation are Mr Gerard DOMINGUE (Compliance Coordinator), Mr Florian GIROUX (Fisheries Officer - Compliance) and Mr Slim DOGLEY (IT Manager).

More broadly, the Project - which includes the application - is under the supervision of Mr Rondolph PAYET (Executive Secretary) and Mr David WILSON (Deputy Secretary & Science Manager).

## **5.2 The IOTC Port State Measures**

### 5.2.1 Understanding Port State Measures

The 1st March 2011, the IOTC Resolutions 10/11 on Port State Measures established a duty for Port States to take a number of measures against foreign-flagged fishing vessels and other vessels supporting or servicing fishing vessels.

The measures include:

- denial or of port entry to vessels known or suspected to be engaged in illegal, unreported and unregulated fishing,
- denial of port facilities and services,
- inspections of vessels,
- port States may allow IUU vessels into their ports for enforcement actions.

The PSMR aims to put an end to 'ports of convenience' or 'ports of non - compliance'—ports that attract IUU fishing vessels because of their lax controls—and to assist port State authorities that are unwittingly allowing foreign IUU fishing vessels into their ports.

This often happens due to financial benefits to the port State, negligence or limited capacity to inspect vessels and to access and share information.

PSM should be considered part of a larger, integrated MCS system. They are particularly useful for foreign vessels regulation, having fished outside the waters of the port State. PSM can also be very efficient when used on national/domestic fleets, and countries are encouraged to consider which PSM that can contribute to an improved MCS system for its own vessels, or vessels licensed to fish in its waters. PSM measures tend to be cost effective when compared to many other elements of an MCS system.

The PSMR centers on a port State's authority to deny a vessel port entry and access to port facilities and services and to inspect a vessel when it seeks to enter, or does enter, its port. Thus, an adequate, well - trained fisheries inspectorate is a key feature in the successful operation of port State measures. The optimum use of information gathered during inspection and from other components of the national, regional and international MCS system, is also an important feature of the PSMR. This implies that to fully implement the PSMR, good communication is needed among national agencies involved in fisheries management, such as customs and the port authority, as well as cooperation with appropriate flag State, regional (such as RFMO's) and global bodies, such as the FAO.

### 5.2.2 Understanding how the IOTC PSMR works

The PSMR requires that the master of a vessel seeking to enter port provides the port authorities with information about the identity of the vessel, the catch on board, fishing and transshipment authorizations, and details of any transshipments that have taken place. This must be done well in advance of port entry to allow for a preliminary investigation of the vessel and its activities.

On the basis of this information provided in advance, an assessment is made as to whether the vessel might have been involved in IUU fishing. If no suspicion is raised, the decision is made to allow the vessel to enter port. The vessel is then subject to whatever inspection regime that might be in operation (e.g. random selection of 25 percent of vessels).

If a vessel is inspected and there are no “reasonable grounds” for believing that the vessel has been involved in IUU fishing, then the vessel is permitted to land its catch and use the port’s services. However, if there are reasonable grounds for believing that the vessel has been involved in IUU fishing, then the vessel must be refused permission to land the catch or make use of port services, except when health or safety of the crew and/or the safety of the vessel is at risk.

In addition, other enforcement action might be taken in consultation or cooperation with the flag State and, if appropriate, other coastal States and RFMOs. If it is subsequently established that there is insufficient proof that the vessel has been involved in IUU fishing, then the port State withdraws the denial to land the catch and use port services.

At virtually every stage of the process, the port State must inform the flag State of actions it has taken and, as appropriate, other coastal States, RFMOs and other organizations, and in some instances the State of which the master is a national. The flag State must also act on requests by the port State for certain information.

### 5.3 Terms of Reference of the project

This section presents the most significant aspects of the Terms of Reference of the project.

#### *Scope of the assignment*

The purpose of the assignment is to develop an information system / web-based application accessible through the IOTC web site, to support the implementation of IOTC resolutions on Port State Measures (Resolution 10/11 which call for cooperation between the Port State, the Flag State and the coastal State, Resolution 05/03 and Resolution 12/05), thus facilitating the implementation of the Resolutions on Port State Control adopted by the Commission.

#### *Expected outputs/delivery*

The consultancy work is divided into three components:

Component	Activity
<b>Component 1</b>	<p>A preliminary/feasibility study leading to the definition of the detailed requirements (usage scenario or use-cases) and to the choice of the technologies to be used, the elaboration of the technical specifications for the system/application, taking into account the expectations of the IOTC Members (including as Port States, coastal States and Flag States), as well as their situation and capacity.</p> <p>The activity includes the organization of a regional consultation/validation workshop where the results of the feasibility</p>

	study will be presented, as well as a mock up application before entering into the development phase of the application
<b>Component 2</b>	<p>Development of the application, including the development of user manuals, both for internal users (installation, administration, maintenance...) and for external users (CPCs, Industry...) and the training of the IOTC members States.</p> <p>A draft structure of the application would include the following modules:</p> <ul style="list-style-type: none"> <li>• Data input modules,</li> <li>• Information sharing module,</li> <li>• Statistical module,</li> <li>• Search/query module,</li> <li>• Analytical module.</li> </ul>
<b>Component 3</b>	Assessment of the performance of the system and debug the system when a bug occurs, including training of the IT Section of the Secretariat.

Table 1: Project Components.

*Technical Supervisor*

The technical supervisors of the IT expert(s) are professional staff of the Secretariat of the Indian Ocean Tuna Commission.

*Place and calendar*

The activities have started in September 2013 and shall be completed by February 2016.

<b>Component</b>	<b>No of WD</b>	<b>Delivery Date</b>
<b>Component 1</b> Feasibility study, technical specifications required for the system and regional consultation/validation workshop	66	Component 1 must be completed before 30 April 2014
<b>Component 2</b> Development of the information sharing application, including users manuals (System Management, Industry, State) and training of IOTC CPCs	116	Component 2 must be completed before 30 April 2015.
<b>Component 3</b> Assessment of the performance of the application and debug the application when a bug occurs	35	Component 3 ends in February/April 2016.

Table 2: Expected Project Activities.

### *Beneficiary Country*

All direct beneficiary countries of the GPO-DGF are involved in this component, and includes all the SWIOFC developing country Members of the Indian Ocean Tuna Commission i.e. Comoros, France, Kenya, Madagascar, Maldives, Mozambique, Mauritius, Seychelles, Tanzania, South Africa and Yemen.

However, all IOTC CPCs shall be involved in the project. The IOTC secretariat shall invite others CPCs to participate to the activity and secure others funding than the GPO-DGF.

#### **5.4 IT Consultants**

All experts who have a crucial role in implementing this assignment are referred to as key experts. They are the primary and only suppliers for the development of the e-PSM application.

##### 5.4.1 Mr. Stefano PIREDDA

Mr. PIREDDA - entrepreneur and freelance since 2001 - is a Web Architect, Project Manager, Open-Source developer and IT Drupal Expert.

Mr. PIREDDA has implemented more than 100 projects since 2001 for both public and private sectors. More recently we can cite two International Drupal projects:

- In 2011, M. PIREDDA, worked on the COM4DEV platform (a PRO€INVEST Information and Communication Community) in Belgium based on Drupal 6 framework along with Java software solutions (Apache SolR, ...). This EU project has given M. PIREDDA a very good knowledge on how to manage an International e-Platform.
- In 2012, M. PIREDDA developed a website and database application for the IOTC that allows users for a faster and more comprehensive search facility of the collection of IOTC's Conservation and Management Measures (CMMs) and based on DRUPAL 7.

##### 5.4.2 Mr. Grégoire PICHENOT

Mr. PICHENOT is a Software Architect and Back-end Developer, Database and Server & Hosting Infrastructure Expert

Mr. PICHENOT - entrepreneur and freelance since 2002 - has implemented more than 70 projects and has a rock-solid professional experience from desktop/server/embedded & mobile Java, iPhone SDK, to PHP. Recent achievement:

- From 2007 to 2011, Mr. PICHENOT wrote the UK Yellow Pages Mobile Search middleware, serving 3 million requests per month, and first "1 box free form search" engine released in the UK for a Directory Service.
- In 2013, M. PICHENOT was involved in the SIP ("Système d'Information des Pêches"), a fisheries expert statistical system, for the Mauritanian Fishing and Economy minister.

##### 5.4.3 Roles and Responsibilities

The IT Consultants Mr. Grégoire PICHENOT and Mr. Stefano PIREDDA were selected by the IOTC and the IOC to achieve the entire Project and the e-PSM application from design phase to the development phase, including the inception phase and this feasibility study, and monitoring of the application after its finalization.

The technical supervisors are professional staff of the Secretariat of the Indian Ocean Tuna Commission. Team effort will be synchronized through emails and an online tool in order to share files, agenda, road maps, such as DropBox.

The Consultants will achieve the following results as part of this assignment:

As a project manager, M. PIREDDA will undertake the following role and responsibilities in this project assignment, his responsibilities will be to act as team leader and preferred partner, to organize schedule, travel and facilities, to organize meetings, training program, power point presentations, and others documents/material as required in close cooperation with IOTC secretariat, to monitor the full project and meet deadlines, to write reports of each phase or step of this project.

As a Front-end developer, the IT Consultant and Drupal specialist, M. PIREDDA responsibilities will be to create mock-ups and/or wireframe, to write functional specifications, to design User Experience (UX) and User Interface (UI), to develop and program UI (CSS, HTML, PHP, JSP, etc.), to configure Drupal (if required) and its database, fields, contents, files, etc., to bridge the gap with Back-end development (manage by M. PICHENOT).

As a Back-end engineer, Software Architect & Developer, and Database & Server Expert, M. PICHENOT responsibilities are to establish:

- Process & Modeling (technology stack survey & recommendation & validation, data model design, data flows design, process implementations, workflow implementations, reporting & BI),
- Versioning & Release Management,
- Quality Assurance (Unitary testing, Staging / Test environment),
- Production (Production environment specification & validation, Hardware / Software install + local admin training, Backup procedures, DRP & Migration procedures),
- Training & Documentation (Architecture Document reference (Data + Software), API documentation + SDK, Code documentation + review with local expert, System Administrator training for backup/drp/upgrade)

## **6 THE e-PSM APPLICATION**

### **6.1 Objective**

The main objective of the Project is to design and develop the e-PSM Application. The e-PSM application is a web-based information system (also called web application) that will use a regular internet browser and a PDF viewer such as Adobe Acrobat Reader. The e-PSM application shall naturally be accessible through the IOTC website.

The e-PSM application aims to collect, store, and report data, in order to assist the IOTC CPCs to implement the PSM resolutions adopted by the Commission (Resolution 10/11, 05/03 and 12/05-Annex 1), thus facilitating operational implementation.

The e-PSM Application scope can be sliced in three main areas defined as “modules”, each being given with a dedicated responsibility. Each module will have its own homepage (three different URLs) and users.

The modules and their main components are listed below:

- Module 1 – PSM Forms & Processes:
  - Vessel File,
  - Data Input Forms,
  - Port Activity Dashboard,

- Vessel File Dashboard,
- Vessel Activity & Intelligence Report,
- Module 2 – Information Sharing:
  - Document Library,
  - Designated Ports,
  - Useful Links,
  - Referential Listing,
- Module 3 – Statistics & Reporting:
  - Consolidated Reporting,
  - Data Extraction.

As for any web application and in addition to the development of the modules themselves, it will be necessary:

- to design and develop the navigation interface between modules or functions,
- to design and develop generic content pages or sections such as: legals, terms of use, privacy, contact (info, request... to IOTC Secretariat),
- to design and develop a header and footer for each screen / page.

It is important to note here that the exact name of the modules is not yet finalized. That is why later in this report we will refer only to the module number.

## 6.2 Application map



Figure 1: Application Map.

## **6.3 Module Introduction**

### **6.3.1 PSM Forms & Processes**

The first module, called “PSM Forms & Processes”, is in charge of offering a computer based model of the flow of events while implementing PSM, and more specifically regarding submission of “forms” between vessels and port State, or any relevant party involved in the PSM processes.

This set of forms is the cornerstone of the whole application. They are, on one hand, the digital implementation of the requirements of the Resolution 10/11 (e.g. Annex 1 and 3), completed on the other hand by the PSM processes described by Resolution 10/11.

The forms are listed below and a full description is provided in section “Module 1” of this document, including where, when and how they shall be used:

- AREP (Advance Request of Entry in Port),
- RAI (Request for Additional Information) for an AREP,
- NFV (Notification to Fishing Vessel),
- RAI (Request for Additional Information) for a PIR,
- PIR (Port Inspection Report),
- LAN/TRX (Offloading Declaration),
- TRX TD (Transshipment Declaration).

### **6.3.2 PSM Information Sharing**

The implementation of the PSM resolution implies efficient and easy information sharing, and the second module is responding to these challenges.

Authorized users will be able to share, in a structured way, information related to port State measures (e.g. national fisheries legislations, vessels activities, port States CPCs contact details and flag States CPCs contact details). Information will be available through several and complementary axis.

The first axis will follow the flag State and Designated Ports hierarchy, to serve page where these Designated Ports will be able to self publish information, on a dedicated web page, including contact details, links and documents.

The second axis is a “Search & Query” interface offering the user the opportunity to search for:

- advance requests of entry in port (AREP),
- port Inspection Reports (PIR),
- document published by Designated Ports and/or IOTC Secretariat,
- referential files of the application to download (e.g. type of vessel).

### **6.3.3 PSM Reporting**

The 3<sup>rd</sup> module is the section of the application in charge of providing its users with reporting and consolidation tools. It will first provide a flexible framework to design reports based on statistical values processed via the consolidation of PSM activity recorded through module 1.

These reports will be designed online, and rendered as interactive statistical tables, and chart based visualizations. Both will be exportable to appropriate format according to its nature (e.g. excel, PDF, image).

It will also provide flag State CPCs and port State CPCs with consolidated extraction of this activity, to comply with reporting obligations (Res 05/03 and 12/05).

## 6.4 User Benefits

The first objective of the application is undoubtedly to assist its users to comply with resolutions adopted by IOTC members, but it shall also be considered as a tool with substantial benefits for them, to assist them in their daily work.

The following tables introduce the benefits of the e-PSM application, considering the features planned, and how they have been welcomed by IOTC members who have attended the regional consultation workshop.

User Type	Benefits
<b>Port State</b>	<ul style="list-style-type: none"> <li>• Quick overview of PSM status for each foreign vessel in port,</li> <li>• Foreign vessel Information / Contacts,</li> <li>• Single Repository for documents,</li> <li>• Centralized communication platform with vessel/flag State/representatives,</li> <li>• Inspection Monitoring,</li> <li>• Vessel Intelligence Report,</li> <li>• Vessel History (all ports).</li> </ul>
<b>Flag State</b>	<ul style="list-style-type: none"> <li>• Foreign vessel Information / Contacts,</li> <li>• Vessel History (all ports),</li> <li>• Centralized communication platform to provide details on foreign vessels,</li> <li>• Inspection Monitoring,</li> <li>• Ports activity overview + Yearly Reporting,</li> <li>• Vessel Intelligence Report,</li> </ul>
<b>Vessels</b>	<ul style="list-style-type: none"> <li>• Faster submission of AREP / Documents,</li> <li>• Centralized communication platform to provide additional information,</li> <li>• Easy (token based) authentication,</li> <li>• Easy delegation to vessel representative.</li> </ul>
<b>IOTC Secretariat</b>	<ul style="list-style-type: none"> <li>• Up-to-date and disambiguated database of vessels, vessels representative, Inspectors, Designated Ports,</li> <li>• Up-to-date Reference Document Repository,</li> <li>• Up-to-date consolidated reporting and data extraction.</li> </ul>

Table 3: Benefits of the e-PSM application

## 7 MODULE 1 - PSM FORMS & PROCESSES

### 7.1 Introduction

In this section and within the scope of the module 1, the term *User* is used as a generic term for any user of the application.

A *User* can either be a Port State user, a Flag State user, a Vessel Representative (e.g. captain, agent, owner, operator). All users do not have access to all the screens and

functions of the application. The different roles and permissions, for each of them, are detailed in a table (table "Permissions Matrix") for this purpose.

The module introduction includes prototypes (mockups proposals), to illustrate the implementation process. Those prototypes are likely to change during the development phase. Estate being limited on this paper document, only the screens are presented without the surrounding browser or any header/footer links.

## **7.2 Objectives**

The module 1 offers a set of dashboards and online forms to be completed by users, to comply with the PSM flow of events. The list of forms is presented in detail in the next sections.

This restricted access module will require user identification, via a login and password, in case of port State Users. However, it is not restricted through the IOTC website for Vessel Representative for the submission of AREP.

## **7.3 Components**

Five components have been defined:

- The Vessel File,
- The Data Input Forms,
- The Port Activity Dashboard,
- The Vessel File Dashboard,
- The Vessel Activity & Intelligence Report.

### **7.3.1 Vessel File**

The Vessel File is created as soon as a form is completed and submitted (the Vessel Identity, the Vessel Contacts sections and the selected form) in the e-PSM application.

There are two entry points to create a Vessel File, but the core process remains the same:

- From the IOTC website – suitable for vessel representative,
- Inside the e-PSM application through the Vessel Activity Dashboard in the "forms" section – suitable for port State user that may have received a paper version of the AREP (e.g.by fax).

The Vessel File acts as a "data folder". It is made of the different data and information submitted in each forms and the forms themselves.

A complete overview of the Vessel File content and attached forms is accessible from the Vessel File Dashboard.

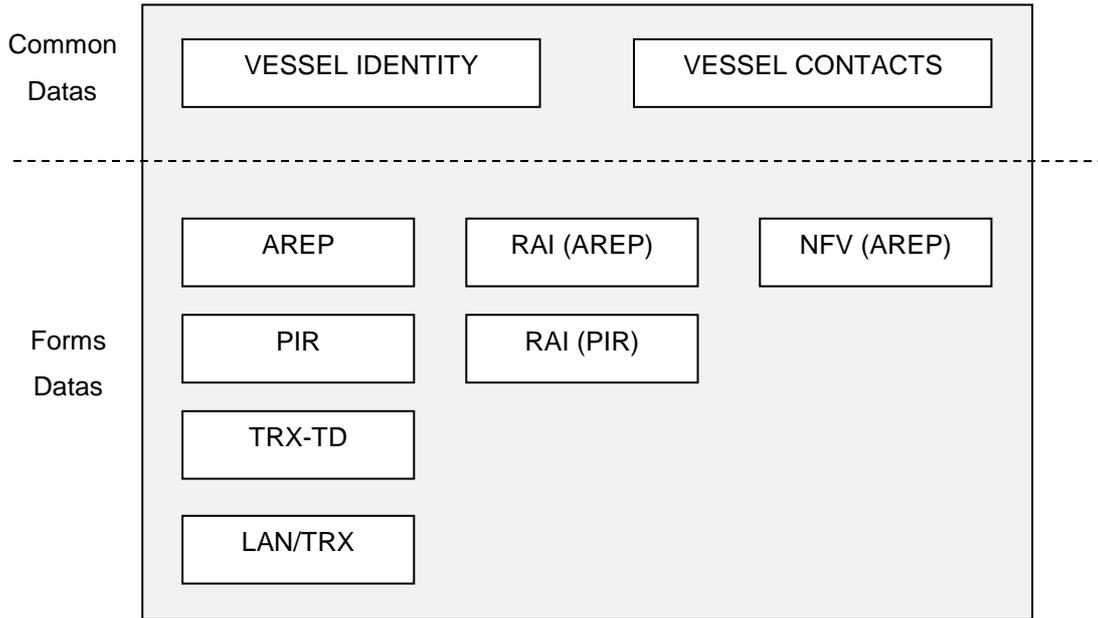


Figure 2: A Vessel File Scheme

### 7.3.2 Data Input Forms

The data input forms consist of six forms facilitating the implementation requirements of the port State measures.

Some forms operate sequentially. A form can therefore depend on a previous one. However, some of them are not related to any other.

- Form AREP (Advance Request For Entry In Port);
- Form RAI (AREP) (Request For Additional Information Following A Request To Enter Port);
- Form NFV-AREP (Notification To Fishing Vessel Following A Request to Enter Port");
- Form PIR (Port Inspection Report);
- Form LAN/TRX (Landing Declaration) based on the Port Inspection Report - field n°30,
- Form TRX TD (Transshipment Declaration - Resolution 12/05).

### 7.3.3 Port Activity Dashboard (PAD)

Once identified, the user (a flag State or a port State) has access to the PAD. The flag state must however select via a menu the port for which they want to see the PAD.

The screenshot shows a web form titled 'Choose the port'. It features a dropdown menu labeled 'List of ports' with the text 'Referential' visible. To the right of the dropdown is a blue button labeled 'APPLY'.

Figure 3: Port Activity Dashboard - Select a port

The Port Activity Dashboard is composed of 2 main sections: "Search filters" and "Results e-PSM files". It provides the opportunity to view and follow the activities of all foreign vessel in its designated ports, from the entry in port (AREP) to the inspection (PIR) or the offloading/transshipment operation, and until the vessel leaves port.

## Port Activity Dashboard

[Create a new ePSM File](#)  
[Alert IOTC upon detection of a duplicate file](#)

Search filters

Keywords

Time Range (from/to):  /

Type of the vessel \*  
Referential

Flag State \*  
Referential

View only opened Vessel Files  
View only archives Vessel Files  
View all

Results

156 results - 13 VAIR alerts detected

<< First < Previous 1 2 3 4 5 6 7 8 9 10 Next > Last >>

Vessel File	File Status	Port Entry	Vessel	IRCS	Vessel Type	Date of arrival	Status (Last Edit Form)	VAIR
<a href="#">File # YYYY</a>	Open+Share	2014/03/07	FR PRIMA BINTANG UNITED	WXYZ	Line Vessel	2014/03/07	AREP	✓
<a href="#">File # YYYY</a>	Open	2014/03/07	SE BANDAR NELAYAN 101	WXYZ	Longliners	2014/03/07	RAI-AREP	✓
<a href="#">File # YYYY</a>	Open	2014/03/07	CA Patala	WXYZ	Longliners-F	2014/03/07	NFV-AREP	✓
<a href="#">File # YYYY</a>	Open	2014/03/07	ES SAMUDERA PASIFIC NO. 08	WXYZ	Supply vess	2014/03/07	PIR	✓
<a href="#">File # YYYY</a>	Open+Share	2014/03/07	JP WAKASHIO MARU NO.128	WXYZ	Trawlers	2014/03/07	RAI-PIR	⚠
<a href="#">File # YYYY</a>	Open	2014/03/07	FR VESSEL 7/4122	WXYZ	Line Vessel	2014/03/07	NFV-AREP	✓
<a href="#">File # YYYY</a>	Archive	2014/03/07	SE FORTUNA - 05	WXYZ	Longliners	2014/03/07	NFV-AREP	✓
<a href="#">File # YYYY</a>	Open+Share	2014/03/07	CA IMULA0021GLE	WXYZ	Longliners-F	2014/03/07	NFV-AREP	✓
<a href="#">File # YYYY</a>	Open+Share	2014/03/07	ES BALAJI NO.8 / KUANG HSING NC	WXYZ	Supply vess	2014/03/07	None	✓
<a href="#">File # YYYY</a>	Archive	2014/03/07	JP Guildi	WXYZ	Trawlers	2014/03/07	NFV-AREP	⊗
<a href="#">File # YYYY</a>	Archive	2014/03/07	FR HARAPAN JAYA - XIV	WXYZ	Line Vessel	2014/03/07	AREP	⊗
<a href="#">File # YYYY</a>	Open	2014/03/07	SE VESSEL 3/9711	WXYZ	Longliners	2014/03/07	RAI-AREP	⚠
<a href="#">File # YYYY</a>	Open	2014/03/07	CA Patala	WXYZ	Longliners-F	2014/03/07	NFV-AREP	⚠
<a href="#">File # YYYY</a>	Open	2014/03/07	FR PRIMA BINTANG UNITED	WXYZ	Line Vessel	2014/03/07	AREP	✓
<a href="#">File # YYYY</a>	Open	2014/03/07	SE BANDAR NELAYAN 101	WXYZ	Longliners	2014/03/07	RAI-AREP	✓
<a href="#">File # YYYY</a>	Open	2014/03/07	CA Patala	WXYZ	Longliners-F	2014/03/07	NFV-AREP	✓
<a href="#">File # YYYY</a>	Open	2014/03/07	ES SAMUDERA PASIFIC NO. 08	WXYZ	Supply vess	2014/03/07	PIR	✓
<a href="#">File # YYYY</a>	Open	2014/03/07	JP WAKASHIO MARU NO.128	WXYZ	Trawlers	2014/03/07	RAI-PIR	✓
<a href="#">File # YYYY</a>	Open	2014/03/07	FR VESSEL 7/4122	WXYZ	Line Vessel	2014/03/07	NFV-AREP	⊗
<a href="#">File # YYYY</a>	Archive	2014/03/07	SE FORTUNA - 05	WXYZ	Longliners	2014/03/07	NFV-AREP	⊗

<< First < Previous 1 2 3 4 5 6 7 8 9 10 Next > Last >>

Figure 4: Port Activity Dashboard.

