



## **Global Record**

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### **High Level Requirements**

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**Version 0.2**

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## Document Version History

Version No.	Date	Author	Summary of changes
0.1	12 April 2010	Dan Martin	Initial draft after review of existing documents and proposals
0.2	28 April 2010	Dan Martin	Updates after review from Shaun Driscoll (FAO - GR Project manager)

## Document Information

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# 1 Introduction

## 1.1 Document purpose

The purpose of this document is to identify the high level requirements and any other supporting tools to be delivered in the design of a Global Record database. It is written from a technical standpoint and does not attempt to solve the non-technical issues (political or legal) which have been identified during the discussions of the global record concept.

This document provides a firmer understanding of the Global Record and how it will need to be designed in order to meet the goals set for it. It also identifies some of the hurdles that will need to be over-come for it to be a success and any assumptions that have been made in developing these requirements.

Where a technical solution exists to any of the issues identified, this has been suggested although the nature of some of the issues and how they are eventually solved may require the suggested solution to change. Technology should not be seen as an impediment to the solution as it a well developed GR should manage most eventualities.

## 1.2 Intended audience

The audience for this document includes:

- *FAO*
- *Global record stakeholders*

## 1.3 Background

The need for a Comprehensive Global Record of Fishing Vessels was acknowledged as far back as 2002 in the implementation guidelines for the International Plan of Action to Prevent Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) where it was acknowledged that the lack of such a tool produced a situation that undoubtedly creates opportunities for IUU vessels to escape detection. Subsequently, in the Rome Declaration on IUU Fishing, ministers called for the development of a comprehensive global record of fishing vessels within FAO, including refrigerated transport vessels and supply vessels. Following this, Proposal 2 of the Final Report “Closing the Net” produced by the High Seas Task Force (HSTF) promotes the establishment of a global information system on high seas fishing vessels. The purpose of this system is to combat the lack of access to transparent and authoritative information about the ownership, control and movements of fishing vessels. Provision of this information to Fisheries Management Organisations, Port States, Fisheries Enforcement and MCS authorities and other interested parties will enable actions to be undertaken to restrict and expose Illegal, Unregulated and Unreported (IUU) fishing activity.

It is widely recognized that one of the significant barriers to eliminating IUU fishing is a lack of transparency and traceability in the global fishing sector. States implement individual measures without the benefit of any sort of global information picture and there is no single source where useful and relevant information can be collated, stored and displayed. One of the major enablers of IUU fishing is the lack of information about the global fishing fleet or the wide range of information associated with vessel activity. To make matters worse, fishing vessels frequently change flag, ownership, registration, and fishing authorizations, enabling them to act with impunity if they choose.

The Global Record, which is being planned as an integrated global data base, offers a solution as it is intended to fill this information void. It will make available the essential information to enhance the effectiveness of regional and national monitoring, control and surveillance (MCS) tools and in particular, to support vessel inspection and surveillance programs, investigations, traceability initiatives and resource prioritization decisions, through the effective sharing of information—something that is not currently possible. The development of a GR would improve transparency and traceability of vessels, products, owners,

operators, flags, authorisations and registration. It would facilitate risk assessment for industry, RFMOs and Governments and improve decision making including on fleet capacity, size and structure, management, safety, pollution, security and statistics and more.

The importance of the GR is underscored by new and growing market demands for ecolabels and other forms of product certification which require product traceability. Market forces and incentives could stimulate compliance by countries to provide information to the GR prior to any mandatory legal requirement being imposed.

The GR would support existing binding and non binding instruments to prevent, deter and eliminate IUU fishing and increase the effectiveness of port state measures and MCS activities.

This document seeks to define at a high level the requirements of the GR that will allow it to meet these goals.

