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Third meeting of the PSMA Technical Working Group on Information Exchange (TWG-IE3)¹

Rome, Italy², 13-14 December 2022

THE GIES, MOVING FORWARD

I. SUMMARY OF THE OUTCOMES OF RELEVANT PSMA MEETINGS

In May 2019, at the second Technical Working Group on Information Exchange (TWG-IE2) meeting, the participants:

- reaffirmed the necessity for all Parties to include their information on designated ports (DPs) and national contact points (NCPs) into the PSMA application as soon as possible. They also agreed that an additional field should be added to the designated ports data upload template, to permit the entry of the authority processing the advanced request for port entry (ARPE), should this be different from the main port authority;
- recognised that active participation by States in the FAO Global Record of Fishing Vessels, Refrigerated Transport Vessels and Supply Vessels (FAO Global Record) can be an important element to maximise the potential of the Global Record to support the functioning of the PSMA global information exchange system (GIES), and;
- agreed that the GIES should be up and running as soon as possible to satisfy the requirements of the Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (PSMA), especially inspection results and information on port denials, and recommended that the Secretariat proceeds with the development of a working prototype of the GIES, working closely with RFMOs and other regional bodies and networks.

With regards to information exchange, at the second Meeting of the Parties to the PSMA (MOP2) in June 2019, the Parties:

- reaffirmed that the transmittal, electronic exchange and publication of information are key components of the PSMA and essential for meeting its objective;
- agreed that the GIES should be operational as soon as possible to satisfy the requirements of the PSMA, prioritizing the ability to securely share law enforcement sensitive inspection results and information on denial of port entry. Additionally, the Parties expressed their preference for GIES as an integrated system using a modular and phased implementation approach, and;
- called on all Parties to upload as soon as possible information on DPs and NCPs into the PSMA application.

¹ To be held in Arabic, Chinese English, French, Russian and Spanish.

² FAO Headquarters, Viale delle Terme di Caracalla, 00153 Rome, Italy.

At the third Meeting of the Parties to the PSMA (MOP3), in May - June 2021, the Parties:

- highlighted the importance of designating NCPs and DPs for the purposes of the implementation of the PSMA and encouraged all Parties, including those not having done so yet, to act in this regard as soon as possible;
- welcomed the GIES prototype and agreed that it enters a pilot phase, during which the Secretariat will also work on the possible automatic linkages to existing relevant systems, and introduce additional improvements to the system;
- noted that the system could be further improved at a later stage through the inclusion of additional features, such as the advance request for port entry (ARPE), and should also be practical, user friendly and interoperable with other systems;
- agreed that a meeting of the TWG-IE shall be convened in 2022 to discuss technical and operational matters related to the GIES, using as a basis the pilot phase experiences, and to suggest any changes to be made in the lead up to the fourth Meeting of the Parties, and;
- noted the value in developing a training programme to support countries in the use of the GIES and developing supporting material in this regard.

II. STATE OF AFFAIRS OF NATIONAL CONTACT POINTS AND DESIGNATED PORTS

Following the guidance from the Parties at their first meeting, and further elaboration at the first meeting of the TWG-IE, the Secretariat developed a prototype application for the submission of information on DPs as per Article 7 of the Agreement and NCPs, as per Article 16.3 of the Agreement.

The prototype application was launched in June 2018, with Parties to the Agreement receiving both sets of unique credentials, while non-Parties were only provided with credentials to submit information on their NCPs.

Additionally, the Secretariat developed a separate application for viewing the information submitted on NCPs and DPs. This application has been accessible since July 2018 and is open to the public. As a precautionary measure, and in consideration of the confidentiality aspects of some of the information submitted, the Secretariat did not publicise personal contact information fields submitted by Parties and non-Parties through the application.

The Secretariat delivered a live demonstration of the prototype application for viewing the DPs and NCPs at MOP2, which noted that the applications met the requirements of the PSMA agreed to adopt it.

Following reports by Parties and observers on implementation of the PSMA, the MOP3 consensus was that sufficient progress had been made in effectively using the PSMA to combat IUU fishing. However, it was also noted that several challenges remain, highlighting the importance of designating NCPs and DPs for the purposes of the implementation of the PSMA, in which all Parties were encouraged to do so as soon as possible.

STATUS OF INFORMATION UPLOADED

As of 17 October 2022, the PSMA application contained information on 67 NCPs and 575 DPs.

The number of Parties providing information on their NCPs and DPs through the PSMA application has been increasing, with 51 out of 73 Parties having already uploaded data into the application.

