MedStat 2011 – Fishing Vessel Census

FISHING VESSEL REGISTER SOFTWARE
USER GUIDE (RELEASE 1.0)

by

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Disclaimer:

The user guide is subject to being updated depending on alterations and additional features introduced into the software and customization at national level, following the release of this version (Release 1.0)

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Section I – Software setup

Introduction

Before installing the application, it is of utmost importance to customize it by means of using the *Fleet Register Configurator* application. Only after this step can the *MedFisis Fleet Register* application be installed.

In order to customise the application according to the specific needs of the country in question, it is necessary to install certain material/information (Reference Tables, operating language, correlation coefficients *etc*).

Pre-requisites

It is essential to prepare certain information before starting the set up of the software (customisation and installation):

- Reference tables information (this information is essential)

It is strongly suggested that the following lists must be completed and available before launching the *Configurator* tool.

- List of National Ports (plus additional information)
- List of Field Recorders
- List of Fishing Zones (according to national requirements and specifications)
- List of Issuing Offices (issuing of fishing licenses)
- Statistical Minor strata (usually the Provinces)
- Statistical Substrata (usually the Regions)
- Statistical Strata (usually mainland/islands, Atlantic/Mediterranean, marine/continental, etc)
- Authorisation types

Language

There are two options for use of the national language. The first is in the reference tables and the second is in the application itself. In order to have the answers to the fields (drop-down lists) in the national language, all terms employed in the reference tables must be translated from English into the national language. Moreover, if the aim is to use the application in the national language, a full list of all terms employed in the software must be provided. Without the full list of terms translated, the application will work only in English.

Correlation coefficients

The application incorporates several ways of checking the quality of the data entered into the register database. Some of these checks are based on correlation coefficients between measurable variables. Usually the variables used for these correlations are length, tonnage and power. The application uses default coefficients obtained from the whole Mediterranean fleet; however, it is recommended that coefficients be calculated for the national fleet and substituted into the application in order to fine-tune the quality check of the national data. The updating of these coefficients is explained in item *Quality Checks* in section III of this guide. This step can be ignored if the coefficients are not available.

Starting the customisation procedure

Click on Start → All Programmes → FAO MedFisis → Fleet Register Configurator

Before opening the Configurator, two questions are asked:
- Would you like to retain the database currently in use?
- Would you like to retain the language translations currently in use?

These questions allow the user to keep the existing database and language translations (if they already exist in the PC), so that any changes or new data will not be lost if a new software version is released and installed on the PC.

Note: language files are .XML files and the database is a set of a .mdf and a .ldf files.

After accepting or refusing these questions (or one of them) the Configurator opens up.

The Configurator wizard guides the user through very simple steps starting with the selection of the country and the database settings (see *Fig.1* below).

Figure 1. The configurator wizard

Country-related settings

In this window (figure above), the user can set a prefix for the Unique Vessel Identifier by inserting the selected prefix in the box on the right. The fleet register application is built in modules one of which is the EU-related information. By selecting the EU Country box, this module (and its related fields) will be activated (but for EU countries only). In the drop-down list, the country to which the fleet register will make reference must be selected. The user can also choose to show the National Language (Arabic is available) in the drop down lists of the application (click on <u>References</u>) or English (if this option is

not selected) and/or the software labels themselves (<u>Labels</u>) so that the software appears in the national language.

Distributed data management

At system design level, due to the restrictions that most of the South Mediterranean countries (our privileged customers) have with hardware, connectivity and localised technical support, it was decided to develop this database in Stand-alone platform instead of a Client-server structure which could have been in certain cases more performing and easier to be assisted on remote (from MedFisis-Rome). However, preparations have been made in order to enable the change to the present structure without the need for excessive modifications, and a pseudo distributed data management system has been created artificially. In other words the system can be divided into two main blocks, the Central and the Peripherals. Ideally the Centre is located at the ministry (or system headquarter) which dialogues with a certain number of peripheral offices where certain functions are enabled by the administrator. For example, operators in three or four ports can perform all data entry operations, updating vessel records, printing limited tables etc and regularly submit (send) the file to the Centre which upload it into the main database, assemble it with the remaining parts and construct an updated version which is then downloaded to a number of "read only" users

The patter on how the system is going to be used must have been decided at the initial phase.

Controlled environment

Needless to say that all the data transmission is governed by internal functions which prevent errors, bugs etc. Several levels of automatic data debugging, data coherence checking and data integrity controls are built in. The user can also select the option "<u>Skip Integrity Checks</u>" if he or she wants to accept the data as they are (without pre-testing it for uploading). A box is also available to indicate whether this is a <u>Peripheral Office (usually at the ports)</u> or not. This option will be used later to 'Upload' data from the central office into the peripheral offices or *vice versa*. For this, the user should 'Download' Full Fleet or Current View for Transfer from the central office (creates an .XML file), then 'Upload' this data from a peripheral office and 'Update' the census. It is necessary that the flag in the <u>Peripheral Office</u> box is marked for the data to be transferred.

SQL server parameters

This section should not be modified unless the user is an IT expert. The server address and the server instance name are to be indicated (set by default if not modified). The database settings can be tested.

Connection-related constants

As in the previous section, these parameters (Database, Documents, Images and Language subfolders, Current Connection String and Connection String Template) should not be modified unless by an IT expert. After all modifications are done, click on the <u>Apply Changes</u> button (<u>Save successful!</u> message appears) and go to the next wizard window (Reference Tables Customization).

Reference Tables

In the fleet register application, the majority of reference tables are already filled with data that are common to all countries. These are called *Integrated* tables and do not need any modifications. However, certain tables have to be either completed (for subcategories, *etc*) or filled up from scratch with data elements particular to the country. These tables are called *Populated* tables.

The Populated tables are therefore completed during the set up. Initially, they are filled with examples that can be modified, deleted or completed; other tables are filled with sequential numbers that have to be replaced by the national data elements of the country. For example, the Reference Table 'Ports' includes a sequential list of imaginary ports:

> Port 1
> Port 2
> Port 3
> ...

These have to be replaced by the list of actual national ports.

The Reference Table *Issuing Offices* includes some guiding examples that can be kept and expanded according to national needs, or totally replaced:

> Fishery Directorate
> Port Authority
> Other

It is therefore important to decide on the data elements that are going to populate these reference tables before the start of the set up of the application.