## 1.4 Definitions and Acronyms

FAO	The Food and Agriculture Organisation of the United Nations
GR	Global Record
UVI	Unique Vessel Identifier
MCS	Monitoring Control and Surveillance
RFMO	Regional Fisheries Management Organisation
UNGA	United Nations General Assembly
FAO	Food and Agriculture Organisation of the UN
NGO	Non-governmental organisation
COFI	Committee on Fisheries
UN	United Nations
FishVIS	High Seas Fishing Vessel Information System
FINNZ	FishServe Innovations New Zealand Limited
HSTF	High Seas Task Force
MU	High Seas Fishing Vessel Information System Management Unit
TU	High Seas Fishing Vessel Information System Technical Unit
IUU	Illegal, Unregulated and Unreported Fishing Activity
IHS Fairplay	IHS Fairplay
CFR	Community Fleet Register
EMSA	European Maritime Safety Agency



## 2 Stakeholders

The stakeholders identified in this section are the primary (although not all) stakeholders of this project. They include a representative group of direct users of the application and/or the data captured through the processing of the system, any other person or body deemed to have an interest in the project.

Name	Description
FAO	Sponsor and Developer of the GR.
Flag States	Countries who exercises regulatory control over a vessel registered under its flag
Fisheries Management Authorities/Fishing Vessel Registries/Fisheries MCS agencies	Data provider and potential user. GR data could be used to help direct Fishing Management Authorities activities in respect of vessels of interest including assessment of suitability to meet registration criteria.
Prospective ship purchaser or ship broker	User. Use the GR to investigate the background of a vessel as part of a pre-purchase inspection
RFMO's	Data user and provider. Interested in vessels flagged in the individual region/sub-region, as well as data on vessels having authorization to fish in waters of States other than those of the flag State. This would support efforts by RFMOs to establish reliable lists of authorised fishing vessels and to prevent IUU fishing vessels from operating in their areas of competence. Regional organisations can play an important role in assisting countries with their data obligations. They may offer the potential to collect, store and submit data for countries, and to help with national capacity development;
Environmental groups	Groups concerned with the environmental impact of fishing. Organisations such as Greenpeace already run a black-list of vessels implicated in IUU activities.
Compliance groups	Groups who would be interested in using the system to further understand the fishing vessels in their jurisdictions. Would use the GR to focus attention on vessels or operators with a history of IUU activity.
Coastal States	A governmental group who would be interested in using the system to further understand the fishing vessels in their jurisdictions. Would use the GR to better manage resources used for monitoring and surveillance activities.
Consumer groups	With consumers becoming more and more aware of the background of the products they purchase and making decisions based on this information, the GR may provide a mechanism for providing assurance to these groups of the methods and practices used in the catching of fish
Retail organisations e.g. supermarkets	As with the consumer groups, retail organisations are becoming more environmentally aware and conscious of the products they sell. The use of the GR will help to provide additional information for these agents to make informed decisions
Seafood Processors and Fishing Companies	With increasing environmental awareness by consumers and retailers, seafood processors and fishing companies will need to be conscious of satisfying consumer demands for legally harvested fish product.
GR Management unit	Unknown at this stage. This will be the organisation tasked with the day to day management of the GR This group will provide gate-keeper type services to the GR and be required to verify IUU information that is provided in addition to being able to maintain other GR held data



Maritime Patrol agencies and Search and rescue groups	A group who may use the GR to ensure they have the correct information regarding a vessel of interest
IHS Fairplay	Issuer of the IMO number to vessels with a gross tonnage greater than 100 tonnes. The source of the vessel identification information used in the GR. Formerly the Lloyds register fairplay.
Port State Control Authorities	Data providers. PSM information must be reported to the FAO who must make it available and usable in a meaningful way. The GR will provide an excellent mechanism for this.
IGO's	Intergovernmental organisations
Insurance Companies	Data user. GR may provide information on vessel activity which could help insurers to determine whether that activity is compliant with vessel owner/operators vessel insurance policy.
Classification Societies	NGO's in the shipping industry that establish and maintain standards for the construction and classification of ships and offshore structures, ensuring that construction is according to standards including carrying out regular surveys of ships in service to ensure the compliance with these standards