However, further efforts are needed to gather all required information. Furthermore, 7 non-Parties have also uploaded data on their PSMA NCP into the application. The current status of information uploaded by Parties into the PSMA application is shown in Figure 1 below:

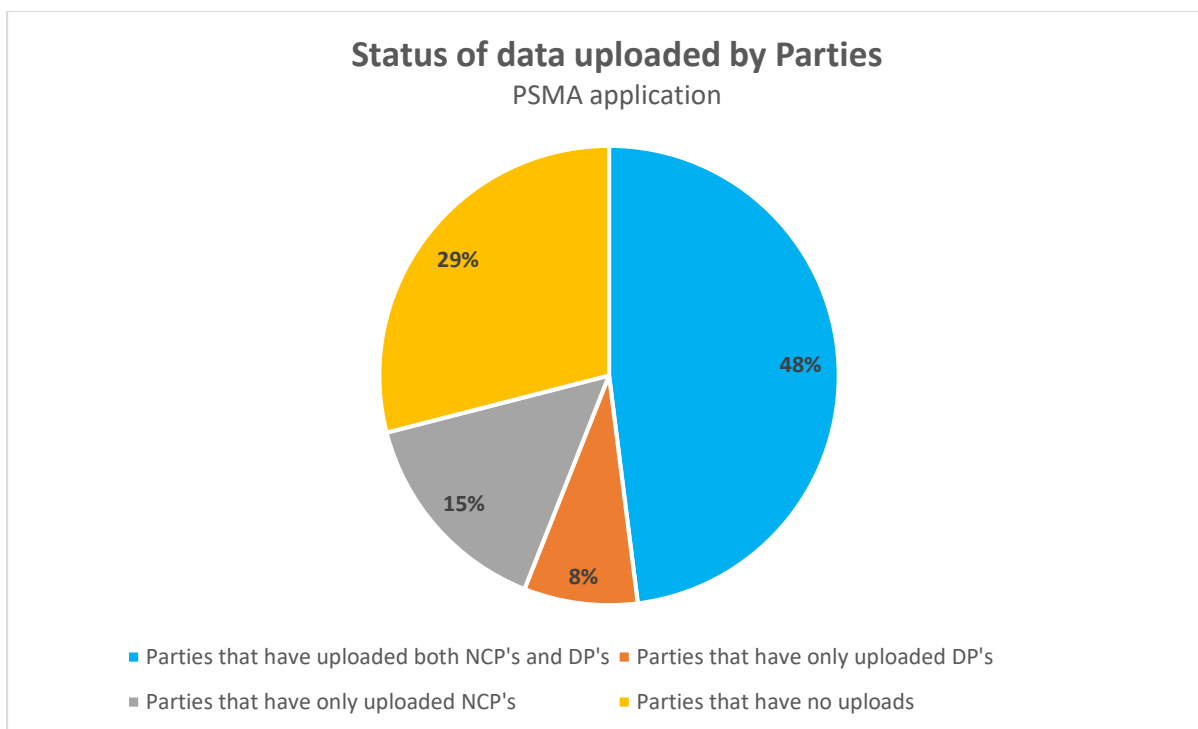


Figure 1: Status of data uploaded by Parties into the PSMA application

PSMA NATIONAL CONTACT POINTS

Table 1 below lists the Parties and non-Parties that have uploaded information on their PSMA NCP into the PSMA application, as at 17 October 2022.

Table 1: States having uploaded information on national contact points

PSMA application: Uploads on national contact points³			
46 Parties (60 States)			Non-Parties (7)
Albania	Guinea	Republic of Korea	Belize
Angola	Guyana	Romania*	Bosnia and Herzegovina
Australia	Indonesia	Seychelles	Colombia
Bahamas	Ireland*	Sierra Leone	Malaysia
Bangladesh	Italy*	Somalia	Papua New Guinea
Belgium*	Japan	South Africa	Uganda
Benin	Latvia*	Spain*	Switzerland
Cabo Verde	Libya	Sri Lanka	
Cambodia	Lithuania*	Sweden*	

³ The European Union needs to confirm whether its individual member States are to each provide a NCP or whether it will submit one NCP to cover all member States.

Canada	Mauritius	Thailand	
Chile	Mozambique	Togo	
Costa Rica	Myanmar	Tonga	
Côte d'Ivoire	Netherlands*	Trinidad and Tobago	
Croatia*	New Zealand	UK and Northern Ireland	
Cuba	Nicaragua	United States of America	
Cyprus*	Norway	Uruguay	
Denmark*	Palau	Vanuatu	
Ecuador	Panama	Viet Nam	
France*	Peru		
Ghana	Philippines		
Greece*	Poland*		

*European Union Member States

Table 2 below lists the Parties that have yet to upload information on their PSMA NCP into the PSMA application, as of 17 October 2022:

Table 2: Parties that have yet to upload NCPs

Parties that haven't uploaded national contact points (NCPs) (26 Parties /37 States)	
Austria*	Maldives
Barbados	Malta*
Bulgaria*	Mauritania
Czechia*	Montenegro
Djibouti	Morocco
Dominica	Namibia
Estonia*	Nigeria
Fiji	Oman
Finland*	Portugal*
Gabon	Russian Federation
Gambia	Saint Kitts and Nevis
Germany*	Saint Vincent and the Grenadines
Grenada	Sao Tome and Principe
Hungary*	Senegal
Iceland	Slovakia*
Kenya	Slovenia*
Liberia	Sudan
Luxembourg*	Türkiye
Madagascar	

*European Union Member States

DESIGNATED PORTS UNDER THE PSMA

Table 3 below lists the Parties that have uploaded information on DPs into the PSMA application, as of 17 October 2022:

Table 3: Parties that have uploaded DPs

PSMA online application: Uploads on designated ports (DPs) 40 Parties (58 States)⁴		
Angola	Guinea	Poland*
Australia	Iceland	Portugal*
Belgium*	Indonesia	Republic of Korea
Benin	Ireland*	Romania*
Bulgaria*	Italy*	Sao Tome and Principe
Cabo Verde	Japan	Seychelles
Canada	Kenya	Somalia
Chile	Latvia*	South Africa
Costa Rica	Libya	Spain*
Croatia*	Lithuania*	Sri Lanka
Cuba	Maldives	Sweden*
Cyprus*	Mauritius	Thailand
Denmark*	Mozambique	Togo
Ecuador	Myanmar	Trinidad and Tobago
Finland*	Netherlands*	United Kingdom
France*	New Zealand	United States of America
Gambia	Norway	Vanuatu
Germany*	Panama	Viet Nam
Ghana	Peru	
Greece*	Philippines	

*European Union Member States

Table 4 below lists the Parties that have yet to upload information on DPs into the PSMA application, as of 17 October 2022:

Table 4: Parties that haven't uploaded DPs

Parties that haven't uploaded designated ports (DPs) (32 Parties /39 States)	
Albania	Mauritania
Austria*	Montenegro
Bahamas	Morocco
Bangladesh	Namibia
Barbados	Nicaragua
Cambodia	Nigeria
Czechia*	Oman
Côte d'Ivoire	Palau

⁴ The European Union needs to confirm whether its individual member States are to each provide DPs or whether it will submit one list to cover all member States.

Djibouti	Russian Federation
Dominica	Saint Kitts and Nevis
Estonia*	Saint Vincent and the Grenadines
Fiji	Senegal
Gabon	Sierra Leone
Grenada	Slovakia*
Guyana	Slovenia*
Hungary*	Sudan
Liberia	Türkiye
Luxembourg*	Tonga
Madagascar	Uruguay
Malta*	

*European Union Member States

MIGRATION OF THE PSMA APPLICATION TO THE GIES

In anticipation of the development of the PSMA GIES, the PSMA application was developed by FAO to allow for the sharing and dissemination of information on DPs and NCPs. With the release of the GIES, which is currently in its pilot stage, Parties currently require three different sets of credentials, one for the GIES, one for uploading NCP information and another for uploading information on DPs.

With advances being made in the development of the GIES, the Secretariat proposes that in the future the PSMA application is migrated into the GIES, providing Parties with a single access point for exchanging information relevant for the implementation of the PSMA.

Furthermore, this migration would be an opportunity for addressing the request of the Parties during the TWG-IE2 on the inclusion of an additional field to the designated ports data upload template, to permit the entry of the authority processing the advanced request for entry into port, should this be different from the main port authority. Additionally, advances would be made to allow for bulk upload of DPs information, to facilitate information sharing for Parties with many designated ports on top of the re-creating current online template for uploading ports one by one.

III. STATE OF AFFAIRS OF THE GLOBAL INFORMATION EXCHANGE SYSTEM (GIES)

The prototype of the GIES was developed following guidance received by Parties through relevant meetings, containing the main features required to exchange information as outlined by the Agreement. In addition to internal testing, four Parties were also invited to conduct testing of the GIES prototype, namely Ecuador, New Zealand, Panama and Philippines.

Due to the postponement of the TWG-IE3 caused by the COVID-19 pandemic, it was not possible to present and receive feedback on the prototype from the working group. The prototype was however presented to the Parties through a series of regional webinars, as well as a demonstration during MOP3 in June 2021.

After presentation of the GIES to MOP3, the system formally entered its pilot phase on 15 Dec 2021, where it has and continues to receive feedback from participating users (Parties) to aid in the finalization of its development. The current version of the system sharing inspections and port denials could be fully operationalized following advice from TWG-IE3 and instructions from MOP4. Development of additional components can take place in parallel.