For a flag State, the PAD provides the opportunity to view and follow the activities of flagged vessels in foreign ports from the entry in port (AREP) to the inspection (PIR) or the offloading/transshipment operation, and until the vessel leaves port.

From the PAD, an e-PSM file of a vessel can be opened (see section 6.3.4).

The PAD acts like a breadcrumb to assist port States or flag State to implement Resolution 10/11 step by step (e.g. check-list) and provides a search filters and a result table.

A port State can share a Vessel file of its own PAD to another CPC. As soon as a Vessel file is shared, all information is accessible in a read-only basis (vessel identity, vessel contacts, VAIR and forms) directly inside the CPC PAD. A Vessel File cannot be shared if its privacy is set to "Private".

#### *The "Search filters" section*

The search is performed via a keyword based approach (free text search input field), and a time range (from/to), the type of vessel, the flag state (based on referential) and

the ability to apply advanced filters such as "View all e-PSM files", "View only open files", "View only archive files". An option can also be to "Hide shared files" to display only its own files and not also files that have been shared by another CPC.

The free text search keywords entered will be matched to the data saved inside the following tables: name of the vessel, type of the vessel, IOTC ID, IRCS, MMSI, certificate of registry ID, IMO ID, external ID.

### *The "Result" section*

The number of results is displayed with the number of files with a "VAIR Level 1 warning". An optimal number of results can be shown, in order to maximize the screen estate. A pager will automatically be displayed when necessary.

The table of the section "Result" offers the following columns: Vessel File, File Status, Port Entry, Flag, Vessel, IRCS, Vessel Type, Date of arrival, Status (Last Edit Form), VAIR.

Vessel File ▲	File Stat	Port Entry ▼	F▲	Vessel ▲	IRCS ▼	Vessel Tyr▲	Date of arr▲	Status (Last Edit Form)	VAIR ▼
<a href="#">File # YYYY X</a>	Open	2014/03/07	FR	PRIMA BINTANG UNITED	WXYZ	Line Vessels	2014/03/07	AREP	✓
<a href="#">File # YYYY X</a>	Open	2014/03/07	SE	BANDAR NELAYAN 101	WXYZ	Longliners	2014/03/07	RAI-AREP	✓
<a href="#">File # YYYY X</a>	Open	2014/03/07	CA	Patala	WXYZ	Longliners-P	2014/03/07	NFV-AREP	✓

Figure 5: Reorder Table Results.

It is possible to sort in ascending or descending any of the columns that display a sortable content (name, number, date, document type). It is therefore easy to obtain the list of all files with a VAIR Warning.

### *Column « Vessel Activity & Intelligence Report (VAIR) ».*

The PAD can also display suspicious elements (e.g. difference on quantity caught, transshipped, etc) coming from the Vessel Activity & Intelligence Report (VAIR). Only the level 1 warning –most critical ones- will be displayed at this stage.

"Level 1 warnings" have been defined during the regional consultation workshop as describe in the next section of this document. Further investigation is necessary to check whether the required information is (freely) available and can be shared.

### *Sharing Vessels Activities and Data*

Vessel Files information, such as activity of a vessel in port can be shared with a selected list of users. For example a port State can limit access to their files by selecting which CPC can view its e-PSM files (see section 7.5.8 "Archive, shared and privatize a Vessel File").

#### 7.3.4 Vessel File Dashboard (VFD)

The Vessel File Dashboard provides the opportunity to follow the PSM related activities of a specific vessel in a port by providing a complete overview based on blocks of data (sections), which are:

- Vessel File Information and Status (Header),
- Vessel general information
- Vessel Identity (Photographs of the vessel and particulars of the vessel),
- Vessel Activity & Intelligence Report (VAIR Level 2 warning),
- Vessel Contacts,
- List of the submitted Forms (AREP, RAI, NFV, PIR, LAN/TRX, TRX-TD).

## Vessel File N° [ NUMBER ]

Created by [ NAME, SURNAME ] on [ DATE ]

Modified by [ NAME, SURNAME ] on [ DATE ]

STATUS: **ACTIVE** - PRIVATE

[Change status](#)

[Alert IOTC upon detection of a duplicate file](#)

---

Vessel General Infos

Estimated date and time of arrival: DD/MM/YYYY at 1.45PM

Port of call: **VICTORIA (Seychelles)**

Purposes: *not yet defined*

VAIR

▲ Vessel listed in IOTC Record of Authorized Vessels : YES

▲ Vessel listed in current IUU list: YES

✓ Owner listed in current IUU list : NO

[see the complete report](#)

---

Vessel Identity

[modify photos](#)

Name of the vessel: Invincible	IOTC ID: IOTC4553634	VMS: XXXXXXXXXXXX
Flag State : Japan	IMO ID: 9513634	Certificate: XXXXXXXXXXXX
Type of the vessel: Long-Vessel	IRCS: V2F18	External ID: XXXXXXXXXXXX
Dimensions: [ LOA ]m - [ GRT ]m	MMSI: 654645754	<a href="#">modify vessel identity</a>

---

Vessel Contacts

Position	Name	Phone	Mobile	Fax	Email
Master	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@ipsum.com
Owner	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@ipsum.com

[modify / view all vessel contacts](#)

---

Data Input Forms

Choose a form Advance Request for Entry in Port (AREP) CREATE

Form	To	Status	Creation Date	Modification Date
<a href="#">Advance Request For Entry In Port</a>	email@dot.com	sent	07-13-2014	07-13-2014
<a href="#">Request for Additional Information of an Advance Request For Entry In Port</a>	email@dot.com	answer received	08-13-2014	08-13-2014
<a href="#">Notification of Fishing Vessel of an Advance Request For Entry In Port</a>	email@dot.com	unsent	09-13-2014	10-13-2014
<a href="#">Port Inspection Report</a>	email@dot.com	sent	10-13-2014	10-13-2014
<a href="#">Request for Additional Information of Port Inspection Report</a>	email@dot.com	sent	14-13-2014	14-13-2014

Public access for forms: ▲ DENIED until vessel leaves port

Figure 6: Vessel File Dashboard (Open File).

### 7.3.5 Vessel Activity & Intelligence Report

#### *Principle*

The VAIR is available as a reporting feature from the Vessel File Dashboard to inform the user about a potential issue called a “warning” regarding a vessel and its owner.

The VAIR is an intelligent report dedicated to a vessel and based on different sources of information to assist the port State in vessel risk assessment (e.g. regarding IUU listing, or poor compliance with IOTC resolutions).

The purpose of the VAIR is to compare declaration versus information in database(s), to flag any IUU listing, to offer a review of activity history (e.g. AREP, port called, Flag, and Owner) and list any relevant third party information.

#### *User Notification*

User notification has been organized into three phases and two levels warning:

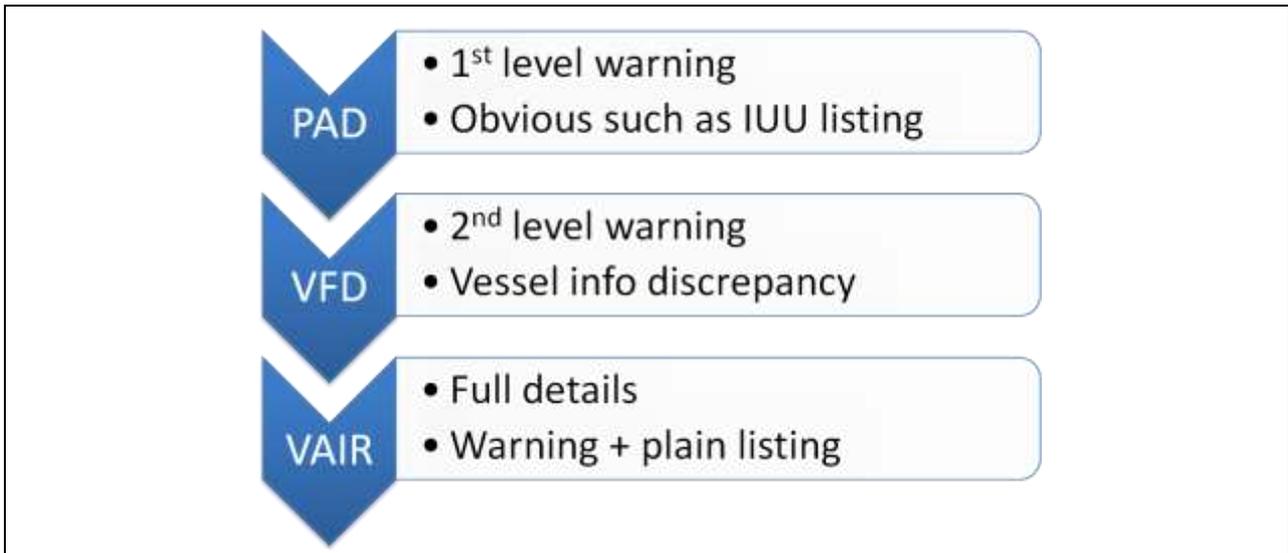


Figure 7: The VAIR User Notifications.

Level 1

Vessel File	File Stat	Port Entry	F	Vessel	IRCS	Vessel Typ	Date of arr	Status (Last Edit Form)	VAIR
<a href="#">File # YYYY</a>	X Open	2014/03/07	FR	PRIMA BINTANG UNITED	WXYZ	Line Vessels	2014/03/07	AREP	✓
<a href="#">File # YYYY</a>	X Open	2014/03/07	SE	BANDAR NELAYAN 101	WXYZ	Longliners	2014/03/07	RAI-AREP	✓
<a href="#">File # YYYY</a>	X Open	2014/03/07	CA	Patala	WXYZ	Longliners-P	2014/03/07	NFV-AREP	✓
<a href="#">File # YYYY</a>	X Open	2014/03/07	ES	SAMUDERA PASIFIC NO. 08	WXYZ	Supply vessel	2014/03/07	PIR	✓
<a href="#">File # YYYY</a>	X Open	2014/03/07	JP	WAKASHIO MARU NO. 128	WXYZ	Trawlers	2014/03/07	RAI-PIR	⚠

Figure 8: A level 1 warning displayed on the PAD.

A level 1 warning is an indicator available at Port Activity Dashboard level. This is the first screen (listing all PSM vessels in port) the Port User will see, and it display the most critical points detected by the system.

The list of level 1 warning is:

- Vessel recorded in IUU Listing,
- No Fishing authorizations,
- Not on the IOTC authorized list,
- Previous denial of port entry,
- Black notice (for forcing entry, not denial),
- Misreporting of data on declaration (important differences on previous declarations).

Level 2

VAIR

- ⚠ Vessel listed in IOTC Record of Authorized Vessels : YES
- ⚠ Vessel listed in current IUU list: YES
- ✓ Owner listed in current IUU list : NO

[see the complete report](#)

Figure 9: A level 2 warning displayed on the VFD.

A Level 2 warning is displayed once the port State user enters in a Vessel File, and discovers its Dashboard. Level 1 warning will be preprended to this listing.

The list of level 2 warning is:

- Flag state fishing authorizations
- Coastal state License
- Previous IUU listing
- First port access
- Record of previous reported infractions
- Report of suspected infractions
- No reply to RAI / missing data

*Data Aggregation Principles*

The Vessel Activity & Intelligence Report is based on heterogeneous data sources using different structure, different "life cycle" and even different "ID".

It is therefore necessary for the e-PSM application to merge source in a single database as it could not be possible to query all third-party sources for example, for security reasons (external URL, IP) and also to improve the global performance of the application

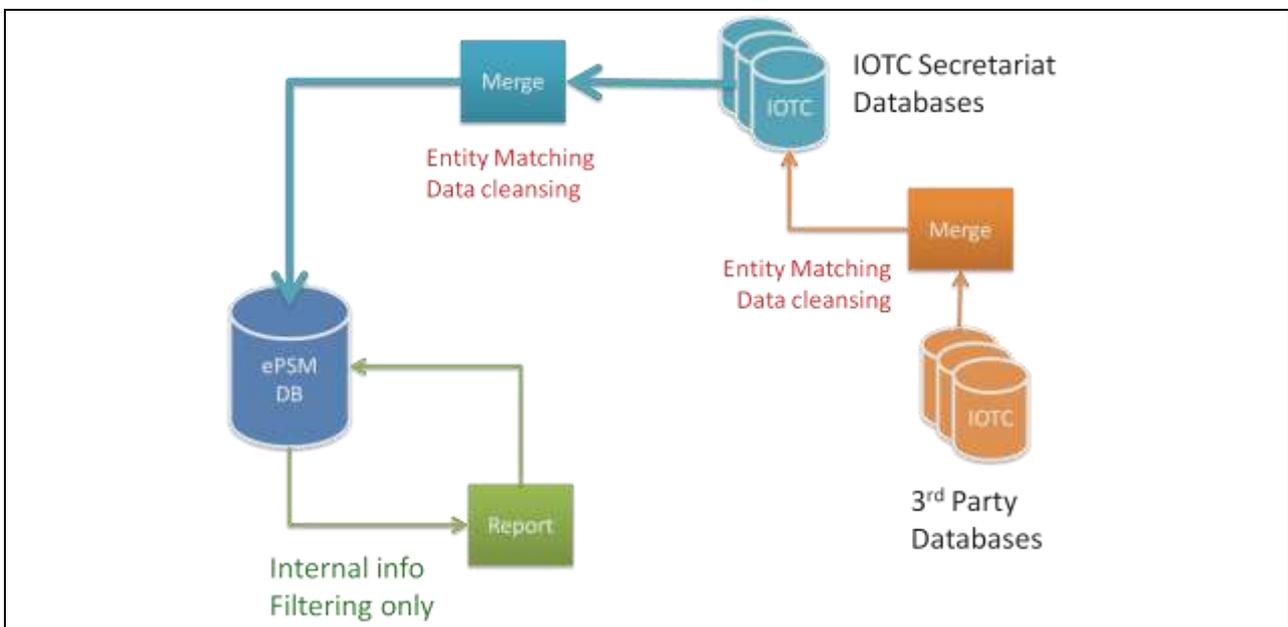


Figure 10: The VAIR Data Aggregation Principles.

*Sections Listing*

**Verification of vessel particulars**

Source of information: IOTC Record of authorized vessels and e-PSM application

Comparison with the vessel declaration (AREP) to detect discrepancies.

Example: attributes will be shown such as: IOTC NAME vs. Declared Name, IOTC Flag vs. Declared Flag...

- Vessel Name,
- Flag,
- Port of registration State,
- Type of vessel,
- Dimension (LOA),
- National Registration Number (NRN),
- IRCS,
- IMO Number (if any)/MMSI Number,
- VMS Type and ID, IOTC Number,
- Previous Name and Flag,

**IUU**

Source of information: IOTC IUU list and t-RFMOs IUU lists).

Comparison provides a simple response: Yes/No.

**IOTC Authorized / Active Vessel**

Source of information: IOTC Record of authorized vessels.

Comparison provides a simple response: Yes/No.

Source of information: IOTC Record of active vessels.

Comparison provides year active, period from/to.

**Flag History**

Source of information: IOTC Record of authorized vessels.

Comparison provides flag history, period from/to.

**Owner History**

Source of information: IOTC Record of authorized vessels.

Result provides owner name history, period from/to.

**License to fish in Costal State waters**

Source of information: IOTC Record of foreign fishing vessels (Res 13/07).

Result provides name of coastal State, license period from/to.

**AREP History**

Information from the e-PSM application.

**At sea Transshipment history**

Source of information: ROP database (Res 12/05).

Result provides: date of TRX, position (Lat/Long) and name of carrier vessel.

- GT,
- Owner.

- Vessel name listed in IUU lists,
- Vessel owner listed in IUU lists.

- Vessel active,
- Vessel listed in IOTC record of authorized vessels.

- List of flag changes

- List of owner changes

- Listing of licences per costal State,
- Licence information details (period of license from/to).

- Date of port call,
- Name of port,
- Link to previous AREP.

- List all (known) transshipments at sea,
- Identify FV, CV.

The VAIR can be shared as a link.

*Prototype*

**Vessel File N° [ NUMBER ]**

Created by [ NAME, SURNAME ] on [ DATE ]

Modified by [ NAME, SURNAME ] on [ DATE ]

STATUS: **OPEN**

[Change status](#)

[Alert IOTC upon detection of a duplicate file](#)

---

**Vessel Activity Intelligent Report**

Vessel General Infos

Estimated date and time of arrival: DD/MM/YYYY at 1.45PM    Port of call: VICTORIA (Seychelles)    Purposes: *not yet defined*

Vessel Identity




[modify photos](#)

Name of the vessel: Invincible	IOTC ID: IOTC4553634	VMS: XXXXXXXXXXXX
Flag State : Japan	IMO ID: 9513634	Certificate: XXXXXXXXXXXX
Type of the vessel: Long-Vessel	IRCS:V2F18	External ID: XXXXXXXXXXXX
Dimensions: [ LOA ]m - [ GRT ]m	MMSI:654645754	<a href="#">modify vessel identity</a>

IUU

⚠ Vessel listed in current IUU list: YES

✔ Owner listed in current IUU list : NO

IOTC Authorized Vessel

⚠ Vessel not listed in IOTC Record of Authorized Vessels :

Active Vessel

Date (from)	Date (to)	Active
12/04/2012	12/04/2015	Yes
28/02/1992	12/04/2012	No

At-sea Transhipment History

Location (Lat/Long)	Date	Carrier vessel name
Lat: 32.777654 Long: -79.933819	12/04/2014	WAKASHIO MARU NO.128
Lat: 22.746354 Long: -79.933819	06/12/2013	WAKASHIO MARU NO.128

Flag History

Date (from)	Date (to)	Flag
12/04/2012	12/04/2015	France
28/02/1997	12/04/2012	Taiwan
28/02/1992	28/02/1997	Indonesia

Owner History

Date (from)	Date (to)	Flag
12/04/2012	12/04/2015	Owner 1
28/02/1997	12/04/2012	Owner 2
28/02/1992	28/02/1997	Owner 3

Port Entry (AREP)

Date	Port	AREP	PIR	Purpose of Call
Lorem Ipsum	Ipsum	<a href="#">Lorem Ipsum</a>	<a href="#">Lorem Ipsum</a>	Lorem
Lorem Ipsum	Ipsum	<a href="#">Lorem Ipsum</a>	<a href="#">Lorem Ipsum</a>	Lorem
Lorem Ipsum	Ipsum	<a href="#">Lorem Ipsum</a>	<a href="#">Lorem Ipsum</a>	Lorem
Lorem Ipsum	Ipsum	<a href="#">Lorem Ipsum</a>	<a href="#">Lorem Ipsum</a>	Lorem

License to fish in coastal State

Year	coastal State	Licensed <a href="#">start date</a>	Licensed <a href="#">end date</a>
Lorem Ipsum	Lorem Ipsum	Lorem Ipsum	Lorem Ipsum

Figure 11: Vessel Activity & Intelligence Report screen proposal.

## 7.4 User Journey

### 7.4.1 Scheme

Feasibility Study Report

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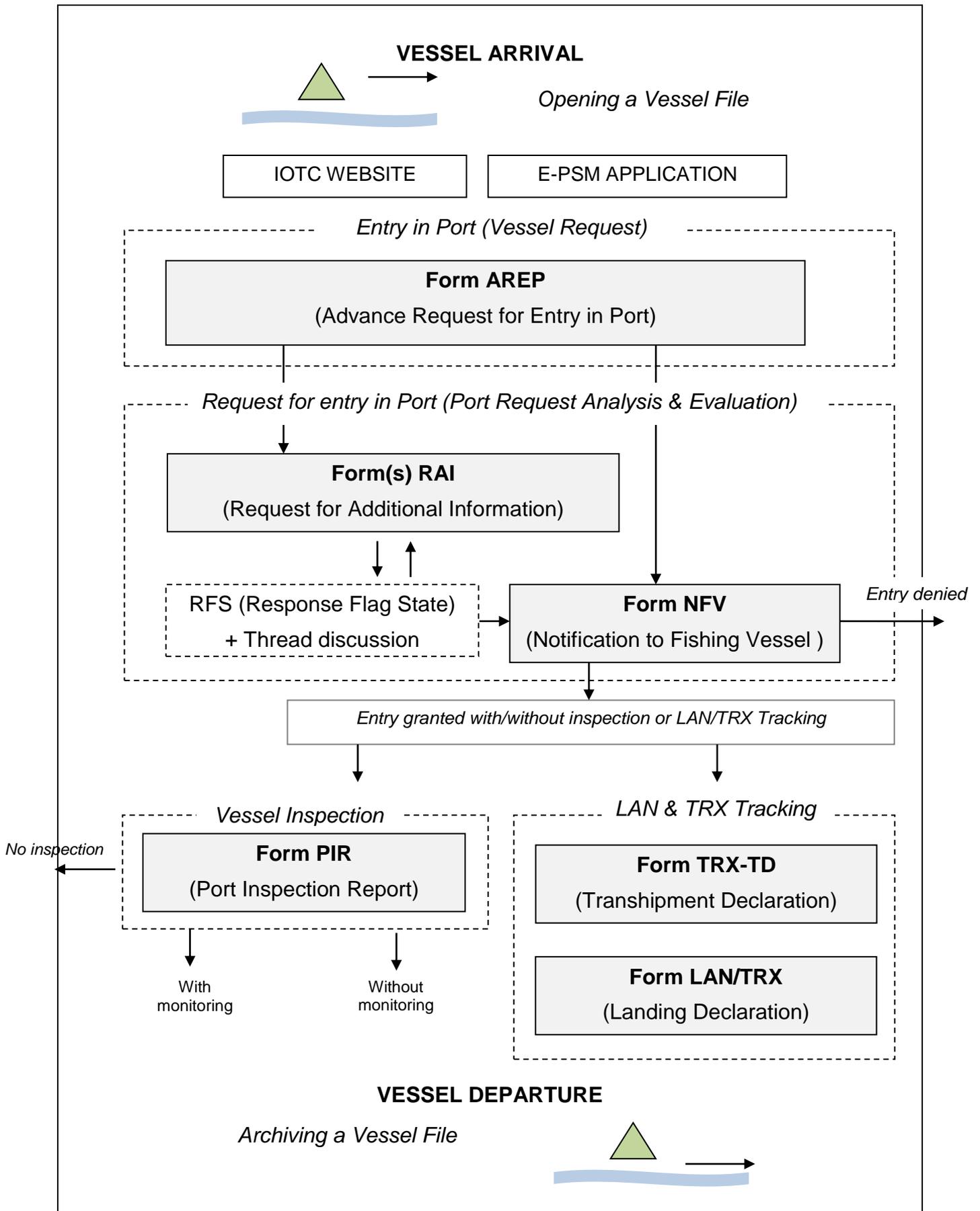


Figure 12: Journey Scheme.