### 3 Goals

Thought the many discussion and proposal documents that have been produced for the Global Record initiative a there are a number of recurring idea's and goals that the GR hope to achieve. While not a requirement they are important to the success of the GR and provide an insight into what the FAO and other stakeholders hope to achieve:

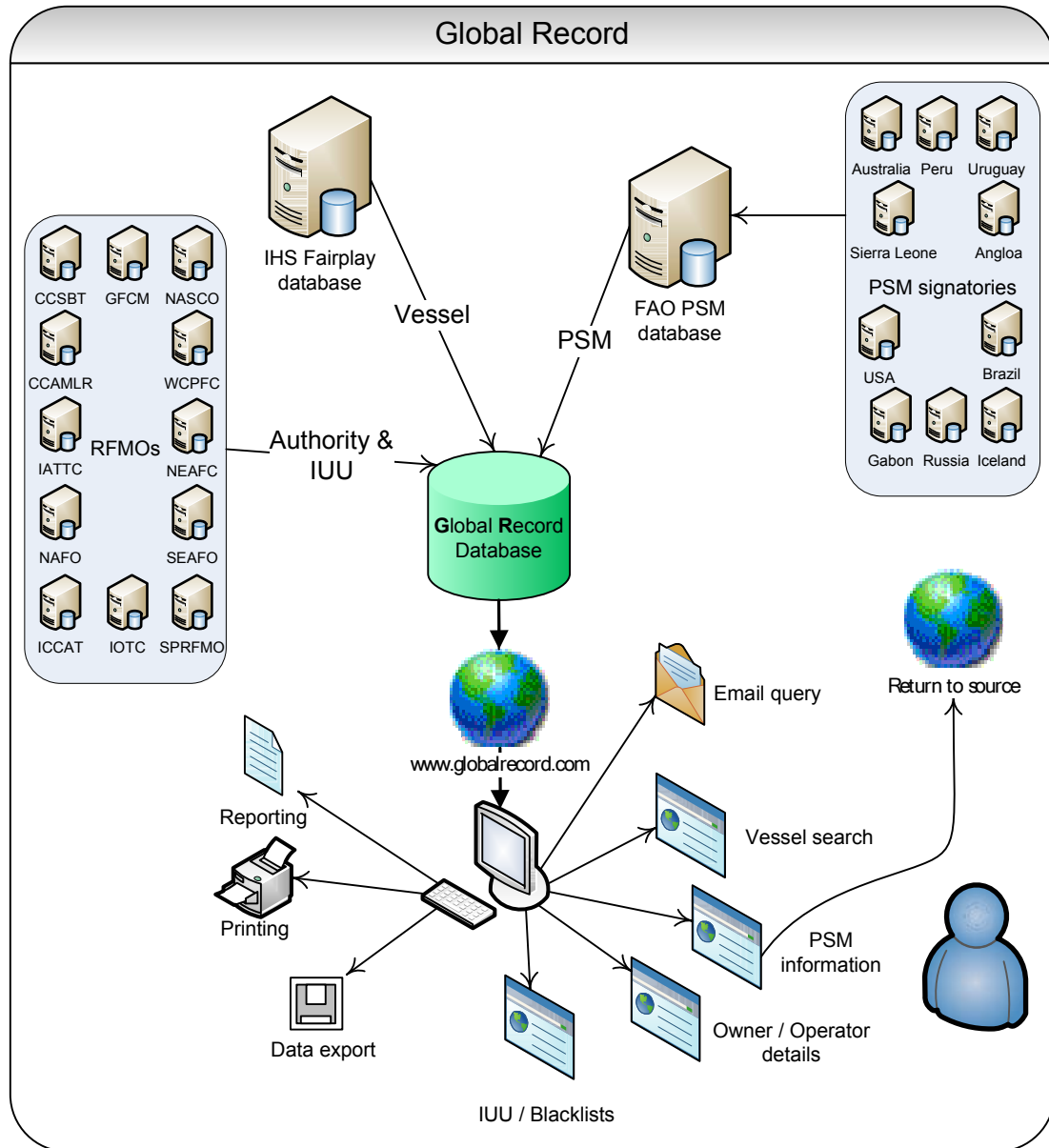
1. Provide a tool to prevent, deter and eliminate IUU fishing and related activities, making it more difficult and expensive for vessels and companies acting illegally to do business<sup>1</sup>.
2. Enhance transparency in the global fisheries sector by uploading, collating and displaying vessel information and information related to vessel activity;
3. Assist planning and decision-making across the fisheries sector by providing a comprehensive global information picture on fishing vessels and vessel related activity;
4. Encourage greater awareness of flag State responsibility and, where appropriate, accountability for the vessel and/or crew behaviour;
5. Add value to the efforts of port States in managing requests to enter port and in assessing the legitimacy or otherwise of catch being transported, trans-shipped or landed through or at the port;
6. Add value to the efforts of coastal states in managing fisheries access agreements, managing domestic fishing fleet registration and activity, planning and executing MCS activities, and communicating with flag States;
7. Provide an international database incorporating as much of the world fishing fleet as deemed appropriate and necessary to mitigate IUU fishing and other risks;
8. Provide, to the greatest extent possible, open access to all relevant information so that the scope of the user group is maximised and transparency in the global fisheries sector is significantly enhanced;
9. Present information in an entirely neutral for, leaving users to make whatever judgements or assessments they feel appropriate;
10. Enhance the effectiveness of existing MCS tools and other traceability or catch verification measures by providing a comprehensive information overlay against which submitted data and other field observations can be cross-checked and verified;
11. Provide simple, user-friendly access using web-based applications with inbuilt flexibility to cope with future requirements and growth;