The development of GIES has been largely supported through the funding provided by the Government of Iceland.

GIES TEAM

The Secretariat has been actively involved in expanding the team engaged in global information exchange (IE) related activities (Global Record and GIES). The team currently comprises 13 specialists, either fully or partly dedicated towards the initiative. The GR-GIES team is organized around main responsibilities:

- Business team (1 full-timer and 1 part-timer): in charge of making strategic decisions for the systems, project management and organisation of relevant meetings and inputs.
- Product team (1 full-timer and 3 part-timers): provide day-to-day management of IT development, develop specifications for new features and primary testing role of new features
- Development team (5 part-timers): in charge of all IT developments and maintenance of the system
- Help Desk (2 full-timers): provide day-to-day user support, active reach out to States to increase participation, creation of the new user.

Additionally, other FAO units are involved and supporting the development and maintenance of GIES, including:

The Digitalization and Informatics Division (CSI): Assists in the development, maintenance and support of software applications, ensuring that Information Technology (IT) products and services are delivered according to CIO/ FAO standards of quality and regulations.

Specifically, CSI has supported NFIFP in the: design and development of the GIES prototype, including system specifications, documentation and procurement of consultants; the launch of GIES pilot phase; maintenance and enhancement of related components, including testing and fixing of bugs, errors and other technical matters; migration to FAO cloud-based infrastructure and creation of new system environments; maintenance of PSMA applications for the upload and viewing of the national contact points and designated ports, and migration to the GIES; technical backstopping to end users, and; advice for new system releases, including for the connection to e-PSM systems and redevelopment of the PSMA applications.

The Office of Communications (OCC): Responsible for all official external and internal communication activities, ensuring coherence and consistency in FAO's messaging and communications' outputs, and enabling cost-effectiveness in use of communication-related resources across the Organization.

OCC has assisted NFIFP in the: provision of FAO corporate designs and colour schemes for the GIES interface, such as the logo and footer; advice on FAO communication policies and guidelines, including promotional material and publications, and; assurance on copyright protection for all GIES intellectual property.

The Development Law Service (LEGN) of the Legal Office: Assists FAO Members in reviewing and updating legislation in the field of food, agriculture and fisheries, and provides advice on policy, institutional and organizational matters, and compliance with international instruments.

In addition to assisting NFIFP in the implementation of the PSMA Global Capacity Development Programme and in its Secretariat role to the MOP, LEGN has supported the development of the GIES, including with respect to advising on legal matters concerning: the launching of the GIES prototype version and pilot version, the relationship with other instruments and agencies; issues concerning confidentiality/ public data in an FAO instrument; relationship with internal and external data providers and linkages to external systems, and; the development of a disclaimer.

GIES ARCHITECTURE

The GIES is a web application comprised of two interrelated layers and components working together, the Backend and the Frontend and standardized Reference Lists. They are hosted on a secured Cloud infrastructure (Virtual Machines, Database servers, Firewalls) procured and managed by the FAO according to its standard procedures.

The GIES Backend or server-side is the ‘hidden’ part of the application, where GIES data and Reference Lists are stored and where business workflows are executed such as sending automated notifications to Parties. These functions are made available to authorized clients through a set of documented application programming interfaces (API) exposed in a secured way on the Internet. Several activities including writing APIs, creating libraries and other programmable components take place to create its features and functionalities as determined by the business design specifications. Authorized third-party systems, such as regional port State measures (e-PSM) systems, can leverage the GIES Backend APIs to access GIES data and add functionalities to the GIES in a distributed way. The GIES Frontend is the part of the application that the user interacts with directly, through text, images, charts, tables, buttons, menus, and the like. In this regard, focus on a robust user interface (UI) and user experience (UX) has been the cornerstone of GIES, as demonstrated through website speed, responsiveness, interactivity and multi-device compatibility. The frontend does not store any GIES data or run business workflow. Instead, it delegates these to the GIES Backend layer to which it is connected. Like the GR, the GIES also uses a series of standardized Reference lists based on international coding systems (including those listed in Annex D) to support data input and workflow. Examples include:

- Countries/territories: ISO-3166 3-alpha Country Code
- Species: ASFIS 3-alpha code (known as FAO 3-alpha code)
- Vessel types: ISSCFV code (known as FAO alpha code)
- Gear types: ISSCFG code (known as FAO alpha code)
- Areas: FAO Major Fishing Areas, Divisions and Subdivisions

Such lists are read from the database and updated as necessary to ensure a harmonized approach to compliance reporting, documentation, and interoperability with e-PSM systems.

As a global information system, the GIES is also available in six FAO languages, including English, French, Spanish, Arabic, Chinese and Russian. As new functionalities are added, translations are updated via an internal administration tool, allowing direct access to, and modification of system dictionaries.