#### 7.4.2 Step by step

From a vessel arrival to a vessel departure, the overall journey is provided as a guide to understand the general principle of the e-PSM application, the forms involved and the communication/information & data flows. More details are provided in the Use Cases enhanced with mock-ups.

##### *Step 1: Vessel arrival*

As stated before, there are 2 start points, to complete and submit an AREP, but still one single to process to unfold. The most suitable start point is related to the user type.

A vessel representative would go on the IOTC website ([www.iotc.org](http://www.iotc.org)) and click on the appropriate link to start completing the online form.

A registered user (a port State user for instance) would use its dashboard, to start completing an AREP he has received by fax for example. He can also choose any of the forms (AREP, PIR, LAN / TRX or TRX-TD) available to start creating a new Vessel File.

The first data to provide by the user concern the vessel identity and the contacts information and then the user can start to complete the selected form. Once completed, a new Vessel File is created with a unique (and generated) identification number.

##### *Step 2: Form "Advance Request For Entry Into Port"*

The user fills out the AREP form with the option to add attachments (e.g. Authorization to Fish, Fishing logbook). The Vessel File now contains the AREP form. The vessel is now waiting for the port State decision (grant or deny entry into port)

To assist the port State in its decision to grant or deny access to the foreign vessel, a "vessel activity intelligent report" can be generated. The VAIR is a making decision tool to the port State.

Once the information of the AREP is analyzed, the port State is in a position to take a decision, to grant or deny entry into port, and to send the final notification to the foreign vessel. The port State may also not be satisfied with the information provided in the AREP, and can request additional information to the flag State of the vessel by submitting the form "Request for additional information (AREP)".

##### *Step 3: Form "Request For Additional Information Following A Request To Enter Port form"*

When submitting a request for additional info (RAI-AREP), the form can be completed and sent to the flag State of the vessel (or any other recipient as mentioned below). Values for some fields are already known (e.g. flag State, vessel identifiers and information) and will be pre-filled by the system.

The flag State can return the requested information or the requested documents (document attachment is working the same way: attachment field + comment).

The port State analyses and verifies that there is no missing or incorrect information. Should any information be missing or incorrect, the port State can request again the missing documents or information, or additional information

Several requests for additional information can be sent to the flag State and as well to a coastal State, or if there is a need, to another organization (FAO, other tuna RFMO) or the representative of the vessel.

##### *Step 4: Form "Notification To Fishing Vessel Following A Request to Enter Port"*

The port State authorizes or denies entry into port by completing the form "NVF-AREP".

#### *Step 5: Form "Port Inspection Report"*

Depending of the choice of the port State, a port inspection can be conducted, and can include, or not, the monitoring of the landing and / or the transshipment (LAN/TRX). A port inspection may take a few hours or days (including monitoring of LAN/TRX).

#### *Step 6: Form "Offloading Declaration (LAN/TRX)"*

This form is based on the field n°30 of the Port Inspection Report. It has to make provision for entering of data on landings and/or transshipments. There may be a need to include a field destination (e.g. a vessel, a vehicle or a processing factory).

#### *Step 7: Form "Transshipment Declaration (TRX-TD)"*

A fishing vessel or a carrier vessel to the port State can submit this form.

The Port Inspection Report form can be completed in parallel with two other forms: Offloading form (LAN/TRX) and TD form. The TD form is completed in the e-PSM application by the port State and concerns a carrier vessel and a fishing vessel.

#### *Step 8: Vessel departure*

As soon as a foreign vessel has left the port, the port State can archive the Vessel File by changing its status to "archive" (Top of the screen on the Vessel File Dashboard).

#### *Vessel Identification*

The whole process is based on accurate vessel identification; therefore there is a need to clearly identify the vessel calling in port and to be inspected. The best attributes for a doubtless identification are:

- National registration number,
- IOTC number,
- IMO number,
- International Radio Call Sign (IRCS).

Other attributes can be considered in the future: VMS serial number, MMSI number, LOA or GT.

## **7.5 Use-Case**

Note about the mockups: mockups are prototypes and will act as functional specifications, however, some improvements or modifications can be made during the development period.

### **7.5.1 Log in to the application**

The user will have two ways to log into the application and be identified (to log in):

1) From the e-PSM application itself, by clicking on the "Identification" link, by completing the username and password fields and by submitting the form.

**User Identification**

Have an account?  
Please enter your credentials and click the Login button below.

Username:

Password:

[Forget Your Password?](#)

**CONNECT**

Figure 13: User Identification (username / password)

2) From the email he has received that will provide a temporary token authentication that will provide a link to a secured generated URL. These emails notifications mainly concern form submission to a recipient. For example, a port State sending an AREP-RAI generates an email to the flag state requesting further information. The flag state will click on the token link provided in this email that will open the browser and the page to complete the RAI form.

Email

To:

CC:

Subject:

Madam,  
Sir,

Our system has received:

- Advance Request for Entry in Port (AREP) - [Download the PDF](#)

Vessel Identity (Vessel File N° #####)

- Vessel Name:
- IOTC Number:

For further actions to be taken,  
[Please open this link in your default browser.](#)

Thank you.  
The ePSM Bot.

The url of the link provided in the email will be secured and will generate a temporary identification to the e-PSM application

Figure 14: Email Notification with token link.

### 7.5.2 Create a new Vessel File

Two options are available to create a new Vessel File, 1) from the IOTC website or 2) from the e-PSM application:

Option 1: from the IOTC website



Figure 15: Create a Vessel File from IOTC website.

In most cases this option will be used by a vessel representative (e.g. captain with internet access onboard the vessel) or agent/owner/operator with an Internet access (e.g. office).



Figure 16: Create a Vessel File from IOTC website (Zoom).

From the IOTC web site (Home page), the user selects the link "Submit an AREP". Then the unauthenticated user will be requested to complete a Vessel Identity form as well as a Contacts form. Little information will be required to provide a positive identification of a vessel. Once the vessel identity and contact forms are completed, the user can complete the AREP form. As soon as the AREP is submitted, the Vessel File is created in the application

Option 2: from the e-PSM application



Figure 17: Create a Vessel File from the e-PSM application.

In most cases the port State will use this option when an AREP has been faxed by a vessel representative (e.g. no internet access onboard the vessel). The responsibility to enter the information of the AREP is with the port State.

From the e-PSM application, the user selects the link "Create a new Vessel File". The authenticated user will be requested to complete a Vessel Identity form as well as a Contacts form. Little information will be required to provide a positive identification of the vessel. Once the vessel identity and contact forms are completed, the authenticated user can complete the AREP form. As soon as the AREP is submitted, the Vessel File is created.

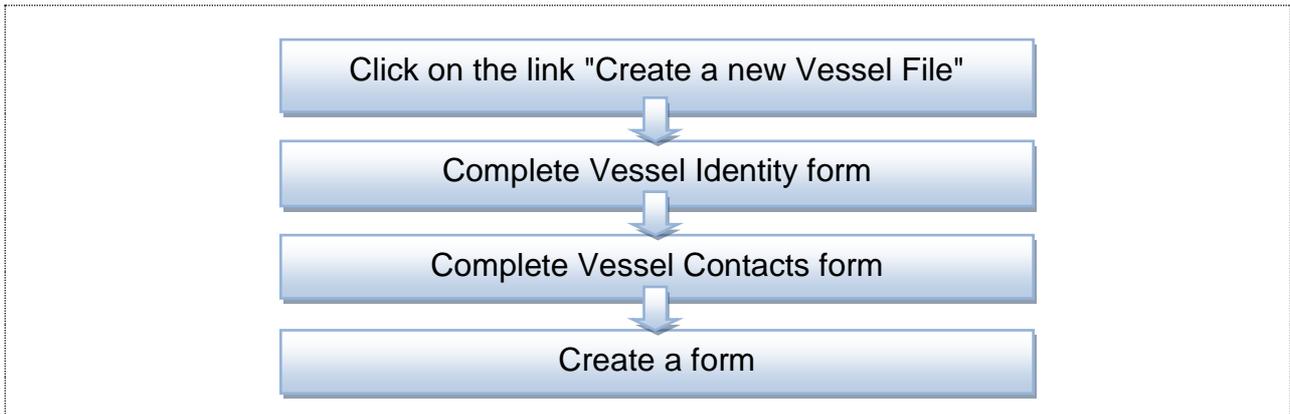


Figure 18: Create a new Vessel File - Case 2 Process

### 7.5.3 Browse and complete the Vessel Identity form

**Vessel Identification**

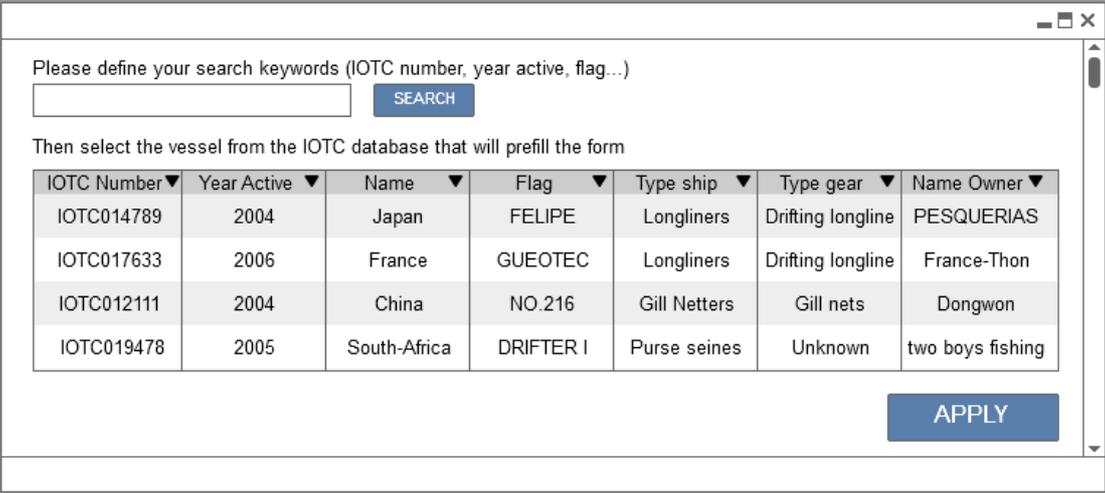
Fields marked with an asterisk are required. Please complete the form or [browse for an existing vessel](#) to prefill the form

<p>Name of the vessel *  <input type="text" value="Referential"/></p> <p>If your name does not appear in the list, please specify below:  <input type="text"/></p> <p>Flag State *  <input type="text" value="Referential"/></p> <p>Type of the vessel *  <input type="text" value="Referential"/></p> <p>Port State  <input type="text"/></p> <p>Dimensions</p> <p>LOA <input type="text" value="73,07"/></p> <p>GRT <input type="text" value="1381"/></p> <p>GT <input type="text"/></p>	<p>IOTC ID *  <input type="text" value="IOTC+6 digits number"/></p> <p>International Radio Call Sign (IRCS)  <input type="text" value="Up to 8 characters"/></p> <p>Maritime Mobile Service Identity (MMSI)  <input type="text" value="9 digits number"/></p> <p>Certificate of registry ID  <input type="text"/></p> <p>IMO ID *  <input type="text" value="7 digits number"/></p> <p>External ID, if available  <input type="text"/></p> <p>VMS (Vessel Monitoring System)  <input checked="" type="radio"/> No  <input type="radio"/> Yes</p> <p>VMS Type:  <input type="checkbox"/> Argos  <input type="checkbox"/> Inmarsat  <input type="checkbox"/> Iridium  <input type="checkbox"/> Others : <input type="text"/></p>
--	--

[Cancel and lose all data.](#) SAVE

Figure 19: The Vessel Identity form

The user can browse for an existing vessel among the vessel database, select the appropriate vessel and click apply. The Vessel Identity form will therefore be prefilled with the database data.



Please define your search keywords (IOTC number, year active, flag...)

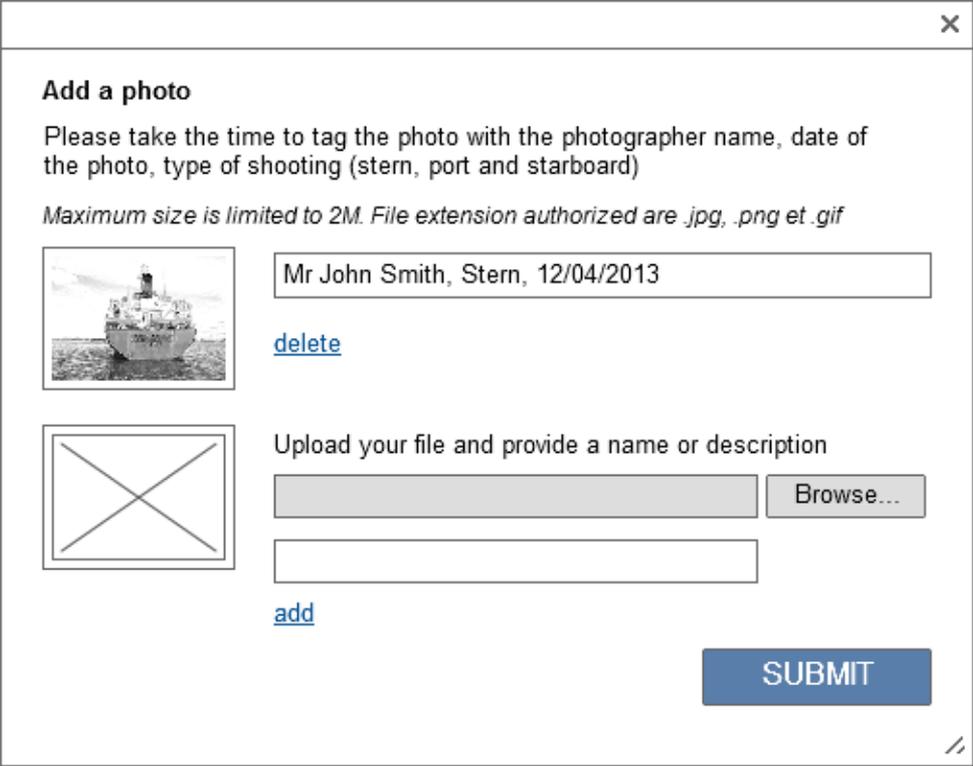
 

Then select the vessel from the IOTC database that will prefill the form

IOTC Number ▼	Year Active ▼	Name ▼	Flag ▼	Type ship ▼	Type gear ▼	Name Owner ▼
IOTC014789	2004	Japan	FELIPE	Longliners	Drifting longline	PESQUERIAS
IOTC017633	2006	France	GUEOTEC	Longliners	Drifting longline	France-Thon
IOTC012111	2004	China	NO.216	Gill Netters	Gill nets	Dongwon
IOTC019478	2005	South-Africa	DRIFTER I	Purse seines	Unknown	two boys fishing

Figure 20: The Vessel Identity form - Browse for a vessel

#### 7.5.4 Add a vessel photo



**Add a photo**

Please take the time to tag the photo with the photographer name, date of the photo, type of shooting (stern, port and starboard)

Maximum size is limited to 2M. File extension authorized are .jpg, .png et .gif



[delete](#)



Upload your file and provide a name or description

[add](#)

Figure 21: Add vessel photos

7.5.5 Browse and complete the Vessel Contacts form

**Vessel Contacts**

Existing contacts

Position	Name	Phone	Mobile	Fax	Email	Actions
Master	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@ipsum.com	<a href="#">delete</a> - <a href="#">view complete card</a>
Owner	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@ipsum.com	<a href="#">delete</a> - <a href="#">view complete card</a>
Beneficial Owner	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@ipsum.com	<a href="#">delete</a> - <a href="#">view complete card</a>

Create a new contact

Please complete the form to add a new contact. You can also [browse for an existing contact](#) to prefill the form. Depending of the type of contact, form fields may change.

Type:  (dropdown menu with options: Master, Agent, Owner, Beneficial Owner, Operator)

Name:

Nationality:

Mobile:

Telephone:

FAX:

Email:

Address:

MSI (id radio):

INMARSAT:

[Cancel and lose all data.](#)

Figure 22: The Vessel Contacts form

Please define your search keywords, then select the contact that will prefill the form

Name	Surname	Email	Position
Giacomo	Benoit	toto@tata.com	Lorem
Giacomo	Benoit	toto@tata.com	Lorem
Giacomo	Benoit	toto@tata.com	Lorem

Figure 23: The Vessel Contacts form - Browse for a contact

The user can browse for an existing contact among the contact database, select the appropriate contact and click apply. The Vessel Contacts form will therefore be pre-filled with the database data.

7.5.6 Avoid duplication Vessel Files



Figure 24: Alert application manager upon detection of a duplicate file.

The whole history process and risk assessment is based on efficient foreign vessel identification. However the e-PSM application cannot detect duplicate files and only human action, and analysis can detect a duplicate. To declare duplicates, a link is provided to notify the application manager (IOTC Secretariat).

### 7.5.7 Browse Vessel Files

The user can browse the Vessel Files from the Port Activity Dashboard. The dashboard will offer a set of filtering options (search by name, by date, by code, etc.).

See Figure 20: Port Activity Dashboard and Figure 21: Reorder Table Results.

### 7.5.8 Archive, Share or Privatize a Vessel File

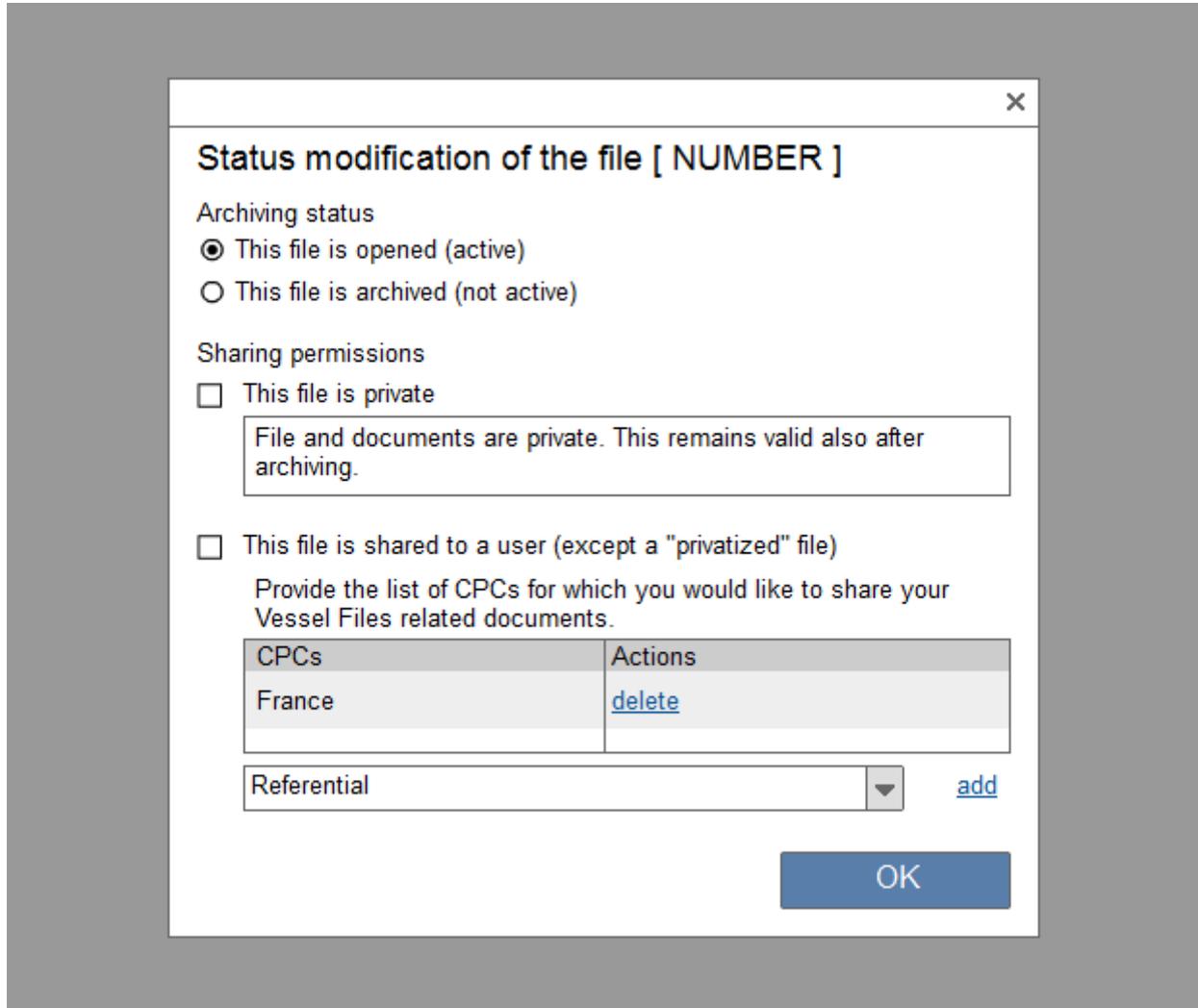


Figure 25: Modify the status of a Vessel File.

A Vessel File status is divided into two categories: archiving and sharing.

<b>Archiving status</b>	<ul style="list-style-type: none"> <li>• This file is active</li> <li>• This file is not active (Archived)</li> </ul>
<b>Sharing permissions</b>	<ul style="list-style-type: none"> <li>• This file (and its documents) is private. No sharing (including the list of CPC) of the file and its documents. This remains valid also after archiving.</li> <li>• This file is shared to another user.</li> </ul>

To remind (see " Table 4: Permissions Matrix Guidelines of module 1 "): only CPCs users can modify a file status.

### Archiving

A user can archive a vessel file when the PSM process is completed, forms have been completed and the vessel has left port. To archive a vessel file, the user must be connected to the e-PSM application, and from the Port Activity Dashboard, he must select the appropriate Vessel File from the current pending list and change it status to "archive".