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<sup>1</sup> Report of the Expert Consultation On The Development Of A Comprehensive Global Record Of Fishing Vessels

## 4 High Level Requirements

The following diagram provides a graphical representation of the Global Record



The high level requirements for solution are listed below.

ID	Title	Description	Expected Features
HLR1	Vessel identification information	The solution will maintain a level of high quality, standardised vessel information that will provide statutory bodies, regional organisation and other enforcement officers with a list of known fishing vessels from around the world.	View vessel View vessel history Print vessel information
HLR2	Vessel activity information	The solution will allow details related to known fishing activity including blacklisting to be record against vessels and provide a means for this information to be reviewed and confirmed or retracted.	Vessel Authorisations Vessel Activity PSM information Print vessel information
HLR3	Searching	The solution will provide a comprehensive search mechanism to interrogate the data held in the GR system. Different search functions may be available to the general public users and to contributing organisations	Search Navigate to information Company search
HLR4	Central source	The solution will draw together data from many different sources and hold it in a single repository.	Data import Data export Data cleansing and verification
HLR5	Users	The solution will maintain users and any other relevant necessary information to efficiently administer privileges to the system.  The solution will incorporate security to only allow users to access and modify data to the extent that they are authorized to do	User registration User maintenance User verification Forgotten password Role based security
HLR6	Review mechanisms	The solution should provide a review mechanism to ensure the GR is being maintained to an adequate level by contributing organisations and used for its intended purpose	Name and shame Duplicate vessel check Information disputes
HLR7	Reporting	The solution will provide a number of standard reports with selectable parameters	Request report Download report
HLR8	Owner / Operators	The solution will maintain Owner and Operator details, record relationships between other Owners and Operators and Vessels	View company details Company overview
HLR9	General information	The solution shall provide information informing users of the sources of information, any disclaimers to the correctness of the information and news or items of interest in relation to the GR. It shall also provide detailed Help, a list of FAQ's, contact information and any other such information to facilitate the use of the GR	Contributor list Disclaimers News / items of interest Help FAQ's Contact Us Data protection statement Public user registration information Report an error

## 4.1 HLR1: Vessel Identification information

Definition of vessel:

“vessel” means any vessel, ship of another type, boat and other craft used for, equipped to be used for, or intended to be used for, fishing or fishing related activities

### 4.1.1 Description

This requirement relates the GR holding sufficient information about vessels that can be maintained over time. It will track changes to the vessels attributes over time to provide a clear history of the vessel itself. The attributes of the vessel will allow a person sighting a vessel at sea, in port, in photos or other media, to find and investigate the history of the vessel.