To ensure system uptime and efficiency, the GIES has recently been migrated to Google Cloud, the FAO cloud-based infrastructure, offering significant advantages and flexibility over traditional hosting, including:

1. Performance – unlimited resources and load balancing through multiple interconnected servers guaranteeing system speed and reliability
2. Scalability – automatically increase resource allowances (e.g., processing, memory, storage and bandwidth) as required (i.e., increase in users or traffic)
3. Security – robust security mechanisms through advanced firewalls and encryption keys to ensure privacy, data integrity, data encryption and recovery in line with FAO's practices.
4. Cost – variable pricing model, lowered operating expenses compared to traditional hosting
5. Maintenance – As an Infrastructure-as-a-Service (IaaS) provider, all hardware is housed, operated, and maintained by FAO.

In preparation for the completion of the pilot phase of the GIES and its forthcoming operationalisation, FAO is preparing to host and make available to Parties a variety of environments of the GIES application, with separate Web sites and databases each one having a dedicated role:

- Production: tried and tested version of the application loaded with real-life data from PSMA Parties to support implementation of the PSMA with Parties sharing vessel compliance information and reports. Once the pilot phase is concluded, the Review environment (pilot phase) will become the Production environment.
- Sandbox: same tried and tested version of the application allowing PSMA Parties to do dry runs, i.e., test upload and visualization of any kind of data (real-life or fake) without risking or compromising data in the Production environment. Data will not be public and the notification system will be disabled.
- Public Beta: experimental (possibly unstable) version of the application loaded with test data allowing PSMA Parties to preview and test new features of upcoming release of the application and upload any kind of data (real-life or fake). Data will not be public.
- Additional environments used internally by FAO team for development and testing purposes.

CURRENT FEATURES OF THE GIES

The main features (components and functionalities) of the GIES in its pilot phase currently include:

- Port denials and inspection reports – the system allows Parties to upload information about their issued port entry and use denials and inspection reports. These are compiled through an online form, also allowing for the file attachments of reports to supplement the information provided. Reports can be saved in draft modality, and once published, they can be withdrawn. A search functionality is also present allowing users to search through their own draft reports as well as published reports when submitted by their own State or reports published by other States that they have received.
- Connection with the Global Record – when compiling reports, users are able to search for the presence of the relevant vessel within the Global Record, allowing the user to automatically compile relevant vessel identification fields into the online form. In such cases whereby information of the selected vessel is not updated, they are able to edit information of that vessel for the purpose of compiling the form.

- Connection with the PSMA application – the system is connected to the PSMA application and extracts information on DPs and NCPs provided by States. The designated ports are used as reference list when selecting the relevant port for port denials and inspection reports. The national contact points are used to automatically compile contact information within the notification system.
- Notification system – when preparing to publish a report, the system automatically selects the flag State of the vessel. In addition, the user is able to select additional States to be contacted in following with the provisions of the Agreement, such as in the case of a relevant coastal States, the State of which the vessel’s master is a national and a relevant RFMO. In the case that selected a State has not provided an NCP, the system also allows the user to manually input additional contact information.

STATUS OF GIES PILOT PHASE

The current version of the GIES was launched on 15 December 2021 initiating the GIES pilot phase. The initial version of the system was designed to share all published reports (port denials or inspections) to be visible to all Parties accessing the system, to facilitate understanding of its functioning. Parties were encouraged to use real data.

In the first months, very few Parties engaged with the GIES mostly testing the draft forms with few reports being published. Concerns over security and confidentiality were raised by some Parties directly through the Help Desk (PSMA-GIES@fao.org) or at events such as the PSMA Regional Coordination Meetings (RCMs).

Following this feedback, FAO engaged in adjusting the system to share reports only with those directly involved, as per Article 15. A new release of the system, with a reset database, is foreseen to be released soon.

Feedback was also received from users which led to the identification of an issue (bug) when inputting ports. Some designated ports which had been entered in the PSMA application were not listed in the relevant port reference list. This issue was resolved with an improvement of the connection between the GIES and the PSMA application.

IV. CONFIDENTIALITY AND DATA SECURITY

In many States, inspection reports are considered police records. As such, they are considered sensitive data which must be kept securely and only be shared according to a need-to-know principle. If ever leaked out before a Court could rule on an apparent infringement, this could jeopardise the ongoing legal proceedings. A leak could also potentially cause damage to the reputation of mentioned vessel master, owner and operator. Similar considerations could also be made in the case of port denials.

Previously, the GIES application didn’t implement any restrictions to access of inspection reports and port denials. Although certainly not public, all reports could be seen by all registered users and hence still limited to PSMA Parties. Feedback received from States has also highlighted the need to look more closely at which actors should have access to information exchanged through the GIES.