<b>Vessel File N° [ NUMBER ]</b> Created by [ NAME, SURNAME ] on [ DATE ] Archived on [ DATE ] at [ TIME ]	STATUS: <b>ARCHIVE</b> -  PRIVATE <a href="#">Change status</a> <a href="#">Alert IOTC upon detection of a duplicate file</a>
<b>Vessel File N° [ NUMBER ]</b> Created by [ NAME, SURNAME ] on [ DATE ] Archived on [ DATE ] at [ TIME ]	STATUS: <b>ARCHIVE</b> <a href="#">Change status</a> <a href="#">Alert IOTC upon detection of a duplicate file</a>
<b>Vessel File N° [ NUMBER ]</b> Created by [ NAME, SURNAME ] on [ DATE ] Modified by [ NAME, SURNAME ] on [ DATE ]	STATUS: <b>OPEN</b> -  PRIVATE <a href="#">Change status</a> <a href="#">Alert IOTC upon detection of a duplicate file</a>
<b>Vessel File N° [ NUMBER ]</b> Created by [ NAME, SURNAME ] on [ DATE ] Modified by [ NAME, SURNAME ] on [ DATE ]	STATUS: <b>OPEN</b> <a href="#">Change status</a> <a href="#">Alert IOTC upon detection of a duplicate file</a>
<b>Vessel File N° [ NUMBER ]</b> Created by [ NAME, SURNAME ] on [ DATE ] Modified by [ NAME, SURNAME ] on [ DATE ]	STATUS: <b>OPEN</b> -  SHARED <a href="#">Change status</a> <a href="#">Alert IOTC upon detection of a duplicate file</a>

Figure 26: Vessel File status.

When a Vessel File is archived, it will no longer appear in the Port Activity Dashboard (by default) and no forms or any interactions with any data related to this file can no longer be performed. However, it is possible to view the archived vessel files in the PAD by changing the search filter option to "View only archived vessel files" or "View all".

An archived file can be re-opened at any time for any reason. To re-open a file, the user has to change the Vessel File status to "open".

## Port Activity Dashboard

[Create a new ePSM File](#)  
[Alert IOTC upon detection of a duplicate file](#)

Search filters

Keywords <input style="width: 90%;" type="text"/>	Type of the vessel * <input style="width: 90%;" type="text" value="Referential"/>
Time Range (from/to): <input style="width: 40%;" type="text" value="//"/> <input type="text" value="//"/> <input type="text" value="//"/> <input type="text" value="//"/>	Flag State * <input style="width: 90%;" type="text" value="Referential"/>

Figure 27: PAD search filters

### Privatize

By default, a Vessel File is shared between a port State and the flag State of the vessel and the file itself and its content are accessible by them (see the permissions table).

While the "This file is private" option is checked, the file and its content and any documents related (such as all the forms generated) are no longer shared. If the Vessel

File is set to "Private" (for instance in case of judicial proceedings in progress), no Vessel File documents (PDF forms) will be available for public access in module 2 "PSM Information Sharing" neither module 3 "Reporting".

After one month, two documents of the Vessel File shall be accessible in the module 2 – to publish AREP and PIR (excluding catch data), unless it has been tagged as private. In the latter case, no publication shall be done until the Vessel File status is updated by unchecking "This file is private" (under the responsibility of the port State).

### Sharing

The port State can add or delete any CPCs that will have the ability to access a Vessel File and its content on the read-only basis unless it is private.

### 7.5.9 Create and submit a form

We will detail precisely in this document as use-cases each form (AREP, RAI-AREP, NFV-AREP, PIR, RAI-PIR, LAN/TRX and TRX-TD) data and structure, however, it is important to show here the process for creating a form which is always:

- Complete form sections and sub-sections
  - Sender
  - Data Form
  - Recipients
- Correct errors - if any - on the above sections and sub-sections
- Preview the form before submission
- Submit the form to recipients

Figure 28: Displaying errors on a form.

Any errors that may occur while filing, and missing information, will be displayed clearly at the top of the form. A visual hint is also given next to the input field where the error occurred.

It is possible to attach one or many files to a form. Each file can be freely categorized (see "Figure 29: The RAI form thread discussion, adding a document").

It is possible to define one to many recipients (c and cc).

### 7.5.10 Edit a form

Form ▲	To ▼	Status ◆	Creation Date ▼	Modification Date ▼
<a href="#">Advance Request For Entry In Port</a>	email@dot.com	sent	07-13-2014	07-13-2014
<a href="#">Request for Additional Information of an Advance Request For Entry In Port</a>	email@dot.com	answer received	08-13-2014	08-13-2014
<a href="#">Notification of Fishing Vessel of an Advance Request For Entry In Port</a>	email@dot.com	unsent <a href="#">edit</a>	09-13-2014	10-13-2014
<a href="#">Port Inspection Report</a>	email@dot.com	sent	10-13-2014	10-13-2014
<a href="#">Request for Additional Information of Port Inspection Report</a>	email@dot.com	sent	14-13-2014	14-13-2014

Figure 30: Editing a form.

Until submission, a form can be saved as a draft form and can be editable. The link "edit" will therefore appear. Once sent, a form cannot be edited anymore and the link "edit" will disappear from the table.

### 7.5.11 Create and send an AREP form

The purpose of this form is to provide a request to enter into port to the port State. It contains the mandatory information to be submitted in advance by a foreign vessel as required by the Annex 1 of the Resolution 10/11. The form "AREP" is completed by a vessel representative (e.g. captain, agent, owner, operator, etc).

### Advance Request For Entry In Port (AREP) form

**Sender**  
From: \_\_\_\_\_  
Your are identified as [ USER NAME ]

**Form Data**

Complementary Vessel Information

Intended port of call  
Referential

Estimated local date and time of arrival  
[ ] [ ]

Port of last port call  
Referential

Free text

Date of last port call  
[ ] [ ] [ ]

Observer on board  
 Yes (selected)  
 No

Purposes  
 Transshipping  
 Packaging  
 Processing of fish  
 Refueling  
 Resupplying  
 Maintenance  
 Dry-docking  
 Landing/Offloading  
 Medical Emergency  
 Arrest  
 Force majeure, please specify: [ ]  
 Free purpose, please specify: [ ]

**Relevant Fishing Authorizations**

Identifier	Issued by	Validity (from)	Validity (to)	Fishing area(s)	Species	Gear	PDF File	Action
###	####	##/##/####	##/##/####	###	###	####	PDF File	Delete line

Identifier: [ ] Issued by: Referential Validity (from / to): [ ] [ ]

Fishing area(s): Referential Species: Referential Gear: Referential Authorization File (Upload a file): [ ] Browse

[add this new line of data in the table](#)

**Relevant Transshipment Authorizations**

Identifier	Issued by	Validity (from)	Validity (to)	PDF File	Action
###	####	##/##/####	##/##/####	PDF File	Delete line

Identifier: [ ] Issued by: Referential Validity (From / To): [ ] [ ]

[add this new line of data in the table](#)

**Transshipment Information concerning donor vessels**

Date	Location	Name	Flag State	ID number	Species	Product form	Catch area	Quantity
###	####	##/##/####	##/##/####	###	###	####		

Date: [ ] [ ] Location: Referential Name: [ ] Flag State: Referential ID number: [ ]

Species: Referential Product Form: Referential Catch Area: Referential Quantity (Kg): [ ]

[add this new line of data in the table](#)

**Total Catch on-board**

Species	Product form	Catch area	Quantity (Kg)
#####	#####	#####	####

Referential Product Form: Referential Catch Area: Referential Quantity (Kg): [ ] Quantity to be offloaded (Kg): [ ]

[add this new line of data in the table](#)

**Recipients**  
To: \_\_\_\_\_  
The default recipient is [ PORT STATE ]

[Save as draft and submit later \(authenticated user only\)](#)  
[Cancel completion and lose any data entered](#)

**SUBMIT**

This will open a PDF preview before submission from [ SENDER ] to [ RECIPIENT ]

Figure 31: The AREP form completion.

The user connects into the e-PSM web application and completes an Advance Request for Entry in Port (AREP).

The AREP form is organized into the following sections:

- Complementary Vessel Information,
- Relevant Fishing Authorizations,
- Relevant Transshipment Authorizations,
- Transshipment Information concerning donor vessels,
- Total catch on-board,
- Upload document,
- Recipient.

A preview screen is available for the user to provide him the opportunity to verify the information entered before submission.

A “print” button will allow the user to print the AREP, and a “save as PDF” button will allow the user to save the file on a computer. Those functions are part of Adobe Acrobat Reader plugin used to display the PDF preview. See arrows below.

**Advance Request For Entry In Port (AREP) form**

PDF Preview  
[If the PDF is not displayed, you can download it.](#)

Important disclaimer: this PDF is generated from the e-PSM application

1 General information  
 2 Vessel Name  
 3 General information  
 4 Vessel type  
 5 Vessel details  
 6 Vessel details  
 7 Vessel details  
 8 Vessel details  
 9 Vessel details  
 10 Vessel details  
 11 Vessel details  
 12 Vessel details  
 13 Vessel details  
 14 Vessel details  
 15 Vessel details  
 16 Vessel details  
 17 Vessel details  
 18 Vessel details  
 19 Vessel details  
 20 Vessel details  
 21 Vessel details  
 22 Vessel details  
 23 Vessel details  
 24 Vessel details  
 25 Vessel details  
 26 Vessel details  
 27 Vessel details  
 28 Vessel details  
 29 Vessel details  
 30 Vessel details

Validation  
 By clicking submit, we declare that:

- The above declaration is true and complete to the best of my knowledge and belief,
- We and our vessel have NOT engaged in or supported any form of IUU activity within the IOTC area,
- All fishing activities undertaken in the IOTC area were fully Compliant with the relevant IOTC requirements and Resolutions

[Modify my entry before submission](#)  
[Cancel completion and lose any data entered](#)

**SUBMIT**

This [ FORM ] from [ SENDER ] will be submit to [ RECIPIENT ]

Figure 32: The AREP form page preview

Once submitted, the AREP is sent by email to the port State with the PDF file and/or a direct link to the PDF file.

Email
To: <input type="text" value="firstname.lastname@example.com"/>
CC: <input type="text"/>
Subject: <input type="text" value="ePSM: Advance Request for Entry in Port (Pending Notification)"/>
<p>Madam, Sir,</p> <p>Our system has received:</p> <ul style="list-style-type: none"><li>• Advance Request for Entry in Port (AREP) - <a href="#">Download the PDF</a></li></ul> <p>Vessel Identity (Vessel File N° #####)</p> <ul style="list-style-type: none"><li>• Vessel Name:</li><li>• IOTC Number:</li></ul> <p>For further actions to be taken, <a href="#">Please open this link in your default browser.</a></p> <p>Thank you. The ePSM Bot.</p>

Figure 33: The AREP form email Notification.

7.5.12 Create and send one or many RAI (AREP or PIR) form(s)

### Request For Additional Information of an Advance Request Entry in Port form

---

**Sender**

From \_\_\_\_\_  
 Your are identified as [ USER NAME ]

---

**Form Data**

Information on fishing vessel requesting entry in port \_\_\_\_\_

AREP Received Estimated date and time of arrival

Yes //

No Port of call

---

Request for additional information \_\_\_\_\_

To confirm that the fish on board was taken in accordance with applicable requirements of the IOTC, the flag State of the vessel must provide the following information/documents within the days (specify below) from the date of this request. Failing to provide the information within the period of time, the vessel will be denied use of the port for landing, transshipping, packaging, processing, refuelling, resupplying, maintenance and drydocking in accordance with paragraph 9.1.

Number of days

Flag State authorisation to fish

Fishing logbook from / to

Flag State authorisation to tranship

Certificate of registry of the fishing vessel

Authorisation for specific area/EEZ (foreign licence)

VMS record from / to

Others (specify):

Copy of the Vessel Master Passport

Copy of the Vessel Master Nation ID Card

---

**Recipients**

To \_\_\_\_\_

This RAI will start a thread discussion between you and your recipient. Please specify this recipient:

Name  Email

---

Carbon Copy to \_\_\_\_\_

Select the contacts to send this form

Position	Name	Phone	Mobile	Fax	Email	Selection
Master	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@ipsum.com	<input type="checkbox"/>
Owner	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@ipsum.com	<input type="checkbox"/>
Beneficial Owner	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@ipsum.com	<input type="checkbox"/>

Customs

Immigration

Other Port Authority

Flag State

Coastal State

RFO/RFMO

Name  Email  [add a new email contact](#)

---

[Save as draft and submit later \(authenticated user only\)](#) SUBMIT

[Cancel completion and lose any data entered](#)

This will open a PDF preview before submission.

Figure 34: The RAI-AREP form completion.

A Request for Additional Information can be related to an AREP or a PIR, some differences exist between the two documents but they are minimal. These differences will be taken into consideration during the development of the application.

A RAI is a dialogue between two entities. There can be as many RAI started between different entities depending of the nature of the required information or documents.

The recipients of a RAI can be the flag State of the foreign vessel, the vessel representative, a coastal State CPC or any other entity (e.g. RFMOs, FAO, etc...). As an example a port State can send several RAI: to the flag State, to the vessel representative and to a coastal State.

If the RAI is sent to the flag State, the recipient will receive a notification email with a link to the Vessel File Dashboard to allow him to provide a response to the request. The recipient selects the appropriate Vessel File (in the Vessel File Dashboard) from the current pending list to review the *RAI (AREP) form*. He can provide a response to the port State and attach the requested documents and approve (checkbox) the "Statement" to submit his answer. An email notification is sent.

If the RAI is sent to any other recipient than the flag State (e.g. vessel representative, coastal State), the recipient will receive a token (with the PDF file and/or a direct link to the PDF file) to allow him to respond to the request of the port State.

A thread (discussion) is automatically provided for any further information needed.



### 7.5.13 Create and send a NFV (AREP) form

The purpose of this form is to provide a response to the request to enter into port to the vessel representative. It contains the decision of the port State to grant or deny access into port. The port State completes the form “NFV”.

**Notification to Fishing Vessel (NFV) form**

**Sender**

From \_\_\_\_\_  
Your are identified as [ USER NAME ]

**Form Data**

Port State Decision \_\_\_\_\_

Port entry authorised.  
 Port entry authorised - Use of port facilities denied until completion of port inspection and written clearance received by competent authority.  
 Port entry denied for the following reasons:

Last choice will display following fields

Fishing vessel on IUU list.  
 Fishing vessel not authorised by flag State.  
 Fishing vessel not on the positive of the RFMO   
 Other

**Recipients**

To \_\_\_\_\_  
The recipient is [ RECIPIENT ].

Carbon Copy to \_\_\_\_\_

Select the contacts to send this form

Position	Name	Phone	Mobile	Fax	Email	Selection
Master	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@ipsum.com	<input type="checkbox"/>
Owner	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@ipsum.com	<input type="checkbox"/>
Beneficial Owner	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@ipsum.com	<input type="checkbox"/>

Customs  Email  
 Immigration  Email  
 Other Port Authority  Email  
 Flag State  Email  
 Coastal State  Email  
 RFO/RFMO  Email  
 Name  Email [add](#)

[Save as draft and submit later \(authenticated user only\)](#)

[Cancel completion and lose any data entered](#)

SUBMIT

This will open a PDF preview before submission [ SENDER ] to [ RECIPIENT ].

Figure 37: The NFV-AREP form completion.

The port State selects the appropriate Vessel File (in the Port Activity Dashboard) from the current pending list, and then he selects the *NFV form* and completes the form to grant or deny port access to the foreign vessel.

An email notification is sent:

- In case of authorization to enter port: by default to the sender of the AREP (vessel representative) and any other recipients (national agencies, flag State, coastal State, IOTC Secretariat and secretariats of other RFMOs),
- In case of denial of entry: by default to the flag State of the foreign vessel and the vessel representative, and any other recipient he deems necessary (national agencies, coastal State, IOTC Secretariat, secretariat of others RFMOs)

7.5.14 Create and send a PIR form

### Port Inspection Report (PIR) form

**Sender**

From

Your are identified as [ USER NAME ]

**Form Data**

Inspection Inspecting authority <input style="width: 95%;" type="text"/> ID of principal inspector <input style="width: 95%;" type="text"/> Name of principal inspector <input style="width: 95%;" type="text"/> Email of principal inspector <input style="width: 95%;" type="text"/>	Inspection report no <input style="width: 95%;" type="text"/> Part of inspection <input style="width: 95%;" type="text"/> Commencement of inspection <input style="width: 45%;" type="text"/> <input type="text" value="MM"/> <input type="text" value="DD"/> <input type="text" value="YY"/> Completion of inspection <input style="width: 45%;" type="text"/> <input type="text" value="MM"/> <input type="text" value="DD"/> <input type="text" value="YY"/>
--	--

**Complementary information for Vessel**

Advance notification received <input checked="" type="radio"/> No <input type="radio"/> Yes Last port call Port name <input style="width: 95%;" type="text"/> Date <input style="width: 45%;" type="text"/> <input type="text" value="MM"/> <input type="text" value="DD"/>	Purposes <input type="checkbox"/> Transshipping <input type="checkbox"/> Packaging <input type="checkbox"/> Processing of fish <input type="checkbox"/> Refueling <input type="checkbox"/> Resupplying <input type="checkbox"/> Maintenance <input type="checkbox"/> Dry-docking <input type="checkbox"/> Landing/Offloading <input type="checkbox"/> Medical Emergency <input type="checkbox"/> Arrest <input type="checkbox"/> Force majeure, please specify: <input style="width: 80%;" type="text"/> <input type="checkbox"/> Free purpose, please specify: <input style="width: 80%;" type="text"/>
--	--

**Relevant Fishing Authorizations**

Identifier	Issued by	Validity (from)	Validity (to)	Fishing area(s)	Species	Gear	PDF File	Action
###	####	##/##/####	##/##/####	###	###	####	<a href="#">PDF File</a>	<a href="#">Delete</a>

Identifier:  Issued by:  Validity (from / to):

Fishing area(s):  Species:  Gear:  Authorization File (Upload a file):

[add this new line of data in the table](#)

**Relevant Transshipment Authorizations**

Identifier	Issued by	Validity (from)	Validity (to)	PDF File	Action
###	####	##/##/####	##/##/####	<a href="#">PDF File</a>	<a href="#">Delete</a>

Identifier:  Issued by:  Validity (From / To):

[add this new line of data in the table](#)

**Transshipment Information concerning donor vessels**

Date	Location	Name	Flag State	ID number	Species	Product form	Catch area	Quantity	Actions
###/###/###	####	#####	#####	###	###	####	###	#####	<a href="#">Delete</a>

Date:    Location:  Name:  Flag State:  ID number:

Species:  Product Form:  Catch Area:  Quantity (Kg):

[add this new line of data in the table](#)

Figure 38: The PIR form completion (1/2).

Evaluation of offloaded catch (quantity)

Species	Product form	Catch area(s)	Qty declared	Qty offloaded	Qty Difference	Actions
#####	####	#####	#####	###	####	<a href="#">delete</a>

Species:  Product Form:  Catch Area:  Quantity declared (Kg):  Quantity offloaded (Kg):

[add this new line of data in the table](#)

---

Verification of Catch retained onboard (quantity)

Species	Product form	Catch area(s)	Quantity declared	Quantity offloaded	Difference	Actions
#####	####	#####	#####	###	####	<a href="#">delete</a>

Species:  Product Form:  Catch Area:  Quantity declared (Kg):  Quantity offloaded (Kg):

[add this new line of data in the table](#)

---

Examinations

Examination of logbook(s) and other documentation

YES

NO

Compliance with applicable catch documentation scheme(s)

YES

NO

Compliance with applicable trade information scheme(s)

YES

NO

Gear examined in accordance with paragraph of Annex 2

YES

NO

Type of gear used:

Finding by inspector(s)

Comments by the master

Apparent infringement(s) noted including referenceto relevant legal instrument(s)

Actions taken

---

**Recipients**

To:

---

Carbon Copy to

Position	Name	Phone	Mobile	Fax	Email	Selection
Master	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@psum.com	<input type="checkbox"/>
Owner	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@psum.com	<input type="checkbox"/>
Beneficial Owner	Lorem Ipsum	+343225235235	+343225235235	+324235235325	lorem@psum.com	<input type="checkbox"/>

Customs

Immigration

Other Port Authority

Flag State

Coastal State

RFO/RFMD

[add](#)

[Save as draft and submit later \(authenticated user only\)](#)

[Cancel completion and lose any data entered](#)

SUBMIT

This [ FORM ] from [ SENDER ] will be submit to [ RECIPIENT ]

Figure 39: The PIR form completion (2/2).

The user selects the appropriate Vessel File from current pending list, completes the PIR form step by step. Once the form is completed, notifications are sent to the appropriate recipients (e.g. flag State, coastal State, IOTC secretariat, etc.) and additional recipients if needed in accordance with paragraph 13 of the Resolution 10/11).

A public copy is available as an archive in the Information Sharing module. Note: This public copy may be restricted in terms of fields' visibility (data on landing/transshipment).

7.5.15 Create and save an offloading form (LAN/TRX)

### Offloading Declaration (LAN/TRX) form

**Sender**

From

Your are identified as [ USER NAME ]

**Form Data**

Inspection

Is this landing operation monitored by an inspector ?

Yes  
 No

Inspecting authority

ID of principal inspector

Name of principal inspector

Email of principal inspector

Inspection report no

Port of inspection

Commencement of inspection

Completion of inspection

Evaluation of offloaded catch (quantity)

Type	Species	Product form	Catch area(s)	Qty declared	Qty offloaded	Qty Difference	Actions
#####	#####	#####	#####	#####	####	#####	<a href="#">delete</a>

Type

Species

Product Form

Catch Area

Quantity declared (Kg)

Quantity offloaded (Kg)

[add this new line of data in the table](#)

[Save as draft and submit later \(authenticated user only\)](#)

[Cancel completion and lose any data entered](#)

**SUBMIT**

This will open a PDF preview before submission.

Figure 40: Offloading form (LAN/TRX) completion.

The port State selects the appropriate Vessel File from current pending list and completes the form. An electronic document copy can be downloaded for viewing and printing.

7.5.16 Create and save a TRX-TD form

### Transshipment declaration (TRX-TD) form

**Sender**

From

Your are identified as [ USER NAME ]

**Form Data**

<p>Donor (Carrier or Fishing Vessel)</p> <p>Type <input type="text" value="Fishing Vessel"/></p> <p>Vessel Name <input type="text" value="Carrier Vessel"/></p> <p>Master Name <input type="text"/></p> <p>Radio Call Sign: <input type="text"/></p> <p>Flag: <input type="text"/></p> <p>Flag State Fishing License Number: <input type="text"/></p> <p>National Register Number <input type="text"/></p> <p>IOTC Register Number <input type="text"/></p> <p>IMO Number <input type="text"/></p>	<p>Receiver (Carrier or Fishing Vessel)</p> <p>Type <input type="text" value="Fishing Vessel"/></p> <p>Vessel Name <input type="text" value="Carrier Vessel"/></p> <p>Master Name <input type="text"/></p> <p>Radio Call Sign: <input type="text"/></p> <p>Flag: <input type="text"/></p> <p>Flag State Fishing License Number: <input type="text"/></p> <p>National Register Number <input type="text"/></p> <p>IOTC Register Number <input type="text"/></p> <p>IMO Number <input type="text"/></p>
--	---

**Dates and destinations**

Departure    from

Return    to

Transshipment

Indicate the weight in kilograms or the unit used (e.g. box, basket) and the landed weight in kilograms of this unit: kilograms

**Location of Transshipment**

Species	Port	Sea	Type of product	Catch Area(s)	Actions
#####	#####	#####	#####	#####	<a href="#">delete</a>

[add a location](#) [suggest a new type of product to IOTC](#)

[Save as draft and submit later \(authenticated user only\)](#)

[Cancel completion and lose any data entered](#)

SUBMIT

This will open a PDF preview before submission.

Figure 41: A TRX-TD form completion.

The port State selects the appropriate receiver (eg. cargo) Vessel File from current pending list and identifies each donor Vessel File to complete the Transshipment Declaration.

An electronic document copy can be downloaded for viewing and printing.