The following is the list (in alphabetic order) of the Reference Tables that present Populated Fields:

Authorisation Type	Compulsory field
Fishing Zones	Compulsory field
Issuing Offices (Fishing Authorisation)	Compulsory field
Minor Strata (Vessel Registration Office)	Compulsory field
Ports	Compulsory field
Recorders	Non-compulsory field
Strata	Non-compulsory field
Substrata	Non-compulsory field

In order to modify the reference tables, click over the field and insert the new information. The tab key may be used to go to the next one. To add lines to the table, or to perform other actions, use the buttons at the bottom of the page.

Note   When populating the fields of these tables, never change the ID column.

The tables that are related to each other will have drop-down lists to establish their relationships. Take, for example, the Strata, Substrata and Minor Strata. Next to each new row of the Minor Strata table, the user will have to choose the Substrata it belongs to; then next to each new row of the Substrata table, the user will have to establish which Strata it belongs to. In this way, the relationships will be established by the user without affecting the IDs of each row. Likewise, any other information related to the ports should also be indicated at this step (if available): port code, minor stratum, geographic situation, GSA, port type (see *Fig.2* below), and EU port code (if applicable).
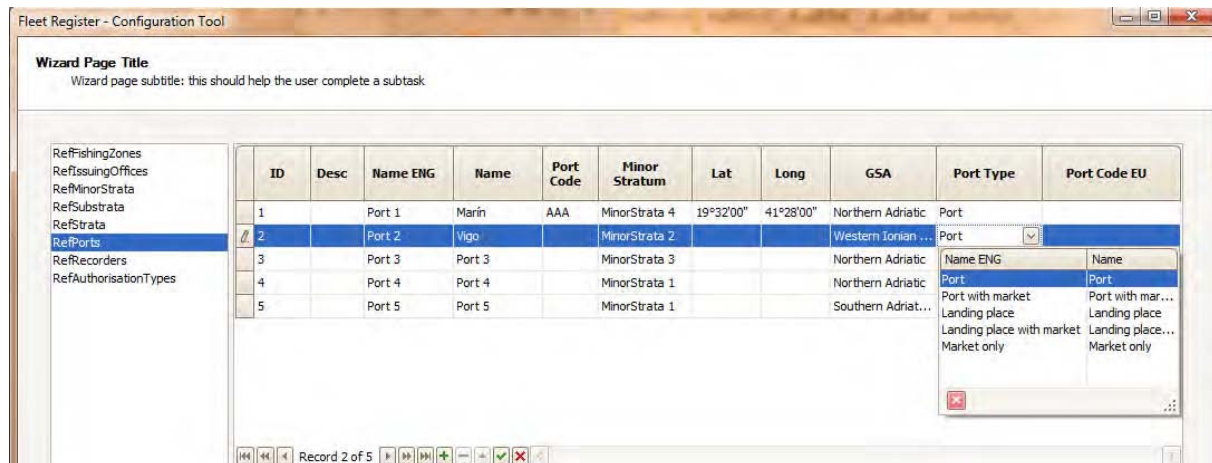

Figure 2. The configurator wizard – selection of port type

When all information has been inserted or the modifications done, click on the Apply Changes button.

> **Warning**
> Keep a copy of the populated reference tables for future set-ups. The values and their corresponding codes must be kept exactly the same for future installations, otherwise the reporting will be affected (by crossed codes/values) and they will not be comparable.
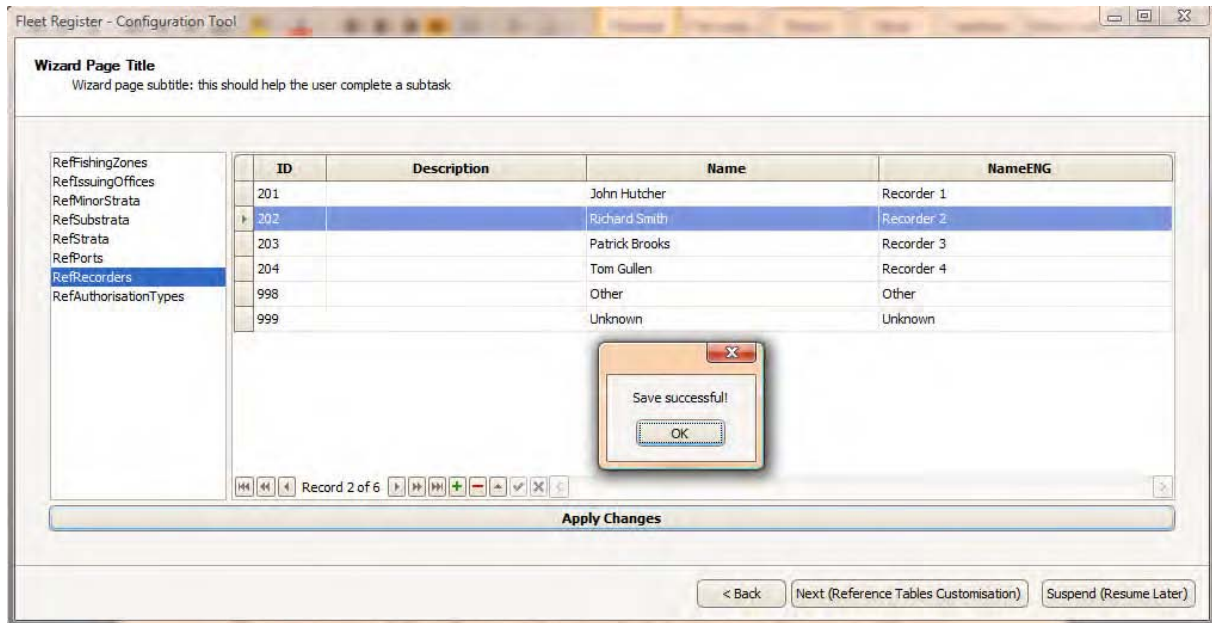

Figure 3. The configurator wizard – saving changes

The customisation of the software can be re-launched at a later stage for further modifications to be incorporated (it is necessary to re-launch the Fleet Register application for modifications to be shown). This facilitates amendments without the need of an IT expert.

