



REQUEST FOR EXPRESSIONS OF INTEREST

for the selection of an Individual Consultant for the e-PSM technical support - Development of the PIR tablet application.

1. The Indian Ocean Commission (IOC) is an intergovernmental regional cooperation organization which brings together the Union of the Comoros, France, on behalf of Réunion, Madagascar, Mauritius and Seychelles. Its mission is to strengthen the bonds of friendship and solidarity between peoples and to contribute through regional cooperation to the sustainable development of its member states. The IOC has received a grant from the World Bank to support the SWIOFish regional project. It intends to use part of this grant to make payments under the Individual Consultant contract " for consultancy for the e-PSM technical support - Development of the PIR tablet application ".
2. The Consultant's mission is to provide technical services to the IOTC Secretariat in order to develop a tablet-based application in support of the PIR workflow (Port Inspection Report) of the e-PSM platform, to allow port State inspectors to complete the reports in situ while conducting port inspections. The collected PIR information shall be then transferred to the e-PSM server and made available to end users through Module 1 ("e-forms and processes") of the e-PSM application.
3. The mission will be carried out by the consultant who will be home based with two missions to IOTC Secretariat (Seychelles) (Or by video conference.).
4. The consultant will work administratively under the supervision of the Indian Ocean Commission and technically under the supervision of the Indian Ocean Tuna Commission.
5. The estimated duration for carrying out this mission is 100 working days over a period of one year.
6. The Indian Ocean Commission (IOC) now invites eligible consultants to express their interest in providing the services described above. They must provide information justifying that they have the necessary expertise and are able to perform the services in question (curriculum vitae, copies of diplomas and attestations, references concerning the performance of similar contracts, etc.).
7. A version of the terms of reference is available on the website of the Indian Ocean Commission <https://www.commissionoceanindien.org/sw2-y3-c022/>
8. Expressions of interest must be filed electronically in uncompressed format at the address below no later than **Monday, June 29th, 2020 at 16:30** (Mauritius time UTC+4):

e-mail: innocent.miada@coi-ioc.org and njiva.r@coi-ioc.org

Reference: " (SW2/Y3-C022) Consultant for e-PSM technical support - Development of the PIR tablet application "
9. Individual Consultants will be selected in accordance with the procedures set out in the Guidelines Selection and Employment of Consultants under IBRD loans and IDA credits & Grants by World Bank Borrowers edition January 2011 Revised July 2014.
10. The individual consultants concerned may obtain further information from the Indian Ocean Commission (IOC) by sending e-mails to the addresses referred in paragraph 8.

AVIS DE MANIFESTATION D'INTÉRÊT en vue de la sélection d'un Consultant Individuel pour le support technique e-PSM - Développement de l'application tablette PIR (Port Inspection Report)