**7.6 Users, Roles and Permissions**

**7.6.1 Roles**

One of the great features of the e-PSM application is the ability to control how and what person can access the different dashboards, forms and information of the e-PSM application. To this end, the application will be configured by default with different roles where each role has a permission list (on an entire module, components of a module or specific functions) to create, edit, delete, modify, etc. The roles will be assigned to users.

These roles are:

- Port State,
- Flag State,
- Other CPCs
- Other entities (Costal State, RFMOs, FAO),
- Vessels Representative,
- IOTC Secretariat.

#### 7.6.2 Users

User management will be the sole responsibility of database administrator of IOTC Secretariat, through a dedicated database management system.

Request for additional login shall go through IOTC Secretariat, in order to ensure a consistent credential attribution policy. The same goes to revoke access to a given user.

#### 7.6.3 Permissions Table

A permissions matrix is proposed in the next page. A full matrix will be drawn later depending of the definitive functions that will be retained by the CPCs.

Important note: IOTC administrative users are given a powerful role in the e-PSM application, granting them the ability to act as any of the listed role
--

Development of an information system / web based application on Port State Measures

SCREENS	PORT STATE	FLAG STATE	VESSEL REPRESENTATIVE	OTHER CPCs	OTHER ENTITY (e.g. RFMO, FAO)
Port Activity Dashboard	GRANTED	GRANTED for its own vessels only	GRANTED for its own vessels only	DENIED	DENIED
Vessel File Dashboard	GRANTED	GRANTED (view)	GRANTED for its own vessels only, view)	DENIED by default, unless GRANTED (by Port State; view)	DENIED by default, unless GRANTED (by Port State; view)
Vessel File	GRANTED (create from PAD, view, modify, archive)	GRANTED (view)	DENIED	DENIED by default, unless GRANTED (by Port State; view)	DENIED by default, unless GRANTED (by Port State; view)
Vessel File status	GRANTED (modify)	DENIED	DENIED	DENIED	DENIED
Vessel Identity	GRANTED (create, view, modify, archive)	GRANTED (view)	GRANTED (view; for its own vessels only)	DENIED by default, unless GRANTED (by Port State; view)	DENIED by default, unless GRANTED (by Port State; view)
Vessel Contacts	GRANTED (view, create, modify)	GRANTED (view)	GRANTED (view; for its own vessels only)	DENIED by default, unless GRANTED (by Port State; view)	DENIED by default, unless GRANTED (by Port State; view)
Vessel Photos data	GRANTED (view, create, modify, delete)	GRANTED (view)	GRANTED (view; for its own vessels only)	DENIED by default, unless GRANTED (by Port State; view)	DENIED by default, unless GRANTED (by Port State; view)
AREP	GRANTED (view, create, modify, delete)	GRANTED (view)	GRANTED (create by submission thru IOTC website)	DENIED by default, unless GRANTED (by Port State; view)	DENIED by default, unless GRANTED (by Port State; view – no catch qty)
RAI-AREP	GRANTED (view, create, modify, delete)	GRANTED (view - response thru token-based auth email)	GRANTED (view - response thru token-based auth email.	GRANTED (view - response thru token-based auth email.	GRANTED (view - response thru token-based auth email.
NFV	GRANTED (view, create, modify, delete)	GRANTED (view)	GRANTED (view; for its own vessels only)	DENIED by default, unless GRANTED (by Port State; view)	DENIED by default, unless GRANTED (by Port State; view)
PIR	GRANTED (view, create, modify, delete)	GRANTED (view)	DENIED	DENIED by default, unless GRANTED (by Port State; view)	DENIED by default, unless GRANTED (by Port State; view – no catch qty)
RAI-PIR	GRANTED (view, create, modify, delete)	GRANTED (view - response thru token-based auth email)	GRANTED (view - response thru token-based auth email.	GRANTED (view - response thru token-based auth email.	GRANTED (view - response thru token-based auth email.
LAN/TRX	GRANTED (view, create, modify, delete)	GRANTED (view)	GRANTED (view; for its own vessels only)	DENIED by default, unless GRANTED (by	GRANTED (by Port State; view)

Development of an information system / web based application on Port State Measures

TRX-TD	GRANTED (view, create, modify, delete)	GRANTED (view)	GRANTED (view; for its own vessels only)	Port State; view) DENIED by default, unless GRANTED (by Port State; view)	GRANTED (by Port State; view)
Vessel Activity & Intelligence Report (VAIR)	Full access – search for doc limited to authorized DP	ACCESS GRANTED for all DP where flagged vessels have called.	DENIED	DENIED by default, unless GRANTED (by Port State; view)	DENIED
<i>Files Visibility Perimeter</i>		<i>Limited to relevant selection of ports for a given flag State.</i>			<i>Limited to relevant selection of files, defined with entity credentials on a CPC level basis.</i>

Table 4: Permissions Matrix Guidelines of module 1

## **8 MODULE 2 - PSM INFORMATION SHARING**

### **8.1 General presentation**

#### *Purpose*

The purpose of the module 2 can be summarized in four main qualities:

- It 's a structured way to share information,
- It's open to public,
- It comes with its own search engine,
- It is a reference document repository.

#### *Objectives*

The objective of the module 2 is to propose a platform open to public consultation where authenticated users will be able to input, update and share, in a structured way, information related to Port State Measures such as:

- All (and non private) AREP forms generated in PDF by authenticated users or public users from module 1,
- All (and non private) PIR forms generated in PDF by authenticated users from module 1,
- Any documents files (PDF, DOC, XLS, etc.) uploaded manually by the authenticated users of module 2.

When information is updated, the users shall be notified. IOTC Secretariat shall be able to validate the information submitted by CPCs.

The module 2 will be structured into five components:

- Document Library (with a search & query function),
- Designated Ports Info (with a search filter),
- Useful Links,
- Referential Listing,
- User Guide.

To allow each document to be easily found:

- a free text search engine with a type selector and a selector date called "search and query" will be implemented in the document library to search for all documents (generated AREP (PDF), generated PIR (PDF) and document files uploaded (PDF, DOC, XLS,...),
- a filter search engine will be implemented in Designated Ports Info, Useful Links, Referential Listing, User Guide.

Module 2 will be based on DRUPAL 7 and will share IOTC web site graphic theme.

### **8.2 Documents Library with Search and Query**

#### **8.2.1 Documents**

In Drupal back-office, users will be able to upload, update any document and to "tag" them with keywords and to organize them freely inside categories.

Advance Request of Entry in Port (AREP) generated PDF and Port Inspection Report (PIR) generated PDF coming from module 1 will be automatically tagged with attributes.

### 8.2.2 Search & Query

#### *Principle*

This free text search engine with a type selector and a selector date called "search and query" will be implemented in the document library to search for all documents (generated AREP (PDF), generated PIR (PDF) and document files uploaded (PDF, DOC, XLS, etc.).

A scoring system is applied. If a search term corresponds exactly or very closely with the content of an attribute, it will give the document a boost to be shown on top of the result list.

#### *Attributes*

As specified, the free form search engine will search on the attributes of any of the documents available in the document library. Those attributes shall be:

- Name,
- Type,
- Date,
- Author,
- Description,
- Tags / Key words,
- Version / Update date,
- Vessel name,
- Call sign,
- IOTC number,
- Port,
- Flag of Vessel,
- IUU identifier (yes/no),
- Species,
- Vessel type,
- Activity,
- RFMO,
- Area,
- Public / private,
- Port,
- Owner/company.

#### *Results*

Results shall be displayed as a standard IOTC ([www.iotc.org](http://www.iotc.org)) web page style.

Mr. PIREDDA provided an example, show below, from the project in 2012 on CMM (Conservation and management measures).

<input type="button" value="Search"/> <input type="button" value="Reset"/>			
Title	Date of adoption	Status	Download PDF
<a href="#">Resolution 13/04 On the conservation of Cetaceans</a>	2013	Active	
<a href="#">Resolution 13/05 On the conservation of whale sharks (Rhincodon typus)</a>	2013	Active	
<a href="#">Resolution 13/08 Procedures on a fish aggregating devices (FADs) management plan, including more detailed specification of catch reporting from FAD sets, and the development of improved FAD designs to reduce the incidence of entanglement of non-target spe</a>	2013	Active that supersedes <a href="#">Resolution 12/08 On a fish aggregation devices (FADs) management plan</a>	

[see all](#)

Most documents are in Adobe's Portable Document Format (PDF). Get the free acrobat reader [here](#).

[CSV](#)

Figure 42: CMM search engine screenshot.

### 8.3 Useful Links

#### *Principle*

The system will allow CPCs to publish a list of « useful links », which is basically a structured list of Internet links shown on a dedicated page that can be assigned to a category.

Those useful links will be made of general Links (Web links submitted by IOTC, visibility: Links home page) and/or designated ports links (Web links submitted by DP, visibility: DP Page).

#### *Structure*

Authenticated users organize the links in free categories.

A category is based on:

- Title: a plain string;
- Position: to sort groups among them,
- Links: list of links for this group.

A link is based on:

- Title: a plain and “English friendly” string to display,
- URL: the URL to follow when the user clicks on the link,
- Position: to sort links among other links of the same group.

### 8.4 Listing of referential

#### *Principle*

The information Sharing Module will let the user to download any referential used by the e-PSM application.

The listing will be available on a dedicated and structured page (groups + referential). All listing entry will be identified by a name, and will result of an Excel download file.

The maintenance of these lists is an IOTC Secretariat responsibility; at this stage it's not clear how much this will be automated from IOTC databases.

*Listing of referential*

<b>Name</b>	<b>Comments</b>
Area	(as defined in AREP).
Authorized officers	Drop box.
Catch Areas list	Drop box.
Designated Ports	Full name.
Document Types	
Fishing Areas list	Drop box.
Flag codes	Indicate CPC on flag code list.
Gear type	
Infraction classification list	
Infraction list	
IOTC Res list	
Months/quarters/years	
Port codes	
Preservation type	
Product Form Listing	Should be code name
RFMO vessel lists	Use CLAV when finalised
Species List	Should contain code, scientific name, and common name in English. Classify by major and minor species. Always in same order.
Vessel Types	
VMS Com Sys Code	
Inspector name & no.	Full name.
Inspector number.	No. based on the number of digits.

Table 5: Listing of Referential.

**8.5 User Guide**

The information sharing module will host part of the user guide of the e-PSM application, in English and French, structured by module (1 file per module) and available as HTML pages (not downloadable for offline reading). Consultation of the guide is public, and should be available from any section of the module or downloadable as a single PDF document.

User Guide content will be a mix of application content description and enhance with training use cases.

## 8.6 Designated Ports and Contacts Database

### Designated Port Contacts

Filter by

State  Port

Flag State Contacts

<p>Name of person responsible: <b>Moffat Omari</b>                      Local name: <b>Kenya Ports Authority</b>                      Tel: 254-41-2112999                      Fax: 254-41-2311867                      Email : customerfeedback@kpa.co.ke                      Street address: Kenya Ports Authority                      P.O. Box 95009 - 80104 Mombasa</p>	<p>Name of person responsible: <b>Moffat Omari</b>                      Local name: <b>Kenya Ports Authority</b>                      Tel: 254-41-2112999                      Fax: 254-41-2311867                      Email : customerfeedback@kpa.co.ke                      Street address: Kenya Ports Authority                      P.O. Box 95009 - 80104 Mombasa</p>
---	---

Port Contacts

<p>Name of person responsible: <b>Moffat Omari</b>                      Local name: <b>Kenya Ports Authority</b>                      Tel: 254-41-2112999                      Fax: 254-41-2311867                      Email : customerfeedback@kpa.co.ke                      Street address: Kenya Ports Authority                      P.O. Box 95009 - 80104 Mombasa</p>	<p>Name of person responsible: <b>Moffat Omari</b>                      Local name: <b>Kenya Ports Authority</b>                      Tel: 254-41-2112999                      Fax: 254-41-2311867                      Email : customerfeedback@kpa.co.ke                      Street address: Kenya Ports Authority                      P.O. Box 95009 - 80104 Mombasa</p>
---	---

Port Officers Contacts

<p>Chief Executive Officer: <b>Moffat Omari</b>                      Tel: 254-41-2112999                      Fax: 254-41-2311867                      Email : customerfeedback@kpa.co.ke</p>	<p>Executive Officer: <b>Moffat Omari</b>                      Tel: 254-41-2112999                      Fax: 254-41-2311867                      Email : customerfeedback@kpa.co.ke</p>
---	---

Authorized / Designated Inspectors Contacts

<p>Chief Inspector 1: <b>Moffat Omari</b>                      Tel: 254-41-2112999                      Fax: 254-41-2311867                      Email : customerfeedback@kpa.co.ke</p>	<p>Chief Inspector 2: <b>Moffat Omari</b>                      Tel: 254-41-2112999                      Fax: 254-41-2311867                      Email : customerfeedback@kpa.co.ke</p>
---	---

Useful Links

<p>Category 1</p> <p><a href="#">UN Website</a></p> <p><a href="#">CTOI Website</a></p>	<p>Category 2</p> <p><a href="#">Example Website 1</a></p> <p><a href="#">Example Website 2</a></p>
---	---

Figure 43: Designated Ports and Contacts Database.

This first section of the 2<sup>nd</sup> module offers a simple directory listing service, where internet user can freely browse and look for contact details, such as a postal / electronic address, phone number, etc.

This is a UCG feature, where the information is displayed, and stored in a hierarchical way, filtered first by country (CPC), then by port.

To offer up-to-date information, CPC users will be given the opportunity to update their own listing entries. The IOTC Secretariat will be notified by email of the update, to prevent abuse, or misuse of the update feature.

Sections of the designated ports screen will be:

### Sections

### Details

CPC - Flag State Contact

- Name of person responsible,
- Local name,
- Tel,
- Fax,

CPC - Port State Contact	<ul style="list-style-type: none"> <li>• Email,</li> <li>• Street address.</li> </ul>
Authorized / Designated Inspectors Contacts	<ul style="list-style-type: none"> <li>• Name of contact,</li> <li>• Local name,</li> <li>• Tel,</li> <li>• Fax,</li> <li>• Email,</li> <li>• Address.</li> </ul>
Useful links	Links submitted by the CPC for the DP

Table 6: Sections of the DP screen

### 8.7 Users, Roles and Permissions

One of the great features of the e-PSM application is the ability to control how and what people can access.

PERMISSIONS	CPC	IOTC	PUBLIC
<b>Content</b>	GRANTED (view, create, modify, delete) their own content only	GRANTED (view, create, modify, delete) all contents	GRANTED (view, search) all contents

Table 7: Permissions Matrix of module 2.

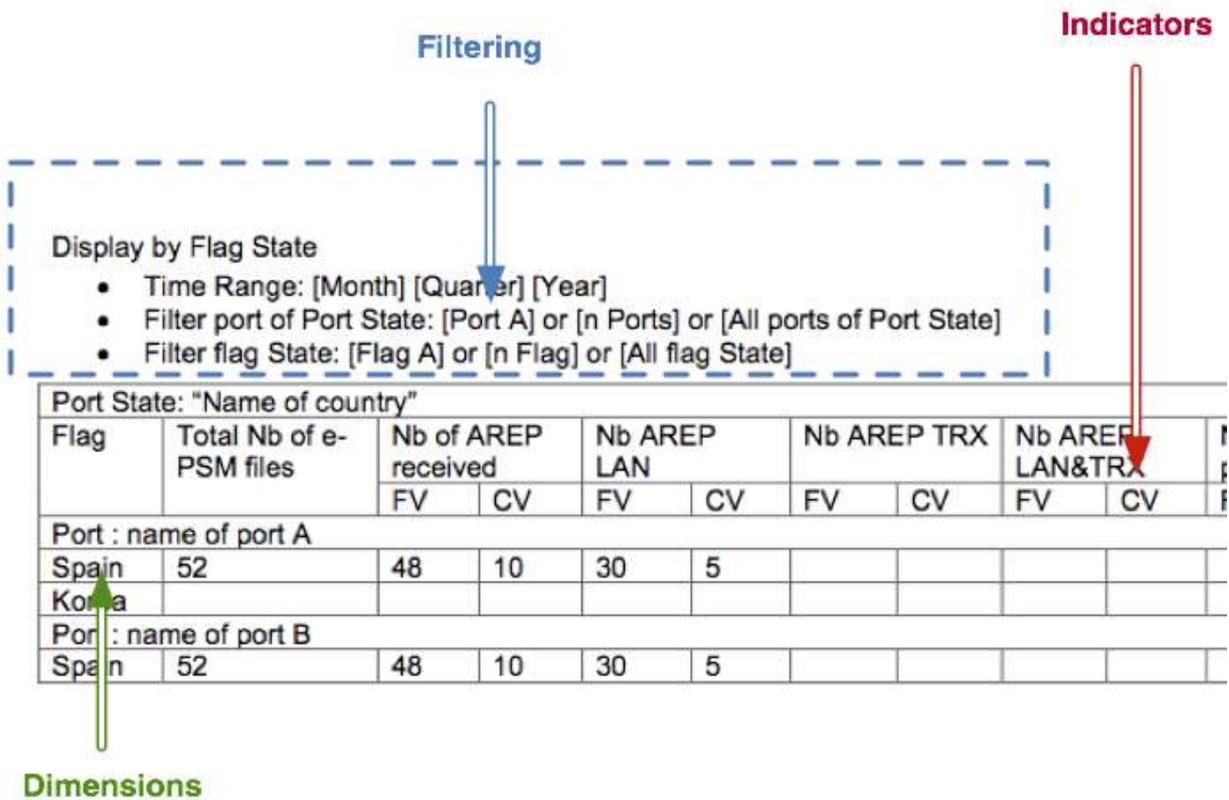
## 9 MODULE 3 - PSM REPORTING

### 9.1 Objectives

The 3<sup>rd</sup> module of the e-PSM application is about reporting the activity recorded in the first module, in a flexible and user-friendly way. Users will be able to design their own reports, and the system will also help port State and flag State to comply with Resolutions 12/05 and 05/03 in term of mandatory reporting to the Commission.

The reporting tables will be browsable online, and easy to print and export as excel files. In order to analyze data in consistent way, we will borrow the “Business Intelligence” framework to break down the data set to data warehouses, and use analytical drilldown strategies to investigate dedicated indicators thru dimensions, considering relevant selection of filters.

Structure of Reporting Table



**Indicators**

Indicators are statistics processed with the data available in the system. Indicators are built with the selection of a field (from a form for instance), and an operator to compute a value.

For instance an indicator can be:

- Number of vessels entered in port,
- Number of AREP received.

An indicator can also have several levels, and the values from top indicator can then be dispatched across several criteria. For instance:

- Number of AREP received:
  - Number of Granted Entries,
  - Number of Denied Entries,
  - Calling at purposes (per type...).

**Dimensions**

Dimensions are a way to create subtotals for the whole universe considered by the reporting.

Typical dimension would be:

- Flag State > Port State,
- Flag > Designated Ports,
- Vessels Flags > Vessel Types.

Whenever the user clicks on a line, the system will drill-down to

enter into the selected dimension details.

For instance:

- Flag → select on flag,  
Designated Port → display list of designated ports for this flag.

## Filters

Filtering is a way to create a subset of data, among the full dataset. The user might want to consider only;

- A given time range,
- A given Flag State,
- A given vessel type.

The following reporting tables have been submitted during the consultation workshop, as examples. Details of this report will be added on annex.

- Flag State Reports
  - AREP,
  - Inspection,
  - Infraction,
  - Quantities LAN and/or TRX,
  - AREP,
  - Inspection,
  - Quantities LAN and/or TRX,
  - Quantity LAN and/or TRX by flag vessel.
- Port State Reports
  - AREP,
  - Inspection,
  - Infraction,
  - Quantity LAN and/or TRX by foreign vessels.

## 9.2 Recommendations

### 9.2.1 General Comment

Although the selection of suggested reports has been appreciated – the next section will list recommendations for each of them – one general comment came up. Members would expect to be able to **build** and **share** their own reports, using a friendly report designer.

The system is not live yet, and the idea is to be able to offer a future proof solution, that will help them to fit into future reporting need.

This statement is probably the key point leading to our decision of technology to implement this module. Instead of building a fixed list of reports (the list we submitted as a suggestion – for instance), it is proposed to develop and install a model and a tool that will let the user to design those reports, and many more.

The development phase will be followed by an implementation phase to actually setup the list of reports, following the recommendations we collected during the workshop.

## 9.3 Process Schemes

### 9.3.1 Data publishing to Analytical Model

The reporting will be fed with data from module 1, and IOTC database referential (Designated Port, flag States, or species for instance). However an additional step is required to use these data into the reporting. This step, in e-PSM process, is called “publication”.

The goal of publication is to export data, using ETL technologies, in order to (as the name suggest):

- **Extract** data from module 1, and ITOC databases,
- **Transform** these data into an analytical friendly structure,
- **Load** this structure into the reporting system.

### 9.3.2 Publication schedule

Publication will be run on a scheduled rate, according to customizable settings (by ITOC administrator), such as: every day, every hour... Publication can also be launched “on demand”, by IOTC administrator.

Publication can take some time to process according to the amount of data to process, from seconds to minutes.

## 9.4 Use cases

### 9.4.1 Create a Report template

The screenshot shows a web form titled "Reporting". Inside the form, there is a section labeled "Report Properties" which contains three input fields: "Name" (a text box), "Group" (a dropdown menu), and "Description" (a larger text area). Below these fields, there are two radio buttons for "Visibility": "Public Report Template" and "Private Report Template". At the bottom right of the form, there are two buttons: "Cancel" and "Save".

Figure 44: Create a new reporting template.

As a reporting user (port State or flag State), I can create as many reports as I want. Reports will be saved for later use, as a template. Each template is defined by:

- Report Name – the name to identify the report later on,
- Report description – in plain English,
- Report category – category to store report of same nature in a folder/group,
- Creation Date – when this report was created,
- Author – who created the report,
- Visibility – see “share a report” use case for details.

Once a template is created, the user can configure it’s content.

9.4.2 Browse a Report

## Reporting

General Activity Reports | Inspection Reports | TRX Reports | ...

Name	Author	Description	Datev	Pub. Template
Report for port State	J. Doe	Report PSM activity	1 june 2014	<input checked="" type="checkbox"/>
Monitored Quantity	J. Doe	Report PSM activity	1 june 2014	<input checked="" type="checkbox"/>
PIR Monitoring	J. Doe	Report PSM activity	1 june 2014	<input checked="" type="checkbox"/>
AREP Calling Purposes	J. Doe	Report PSM activity	1 june 2014	<input checked="" type="checkbox"/>

[Add](#) | [Delete](#) | [Duplicate](#)

Figure 45: Report templates browser.

As a reporting user, the most common tasks I will perform on module 3 is to browse reports created by me or another user.

Reports are identified by name and categories, as we just described. I just need to select the report I want to use, to have the table displayed.

Once the table is show, I can:

- Apply / adjust filtering to refresh data,
- Drill down thru dimensions to analyze in details the figures,
- Export the table as an excel file,
- Export one or several indicators to an appropriate visualization graph (image).