Due to the sensitive nature of data being exchanged in the GIES, the Secretariat adjusted GIES so that detailed inspection reports and port denials should no longer be made available to all PSMA Parties by default during the pilot phase. Detailed data (full report) should only be visible in the GIES application to those PSMA Parties concerned, as detailed by under Article 15 of the Agreement for inspection reports and Article 9 in the case of port denials. Therefore, in the case of inspection reports, detailed information would be communicated to the Flag State, State to which the Master is a national, and any relevant Coastal States or RFMOs.

In addition to those specifically identified under Article 15, summary information on reports should also be considered to be communicated to port States having received an advanced request for port entry from (ARPE) the vessel in question. This functionality would greatly enhance risk analysis of the Party receiving such vessel, by giving an indication of the compliance history at the time of the vessel requesting access into port.

In practical terms, this proposed new functionality would provide GIES-compliance-history-information (a “vessel file”) about a specific vessel requesting access to a designated port of a Party.

This functionality could only be fully automated after the functionality for the exchange of advanced requests for port entry is implemented in the GIES application.

In the case of port denials, a similar approach would be taken with the exception of the State to which the Master is a national, which is not included under Article 9.

Currently GIES sends notifications to Parties by means of emails, without digital encryption or signature, exchanged over the internet. Such transmission mechanism is not appropriate to the exchange of sensitive information, and also not very robust. These emails can be intercepted or even imitated. Therefore, it is proposed that emails sent by GIES no longer includes sensitive information. Instead, they would contain a link to the password protected GIES application screen where the sensitive data will be accessible to authorized Parties.

With regard to user accounts in the system, the Secretariat is currently moving towards the creation of personal user accounts instead of generic country accounts. Generic accounts are a security risk as password could be shared between relevant personnel, increasing the possibility of it being intercepted. In this new approach of personal user account, each account would be tied to a unique email address and upon creation of the account, the user would be requested to create a password. Furthermore, this approach would allow for the deactivation of accounts for users who should no longer have access to the system, such as due to retirement or change of position. Furthermore, the inclusion multi-factor authentication is being considered to further increase account security.

Suggested improvements to the GIES application for consideration are as follows:

- Only share basic summary information with Parties that are either taking a decision on port entry/use or inspecting a vessel (only possible after development of ARPE).
- No longer send inspection report detailed data over unsecure transmission channels such as email. Instead, an Internet link will be included that points to the information inside the GIES application where password protection is enforced.
- Replace generic user profiles by personal user profiles linked to an individual, so that password need not be shared any longer and can be changed regularly, and retired personnel can be deactivated in the system.

V. NEW FEATURES AND IMPROVEMENTS TO THE GIES

In following with the requests by States through MOP2, the GIES is being developed in modular and phased approach. The current version of the system was developed to include the minimum functionalities required for exchanging information under the PSMA. The Secretariat is however looking at new features and improvements that could be made to the system in order to further support Parties in their implementation of the Agreement. Below is a list of features that are being considered for development and inclusion within future versions of the GIES. Major features which would require review by Parties or are considered to have a significant workflow impact upon users could be tested by States within the sandbox environment prior to being integrated into the production environment.

1. Online form for advanced requests for port entry (ARPE) to facilitate the secure exchange and traceability of sensitive information between foreign vessels and Parties' DPs. Inclusion of this feature would facilitate user workflow of information being shared in the system, such as identification of relevant coastal States and RFBs and would further facilitate the eventual creation of risk analysis through various linkages to relevant system and reports. This feature was already approved for development by Parties at MOP3.
2. Unified search, to serve as a single-access point to search of any information contained on the GIES to which the user has access. Currently search is split between report type.
3. Basic risk analysis tool to support Parties in the decision-making process through the presentation of GIES-compliance-history data in a centralized format ("vessel file").
4. Advanced user management, to enhance coordination at national level. This would allow designated users at the national level to approve additional accounts and potentially manage rights of each account in terms of viewing and uploading information. Centralized account access will be provided to designated users, who can autonomously assign and manage Local Registration Authorities (LRAs) at their discretion.
5. Connection to national and regional e-PSM systems, to facilitate automatic information exchange with internal and external systems through Application Programming Interfaces (APIs).
6. Inclusion of flag State actions, to report on the actions taken on the vessel as a result of a inspection report or port denial report. This feature is already at an advanced stage and was featured in the prototype presentations during MOP3, however its release was delayed in order to improve core features in the system. Once implemented this form could also be modified to allow States to also report on follow up port State actions.
7. Dynamic dashboard, to provide a real-time visual insight (aggregated data) into the participation and level of implementation of the application.
8. Improve workflow of the application by creating linkages to various forms when related to the same event, such as an ARPE, followed by a port inspection report, a port use denial and any subsequent flag or port State actions.
9. Redevelopment of the PSMA applications into GIES, to facilitate the 'Bulk Upload' functionality of DPs into the system and enhance the user experience, including workflow provisions to accommodate new Parties to the PSMA.
10. Multi-factor authentication, to provide additional layers of security and prevent unauthorized system access.