It is envisioned that this data will be maintained via a data transfer mechanism from national or regional authorities, or by the GR management unit via the GR itself. It would also be possible for national or regional authorities to add or edit information if desired.

A key piece of functionality that will be available will be the ability to add photo's of the vessel. This will greatly assist in the identification process and for evidentiary purposes.

Vessel information requirements will be broken into (at this stage) two (2) main groups. That for vessel greater than 100GT, which will be sourced from the IHS Fairplay register, and that for vessels less than 100GT, which will be sourced from national registers. A staged approach will be necessary with the IHS Fairplay register being the initial source of vessel information. Further stages will incorporate and expansion of IMO numbering program along with the management of vessels that do not fall into the IMO numbering brief

The GR will also record the source of the data and when the data was updated.

### 4.1.2 Data

Note: This information is indicative at this time. The detailed requirements will specify this information.

- Vessel identification information may include:
  - Name
  - Unique identifier
  - Call sign
  - Flag
  - Flag state's Vessel number (if issued by flag state)
  - IMO number
  - Base / registered port
  - Length
  - Beam
  - Weight
  - Images
  - Hull colour
  - Superstructure colour
  - Vessel type
  - Year built
  - Location beacon information
  - Operator
  - Superstructure position

### 4.1.3 Expected Features

- View vessel
  - The ability for the GR to display the most up-to-date information particular to the vessel selected. This will include the initial point of entry when investigating a vessel and provide options to navigate to other information relating to a vessel e.g. IUU Activity, PSM data or Owner/Operator information
- View vessel history
  - A continuation of the view vessel feature, whereby the user may review the history of the vessel along with the period when that information was valid. It is expected that all vessel information that is held in the GR will be tracked over time to ensure a complete understanding of the vessels past can be provided
- Navigate to Owner / Operator
- Navigate to Activity information
- Vessel activity summary
- Vessel authorisation summary
- Print vessel information

Note: At this stage it is not expected that there will be any ability to directly add or modify vessel identification information via the Global Record. All vessel identification information and updates to this information will be sourced from other systems, notably the IHS Fairplay system via a data transfer function.

## 4.2 HLR2: Vessel activity information

### 4.2.1 Description

This requirement pertains to the GR recording any fishing activity that the vessel may have been identified as undertaking. In addition to the activity, it will also record any fishing authorisations issued by national or regional authorities.

This area will be the key focus for identifying IUU activity when comparing activity information against authorisation information and as such will require evidence and verification of the activity. Authorisation information will not be verified as it will be sourced from the issuing body. Authorisation information may be edited to allow the issuing body to retract, revoke or cancel any authorisation it has issued

Activity information will be expected to be provided from compliance groups, national and regional organisations.

When activity information is received and the activity is outside of the vessels authorisation, this vessel will be blacklisted. A user will be able to review the activity information, be able to identify the source of the information, view any images included and where relevant be provided with the ability to contact the source.

Port records will manage events such as customs breaches, illegal discharges, crew mistreatment, immigration issues, misreporting, non-payment of fees or any other event that may be of interest to a port or state authority.

This information will be received and made available under the Port State Measures (PSM) agreement, which a foreign vessel must comply with as a condition of use of ports within a port state. National PSM would typically include requirements related to prior notification of port entry, use of designated ports, restrictions on port entry and landing/transshipment of fish, restrictions on supplies and services, documentation requirements and port inspections, as well as related measures, such as IUU vessel listing, trade-related measures and sanctions

The GR will record the source of the information and when the activity and authorisation information updated.