In the case of Reference Tables with Integrated Fields, there is also the possibility of adding sub-categories or further categories to the table, in order for them to be used for national/statistical reports (customised from queries). However, these won't be linked to other fields. This action is possible through another facility of the software explained ahead in this user guide.

Operational Language

The operational language is the language in which the whole application is presented. The application has been developed in English but can operate in any language provided that a source file is completed with the translation of all terms (Labels) used in the software. This source file is external to ease the translation process so can be done beforehand. This file is defined in the setup of the software so that it will operate in the national language (see explanation in *Country-related settings* section).

The national language can also be introduced in the Reference Tables that provide the Data Field values by means of drop-down lists. The drop-down lists present two columns, one in the national language and one in English of every string value, provided that the translation is made available before the set-up of the software. The drop-down lists can be set to show either the national language or English in the values of the fields (as explained in the Country-Related Settings above). This option is independent of the operational language of the software.

Section II - Users

The census software is able to fulfil a number of functions depending upon the type of user using it. There are two main user types:

- data entry/modification user, and
- supervisor

There is a third type of user who would be a sort of supra-administrator able to reinstate the other Supervisors should they be denied access by mistake. This user cannot be deactivated nor can his Supervisor rights be removed. This role would normally be adopted by a member of the National Coordination Team (see the "Operational Manual" in References).

Data entry/modification user

The data entry user will be the most common user type. There can be as many of these users as necessary and their main role will be to enter/correct/complete data on the vessels from the information gathered through the questionnaires.

If possible, it would be convenient to assign this task to the field recorders who completed the questionnaires, as they are acquainted with the information. Otherwise, trained data entry staff should be adequate for this task considering that the questionnaires have been approved and validated and most responses are chosen from a drop-down list so that problems in the interpretation of the questionnaires should be limited.

The data entry user can change his/her password, load a census, view its history, load a fleet, add new vessels, modify or delete them, do queries and data checks on the fleet and generate fleet and statistical reports as well as fleet exports and reference exports. This type of user cannot report or export to international organisms (*FAO, GFCM, EU*).
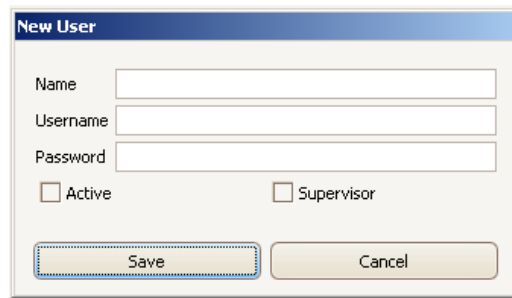
Supervisor

The supervisor has full rights over the software in terms of its functions. This means that besides the functionalities that are available to the data entry user, the supervisor can also:

- manage user accounts,
- create, modify, seal, delete, reopen or restore a census,
- view (and authorise) deleted/pending vessels,
- modify the data integrity checks reference tables,
- generate official standard reports (National, *GFCM, FAO, EU*), and
- export the fleet data into *Excel* files.

Regarding the management of user accounts, the supervisor can:

> ***Add user.*** The supervisor can create as many user accounts as necessary, for both data entry users and for users with supervisor rights. To add a new user, go to the Menu bar, select the <u>Users</u> tab and then select <u>Add User</u>. A new window will appear (see *Fig.4*) prompting the supervisor to add the full name of the person, a user name to log on and a password. If the account is meant to be a supervisor account, the corresponding check box must be marked; otherwise it must be left empty. A second check box indicates whether the user is active or not. This check box will allow the supervisor to set up an active or inactive user account. For the account to be active, the check box must be marked. Inactive users will not have access to the database.

Figure 4. New user dialogue box

Deactivate user. As stated before, any active user can be deactivated at any time by a supervisor. This user will not be able to login while he/she is deactivated. To do this, select the <u>Users</u> tab from the Menu bar and select <u>Deactivate User</u>, (see *Fig.5*).   A new window will come into view showing the list of all active users. Select the check boxes corresponding to the users to be deactivated and press the <u>Deactivate</u> button. A pop-up message will prompt confirmation or cancellation of this action. Click on the <u>Yes</u> button and a confirmation message will come into view. The user name will disappear from the list and will appear on the deactivated users list.
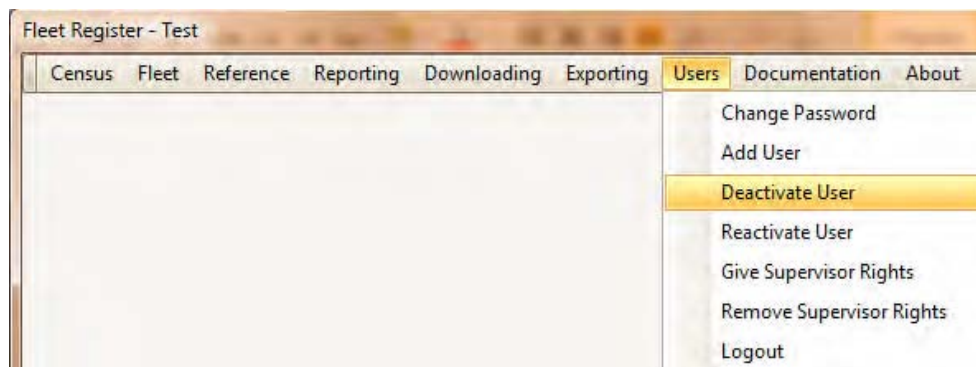

Figure 5. User deactivation

Reactivate user. To reactivate a user account, a similar procedure must be followed: select the <u>Users</u> tab in the Menu bar and select <u>Reactivate User</u>. A window will appear with a table listing all non-active users. Click on the check boxes of the users to be reactivated and press the <u>Activate</u> button. A pop-up message will prompt you to confirm this action or to cancel it. Click on the <u>Yes</u> button and a confirmation message will come into view, (see *Fig.6*). The user name will disappear from the list and appear on the activated users list.