11. Access control system, to allow users to send or receive (and accept or deny) requests for access to confidential information.
12. File export function with digital signature, to facilitate secure offline use and archiving.
13. Central Authentication Service (CAS), to allow for a singular access point to all PSMA systems for different GIES environments.
14. Notification system, to support multi-channel notifications for system updates. This would facilitate a wider demographic range by allowing notifications to be reached in all forms, including through: Email, SMS, voice call, push notifications, and more.

VI. ROLE OF THE IMO NUMBER IN PSMA IMPLEMENTATION

Annex A – Information to be provided in advance by vessels requesting port entry – and Annex C – Report of the results of the inspection - contain the list of data fields to be used as basis for information sharing under the agreement.

The IMO number, globally recognized as the Unique Vessel Identifier (UVI) for the Global Record, is currently broadly implemented as a requirement for certain fleet segments both at regional and national levels, through its inclusion in national law and regional regulations. Usually, the application of the IMO number at regional and national level covers vessels with international activity.

The Parties have recognized the importance of the Global Record in the implementation of the Agreement, and thus the GIES has been developed with an intrinsic connection to the Global Record. This connection supports the truthful identification of a vessel requesting or being denied port entry or use, or being inspected. In other words, making sure that a port denial or inspection report are referred to the right vessel.

Therefore, in practical terms, this is a key data field to support verification of vessel identification and ensure the correct connection of these report types to the flag State certified data. This will also allow the compilation of GIES-compliance-history information on a specific vessel (a “vessel file”) for its use by a port State to feed into its risk analysis.

Some type of risk analysis embedded into the system is an essential future element of GIES should Parties want to exploit the full potential of GIES beyond the notification to those directly involved in a specific case (port denial or inspection). A basic risk analysis to be provided through GIES would at least provide summary compliance history of a specific foreign vessel requesting access to a DP to the port State. This feature could be very useful for all Parties and especially to developing States lacking resources to conduct risk analysis or intelligence reports. It is therefore an inherent possible future feature of the system that could certainly support an effective implementation of the Agreement.

Both annex A and C of the Agreement (drafted in 2009 and entered into force in 2016) include the IMO number data field requirement as “IMO ship ID, if available”. For the purpose of the full operationalization of the GIES, the Parties should consider implementation of these annexes through the GIES requesting “IMO ship ID, if eligible”. This in practical terms would mean that, when the IMO number is required at national or regional level, this data field has to be provided through GIES,

and thus, it would no longer be an option, but a requirement. It is not straightforward to assess the percentage of vessels under PSMA scrutiny that might fall out of this requirement but it is likely to be low.

VII. ROLE OF REGIONAL FISHERY MANAGEMENT ORGANISATIONS IN DATA EXCHANGE

Exchange of information through GIES is a responsibility of the Parties to PSMA. This responsibility can be exerted in several ways, through direct submission (manual or automatic) of information into the GIES or through other means such as regional fishery management organisation (RFMO) systems.

Parties and specific regions have different mechanisms in place and each Party would have to assess the best way forward.

GIES is catered for both receiving information from the Parties directly or through RFB systems but also to notify all those involved, thus in practical terms, it can feed information into an RFB that has yet to develop its own system or has assessed that it is more beneficial to receive information through notifications than build its own system. Equally, if an agreement was in place through the relevant decisions making body of an RFMO with a functional electronic port State measures system, relevant compliance information could be exchanged directly to the GIES, hence avoiding duplication of effort.

Parties are encouraged to assess their specific situation and get in contact with the PSMA Secretariat to initiate implementation of the selected choice.

VIII. ROLE OF THE GIES IN SUPPORT OF THE IMPLEMENTATION INTERNATIONAL INSTRUMENTS AND RELATED TOOLS

SUPPORT TO FAO'S GLOBAL RECORD IMPLEMENTATION

Whilst the fundamental objective of connecting the Global Record and GIES remains the truthful identification of the vessel in relation to port denials or inspections, there are other benefits related to the linkage. GIES adequate implementation might result in an increased participation by FAO Members to the FAO Global Record given intrinsic benefits of the connection.

Currently the GIES is able to extract vessel information from the Global Record to facilitate users in compiling forms such as port denials and inspection reports. The user, when selecting a vessel from the Global Record, is then able to adapt any of this information if it is found not to be updated.

Further linkages could be explored in the following areas.