### 4.2.2 Data

Note: This information is indicative at this time. The detailed requirements will specify this information.

IUU Activity information may include:

- Activity location
- Activity type
- Date of activity
- Activity description
- Additional evidence (e.g. photo's, court documents, many different document types allowed)
- Reason for reporting / why activity is considered IUU
- Species (if known)

Authorisation information may include:

- Authorised period
- Method/s
- Location
- Issuing organisation
- Operator name
- Captain's name
- Target species

Port State Measures information may include:

- Port
- Country
- Incident type
- Description
- Date
- Additional evidence (e.g. photo's, court documents, many different document types allowed)

### 4.2.3 Expected Features

- Add IUU activity
  - An interface for permitted users to add an IUU activity record against a vessel known or unknown.
  - Will notify GR management unit (and national/regional organisations) of entry being recorded - will commence the verify IUU activity business process
- Update IUU activity
  - An interface to allow permitted users to update an existing IUU activity record
- Delete IUU activity record
  - The ability for a GR management unit member to delete a record created incorrectly
- Verify IUU activity
  - The method by which the GR management unit or other permitted users can verify that the activity took place. A business process will need to be developed to ensure this is a rigorous process to maintain the integrity of the GR
- View IUU activity records
- View Authorisation records
- View PSM records
- Hyperlink to website of data source
- Print activity information
- Print authorisation information
- Print PSM information

## 4.3 HLR3: Search

### 4.3.1 Description

One of the most important aspects of the GR will be the ability to detailed searches of many aspects of the vessel identification, activity and authorisation data held in the GR database. It will allow a user to drill down to get further details of the vessel.

The search will perform smart searches on names and numbers (looking for full and partial matches) and provide drop down selection lists for attributes such as flag and vessel type.

The search function will be provided in a basic form for public users and an advanced form for contributing organisations users'.

Search results will include an image if a vessel identified as matching the search has an image stored in the GR and be ordered based on how close it matches the search criteria entered.

The search will also provide a function to query historical data in order to track vessels whose attributes have changed over time e.g. a search on the name 'Gill' will return all vessels who were at any time named 'Gill', not just those vessels currently named 'Gill'.

At this stage as it is unknown what search attributes and results sets will be required, so more than one search function may be need to be developed to accommodate all desired functionality.

A public search may also require payment although this is yet to be confirmed.

### 4.3.2 Expected Features

- Vessel search (basic)
- Vessel search (advanced)
- Owner / Operator search
- IUU Activity search
- Blacklisted vessels

## 4.4 HLR4: Central Source

### 4.4.1 Description

The GR is to provide the ability to be a one-stop-shop for vessel information. To that end the GR will be able to import data in multiple formats e.g. csv, html, xls, xlsx and use electronic mediums such as web-services and email to transfer data. The data will be imported from national and regional authorities systems

The GR is to allow manual and automatic upload functions and will perform basic validation checks as well as informing both the GR management unit and the contributing organisation of confirmation of receipt or error details if the file failed some validation.

The data and field formats will be generic as possible to allow for many different system and technology types to interact with the GR.

The GR will also allow data to be exported in multiple formats e.g. csv, html, xls, xlsx, doc, docx, pdf and will allow for this data to be downloaded to a users computer.

Any data which is not publically available in the country that collected the information will not be available to public searches. A review of legal requirements will be necessary to confirm this functionality

It is preferable that where vessel identification and vessel authorisation information is drawn automatically from another system, this data should only be updated via that system to ensure the data is kept in sync.

The GR will accommodate as many different datasets as possible. Where information is not provided from a source, the GR should still be able to store and use the data that is provided

### 4.4.2 Expected Features

- Data import



- Import file validation
- Validation failure notification

## **4.5 HLR5: User**

### **4.5.1 Description**

The GR may only be used by registered users. Users are to be assigned a role which will allow read/write permissions based on the contributing organisation they belong to.