## Report for port State - AREP

Filter by

Time Range (from/to):  //

Filter flag State:

Filter port of Port State:

Toggle details (per v.type)

Port : name of port A	Total Nb of e-PSM files	Nb of AREP received		Nb AREP LAN/TRX		Nb AREP other purposes		Nb LAN/TRX		Nb LAN/TRX monitored		Nb vessels inspected		Nb infraction detected	
		FV	CV	FV	CV	FV	CV	FV	CV	FV	CV	FV	CV	FV	CV
FS - Spain	52	48	10	30	5	53	15	30	5	58	20	25	3	63	25
FS - RSA	35	41	5	25	5	24	10	12	5	12	15	11	3	8	20
FS - Kenya	14	18	7	32	7	14	12	10	5	15	17	18	3	11	22
FS - Seychelles	28	48	10	30	5	53	15	13	5	58	20	25	3	63	25
FS - Korea	25	24	5	32	7	26,5	7,5	32	7	29	10	27	5	31,5	12,5
<b>Port : name of port B</b>	<b>69</b>	<b>18</b>	<b>15</b>	<b>32</b>	<b>12</b>	<b>25,5</b>	<b>22,5</b>	<b>12</b>	<b>12</b>	<b>33</b>	<b>30</b>	<b>6</b>	<b>10</b>	<b>40,5</b>	<b>37,5</b>
FS - Spain	44	12	10	15	5	17	15	5	5	22	20	2	4	27	25
FS - Korea	25	6	5	17	7	8,5	7,5	7	7	11	10	4	6	13,5	12,5
<b>TOTAL</b>	<b>223</b>	<b>197</b>	<b>52</b>	<b>181</b>	<b>41</b>	<b>196</b>	<b>82</b>	<b>109</b>	<b>39</b>	<b>205</b>	<b>112</b>	<b>112</b>	<b>27</b>	<b>217</b>	<b>142</b>

[Export as a PDF](#) | [Export as a CSV](#)

Figure 46: Report Template usage – basic example.

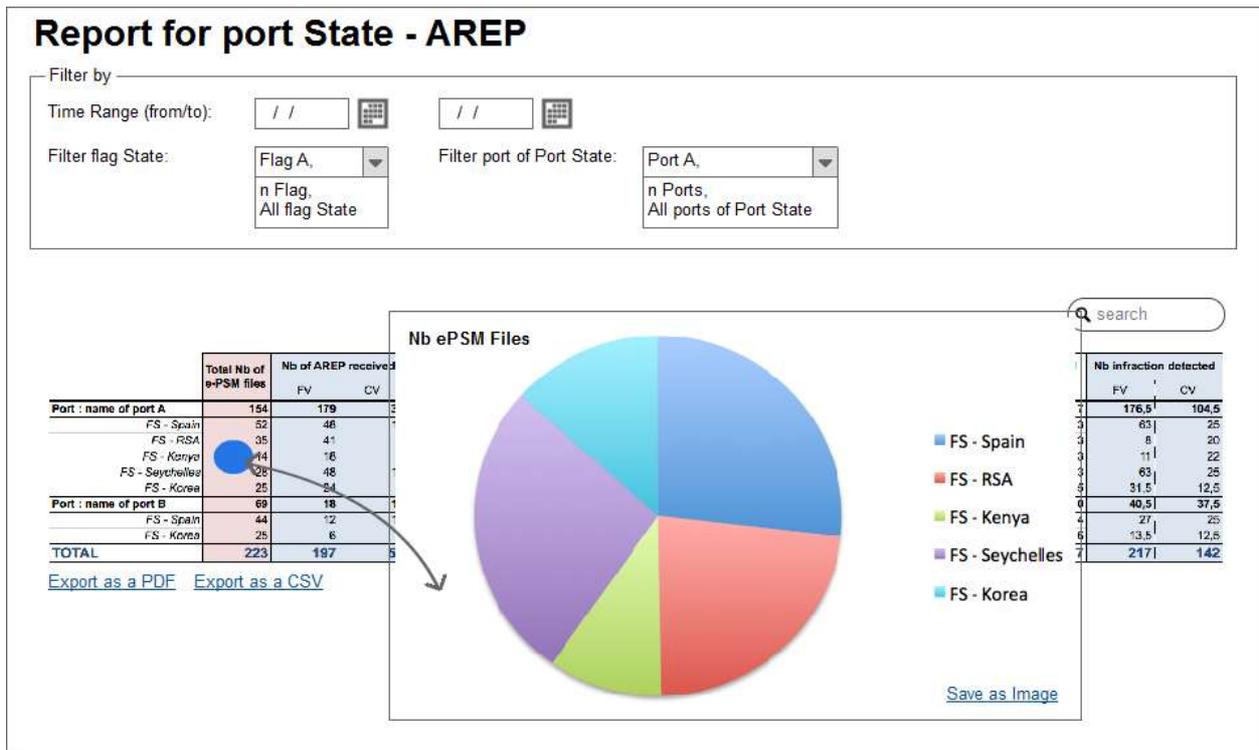


Figure 47: Report Template usage – export indicator to Pie Chart.

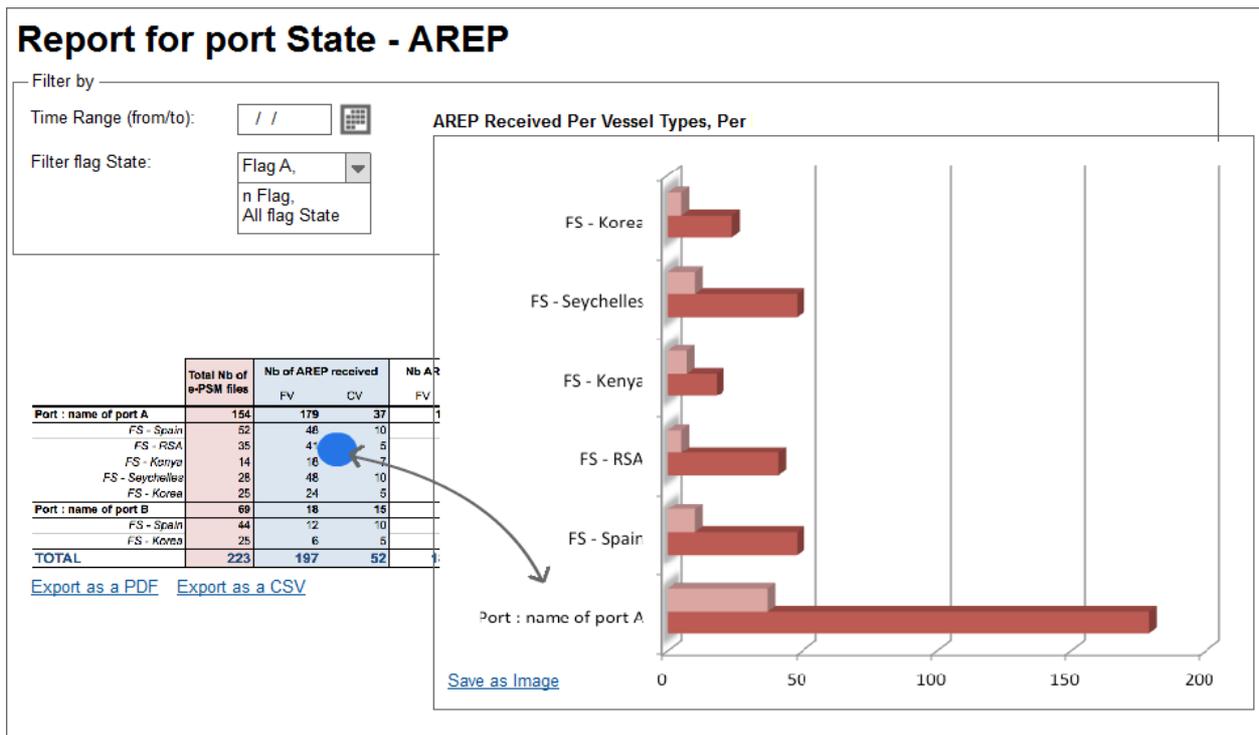


Figure 48: Report Template usage – export indicator to Stacked Bar Chart.

#### 9.4.3 Share a report template

Designing a report can be a daunting task, and all users may not be qualified enough to create a consistent structure (just like all excel users are not able to use a pivot table). IOTC members clearly stated that one must be able to share reports with other users. Of course this is optional. This is why we introduce the concept of “report visibility”.

The visibility of a report defines weather this report can be shared with other users – this is the public visibility mode, or if its author only can use it– this is the private visibility

mode.

When a template is shared, its structure only is shared, and not the content of the report. For instance, if a report describing the number of AREP per vessel type is shared, each Port State will see only AREP submitted of his area of responsibility. In other words, if as a Port State A, I share my template, Port State B will not see my data, but will see it's own data using the same algorithm to compute report values.

## **9.5 Users, Roles and Permissions**

### **9.5.1 User Types**

The 3<sup>rd</sup> module is not open for public access, and credentials are required to access it. IOTC CPC users will be granted access.

IOTC CPC users will be using this reporting module. In terms of feature, there is no limitation according to the user role. A port State user can access the same features as a Flag State user for instance. However, there is an important limitation regarding the dataset perimeter.

Port state users will see a subset restricted to vessel entries within their port, where as Flag State will have a wider subset restricted only to their whole list of Designated Ports.

IOTC Secretariat will be the only user profile with the full visibility of the dataset exported into module 3.

### **9.5.2 Data Restrictions**

Reporting and information on catch data are only available to the port State and the flag State in an individual presentation (vessel by vessel) to respect IOTC confidentiality rules. An aggregated value of catch data (not on a vessel basis – but wider, such as port State / flag State) can be available to other user depending on permission rules.

When extracting information from another CPC, a CPC user will not be able to get data fresher than 1 month, in order to avoid a user trying to lookup for near-live data (confidentiality rules). Additionally, and also to comply with confidentiality rules, this CPC user will not be allowed to get any information on a time range shorter than 1 month. These 2 rules shall prevent from differential analysis to extract confidential data.

### **9.5.3 Report Templates Sharing**

Once a user has created a report, he can decide to make it a “public template” report, that will be available to all member users. This template will show the same table structure, but will be restricted for each user to the appropriate dataset, in terms of files, vessels, forms, and activity in general.

### **9.5.4 Report Export Sharing**

Each report built by the system can be shared as a PDF and/or Excel file by email, to any recipient of the system, or any relevant recipient the user will type.

In this case, this is the user responsibility to ensure that no sensible data is shared with inappropriate people.

## **10 TECHNICAL SPECIFICATIONS**

### **10.1 System Architecture**

The goal of this section is to describe the overall architecture of the application, and give details about modules structure, and how they will interact with each other.

The split by module is an elegant answer to the functional challenges of the wide spectrum of goals to be fulfilled by the whole application, from the PSM flow of events, to activity reporting, thru information sharing.

#### 10.1.1 Appropriate technology stack – modular approach

Beside the natural benefits of splitting, in compliance with the “Single Responsibility Principle” (1 module = 1 goal), we must also emphasize the technical benefits from this approach.

##### *Drupal CMS as natural candidate for Module 2*

We had the chance to collect feedback from other RFMOs and the usage of a standard CMS clearly makes sense to share information, and therefore is a natural choice for our 2<sup>nd</sup> module.

Moreover, the IOTC website is currently running with Drupal, and this second module could then be a natural extension to it, and with appropriate design a natural entry point for the whole application.

##### *Dedicated homebrew solution for modeling flexibility of Module 1*

Meanwhile, considering the complex structure of information we want to implement in our modeling of PSM flow of events, and considering the need for precise control on the workflows involved, we would definitely recommend a custom development, based on standard frameworks, and not a high level solution such as a CMS. Module 1 will therefore be developed as a “java web application” (for technical details, please check specifications and definition - <https://www.jcp.org/en/jsr/detail?id=154>).

##### *Standard tools for elegant & efficient data reporting in Module 3*

The feedback collected during the regional consultation workshop also led us to the conclusion that reporting needs to be flexible, and in the end, it makes more sense to offer a “reporting builder” tool, where user can create their own reports – and maybe share with other users. Many technologies achieving this purpose are available as open sources component, and for the 3<sup>rd</sup> module, we would recommend to embed the most suitable one into our application infrastructure.

The different modules shall therefore use distinct technologies, for obvious “time-to-market” reasons (“don’t re-invent the wheel” design pattern), but also to ensure the best tool is selected for each area of the application.

We want however to preserve consistency thru the whole system, and the next section will explain how our natural flow of events serve this schema, from the entry in port, the publication of documents, and port States activity reporting.

#### 10.1.2 Modules Interactions

Let’s not first consider technical interactions, but functional need for communication between our modules.

As stated before, 3 modules and 3 goals:

1. **M1 – PSM Forms & Processes:** which goal is to model the whole flow of events of PSM, from request to entry in port, to vessel inspection, and eventually vessel leaving the port
2. **M2 – PSM Information Sharing:** which goal is to share all public information of the system, including the documents generated from the 1<sup>st</sup> module, but also Designated Ports information, and e-PSM application details (referential...)

3. **M3 – PSM Reporting:** which goal is to let the user browse, analyze, the data acquired thru module 1, and create consolidated reports with any information available.

This quick reminder shows us that module 1 is the starting point of information to be published later thru module 2, and to be imported into module 3.

However, the information is to be shared only when an e-PSM file is closed – that has been clearly confirmed by IOTC members attending the regional consultation workshop – and communication is therefore in one way only.

Communication will be done on one side (module 2), via the **Drupal API** that allows any 3<sup>rd</sup> party system to connect, and on the other side (module 3) thru an **ETL** (extract transform load) tool, to convert relational data from the module 1 database to an **OLAP Cube** (Online Analytical Processing – standard technology, check [http://en.wikipedia.org/wiki/Online\\_analytical\\_processing](http://en.wikipedia.org/wiki/Online_analytical_processing) for a quick introduction) to explore by the reporting interface of module 3.

### 10.1.3 Modular Architecture General Synopsis

The following synopsis highlight the main architectural blocks of the solution we recommend to implement the e-PSM.

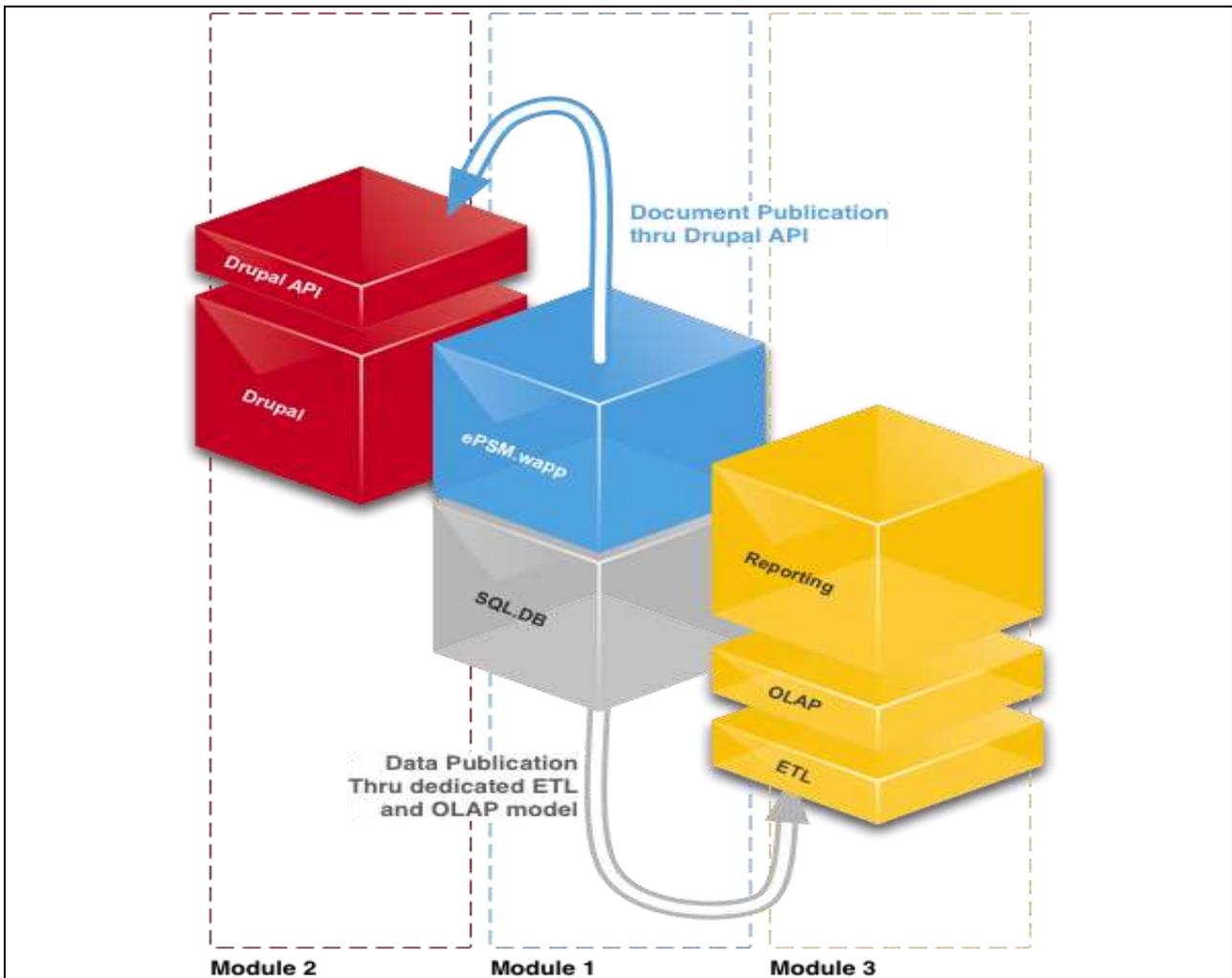


Figure 49: Applications modules interaction.

Information sharing is solely based on publishing information, an active action from the user, from the first module and across all components of the whole application.

Database synchronization, with IOTC databases for instance, will be done at the SQL level, using dedicated scripts, according to IOTC schema for each table we need to synchronize. The next figure, introduced during the consultation workshop, illustrates this concept, using the referential synchronization example.

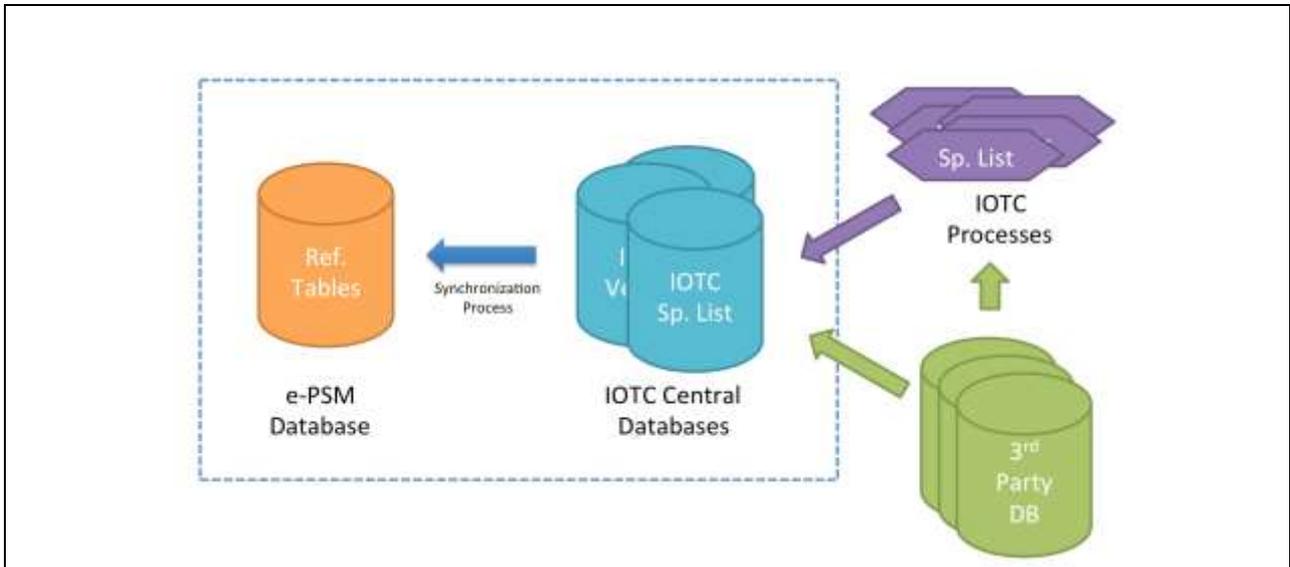


Figure 50: Feed synchronization example

## 10.2 Technical Stack Architecture

### 10.2.1 Dedicated Solution, standard components

Efficiently designing a piece of software in 2014 is finding the appropriate proportions in mixing what is available and reliable, and creating original solutions. Our efforts should be focused on the unique features the service is offering.

To offer a sustainable tool, we believe that we need to select atomic components, serving each 1 simple purpose only, assembled in a consistent platform.

The following graph illustrates the architectural stack of components we want to embed and/or build, and how they are connected one to the other.

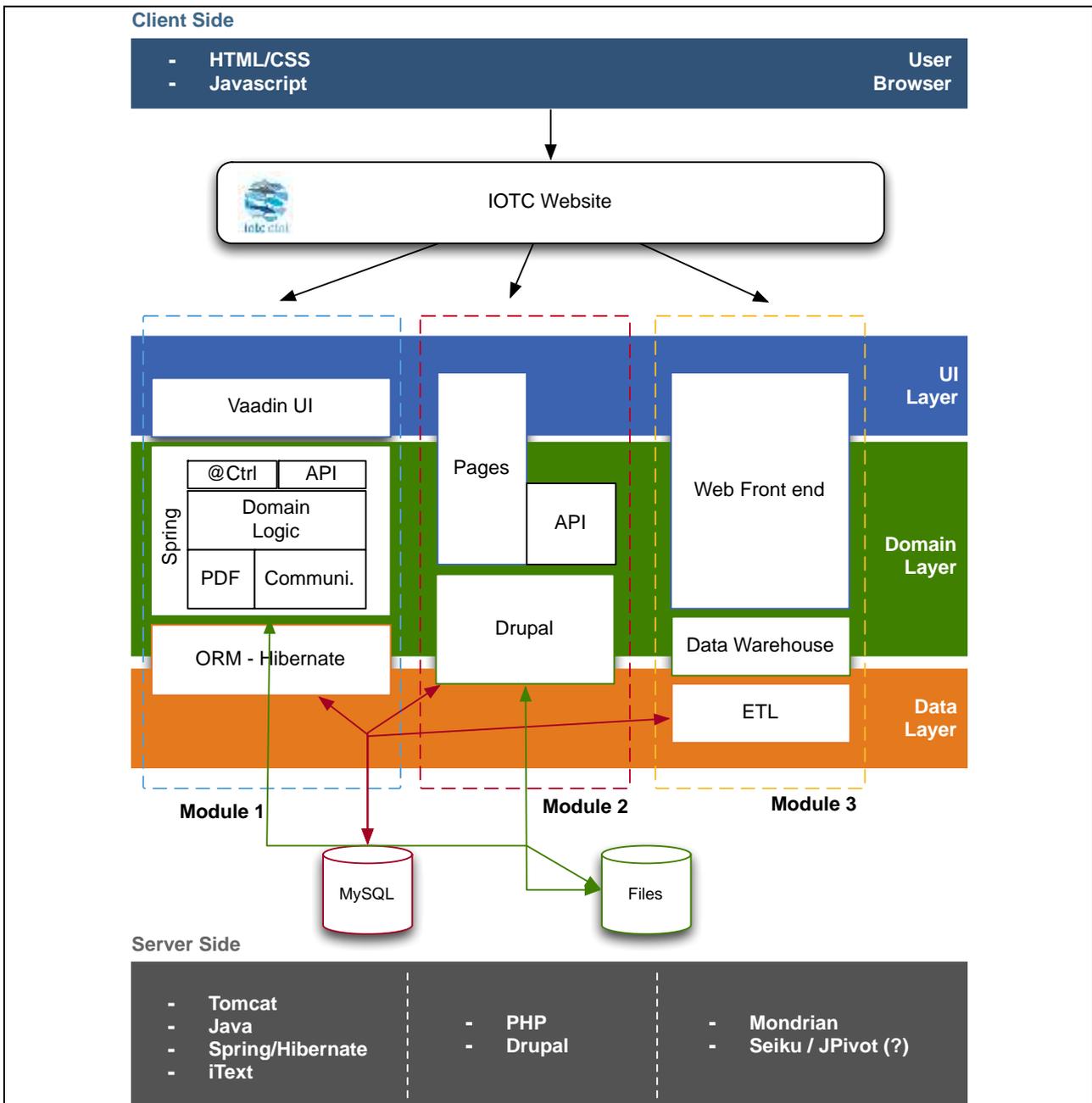


Figure 51: Technologies per module

### 10.2.2 Open Software

One of the recurring recommendations we had from the consultation workshop was to design the system in order to think about connection with other systems, such as other (tuna/not tuna) RFMOs.