Grant Supervisor rights. A data entry user can be given supervisor rights and will then be able to use all available functionalities. To do this, first select the <u>Users</u> tab in the Menu bar and then select <u>Give Supervisor Rights</u>. A window will open up with a table listing all data entry users. Click on the check boxes of the users to be given supervisor rights and press the <u>Set as Supervisor</u> button. A pop-up message will prompt you to confirm this action or to cancel it. Click on the <u>Yes</u> button and a confirmation message will come into view, (see *Fig.7).*   The user name will disappear from the list and appear on the list of supervisors.

Figure 6. User reactivation

Figure 7. Granting supervisor rights

Remove supervisor rights. It is also possible to withdraw the supervisor rights of a user following a similar procedure: select the Users tab in the Menu bar and then select Remove Supervisor Rights. A window will open up with a table listing all supervisor users. Click on the check boxes of the users to be set as data entry users and press the Set as Non-Supervisor button. A pop-up message will prompt you to confirm this action or to cancel it. Click on the Yes button and a confirmation message will come into view. The user name will disappear from the list and will be added to the data entry list.

In addition to these functionalities, any user can change his/her password at any time in the Users menu of the Menu bar. The new password must comprise a maximum of ten characters, which can be letters, numbers or underscore. Caps lock should be avoided since passwords are case sensitive. In order to save the new password, press the Save button (do not press enter). To delete any wrongly typed password, select it with the mouse and press the Delete button on the keyboard. The User menu also provides for Logout.

Other functionalities dealing with the fleet/vessel data (available to different user types) are described in Section III.

Section III - Functionalities

The Census/Fleet Register MedStat software contains all necessary functionalities to input, store and organise fishing fleet data (vessel records), run data checks and queries, produce reports and export the dataset. It provides the outputs requested by international bodies *(FAO, GFCM, EU)* in the required format.

Logging into the software

Double click on the icon of the software in your desktop (*MedStat Fleet Register*) in order to open up the access window. Each data entry officer and supervisor will be assigned a *Username* and *Password* with which the user will be able to open the application, (see *Fig.8*).

Figure 8. Logging into the MedStat Fleet Register

Once the user is logged in, a window with a Menu bar will appear at the top with logos on the top right corner. A data entry user will find at least one census database listed in the central window, and to its right a number of buttons each enabling certain actions to be taken with the selected database, (see *Fig.9*).
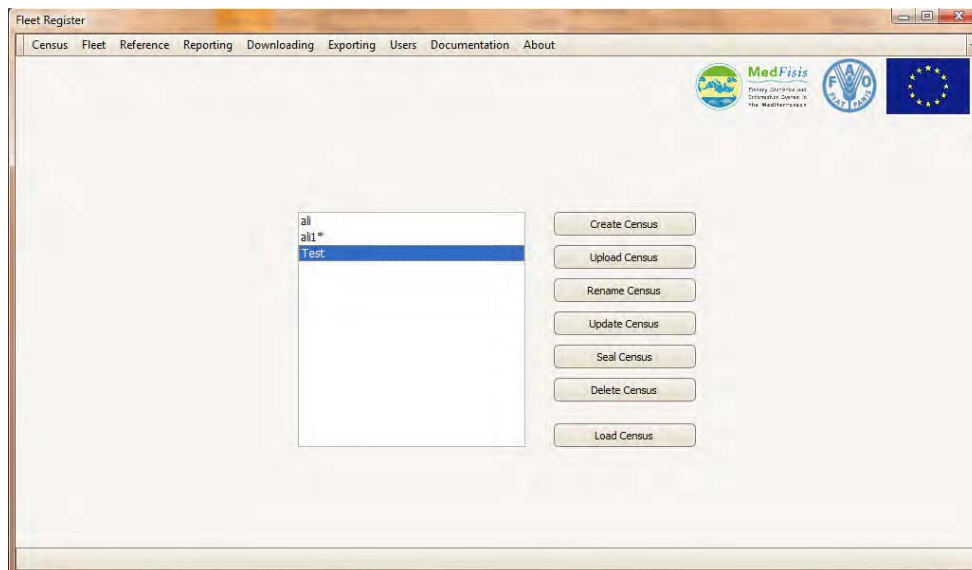

Figure 9. Starting to work with a database

Creating a new database

This functionality is available to users with supervisor's rights only. There are two options to create a new database, depending on whether:
- a census exercise is going to be carried out for the first time, or
- a previous census will be updated.

Creating a database from scratch

Clearly this is the option that must be used when it is the first time that a census exercise is going to be carried out in a country, or when the national authorities want to start from scratch.

Click once in the Create Census button under the central window. The central window could be empty or have a number of databases already in it, in which case make sure that when clicking on the Create Census button no database is selected (highlighted). A message will come into view requesting confirmation for the creation of a blank census/register database. By clicking Yes a request will be made for a census name. After inputting the selected name, click on the Save button. A message will appear confirming the success of the operation.

Creating a database from a previous census

This option is used when a previous database containing the majority of the data needed already exists. In this case, only the data that has changed from the previous year/exercise needs to be updated. This is usually the case when the *National Fishing Fleet Register* is updated annually. Therefore, a new database has to be created by copying the one from the previous year and updating the information that has changed. In order to copy a database from the list, select (highlight) its name and click the Create Census button. A request for a new name will be displayed and an exact copy of the selected database will be shown in the list under the new name.

Note: When entering the census name or other information, always click the corresponding button, since the *Enter* key may not work.

Rename, delete, seal, reopen, restore, upload and update

These are functionalities that are available to Supervisor users only. To Rename, Delete and Seal a census, the targeted census database name must be highlighted. This is not necessary in the case of Reopening or Restoring a census database because a list of censuses to be reopened or restored will be displayed.

> ***Rename***. Select (highlight) a database and then click on the Rename Census button underneath the central window, provide the new name for the database and click Save. A message will indicate that the change has taken place.

> ***Delete***. Select a database, and then click on the Delete Census button underneath the central window. A message will warn the supervisor about the action about to take place. Click Yes and the database will be deleted.

> ***Seal***. This functionality allows the supervisor to block any further actions from taking place in the selected database such as introducing new records, modifications or deletions. This action is intended to protect a completed and approved database from being altered in any way. However, examination of its contents or production of reports and queries or exporting the data stored in it is still possible. The main use of this functionality is when closing the registry of a certain year (after official approval) and opening a new annual register. In order to seal a census/register database, select (highlight) a database from the list, click the Seal Census button and when prompted, enter a reason for the database to be sealed (for example, "Officially revised and approved"). The sealed database will show in the list with an asterisk (*) next to its name.