All editing of data in the GR are to be tracked and including by who and when the change was made. This is important for auditing purposes.

Users for contributing organisations will be able to be managed by the organisation itself - i.e. they can create/edit users for their own organisation.

The GR managing unit will have the ability to edit all information within the GR and will provide the verification / data checking role for the system.

### **4.5.2 Expected Features**

- Role based security
- Add and maintain users
- Account activation
- Login credentials
- Forgotten password

## **4.6 HLR6: Review Mechanisms**

### **4.6.1 Description**

An important aspect of the success of the GR will be that the data is kept up-to-date in a timely and frequent manner.

The GR will provide functions to review data provided by contributors to ensure transparency on which contributors are providing information on a regular basis. This data may be published or made available to other contributors, the GR management unit and the FAO to encourage the non-contributors to provide information for all members to use.

The GR will also provide a method of identifying duplications of vessels to ensure the integrity of the data and traceability of a vessel's past can be maintained. A business process carried out by the GR management unit will support this and will require communications back to the originating organisation.

### **4.6.2 Expected Features**

- Non-contributors
- Erroneous data providers
- Duplicate vessels / related vessels

## **4.7 HLR7: Reporting**

### **4.7.1 Description**

The GR will provide a number of standard reports available (possibly at a cost) to users. These reports will allow a user to select various attributes that the report will be based on.

A report will be able to be downloaded in multiple formats.

A report will also be able to be generated from specific areas of the GR, e.g. a Vessel report can be generated from the vessel information screen for that vessel.

#### 4.7.2 Expected Features

The contents and the user selected attributes of each report will be confirmed during the detailed requirements phase

Vessel Reports:

Vessel reports are centred on a single vessel.

- Vessel as at a date
  - This report answers the question, on a selected date, what were the attributes of this vessel
- Vessel history report
  - Design to give the life history of a vessel allowing it to be tracked in all it's

Operator reports are focused on a single operator.

- Operator vessel summary report
  - Provides details on all the vessels under control of the operator at a point in time
- Operator authorisation report
  - All fishing authorisations issued to the operator at a point in time
- IUU activity report
  - Relates all IUU activity within a time period, for a vessel, for an operator, for a species or in a specific area.
- Port summary report
  - A summary report by either port, vessel, operator or timeframe providing a summary of the PSM data.
- Vessel blacklist
  - A list of vessels that have IUU activity recorded against them and the operator at the time the activity was recorded. By date, area or operator

## 4.8 HLR8: Owner / Operator

### 4.8.1 Description

Another important aspect of the GR will be tracking Owners or Operators who continuously engage in IUU activity. The GR will track owners and operators of vessels and any relationships between different entities so that in the same way as a vessel, an operator cannot simply change their name and look to be clean.

This information will also be required to support various business processes to allow the GR management unit to contact these entities with regards to IUU activity.

It is envisioned that this data will be maintained via a data transfer mechanism from national or regional authorities, or by the GR management unit via the GR itself. It would also be possible for national or regional authorities to add or edit information if desired.

A unique identifier will also be generated to track the entity throughout the GR.

## 4.8.2 Data

Owner/Operator data may include

- Name
- Country
- Type
- Address details
- Email details
- Phone details
- Related entities

## 4.8.3 Expected Features

- View Owner / Operator
- Vessels summary
- IUU Activity summary
- Fishing Authorisation summary

## 4.9 HLR9: General Information

### 4.9.1 Description

This HLR encompasses all the peripheral pages required on the website to provide relativity static information to anyone using the website.

### 4.9.2 Expected Features

The following is an indicative list.

- About the GR
- Contributor list
- Disclaimers
- News / items of interest
- Help
- FAQ's
- Contact Us
- Data protection statement / Privacy information
- Public user registration information
- 

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