1. La Commission de l'Océan Indien (COI) est une organisation intergouvernementale de coopération régionale qui regroupe l'Union des Comores, La France/Réunion, Madagascar, Maurice et les Seychelles. Elle a pour mission de resserrer les liens d'amitié et de solidarité entre les peuples et de contribuer à travers la coopération régionale au développement durable de ses Etats membres. La COI a obtenu un don de la Banque mondiale pour financer le projet SWIOFish Regional (Second South West Indian Ocean Fisheries Governance and Shared Growth Project). Elle se propose d'utiliser une partie de ce don pour effectuer des paiements autorisés au titre du contrat de Consultant Individuel qui assurera la « le support technique e-PSM - Développement de l'application tablette PIR (Port Inspection Report)»
2. La mission du Consultant est de fournir des services techniques au Secrétariat de la CTOI afin de développer une application sur tablette à l'appui du flux de travail PIR (Port Inspection Report) de la plate-forme e-PSM, pour permettre aux inspecteurs de l'État du port de compléter les rapports in situ lors des inspections portuaires. Les informations PIR collectées doivent ensuite être transférées au serveur e-PSM et mises à la disposition des utilisateurs finaux via le module 1 ("e-forms and processes") de l'application e-PSM.
3. La mission sera effectuée à distance avec deux missions au Secrétariat de la CTOI (Seychelles) (ou par vidéoconférence.)
4. Le Consultant travaillera sous la supervision de la Commission de l'océan Indien.
5. La durée estimée des prestations est de 100 jours ouvrable sur une période d'un an.
6. La Commission de l'océan Indien (COI) invite les consultants admissibles à manifester leur intérêt pour la fourniture des services décrits ci-dessus. Ils doivent fournir les informations justifiant qu'ils sont en mesure de mettre en œuvre les expertises nécessaires et d'exécuter les prestations en question (curriculum vitae, copie des diplômes et attestations, références concernant l'exécution de contrats analogues, ...).
7. Une version des termes de référence est disponible sur le site web de la Commission de l'océan Indien <https://www.commissionoceanindien.org/sw2-y3-c022/>
8. Les manifestations d'intérêt doivent être déposées en version électronique sous format non compressé aux adresses ci-après au plus tard **le lundi 29 juin 2020 à 16 heures 30 minutes** (heures de Maurice GMT+4) :
e-mail : innocent.miada@coi-ioc.org et : njiva.r@coi-ioc.org
Référence : « (SW2/Y3-C022) Consultant for e-PSM technical support - Development of the PIR tablet application »
9. Les consultants individuels seront sélectionnés en accord avec les procédures définies par les Directives sur la Sélection et l'Emploi des Consultants par les emprunteurs de la Banque mondiale dans le cadre des prêts de la BIRD, des crédits et don de l'AID, édition janvier 2011 révisée en juillet 2014.
10. Les consultants individuels intéressés peuvent obtenir de plus amples informations auprès de la Commission de l'océan Indien (COI) en envoyant un courriel aux adresses visées au paragraphe 8.



Terms of Reference for e-PSM application.

e-PSM technical support - Development of the PIR tablet application.

Assignment title	e-PSM technical support - Development of the PIR tablet application
Contract duration	100 working days over a period of one year.
Assignment location	Home/office based with two missions to IOTC Secretariat (Seychelles) (Or by video conference.)
Financed by	International Development Association (IDA) - Grant Number D1720.

1. Background

1.1. SWIOFISH 2

World Bank has been supporting various fisheries projects in the Africa Region. At the regional level, the most relevant of these is the South West Indian Ocean Fisheries Project (SWIOFP), which closed on March 31, 2013. The SWIOFP, which brought together all countries in the South West Indian Ocean (SWIO), including Kenya, Mozambique, South Africa, Seychelles, Comoros, Madagascar, Mauritius, France (non-beneficiary participant), Somalia (observer) and Tanzania, was successful in building regional capacity for fisheries management, including through establishing a network of fisheries researchers and managers, and developing a regional management framework.

Given the important achievements of SWIOFP, SWIOFC Member Countries have requested a follow-on program namely – the South West Indian Ocean Fisheries Governance and Shared Growth Program (SWIOFish Program).

It comprises a regional umbrella and a combined approach targeting both regional and national fisheries priorities. It supports regional integration of fisheries management, while expanding the approach beyond research and sound fisheries management to strengthen sector governance and harness the value of coastal and marine fisheries to national economies. Given the importance of sound fisheries management to livelihoods and economic growth, the SWIO coastal countries have decided to all participate in the SWIOFish Program through a regional platform hosted by the SWIOFC and supported by the Indian Ocean Commission (IOC).

1.2. IOTC

The Indian Ocean Tuna Commission is an intergovernmental organisation established under article XIV of the FAO constitution. The IOTC agreement was concluded in 1993 and entered in force in 1998. The IOTC is mandated to manage tuna and tuna-like species in the Indian Ocean and adjacent seas with primary objective the conservation and optimum utilisation of the stocks for long term sustainability.