> ***Reopen***. This functionality allows the reopening of a sealed database in order to make necessary changes. This option should be used only in cases where major mistakes have been noticed in the previously sealed database. In the Menu bar, select Census and Reopen Census. A new window will come into view with a list of the sealed databases. Several columns offer information on the census database (name, sealing date, reason, user). In the

Reopen column, select the box of the database to be reopened and click <u>Reopen</u>. A message will prompt the supervisor to confirm the action. Click <u>Yes</u> and another message will confirm that the action has taken place. Then close the window. The reopened (or unsealed) database will disappear from this list and will appear as a normal database in the central window. All other functionalities will now be available for this database. This operation can be undertaken at the same time for several databases.

Restore: The restore functionality allows for the recovery of a deleted database. In order to start this action, select <u>Census</u> and <u>Restore Census</u> in the Menu bar. A new window will emerge with a list of the deleted databases. Several columns present information about the deleted databases (name, deletion date, user). In the Reinstate column, select the box of the database(s) to be restored and click <u>Reinstate</u>. A message will prompt you to confirm the action. Click <u>Yes</u> and another message will confirm the action has taken place. Then close the window. The reinstated (or restored) database will disappear from this list and will appear as a normal database in the Central Window. All other functionalities will now be available for this database. This action can be undertaken for several databases at the same time.

Upload: The upload function allows acquiring data from another workstation running the same software (usually from the central office to a peripheral one or vice versa); (see note in Downloading section).

Update: the update function allows integrating (or adding) the data uploaded with the data contained in the local database after having tested that is errors free.

When trying to Seal, Reopen or Restore a database that contains errors, an Error window will appear with two columns indicating the record (Unique Registration Number) and the error type. The action chosen can be 'cancelled', for the errors to be corrected before attempting the sealing operation again, or 'confirmed', despite the errors.

In the reopen and restore windows (list of databases) any column can be dragged to the header of the window in order to classify the databases by that column.

Loading a census (overview information)

The loading functionality is available to all users of the software. It is necessary to load the database in order to access the information contained in it or to undertake any other action with it (load a pre-existing database).

All databases shown in the central window are accessible to users and can be loaded to access their contents (it is compulsory to unload a previously opened database before opening a new one). However, databases with an asterisk in the database name have been sealed and data stored in them cannot be modified (new records, modifications, deletions, *etc*); all other options are available (query/reporting, export, *etc*).

In order to load a database, click on it to highlight it and click on the <u>Load Census</u> button underneath the central window (if no database is selected a message will prompt the user to select one). Otherwise, double click on the database name. A new window, containing summarised information about the census/register database, will replace the previous one (see *Fig.10* below).
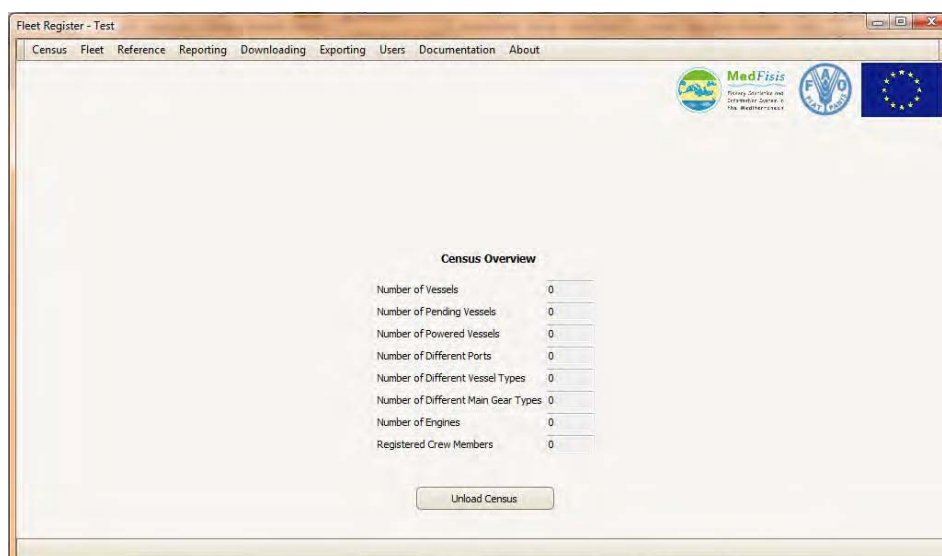
Figure 10. Summarised information about the census/register database

The window displayed in *Fig.10* will be referred to as the *Census Overview Window* from now on; the information displayed in it is:

> **Number of Vessels**. The total number of fishing vessels (or records) that comprise the current national fishing vessel census/register (or the currently opened database). It gives an indication of the size of the national fleet; however, other information is necessary to properly describe it such as the length distribution, the type of fishing vessels, *etc*. Contrasting this information annually with the quantity of new entries or exits from the fleet can help to eliminate errors in deletion or duplication of records and also to provide fleet trends.

> **Number of Pending Vessels** . The number of vessels in the database that have failed Range and/or Quality Checks. The pending vessels have to be checked and approved by the Supervisor and until this is done, they do not form part of the census/register database in terms of numbers of vessels; *i.e.*, their information is stored but it is not taken into account in any operation, summary or statistics. In the case of a failed Range or Quality Check response, a decision has to be taken as to whether this is an outlier or it is a mistake. If it is a real outlier it can be approved, and if it is a mistake then it must be corrected, if possible, or the whole record deleted.

> **Number of Powered Vessels**. The total number of main engines thereby indicating the percentage of powered vessels in the database (by comparison to total number of vessels).

> **Number of Different Ports**. The total number of ports used by the present fleet. All port types are considered here: home ports and ports of operation (landings, *etc*). This information gives an indication of the dispersion of the fleet in the country.

> **Number of Different Vessel Types**. The number of vessel types (trawler, purse seiner, *etc*) that constitute the current database. This information gives an idea of the type of fleet that exists in a particular country (diversified, focused on a main type of fishery, *etc*).