The system should be able to import data from 3<sup>rd</sup> party, and should be open to let an authorized system connect and synchronize with its base.

The application platform design introduced here is offering this level of flexibility, from both ends: thru it's pure data layer (bottom level - SQL and file), and thru its application layer (upper level – API & web service).

### 10.2.3 Standardization and Best Practices

In the “Java Code Conventions” written in 1997, Sun (now Oracle) states that 80% of the lifetime of a project goes to maintenance. In time, people change, technology

changes, habit changes, even word meaning evolves. We can't afford to use our own dialect, if we want our software to live more than its development phase.

Moreover, writing software is team job, we share code, api, use 3rd party libraries. Conventions and best practices help people to understand each other, within the team, but also outside, when someone has to fix a bug, add a new feature, or just connect to our service.

Conventions are not constraints, they are productivity tools, we believe there is many ways to express our art, with efficient usage of design pattern, lean architecture, etc. But even the most exiting book starts on page 1, continues on page 2, and ends on the last one.

### **10.3 Technical Requirements**

#### **10.3.1 Hosting requirements**

##### *Hosting premises selection criteria*

The application shall be hosted on a safe and redundant infrastructure, selected (and maintained in time) by IOTC Secretariat, in order to offer best of class Service Level Agreement to e-PSM users, including:

- High Availability infrastructure (electrical power, internet connection...)
- Fast connection, with appropriate peering for the whole Indian Ocean zone
- Fast and flexible virtualization technology, to offer seamless upgrade in time, as the system is more and more used

##### *Server configuration requirements*

- Debian based Linux server
- Hibernate supported RDBMS (MySQL, PostgreSQL, Oracle...)
- Tomcat 7 / JBoss 8
- Java 7

#### **10.3.2 Users workstations Requirements**

The main requirement is of course to have a decent access to the Internet, thru a recent browser. A PDF viewer is also mandatory to display generated forms in module 1.

- Operating System: any running a supported browser (see browser)
- Desktop Browser: IE 9 or better, Chrome 23 or better, Firefox 17 or better, Opera 12 or better, Safari 6 or better.
- Mobile Browser: Android 2.3 or better, Safari Mobile 6 or newer
- Internet Connection: ping to datacenter < 150 ms, throughput > 128kbps / user
- Screen resolution: 1024x768 or better

### **10.4 Development methodology**

#### **10.4.1 Agility in development**

The e-PSM application is an ambitious project, and its specifications are described via both the IOTC resolution and future users recommendations collected during a consultation phase. Those input are not pure technical description of the technology nor the result expected. We would therefore definitely recommend an agile approach; in order to continuously ensure that the software implementation is progressing at a reasonable pace, and more important in the right directions.

In order to achieve this, we will involve test users from members ready to test and validate early versions of the application.

Agility in software provides a high degree of collaboration between stakeholders, especially members and the project development team. Agility also focuses on transparency about the implantation in terms of features, and planning.

The software will be released by consistent chunk of testable features set, fixed at a schedule of 2/3 weeks. New features will be delivered quickly and frequently, with a high level of predictability.

This schedule of deliveries allow time for adjustments, should the result not be as expected. While the team needs to stay focused on delivering a agreed-to subset of the product's features during each iteration, there is an opportunity to constantly refine and reprioritize the overall product backlog. New or changed backlog items can be planned for the next iteration, providing the opportunity to introduce changes within a few weeks.

#### 10.4.2 Test environment

A full featured test environment will be provided as soon as possible, where all alpha and beta releases of the software will be available at all time (save for scheduled update), for our members to test.

A test dataset including a subset of designated ports, vessels, and contacts will be available for testing.

The test environment should be as close as possible to the final environment to validate hosting configuration, especially regarding network quality (bandwidth, and round-trip time).

#### 10.4.3 Feedback collection – Bug tracking

A dedicated online tool will be available once the development has started, in order to collect feedback from users, and also collect information to report bugs.

The JIRA system will be used to that end. JIRA lets you prioritize, assign, track, report and audit 'issues', project tasks and change requests. It improves productivity by cutting down on time wasted on tracking issues and coordination. JIRA improves quality by ensuring all tasks are recorded down with all the details and followed up till completion

Jira will be maintained and moderated by IOTC and e-PSM team development.

## 11 IMPLEMENTATION SCHEDULE

We detailed in the previous pages of this report all the features selected for the application. We now divide module by module all these features into categories, tasks, functions and function blocks to estimate the time needed to achieve full implementation.

### 11.1 Estimation Table

#### 11.1.1 Module 1

The total number of days estimated to develop, test and document module 1 is 84 (eighty four) days which breaks down as follows:

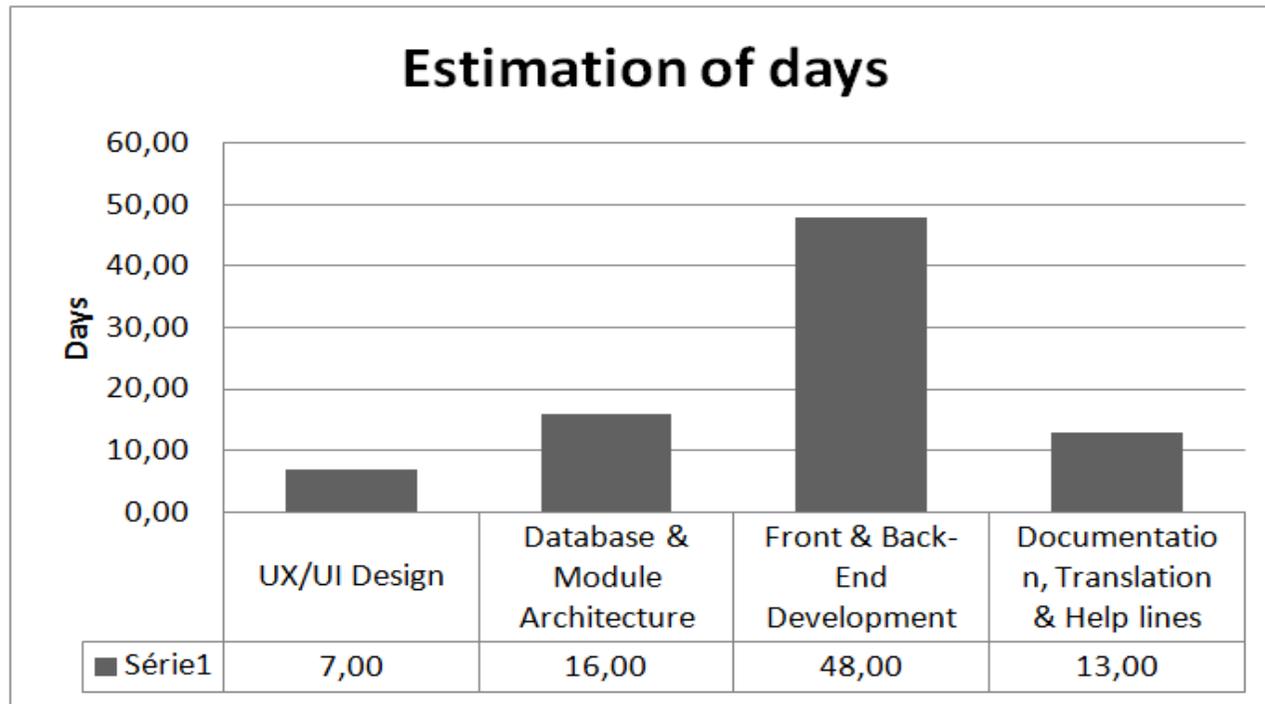


Figure 52: Module 1 Estimation of days chart.

#### UX/UI Design

Title	Days	Comments
-------	------	----------

UX/UI Graphic Design	2,00	Of all objects (fields, buttons, header, footer, etc) of module 1
HTML/CSS/Template	5,00	Of all pages of module 1
<b>TOTAL</b>	<b>7,00</b>	

### Database & Module Architecture

Title	Days	Comments
Vessel database	2,00	
Vessel identification database	6,00	Process to identify a ship. The users types some relevant input data, and as soon as enough data is key-id the system fills with the most relevant vessel info. In case of multiple matches, user help is requested for disambiguation. Use scoring strategies (levenshtein, soundex) to identify vessel w/ IOTC DB entries
Vessel photo database	2,00	Upload picture, browse picture. Server side picture storage. Manual tag (stern, port or starboard) + name of photographer + date of the photo. Note: Vessel photos are uploaded by inspectors only.
Vessel contact database	3,00	Add, Browse contacts.
Users database & rights management	3,00	<ul style="list-style-type: none"> <li>• Port State can limit access to their files by selecting which Port States can view this e-PSM file. After 1 month, the e-PSM file will be automatically accessible to any ports. When a e-PSM is restricted, all the forms related to this e-PSM file are also restricted.</li> <li>• File dash board should be restricted to the port state and the flag state</li> </ul>
<b>TOTAL</b>	<b>16,00</b>	

### Development

#### Common functions

Those functions are essential for the whole application. They do not have their own screen but are part of the following forms and dashboard screens or functions as sub-functions.

<b>Title</b>	<b>Days</b>	<b>Comments</b>
Autosave Form	1,00	A form is frequently saved to avoid any loss of data
Email Sender	2,00	Email templates + Rules
Local Time Handler	1,00	The application must use the local time (Port State time) for forms (including date pickup) and NOT hosting service time.
PDF Generator	3,00	PDF Generation of each form (with the numbering of fields available in the paper version)
Import Referentials	2,00	All referential provided by IOTC => are they provided already structured or do we have to structure before importing
VAIR engine	7,00	IOTC Database will push relevant data to e-PSM DB schema.
e-PSM File Management	2,00	Note: For the e-PSM file name: see annex 4 of Resolution 10-11
<b>TOTAL</b>	<b>18,00</b>	

AREP form

One single page (with scrollbar) with all fields + PDF Generation + Email notifications

<b>Title</b>	<b>Days</b>	<b>Comments</b>
Block "Vessel Identity"	1,00	Type (Owner, Master, Representative), Icon, name, telephone, fax, email, nationality, MSI (id radio), INMARSAT
Block "Vessel Contact"	1,00	Display, Browse, Add, Edit contact.
Block "Vessel Activity in Port"	0,50	Date fields (arrival, departure, return...) local time (flag state hour)- ISO Format, purposes checkboxes. 12 items + one other free text
Block "Relevant Fishing authorizations"	0,50	Field collection(unlimited)+ PDF file attachment
Block "Relevant Transshipment Authorizations"	0,50	Field collection(unlimited)+ PDF file attachment

Block "Relevant Information concerning donor vessels"	0,50	Field collection(unlimited)
Block "Total Catch on board"	0,50	Field collection(unlimited)
Block "Total quantity to be offloaded"	0,50	Field collection(unlimited)
Block "Preview PDF"	0,50	iframe / lightbox display
Block "Send email to contacts"	0,50	Default recipients are displayed to the user. Unlimited recipients can be added.
Block "Validation"	0,25	Validation is made of checkbox and a statement.
<b>TOTAL</b>	<b>6,25</b>	

RAI-AREP form

One single page (with scrollbar) with all fields + PDF Generation + Email notifications

Title	Days	Comments
Access or Display of the AREP	0,75	
Request for additional information	0,50	Date + text + textarea Fields
Block "Send email to contacts"	0,50	Default recipients are displayed to the user. Unlimited recipients can be added.
Block "Validation"	0,50	Validation is made of checkbox and a statement.
Block "Thread Mode"	2,00	Thread mode is based on interaction text fields. Each user is warned by email of a new incoming message, will click on the email, will be redirected on the e-PSM application in the Form RAI-AREP form, on the thread section, and will therefore has the opportunity to give his answer and attach files.
<b>TOTAL</b>	<b>4,25</b>	

NFV-AREP form

One single page (with scrollbar) with all fields + PDF Generation + Email notifications

<b>Title</b>	<b>Days</b>	<b>Comments</b>
Direct access / display of previous AREP and RAI-AREP		
Block "Port Entry Decision"	0,50	
Block "Send email to contacts"	0,50	Default recipients are displayed to the user. Unlimited recipients can be added.
Block "Validation"	0,25	Validation is made of checkbox and a statement.
<b>TOTAL</b>	<b>1,25</b>	

PIR form

One single page (with scrollbar) with all fields + PDF Generation + Email notifications

<b>Title</b>	<b>Days</b>	<b>Comments</b>
Block "Principal Inspector Contacts"	1,00	Edit contact details for principal inspectors.
Block "Relevant Fishing authorizations"	0,50	Field collection(unlimited)+ PDF file attachment
Block "Relevant Authorizations"	0,50	Field collection(unlimited)+ PDF file attachment
Block "Authorizations"	0,50	Field collection(unlimited)
Block "Examinations"	0,50	Select + Checkbox + Textarea fields
Block "Send email to contacts"	0,50	Default recipients are displayed to the user. Unlimited recipients can be added.
Block "Validation"	0,25	Validation is made of checkbox and a statement.
<b>TOTAL</b>	<b>3,75</b>	

RAI-PIR form

One single page (with scrollbar) with all fields + PDF Generation + Email notifications

Title	Days	Comments
Access or Display of the PIR		
Request for additional information	0,25	Date + text + text area Fields
Block "Send email to contacts"	0,25	Default recipients are displayed to the user. Unlimited recipients can be added.
Block "Validation"	0,25	Validation is made of checkbox and a statement.
Block "Thread Mode"	0,25	Thread mode is based on interaction text fields. Each user is warned by email of a new incoming message, will click on the email, will be redirected on the e-PSM application in the Form RAI-AREP form, on the thread section, and will therefor has the opportunity to give his answer and attach files.
<b>TOTAL</b>	<b>1,00</b>	

TRX/LAN form

One single page (with scrollbar) with all fields + PDF Generation + Email notifications

Title	Days	Comments
Block "Principal Inspector"	1,00	Edit principal inspector contact details.
Block "Evaluation of catch"	0,50	Field collection(unlimited)
Block "Validation"	0,25	
<b>TOTAL</b>	<b>1,75</b>	

TRX-TD form

Title	Days	Comments
Block "Vessel / Carrier Identity"	1,00	
Block "Vessel Activity in Port" (arrival, departure, return...)	0,50	
Block "Weight"	0,10	
Block "Location of Transshipment"	0,50	Field collection
Block "Validation"	0,25	Validation is made of checkbox and a statement.
<b>TOTAL</b>	<b>2,35</b>	

Port Activity Dashboard

Title	Days	Comments
Block "Search Filters"	2,00	View with Exposed Filter: Time Range, All/Close only/Open only Files, Port, Port State, Flag State, Type of Vessels, Captain of Vessel, Owner/Company
Block "List of Vessel Files"	1,00	Data table of 10 to 20 results per page
Block "Pager"	0,25	Default Pager
Link "Create a new Vessel File"	0,05	Link
<b>TOTAL</b>	<b>3,30</b>	

Vessel Activity Dashboard

Title	Days	Comments
Block "File General Infos"	0,50	File number, Creation Date, Modification Date
Block "Vessel Activity & Intelligence Report"	0,25	Display of VAIR Results (IOTC RAV, IUU owner, IUU vessel...)

Block "Vessel Identity"	0,50	Name, gear type, Flag State, IRCS, IOTC number, IMO number, Dimension, Vessel owner(s), Vessel operator
Block "Vessel Contacts"	0,50	Display of contacts related: Master, Owner, Representative, Operator, Fishing Authority, Port Authority / Port State, Flag State
Block "Vessel Status"	0,25	file number, creation date, status
Block "Forms List"	0,50	Datatable of forms + link "add a form" with select list"
Link/Select Add new forms	0,00	
Button Open/Close an e-PSM File	0,00	
Tab screen "Vessel Activity & Intelligence Report"	1,50	
Tab screen "Vessel Contacts"	1,00	Field Collection. Add/Edit/Create a new contact
Tab screen "Vessel Identity"	1,00	Fields
Block "Vessel Identity" (Anywhere)	OPTIONAL	It would be nice to have the Vessel Identity on top of the screen as a block in any pages + link to "more details".
Block "Vessel Identity" (Enhanced)	OPTIONAL	Previous name, previous flag, photo
<b>TOTAL</b>	<b>6,00</b>	

11.1.2 Module 2

The total number of days estimated to develop, test and document module 2 is 40 (forty) days which breaks down as follows:

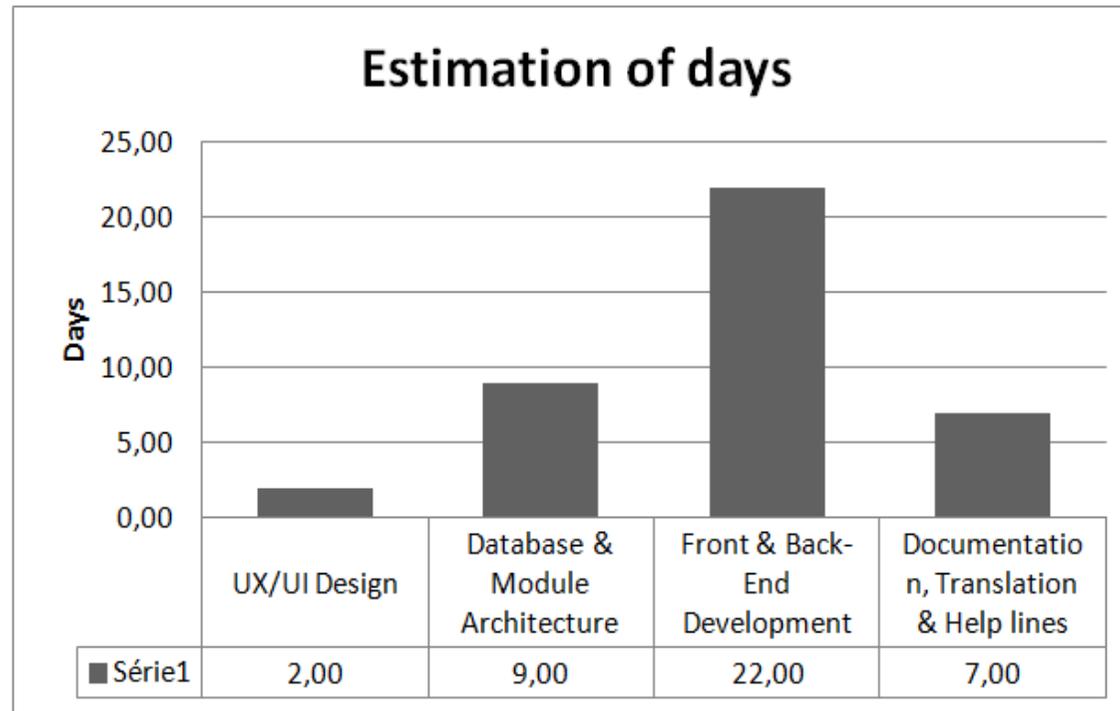


Figure 53: Module 2 Estimation of days chart

### UX/UI Design

Title	Days	Comments
UX/UI graphic design	0,50	Based on IOTC website
Html/css/template	1,50	Based on IOTC website
<b>TOTAL</b>	<b>2,00</b>	

### Database & Module Architecture

Title	Days	Comments
Drupal general configuration	3,00	
User rights management	2,00	
Apache solr search configuration	4,00	
<b>TOTAL</b>	<b>9,00</b>	

**Development (Front-Office)**

Global functions

Title	Days	Comments
MODULE 1 FORMS PUBLISHING	4,00	Datas/Files from Module 1 are sent/shared with Drupal Module 2 and automatically tagged with the following attributes: Name, Type, Date, Author, Description, Tags / Key words, Version / Update date, Vessel name, Call sign, IOTC number, Port, Flag of Vessel, IUU identifier, Species, Vessel type, Activity, RFMO, Area, Public / private, Port, Owner/company)
<b>TOTAL</b>	<b>4,00</b>	

Designated Ports

Title	Days	Comments
Block "Port Contact Details	0,75	
Block "Port Officers Directory"	0,75	
Block "Flag State Contacts"	0,75	
Block "Vessel Documents" (from module 1 forms)	1,00	Taken from Module 1 forms
Block "Port Documents"	1,00	Type of documents are: General Information, PSM Manual / Operational Guide,

		Inspection Report, Fisheries identification guide, Language guide, CPC legislations, List of authorized vessel of the coastal States, National fishing authorization, Fishing license, Transshipment license, Photographs of vessels, Lists of inspectors, IOTC Resolutions link, Other RFMO conservation and management measures.
Block "Useful Links"	0,50	
<b>TOTAL</b>	<b>4,75</b>	

Useful Links, User Guide

Title	Days	Comments
Block "Filter/Search"	0,75	
View "Global Useful links"	1,00	
View "User Guide"	1,00	
<b>TOTAL</b>	<b>2,75</b>	

Referential Listing

Title	Days	Comments
Block "Filter/Search"	0,75	
View "Referential Table Results"	1,00	
<b>TOTAL</b>	<b>1,75</b>	

**Development (Back-Office)**

Title	Days	Comments
Designated Port Contacts	2,00	

Useful Links	1,00
Global Useful Links	1,00
Referential Listing	1,00
Document Library	3,00
Designated Port Page	0,50
<b>TOTAL</b>	<b>8,50</b>

**Documentation, Translation & Help**

Title	Days	Comments
Module 2 user manual	3,00	
Input errors detection & display	1,00	Default IOTC website configuration will be used
Internationalization	2,00	Fields, help lines, etc will be available in both English and French
Online help / fields help lines	1,00	Default IOTC website configuration will be used
<b>TOTAL</b>	<b>7,00</b>	

11.1.3 Module 3

The total number of days estimated to develop, test and document module 3 is 33 (thirty-three) days which breaks down as follows:

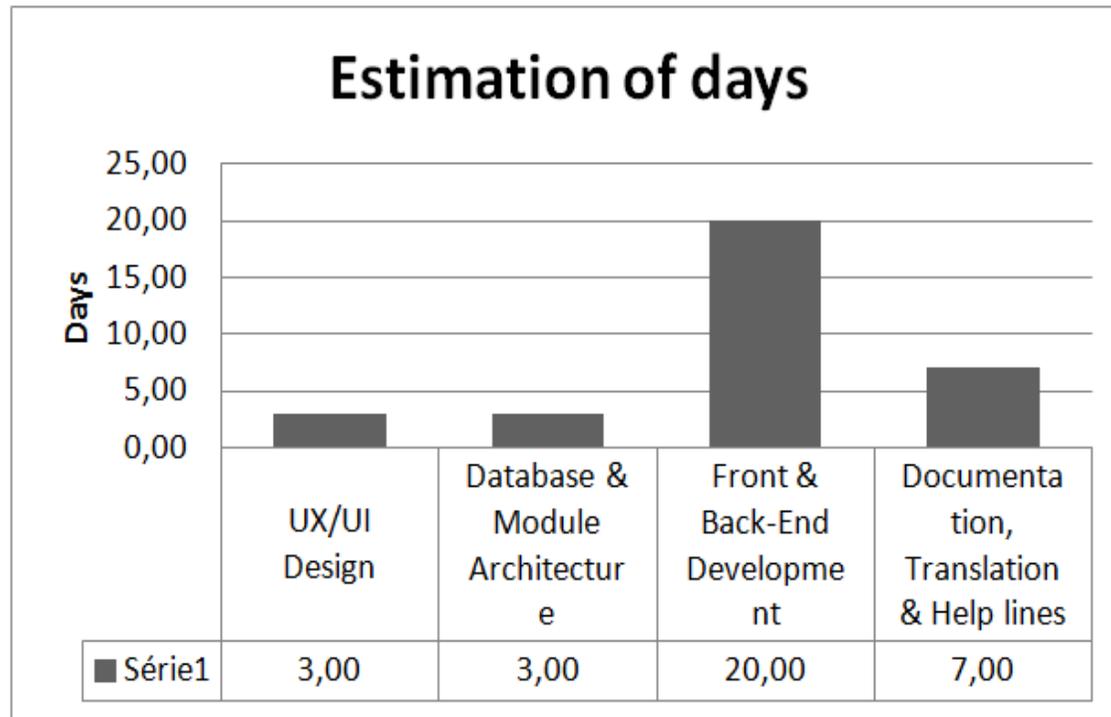


Figure 54: Module 3 Estimation of days chart

### UX/UI Design

Title	Days	Comments
UX/UI Graphic Design	1,00	Of all objects (fields, buttons, header, footer, etc) of module 3
HTML/CSS/Template	2,00	Of all pages, charts, tables of module 3
<b>TOTAL</b>	<b>3,00</b>	

### Database & Module Architecture

Title	Days	Comments
Cube Schema (XML)	3,00	Datamart CUBE (olap) model for instant and flexible reporting.
<b>TOTAL</b>	<b>3,00</b>	

**Development**

Data export procedures

Title	Days	Comments
Batch daily export system	0,50	Batch to export on a regular basis (hourly/daily...) DB content to DataWarehouse Job scheduling + monitoring (failure notification)
Mondrian Cube Export Scripting	6,00	ETL scripting to transform data from DB to DW. Work assumption 1d/form
<b>TOTAL</b>	<b>6,50</b>	

Reporting System UI

UI to build the table, browse & drill down data

Title	Days	Comments
Best UI tool selection	2,00	Benchmark regarding features and usability, for the Best "Analytics" User Interface. Expected features: drag&drop for config (dimensions, filtering & indicators), visualizations (graph), xls export (review Saiku vs Jpalot vs Jpivot vs SpagoBI vs FlexMonster...)
System Installation & Deploy	2,00	Install system on servers, deploy licences
Sample Reports (5 typical reports)	2,50	Setup sample reports, and write guide lines for further reports (videos training?).