- Further information (e.g. active or expired licenses) could be extracted from the Global Record and presented on the GIES in a manner that would facilitate the risk analysis process by Parties after receiving an advanced request for port entry by a foreign flagged vessel to their port.
- In the form compilation process in the GIES, when information on a vessel is extracted from the Global Record and is found to be out of date, Global Record National Focal Point of the flag State of the vessel could receive an automatically generated notification informing them which information fields were identified to be out of date by the port State. Essentially it

would create positive feedback loop between the two systems, with the aim of ensuring that information present on the Global Record remains updated and hence relevant for the GIES.

SUPPORT IN THE IMPLEMENTATION OF THE FAO COMPLIANCE AGREEMENT

Under the 1993 FAO Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (Compliance Agreement), Parties are required to assess the compliance of vessels flagged to their State in following relevant measures when landing in foreign ports.

The PSMA is the entry point where compliance checks are conducted on the provisions of international, regional and national laws and regulations. Given the fact that 100 States out of 165 coastal States are Parties to the PSMA, it is clear that the Agreement and the GIES is a key control point for compliance.

There are therefore clear linkages whereby the GIES could support flag States, Party to the Compliance Agreement, and any other relevant agreements, in fulfilling their responsibility to assess the compliance of their vessels. The Secretariat could explore ways in which the application could be further utilised in order to facilitate such role.

SUPPORT IN THE UPTAKE OF THE FAO VOLUNTARY GUIDELINES FOR TRANSSHIPMENT

As an effective control point, the PSMA can play a fundamental role in the uptake of the VG for Transshipment, particularly through the identification of specific operational loopholes in transshipment operations and the sharing of these with relevant States. The GIES will bring additional insight among those involved in specific cases on the day-to-day realities of transshipment and ease the way towards taking corrective action.

A significant amount of information required through the transshipment and landing declarations are reflected in annexes A and C of the Agreement paving the way for automated mechanisms for verification of the information and risk analysis.

IX. WORKPLAN AND STRATEGY FOR THE IMPLEMENTATION OF GIES

A suggested GIES implementation workplan would consist of the following general phases:

- i. Finalization of GIES pilot (up to MOP4)
- ii. Operationalization of current version of GIES (after MOP4)
- iii. Development and piloting of ARPE and other selected functionalities (intersessional period until MOP5, passing through TWG-IE4)
- iv. Operationalization of ARPE (from MOP5)
- v. Future improvements and maintenance

The key elements to a successful implementation strategy are based on progressing steadily into the operationalization of the system, for which inclusion of specific and clear sub-phases is required.

Devising ways in which to secure adequate level of funding to continue the development and maintenance of GIES as well as provide assistance to developing States is crucial.

X. ASSISTANCE TO DEVELOPING STATES

Capacity development support in relation to GIES implementation is available through the FAO Global CD Programme to support the Implementation of the Agreement and complementary measures and tools.

The European Union has put forward financial support to create and sustain the Help Desk that provides backstopping assistance to Parties in the implementation of the GIES and additional technical assistance support to a limited number of developing States is available through an EU-funded project. Funds remain short to support a sufficient number of States.

At MOP3, the Parties noted the value in developing a training programme to support countries in the use of the GIES and developing supporting material in this regard.

FAO Secretariat is working on the design, planning and development of such training programme and materials. Different activities are being considered at this initial stage:

- Training workshops

To ensure the effective implementation and use of the GIES, provisions for the conducting of 'hybridized' workshops are in the pipeline, allowing for both in-presence and virtual attendance. The tentative training modules to be covered include:

1. PSMA background - history, scope, context, provisions, implementation, etc.
2. GIES overview – design, scope, purpose and functionalities
3. GIES use cases - real-world scenarios and their applicability to the GIES
4. GIES demonstration – features and workflow (e.g., login, navigation, dashboard, content creation, data upload, account management and permissions, notifications , etc.)
5. GIES documentation – technical specifications and user manuals
6. GIES testing – application environments (e.g., sandbox) and uses, user interfaces (front-end and back-end), bulk upload and API connectivity

- Manuals

As the GIES is still in its pilot phase, the development of manuals and relevant resources, is still in the preliminary stage. Nonetheless, provisions will be made for the gradual release of basic support resources as required, to facilitate the continued testing of the application and effective participation by Parties. Subject to the availability of funds, the full release of these resources is expected to be deployed with the release of GIES Version 1.0.

Tentatively, these manuals would include:

- User roles - flag States, port States, coastal States and RFMOs
- Functions and features – dashboard, content creation, data upload, account management and permissions, notifications and more
- Technical documentation – system architecture, specifications, and workflow
- System connectivity – connection with national and regional e-PSMs through APIs
- Use cases – implementation scenarios and real-world examples