> **Number of Different Main Gear Types**. This number refers only to the main gear for which the vessel has authorisation to fish (it appears as 'main gear' in the authorisation documents). It indicates how many different main gear types can be found in the present database. It gives an indication of the diversification of the fishing techniques in the country. In order to give a better description it is essential to know which gear types are present in the database and in what percentage.

> **Number of Engines**. The total number of engines in the registry (current database opened), including main engine and auxiliaries. The latter is used to operate other types of gear. It

gives an idea of the number of auxiliary engines present in the fleet (by deducting the number of powered vessels).
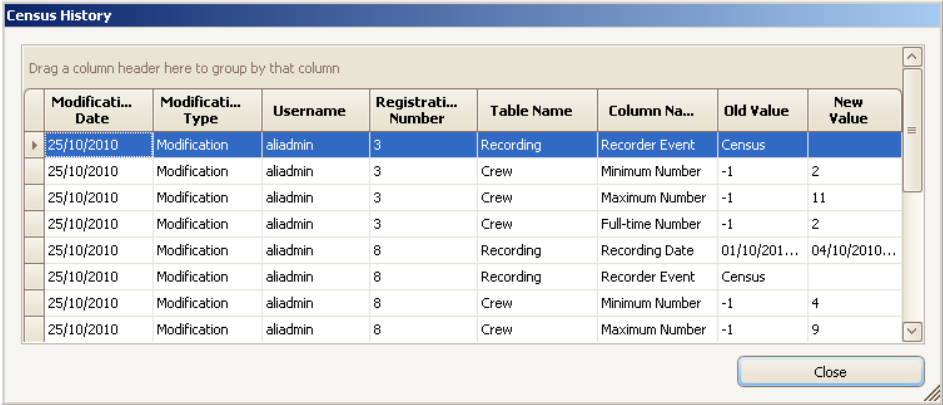
Registered Crew Members. The total number of crew members that are registered in a particular year (for the present database). This number represents the maximum number of crew members that could operate in all vessels in a particular year. It does not indicate the average number of crew members that actually participate in the fishing operations in a particular year.

Note that after entering new data in a database, then in order to have an updated overview of the database, it is necessary to Unload the database and Load it again for the updates to take place.

View Census History, Unload a Census

These two functionalities can be run only when a census has been previously loaded. They are accessible to all types of users.

In order to view the census history, click on Census in the Menu bar, and then click on View Census History. A pop-up window will prompt the user to indicate the time frame (dates beginning and end) for which the history is to be consulted. After choosing this, a new window will come into view (see *Fig.11* below) with several columns including: modification date and type (modification, deletion, *etc*), user (who has carried out the modifications), registration number (of the record modified), table name and column name (of the field modified) and the old and new values for that data field.

Figure 11. Census history

As in other windows with lists, a certain column can be dragged to the header of the window in order to organise or classify the records by that column.

The census history comprises a record of all actions that took place in that census up to the present moment. These can include modifications of records, deletions, new insertions, *etc*. The census history does not specify the actions that were carried out on the census itself (create, seal, delete, *etc*) but only those carried out on the fleet (vessel records) contained in it.

In order to unload a census, click on the Unload Census button in the right lower corner of the window, and the Central Window with the list of databases will come into view. Two or more databases cannot be loaded (opened) at the same time, so when wanting to work or consult another database, the current one must first be unloaded.

Starting the data entry

Each questionnaire includes a number of different data fields relating to a single fishing vessel. This information all put together will be displayed as a single vessel record (one line) in the Fleet table of the census/register database. The data related to each vessel can be displayed by double clicking the vessel's name in the Fleet table.

In order to start putting the data from the questionnaires into the census database it is necessary to first select the census database into which the data must be entered (this will be indicated by the supervisor; for example, *Census 2010* or *Register 2010*), then press the Load Census button. This database could be an empty file (first time census) or a file imported from a previous year exercise (national fishing vessel register/census), for which updating is necessary.

First time census

In this case all data must be inserted in the database. To do this, click on the Fleet button on the Menu bar and then click on Load Fleet. An empty window will come into view with a message indicating that there are no records in the database ('No vessel to show!'). In the lower right corner, click on the New Vessel button in order to start the data entry (or from the Menu bar; see *Fig.12* below).

Figure 12. New vessel

An empty data entry form called 'Vessel Details' will come into view with 13 tabs, (see *Fig.13*). In each one of them, there are a number of fields where the information can be input either by selecting it from a drop-down list, using arrows (spin edit), check boxes or by inputting it directly into the text boxes by hand. In several tags, there are also tables to be filled by using the tools at the bottom of it. After inputting the information, click on the Save button in order to save the data. If there are any missing Compulsory data, a message will show indicating that the vessel record was not saved and prompting the user to correct the missing data before saving the record. All missing data will be flagged by a red cross next to the data field, so as to indicate which fields are compulsory and so have to be filled in for the record to be saved.

The Next Error button can be used to skip to the next field that needs to be filled in. At the right hand side of the tabs there are arrows to help navigate through them. Once all the compulsory fields have been completed the vessel record can be saved and a message will come into view indicating that the operation was successful and that the record was added to the database. Immediately, the record will show in the Fleet table. Repeat this operation for each vessel record. The fields within each tab of the Vessel Details window will be dealt with in detail later.

Figure 13. Vessel details window

Creating a census from a previous database

This is usually the case for a country where either:

- an annual registry is kept and therefore only certain fields of the vessel records need updating from year to year, in which case the supervisor can create a copy of the previous year's exercise and rename it so that it can be updated by the data entry users, or

- the government plans to carry out a new census, but certain previous information is available in other formats (Excel, *etc*), in which case some data may be input beforehand (by means of a routine developed on a case-by-case basis) and updated along with the data entry.

After loading the selected census database the data entry user must load the Fleet table as explained earlier. Select the first vessel from the list in order to highlight it and click on the Modify Vessel button. Another option is to double click on the record to open it up and then click on the Modify Vessel button. After the vessel record is opened, the information to be updated can be modified in the corresponding tab(s). Once the updating is finished click Save or Save Changes in order to keep the modified record in the list. This operation has to be repeated for all records that need to be updated (usually all of them). The tabs that will usually have fields to be updated are: Operations, Authorisation and Recording (though this one is not compulsory). Great attention must be paid to keeping a list of records (vessels) that have been updated in order not to miss any.