	Work assumption -> Half day / report
<b>TOTAL</b>	<b>6,50</b>

Module UI Navigation

Title	Days	Comments
Menu w/ previous reporting	0,50	Home page of reporting menu List of reports available (list by user), filter by date/author/name
Report Designer Access	0,50	Page to save/load/update/duplicate report generated from designer
Reporting Sharing (links)	0,50	Link to send a report by email
Reporting Sharing (PDF)	5,00	Link to send report as email attachment (PDF or image)
<b>TOTAL</b>	<b>6,50</b>	

**Documentation, Translations & Help lines**

Title	Days	Comments
Module 3 User Manual	3,00	
Input Errors Detection & Display	1,00	Default IOTC website configuration will be used
Internationalization	2,00	Fields, help lines, etc will be available in both english and french
Online Help / Fields Help Lines	1,00	Default IOTC website configuration will be used
<b>TOTAL</b>	<b>7,00</b>	

## 11.2 Development Planning

### 11.2.1 Planning par task type

	M1			M2			M3		
	Start	Duration	End	Start	Duration	End	Start	Duration	End
<i>UX/UI Design</i>	07/06/14	7	17/06/14	07/06/14	2	10/06/14	06/10/14	3	09/10/14
<i>Architecture</i>	07/06/14	16	30/06/14	07/06/14	9	19/06/14	13/10/14	3	16/10/14
<i>Development</i>	27/06/14	48	03/09/14	15/06/14	22	15/07/14	20/10/14	20	17/11/14
<i>Tests &amp; Evaluation</i>	16/08/14	30	26/09/14	15/09/14	30	27/10/14	01/11/14	30	12/12/14
<i>Documentations</i>	15/11/14	13	03/12/14	15/11/14	7	25/11/14	15/11/14	7	25/11/14

### 11.2.2 Planning Release Schedule per Module

Sprint	Release Date	Deliverable Target	Sprint	Release Date	Deliverable Target	Sprint	Release Date	Deliverable Target
<b>M0 - Kickoff</b>			<b>M0 - Kickoff</b>			<b>M0 - Kickoff</b>		
Sprint 1	02/06/14	UI Architect. PSD/VSD Struct.	Sprint 1	15/06/14	Drupal Architecture	Sprint 1	10/10/14	UI tools benchmarks
Sprint 2	09/06/14		Sprint 2	04/07/14	Page Modeling	Sprint 2	17/10/14	Cube definition
Sprint 3	16/06/14		<b>M1 - Test System</b>		01/07/14	<b>M1 - Test System Install</b>		17/10/14
Sprint 4	23/06/14		Sprint 3	11/07/14	Page Templating	Sprint 3	24/10/14	
Sprint 5	30/06/14		Sprint 4	29/07/14	Search & SolR Impl	Sprint 4	31/10/14	Infrastructure ETL
<b>M1 - Test System Install</b>	01/07/14		<b>M2 - Member Testing</b>	01/08/14		Sprint 5	07/11/14	
Sprint 6	04/07/14	V. Identif.	Sprint 5	15/08/14	M1 doc interface	Sprint 6	14/11/14	
Sprint 7	11/07/14	AREP	Sprint 6	29/08/14	DP Page finalization	<b>M2 - Members Tests</b>		15/11/14
Sprint 8	18/07/14	RAI + NFV	<b>M3 - Release Candidate</b>	15/09/14		Sprint 7	21/11/14	
Sprint 9	25/07/14	Dashboards	Sprint 6	15/11/14	Doc & Support	Sprint 8	28/11/14	Design default reports
<b>M2 - Members Tests</b>	01/08/14		Sprint 7	25/11/14	Doc & Support			
Sprint 10	01/08/14	PIR						
Sprint 11	08/08/14	PIR						

Sprint 12	15/08/14	V. Contact
Sprint 13	22/08/14	V. Contact
<b>M3 - Members Tests (2)</b>		29/08/14
Sprint 14	29/08/14	
Sprint 15	05/09/14	VAIR
Sprint 16	12/09/14	
Sprint 17	19/09/14	
Sprint 18	26/09/14	TRX/LAN
Sprint 19	03/10/14	TRX/TD
<b>M4 - Candidate Release</b>		03/10/14
Sprint 20	15/11/14	
Sprint 21	21/11/14	Doc & Support
Sprint 22	28/11/14	
Sprint 23	03/12/14	

## 12 CONCLUSION AND RECOMMENDATION

### 12.1 Feasibility Conclusions

#### 12.1.1 Technical feasibility status

##### *Application development*

The first phase of the e-PSM project, which ends with the publication of this Feasibility Study document, gave the e-PSM team the opportunity to refine the application objectives introduced by the initial Terms of References, and also collect IOTC CPC feedback regarding its implementation.

Eventually, the whole application structure has changed and 3 functional - and technical - modules shall now be considered, as the 3 architectural pillars. It's also now clear that each module has its own goal, it's own constraints and its own audience. Therefore, we would recommend to build them as discrete components, and interface them tightly.

The first module is dedicated to the "flow of events regarding PSM", and is really adopting a very specific workflow, for each event, notification, form to submit, and actions to trigger. Although it's using web technologies, we must design it as an application, and not as an advanced website. The use cases to cover define a very wide spectrum, and we wouldn't recommend to use a "turn-key" framework to configure, but instead, we would recommend a custom development. This is, according to our experience, the fastest and safest way to achieve the required level flexibility and customization.

In this first module, the following features are specific, and involve data and processes modeling challenges, and will need:

- Seamless authentication, for vessel, agents and representative (token based – no login required, but still ensure acceptable level of confidentiality),
- Vessel identification, which is required for efficient vessel history management. Every new e-PSM file has to start with a "smart" identification process, in order to ensure that the vessel can be linked to a previous entry in the database. This is a crucial process, and a success factor for the whole application processes. Identification will be matched against IOTC database, and a scoring algorithm has to be defined with IOTC database experts.
- Intelligence, with the Vessel Activity Intelligence Reporting, where e-PSM is collecting and analyzing information from several data sources to provide port State users with a "risk" assessment for each vessel currently in port, or submitting a request for entry
- Forms publication, where the information is sent to the other modules of the application

The second module, on the other hand, is clearly web site oriented, as its primary goal is to publish information, and offer classic website features such as content management, search engine, directory listing. Using the Drupal CMS seems to be the best option, in terms of consistency – as the IOTC website already runs with it – and in terms of feature already available. Using Drupal would limit the maintenance and support effort, and will make the training of IOTC Secretariat administrators much easier.

- The Designated Port page structure will be one of the key to validate with PSM users, in order to ensure that people can find relevant information, and that DP users can update them easily (in terms of contact details, links and material management...).
- Search has to be customized, in terms of criteria, to let the user find relevant content efficiently.
- Document publication rules from Module 1 is also a critical aspect of the workflow for this 2<sup>nd</sup> module, and must comply with PSM resolutions, and match confidentiality requirements expressed by IOTC CPCs.

The third and last module is dedicated to reporting, and will use data extracted from the 1<sup>st</sup> module as a data warehouse. The most critical aspect of this module is the design of the data model for this warehouse, and how it will be loaded.

- ETL is the first critical task for this module, in order to export relevant data from 1<sup>st</sup> module, extract all details we might need, transform and load it into the reporting structure
- Design the reporting structure is the 2<sup>nd</sup> critical task, and must be validated regarding reporting requirements.

As we just stated, the real challenge is not technical, but is definitely functional, in order to achieve first all that has been introduced by the initial Terms of Reference, and also match the IOTC users expectations we had the opportunity to collect during this 1<sup>st</sup> phase.

#### *Database Synchronization status*

Referential from IOTC has to be shared between e-PSM and IOTC database. We need first to make a difference between referential we need to import (when we need to link e-PSM data on it), such as Species, and referential we just need to query, to get information, such as IUU listing.

Regarding the 2<sup>nd</sup> type of referential (query only), we shall consider them as an external data source, available thru an appropriate to be defined between IOTC IT & DB experts and e-PSM team. We can already foresee the following options:

- Database query (direct) thru JDBC – might imply security and/or IT issues,
- REST web service – shall IOTC offer a light middleware to browse content,
- File Based data exchanges – where IOTC system can push data to e-PSM, thru a web service.

This process has to be automated, or even better has to be “live”, and our recommendation would be to offer them as REST web services, in real time, from the IOTC db. This would prevent from complex firewall configurations, and from having to design and monitor a synchronization process.

If we consider now the 1<sup>st</sup> type of referential of data we need to use, and on which we need to link e-PSM data, there is no other option than including them into the e-PSM database, using exactly it's format. This is much more critical, and a mistake on this task might end up in unrecoverable data loss.

So far, it seems that very few entities are involved in this processes, and more important the update rate is extremely low. We are dealing here a listing of IOTC members, DP, species, vessel types... For these tables, no automated process seems relevant, and DB administrator should work directly or thru excel files.

#### *Hosting and operational considerations*

The e-PSM application will be used in a really heterogeneous environment, with users having different level of connexion infrastructure, from a fast reliable land-line connexion (typically bigger port States), to a mobile-based / satellite-based connexion (typically vessels). The hosting infrastructure should offer an excellent connectivity, regarding the region we want to serve.

The differences also come in terms of geographical constraints, and the usage of a large time zone. The system must be up & running at all time, and there is no way to plan nightly maintenance, for instance. Databases backups shall be done on the live systems, on a daily basis, with a minimum lock time (few seconds) for the table structure.

We would also recommend using Virtual Machines (private / hosted, to be checks with IOTC Secretariat It responsible, considering costs, and offers from the most suitable supplier), in order to offer maximum flexibility, and safety in terms of availability. The VM should be snapshotted once per week, causing a small pause on the application, and this snapshot should be stored in a different location. This VM clone might help IOTC to restore the service after a major incident.

The application usage should not be a major issue, with an expected volume of a few thousands of vessel files per year, we should only have a couple of active users logged at the same time, and a single hardware node shall be enough to handle the load. We might however want to consider large disks, to store PDF, pictures from Vessel, and documents exchanged during PSM forms.

Typical configuration could be:

- CPU: Xeon E3-1230v3 – quad core, 3.3GHZ
- RAM: 16 – 32 Go
- Hard Drives:
  - SSD drives for system and DB 64GB+
  - 1To for documents (or SAN)
- RAID Controllers
  - RAID 1
  - Hardware raid controller
  - Battery
- SAN (if no internal 2<sup>nd</sup> disk)
  - 1To Raid based SAN

Monitoring shall be made regarding the following recommendation:

- Implement a “heart beat” feature within the application, to ensure the system can: (1) communicate, (2) run a database query, (3) write a 10MB file on a local disk, (4) allocate 50MB of ram,
- Monitoring agent shall be installed at IOTC Secretariat.
- Another monitoring agent shall be installed on a 3<sup>rd</sup> party system (pingdom, internetvista...)

Backup rules, should follow the 3\_2\_1 strategy:

1. At least **3** copies (in different storage system),
2. In **2** different format (one can be a hard drive, another has to be a backup/tape sytem – DVD...),
3. And **1** copy is store offsite.

### 12.1.2 Planning feasibility status

#### *Development planning*

The development planning has been detailed already in this document, and shows that most of the implementation effort will be done thru the next summer. The important milestones are detailed below, with a comment about important validation steps:

1. Start of implementation during the last week of may. The final application scope should be validated before the team starts working on this task,
2. Module 1 and 2 will be first developed in parallel, starting from June, and after a relevant count of iteration, interfaces will be developed from M1 to M2,
3. Module 1 will be open to testing in early July, once the test system has been setup, and hosting details clarified by IOTC Secretariat. Members’ feedback will be collected thru an appropriate methodology, and after an official communication from IOTC to define the test rules. The goal is not to change the scope, but validate it’s implementation,
4. Module 2 will be open to testing, starting after an initial modelling phase conducted in July. The same members feedback collection rules will apply. It’s important that IOTC provide the e-PSM team with enough data to populate an initial data set compatible with testing (list of DP, contacts, documents...),
5. Modules 1 & 2 interface is then scheduled, and all parties should check the implementation of the document visibility policy,

6. Module 3 will start later, in October, and a review of reporting tables, vs what we will then have in the system by this time, seems in order. We want to validate here that we have all the information we need in the database, and/or the structure of the information is compatible with the reporting tables,
7. Module 3 will be open for testing during the last week of October. A quick training of IOTC staff might be relevant, in order to understand how to create additional reporting. A skype session with screen-sharing shall be just fine, but we suggest at least half a day, to get familiar with the tools. Feedback from this training will be used to design appropriate training material for the Members training, in 2015,
8. In parallel to the last module training, documentation and user guide will be written, and shall be available in early December,
9. The Release Candidate version is planned for late November / early December, according to feedback from the test running since July, and potential backlog adjustments.

#### *Members testing involvement & validation*

As all IT project, change management, and convincing final users is a key success factor for e-PSM. Users must accept the application, and they should see an obvious proven value as they use it. It is therefore important to involve members, at an early development stage, to collect feedback, detect inconsistency in the processes, and enhance the user experience. Several members volunteered to test the system, and we really want to use this opportunity to validate the implementation using an agile methodology.

We suggest IOTC Secretariat and e-PSM team to think of an efficient test framework, describing the methodology, the most efficient communication and tools we will use during this testing phases. This should be defined before we invite testers to test the first releases, during July.

Again, involving the “product owners” is a very powerful tool to validate the teamwork, but on the other hand, it must be clear that this is not a second phase of specifications, and IOTC leaders for this project should be careful about potential drifting, regarding features, and planning.

#### 12.1.3 Work load feasibility status

The analysis conducted in this first phase stress that the initial development effort estimation introduced by the Terms of Reference is not compatible with the expectations from members, especially regarding the width of the final scope of features.

The e-PSM team would recommend the following figures, in order to match requirements and expectations.

#	Figures	Days
1	<b>Application development and configuration</b>	157
2	Application <b>corrections &amp; bug fixes</b>	15% included in dev. effort
3	Selected CPCs users application <b>tests and validation</b>	5
4	Prepare the necessary <b>documentation</b>	10
	Regional <b>training course</b> - Using the PSM information sharing system + Preparation of training and final report	16
5	<b>Debriefing</b> at the IOTC secretariat	(skype based sessions)

## ANNEX1 - REPORTING TABLES

This annex is the synthesis of recommendations and feedback provided by IOTC members, during the regional consultation workshop. IOTC secretariat and ePSM team suggested an initial list of 10 tables. This list, described in this section, is the basis for module 3 reporting content.

### 12.2 General recommendations

Reporting tables design should be flexible enough to adapt each table structure to the user contextual need. For instance, one might need to dispatch values per vessel type, when one other might need to dispatch by flag State.

As a general requirement, it also clearly makes sense that any “level 2” indicator dispatch strategy must be available as a “level 2” dimension dispatch strategy.

### 12.3 Report for port State - AREP

Port State: "Name of country"														
Flag	Total Nb of e-PSM files	Nb of AREP received		Nb AREP LAN		Nb AREP TRX		Nb AREP LAN&TRX		Nb AREP other purposes		Nb Entry granted		Nb entry denied
		FV	CV	FV	CV	FV	CV	FV	CV	FV	CV	FV	CV	FV
Port: name of port A														
Spain	52	48	10	30	5									
Korea														
Port: name of port B														
Spain	52	48	10	30	5									

Table 8: Report for port State – AREP.

The following comments about the structure have been formulated by workgroups attending the workshop:

- The table should include percentage of entry granted/denied.
- The filtering options should allow a filter for number granted /denied, by activity
- In the second level of drilldown, the table should include CV under vessel type.
- In the third level of drilldown, CV should be displayed as a row, under vessel type,

### 12.4 Report for port State – Inspection

Port State: "Name of country"														
Flag	Total Nb of e-PSM files	Nb of AREP received		Nb AREP LAN/TRX		Nb AREP other purposes		Nb LAN/TRX		Nb LAN/TRX monitored		Nb vessels inspected		Nb infraction detected
		FV	CV	FV	CV	FV	CV	FV	CV	FV	CV	FV	CV	FV
Port: name of port A														
Spain	52	48	10	30	5									
Korea														
Port: name of port B														
Spain	52	48	10	30	5									
Korea														

Table 9: Report for port State – Inspection.

The total number of LAN and TRX could be added to enable calculation of percentage of inspection achieved. Instead of summaries, detailed table should be the main table.

### 12.5 Report for port State - Infraction

Port State: "Name of country"														
Vessel type	Total Nb of e-PSM files	Nb of AREP received		Nb AREP LAN/TRX		Nb AREP other purposes		Nb LAN/TRX		Nb LAN/TRX monitored		Nb vessels inspected		Nb infraction detected
		FV	CV	FV	CV	FV	CV	FV	CV	FV	CV	FV	CV	FV
Port: name of port A														
LL	52	48	10	30	5									
PS														
Port: name of port B														
LL	52	48	10	30	5									
PS														

Table 10: Report for port State – Infraction.

Members would like to dig into classification of vessels, using the following dimensions. Again the tool will have to let them switch dimension, and sub-total dimensions:

- Percentage of inspections having detected one or more infractions,
- Need to split into number of Resolutions broken and add total number of infringements per vessel (maybe more than one per Resolution).

Additionally, regarding this 3<sup>rd</sup> report, an interesting feedback about the PIR form structure has been collected. PIR infringements is free text, maybe need to add a pick list of Resolutions to PIR, and possibly IUU definitions as well (Res 11-03), and add new line of free text for each infringement on the PIR so system can count number of infringements.

### 12.6 Report for port State – Quantities LAN and/or TRX

Port State: "Name of country"		Activity: LAN			Vessel type: LL, PS			Port: A, B		
Vessel type	Preservation	Product form	Species 1	Species 2	Species 3	Species 4	Species 5	Species n		
Port : name of port A										
LL	FRZ	GG	1560							
LL	ICE	HO	4520							
PS	BRI	WH	3250							
Port : name of port B										
LL	FRZ	GG								
LL	ICE	HO								
PS	BRI	WH								

Table 11: Report for port State – Quantities LAN and/or TRX.

Additional structure comments have been formulated about this report.

- TRX to Activity should be added to the content table,
- Remove preservation type or include in TRX,
- Standardize type of product to product form,
- Distinguish catches form IOTC vs non-IOTC area,
- Default major species in same order (2 lines header).
  - Header for major species,
  - Header for minor species.

### 12.7 Report for flag State – Inspection

Flag State: "Name of country"														
Name of port	Total Nb of e-PSM files	Nb of AREP received		Nb AREP LAN/TRX		Nb AREP other purposes		Nb LAN/TRX		Nb LAN/TRX monitored		Nb vessels inspected		Nb infraction detected
		FV	CV	FV	CV	FV	CV	FV	CV	FV	CV	FV	CV	
Port State: "Name of Country A"														
Galle	52	48	10	30	5									
Port Louis														
Port State: "Name of Country A"														
Victoria	52	48	10	30	5									

Table 12: Example 6 - Report for flag State – Inspection

- Number infractions should be number of port visits and/or number of vessels with infractions detected,
- Number of vessels inspected = number of inspections carried out (e.g. if vessel has been inspected 6 times, then 6 entries).

### 12.8 Report for flag State – Infraction

Flag State: "Name of country"		Port State: A, B				Ports: 1, 2, n			
Name of port	Total Nb of e-PSM files	Nb of AREP received	Nb vessels inspected	Nb infraction detected	Type of infraction				
					R13/02	R13/04			
Port State: "Name of Country A"									
Victoria	52	48	10	30	5				
Port State: "Name of Country B"									
Maputo	52	48	10	30	5				
Nacala									

Table 13: Report for flag State – Infraction

Number infractions should be number of port visits and/or number of vessels with infractions detected.

### 12.9 Report for port State – quantity LAN and/or TRX by foreign vessels

Port State: "Name of country"		Activity: LAN		Port: A, B				
Vessel name	IOTC Number	Flag	NRN	Preservation	Date entry authorised	Species 1	Species 2	Species n
Port : name of port A								
Aldabra								
Venus								
Port : name of port B								
Carmen								
Txori Argi								

Table 14: Report for port State – quantity LAN and/or TRX by foreign vessels

Regarding the catch values analysis, Members suggested that the user could drill down into more details to:

- Have two part header, to explore from major to minor species
- Distinguish catches form IOTC vs non-IOTC area