Since 1998, the members of the IOTC have dedicated most of their effort to the scientific component of fisheries management to manage the tuna and tuna-like resources. Since 2008, more emphasis has been dedicated to the compliance component of this tuna RFMO. A Compliance Committee was set up to assess and review all compliance aspects related to the implementation of the IOTC Conservation and Management Measures and provide support to Contracting and Cooperating Parties (CPCs) in the implementation of Monitoring, Control and Surveillance (MCS) tools adopted by the IOTC Members (IUU vessel lists, authorised & active vessels list, documents on board, marking of fishing vessels and gears, Vessel Monitoring System, fishing logbooks, regional observers scheme, transshipments programme, catch certification/trade documentation schemes).

In 2010, aware of the powerful and cost-effective compliance tool of Port States measures 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 (superseded by Resolution 16/11) on PSMR). The Resolution, which entered into force on 1 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, where foreign fishing vessels offload tuna and tuna like species, are responsible for the implementation of the Resolution. Others responsibilities fall under the mandate of the Flag States whose vessels use foreign ports in the IOTC area. Port State Measures are not only confined to port State and flag State authorities. The fishing industry plays an important role in the implementation of the Resolution.

The effective implementation of the Port State Measures Resolution (PSMR) by coastal CPCs requires a variety of aspects to be considered, developed and/or strengthened, to improve the implementation capacity of the Port State Measures (PSM) Resolution by the concerned CPCs. Those aspects were identified during the PSM Workshop organised in 2011 by the ACP FISH II Programme, financed by the European Union, 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, the development of an information system on Port State Measures (Annex 4 of the Resolution 16/11), which has been developed

from 2013 to 2016 under the support of the GPO of the World Bank. The e-PSM application is operational and has been used by IOTC port State CPCs since June 2016, as part of a Trial Phase, as per IOTC Resolution 16/11. Following its utilization by the IOTC Members, several requests/proposals have been made to improve some features of the e-PSM application in order to streamline and improve the workflow of users while using the application. This assignment's objective is to address the issues and improvements identified during this early trial period for the e-PSM module Forms and Processes.

2. Scope of the assignment

The purpose of the assignment is to provide technical services to the IOTC Secretariat in order to develop a tablet-based application in support of the PIR workflow (Port Inspection Report) of the e-PSM platform, to allow port State inspectors to complete the reports *in situ* while conducting port inspections. The collected PIR information shall be then transferred to the e-PSM server and made available to end users through Module 1 ("e-forms and processes") of the e-PSM application.

While there is no specific technological constraint at this stage of the process, it is suggested that the PIR application be developed to target Android™ based tablets, because of their cost-effectiveness, limited presence of pre-existing vendor lock-ins and availability of rugged versions of the hardware that are particularly suitable to the environment where the application shall be used.

In terms of the implementation of the remote back-end to allow integration with the e-PSM Module 1, the choice of the final technology is left to the advice of the Expert, considering the existing technologies currently leveraged by the e-PSM application and that open-source, industry grade frameworks and tools are preferred over proprietary solutions.

24/7 availability of the remote back-end is also a necessary prerequisite, as is the implementation of all necessary procedures to guarantee rapid disaster recovery, sensitive data protection and comprehensive, regular backups of all relevant information.

The assignment requires the recruitment of one Expert with in-depth knowledge of effective UI / UX design on Android™ operating system targeting mobile devices, with an accent on data-driven web applications, data visualization best-practices, relational databases design, a limited knowledge of web-application backend development and a proven record of previous experiences in developing rich user interfaces for data collection, integration and analysis on desktop and mobile devices.

3. Expected outputs/delivery

This consultancy work is related to the development of a completely new feature (PIR tablet application) for e-PSM Module 1. At the end of the assignment, it is expected that the tablet-based PIR application and its remote back-end are fully functional and support end users in the full data collection and reporting workflow for PIR data collected onboard the vessel in the absence of Internet connectivity (worst case scenario).