Data types

The type of data to be introduced in the database (numerical, text, dates, *etc*) will determine the way the data can be input:

> ***Drop-down lists*** indicate, in square brackets, the type of information that needs to be selected, (see *Fig.14).* By clicking on the box or on the arrow besides it, the list opens up and the user can select the most appropriate information corresponding to the reply given in the questionnaire. Several drop-down lists include the options: Other and Unknown.
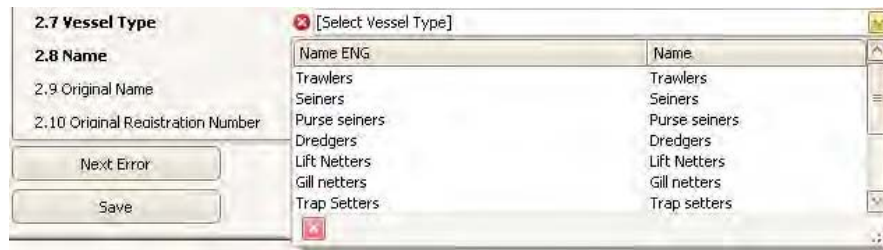
Figure 14. A drop-down list

Arrows (spin edit) are used to input numerical values such as the dimensions of the vessel or the number of crew. By clicking on the arrows the user can increase or decrease the number shown, (see *Fig.15*). However, it is also possible to input the number directly by clicking on the selected field and typing it on the keyboard.

Figure 15. Spin edit arrows

Check boxes usually indicate presence or absence. Examples of these are the Decked/undecked (see *Fig.16)* and the Indicators (Licence, IRCS or International Radio Call Signal, VMS or Vessel Monitoring System). They are also used to select the statement next to them.

Figure 16. Example of a check box

Text boxes are free text boxes where the user can type in the answer. Usually this type of answer includes names, registration number, remarks and others.

Date time picker is a tool similar to the arrows but when clicked a monthly calendar appears and the date can be selected by clicking in the exact day of the month, (see *Fig.17).*
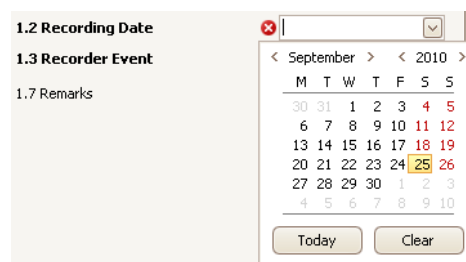

Figure 17. Example of a date time picker

As mentioned before, in some of the drop-down lists, besides the selection of replies corresponding to the field, there are two standard responses at the bottom of the list:

Other, a response that must be chosen when the information regarding the field in question has been identified but is not represented in the offered list, and

Unknown, a response that is used when the user/recorder has not been able to identify a response for this field.

The drop-down lists show two columns which include the responses in both English and the national language. The responses are, in most cases, tailored to the country (*e.g.* list of national recorders, list of registration offices, *etc*).

Entering vessel details

All information to be input to the database comes from the questionnaires (see References: Operational Manual - Supplement 0: Source of Information, Data Structure, Definition and Codification of a Fishing Vessel Census). All compulsory fields are indicated in font style **Bold**. They can also be ascertained in the database by clicking on the Save button when the Vessel Details window is opened; the empty compulsory fields will be flagged by red marks. This will show the minimum data entry requirements for a record to be accepted; the record will not be accepted when even a single compulsory field entry is missing.

In this section, the choice of responses for the fields will be explained as well as some of their particularities. Definitions of each field are to be found in the *Data Field Descriptions* document; however, certain clarifications are provided when considered necessary. All fields are preceded by a numbering system which, for ease of reference, is the same as in the Questionnaire and Data Field Descriptions.

To see all tabs, the user can click on the top right arrows (pointing left and right) and scroll through them.

Once the Vessel Details window is opened (from New Vessel or from Modify Vessel), the structured data entry must be started by navigating through all thirteen tabs and entering the data according to their particularities, as now explained.

1 Recording

Information regarding the recorder and the event are stored in this tab, (see *Fig.18*). All fields other than the recorder's name are compulsory. The data to be input are:
- the Recorders' Name, to be chosen from an available list of recorders,
- the Recording Date, which can be typed in or selected from the calendar that opens up by clicking the arrow at the right side,
- the Recorder Event, and
- any Remarks, where free text can be entered with any comments considered important.

There are several choices for Recorder Event:
- 'Census' - indicating that the recorded information comes from a census exercise,
- 'Change of activity (enter)' - which is selected when a vessel dedicated to another activity is converted into a fishing vessel,
- 'New Construction' - for vessels recently built that enter the registry for the first time,
- 'Intra-Community import, transfer' -   for fishing vessels that are transferred from one (European) country to another and enter the national registry,
- 'Notification from CAS' - for modifications to the fleet register where the information comes from a CAS survey. In this case, the type of event is indicated in brackets.

Figure 18. Vessel details - recording

For EU countries three additional fields are compulsory under this tab (see *Fig.19*), when selecting an option other than Census:

- Import Country,
- Public Aid Code, and
- Administrative Decision Date.

In the case of Public Aid Code, the user has to indicate the type of public aid from the drop-down list (as in *Fig.19*).

Figure 19. Additional EU fields

2 Characteristics

This tab contains many compulsory fields, in the main dealing with the registration of the vessel. The first field is an auto-generated response. By clicking on the Generate button, the software will automatically calculate the *Unique Registration Number* (Unique Vessel Identifier) consisting at least on the 3-alpha code of the country, plus a prefix given by the country in the set-up of the software, plus a sequential number that increases with the number of vessels input into the database.

The *Unique Registration Number* can also be input manually (if it already exists), and the software will check if the number entered is already in use, in which case the field will continue to show a red flag indicating that this response must be corrected.

Great attention must be paid to all compulsory fields in the database, especially those in the Vessel Type tab, since the selection will determine the type of gears that can be selected in another tab, *i.e.,* the present selection will restrict the drop-down list in other related fields for data quality control purposes. For example, if Purse Seiner is chosen as Vessel Type, then it will not be possible to select a Trawl as the main gear for the same vessel record (in the Authorisation tab).