Under the supervision of the IOTC Secretariat, it is expected that the consultant will specifically deliver on the following:

e-PSM PIR tablet application

- Design and develop a user-friendly application interface for users to enable the completion of the PIR while conducting inspections onboard vessels in *offline* mode;
- Implement the proper synchronization mechanisms to allow users to transfer data collected through the PIR application from the tablet to the e-PSM application database when in *online* mode;
- Implement an electronic signature mechanism for the inspector and the captain of the vessel to sign off the PIR;
- Implement proper mechanisms for the storage of photographs (vessel documents, vessel pictures etc.) directly through the tablet. All collected photographs shall be attached to the PIR and uploaded to the e-PSM database as part of the regular data submission cycles;
- Develop proper mechanisms for the installation, maintenance and update of the PIR application on Android tablets, including – but not limited to – the possibility for users to automatically report bugs

and malfunctioning of the application to the IOTC Secretariat and trigger the proper corrective actions from the Expert.

4. Profile of the expert

Qualifications and skills of the Expert:

The expected development of PIR tablet application requires the recruitment of an Expert with a broad understanding of all issues involved in the development of a full application stack, and with solid working experience in the development of tablet-based, data-driven applications and user interfaces. The selected Expert should be able to demonstrate a successful history of developing similar applications, preferably in the field of fisheries, that promote the adoption of industry-validated, simple and robust technologies as well as open-source solutions.

Front-end web application developer with full-stack experience

Essential Requirements:

- Graduate qualifications in computer science, electronics engineering or information technology / management (or any other qualifications relevant to the demands of the assignment) or five or more years of practical, hands-on work experience on projects with a comparable scope.
- Minimum 5 years of experience in:
 - Development of complex, data-driven mobile user interfaces using well-established frameworks, libraries and standards (XHTML, CSS, AJAX, Javascript, AngularJS, NodeJS, Bootstrap, Ionic framework, Cordova, React Native, etc.) and responsive design best practices;
 - Development of remote server applications using any of the leading framework and technologies for the provision of remote services through standard interfaces (PHP, Java EE, NodeJS);
 - Proven track record with the development of applications on Android™ or other modern mobile operating systems;
 - Ability to draft and implement complex software architectures using the most appropriate design patterns;
 - Ability to account for the seamless integration of additional features / independent components within existing software architectures and minimize the impact of both the development and adoption phase;
 - In-depth knowledge of relational and schema-less databases to model complex application domains in the field of fisheries;
 - Substantial hands-on experience with the most common tools and platform for source control, issue tracking, continuous-integration and automated build.
- Experience in the management of information and technology services including planning, performance, strategy development and policy frameworks;
- Excellent communication, interpersonal, relationship building and customer service skills;
- High level of proficiency in written and spoken English or French;
- Knowledge and experience of the e-PSM application and working for IOTC.

Desirable:

- Prior experience of working in the Indian Ocean region and / or in developing countries;
- Knowledge and experience in the design of information systems and services supporting fisheries data collection and analysis.

Technical Supervisor

Concerned professional staff members of the Secretariat of the Indian Ocean Tuna Commission will be the technical supervisor of the IT Expert.

5. Beneficiary Countries

All Members of the Indian Ocean Tuna Commission.

6. Risks

No risk has been identified.

7. Location, travel and expected starting date

The Expert shall travel one or two time to the IOTC Secretariat during the course of the mission (for a maximum of 8 working days). These travels (tickets and DSA) will be covered by the IOC in the budget of the IOTC component on these activities with the applicable DSA rate. The rest of the assignment will be home/office based. The assignment is expected to start during the third quarter of 2020, with the implementation calendar to be defined following consultation between the IOTC Secretariat and the Expert. The Expert will liaise regularly with the IOTC Secretariat while implementing the activities.

8. Payment schedule

Defined under the contract.

9. Indicative number of working days

Assignment duration: 100 working days within a contract duration of one year.

10. Other requirements

The Expert must provide the IOTC Secretariat the software/code developed specifically for this assignment and other documentations or reports generated in relation to the implementation of the expected outputs/deliveries.