After Vessel Type, the Vessel Name must be entered, and it is also possible to add information about the previous status of the vessel (previous name, registration number or flag). The Flag is set by default to the flag of the country but this can be changed by the user.

The Operational Status of a vessel indicates whether it is currently fishing or not, in which case the reasons for inactivity must be indicated in the corresponding drop-down list which becomes compulsory (see *Fig.20*).

Figure 20. Operational status drop down list

Suggestion:
When entering vessel data, it is useful to press the Save button from time to time. This action will point out the compulsory fields that have not been filled up yet in the Vessel Details window. Then it is easy to scroll around the empty fields with the Next Error button and fill up the missing data.

3 Structural Characteristics

The compulsory fields in this tab (length, decked, GT) are important parameters; therefore, great attention should be paid to avoiding errors in the data entry. The length is used for assigning the vessel to a fleet segment. Length, width and depth are measured in meters and GT (Gross Tonnage) in metric tons. For those vessels built before 1994 the GRT (Gross Register Tonnage) may be recorded. If a vessel is not decked, the selection box should be clicked twice so as to remain empty for the system to understand the selection made (see *Fig. 21*). This parameter is used for the FAO forms.

Figure 21. The decked/undecked selection box

EU members should also indicate the GTs, the added capacity allowed for reasons of safety.

4 Authorisation (and Gear)

The authorisation type relates to the main fishing activity of the vessel. The Licence Indicator field indicates only if the vessel has a licence or not. This tab has a sub-section at the bottom part dedicated to the gears used by the vessel (*Fig.22*). The first gear is the main gear used in the fishing activities of the vessel and is linked to the vessel type. Note that several gear types can be attributed to one vessel type as its main gear. The main gear is also the one for which the vessel gets the Fishing Authorisation.

As indicated below the table, it is compulsory to enter at least one fishing gear, which then becomes the main gear linked to vessel type. The remaining gears, if any, should be entered in order of importance; use the buttons at the bottom part of the table to Append, Delete, Edit, End Edit or Cancel Edit. For each of them, indicate the Rank, the Gear Class, Gear Type and Target Group of Species (Gear Class is not compulsory since it can be inferred from the gear type). The selection of each item

narrows down the selection of the next one, in order to leave only related responses, thus minimising the possibility of introducing errors.

Figure 22. Vessels' gears

5 Engines

This tab comprises a table of data related to the vessel's engines; main and secondary engines can be entered following the procedures explained above. When entering engine data, the rank, location and power are compulsory fields, (*see Fig.23*). The power must be input in *kW*. If a unit other than *kW* has been recorded then the value is converted to *kW* before being input to the system. All powered vessels should indicate at least their main engine. If there are more than one engine they should be entered in order of importance (rank). In the case of non-powered vessels the check box at the top of the tab should be un-marked.

Figure 23. Engines

6 Electronics

Two check boxes are available to indicate whether the vessel has been allocated an International Radio Call Signal (IRCS) and Vessel Monitoring System (VMS). The check boxes should be marked (available) or un-marked (unavailable) (see *Fig.24* left); otherwise the information is not recorded (see *Fig.24* right). The VMS will be compulsory for commercial fishing vessels exceeding 15m length overall after 31st December 2012 for all GFCM members (Recommendation GFCM/33/2009/7).

Figure 24. Electronics

7 Equipment

Several types of equipment can be input within this tab: Navigation, Communication, Fish Finder, Safety, Preservation, Processing and other type of equipment. When entering this data (if there is available information), the Equipment Type is a compulsory field and the Equipment Category will be automatically inferred by the system. There is no limit to the number of items of apparatus that may be recorded in the database. The data entry takes place in a similar way to that of the previous tables (gears, engines *etc*) by adding, one by one, the equipment and its characteristics (purchase year, quantity, value, and measurement units).

8 Deck machinery

The activation method (type) is the only compulsory field. However, as shown below (*Fig.25*), information about winches can be recorded in which case winch type and the operation method (operated by) become compulsory.

Figure 25. Deck machinery

9 Ownership

The information included in this tab could be entered into the database either by creating a new company record (one by one) or by importing data from the Companies Dataset accessible from the Reference tab of the Menu bar. Information about at least one owner is necessary.

In the first case, to create a new company record, click on the New Owner button and enter at least the Company Name. Then click the Save button for the new company record to become part of the Company dataset, (see *Fig.26*)

Figure 26. Ownership

To import owner data that is already part of the Companies Dataset, click on the Search Owners button. Another table will appear in the lower part of the window with a search box superimposed on it. Enter any letter/s that may be part of the company name that is being searched and click on the Search Owners by Company Name button. A list of company names including the letter/s entered will appear in the table. Select one by clicking on it to highlight it and then press the Add to Owners button. The search table will disappear and the selected owner will show up in the table of owners for this vessel record.

Company Name and Operated By are compulsory fields. However, if the operator is not the owner, but an operator, further fields become compulsory (operator name and address).

Other functionalities dealing with the Companies Dataset will be explained further elsewhere in this document. Note that owner data is confidential and should therefore be handled with discretion.

10 Crew

This tab shows the minimum and maximum number of crew during the year and the number of registered full-timers for the year. These figures are interrelated in such a way that the maximum number can never be less than the minimum and the number of full timers must fit within this range.

In the census overview window, the crew information shown corresponds to the total number of maximum crew that are registered for a particular year.

11 Ports

This tab shows the operational ports of the vessel for the previous year by entering each operational port in the table shown, including the time period in which the vessel operated in that port. The operating periods can overlap each other. This information is not compulsory, but when available, three fields become compulsory (port, period start, period end). This information can be added using the same procedure as for the rest of tables.

12 Operations

This tab comprises information about the operations carried out the previous year by the vessel; this provides a fuller understanding of its fishing activities. It is compulsory to record at least one operation for active vessels (*i.e.* vessels that have carried out fishing operations during the previous year). Input the operations information on a one by one basis by indicating which gear was used, in which period, in which national Fishing Zone (to be defined in the Reference Tables during the set-up of the software), GSA (GFCM Geographical Sub Area) and which was the Target Group of Species (*e.g.*, demersal, *etc*), (see *Fig.27*).
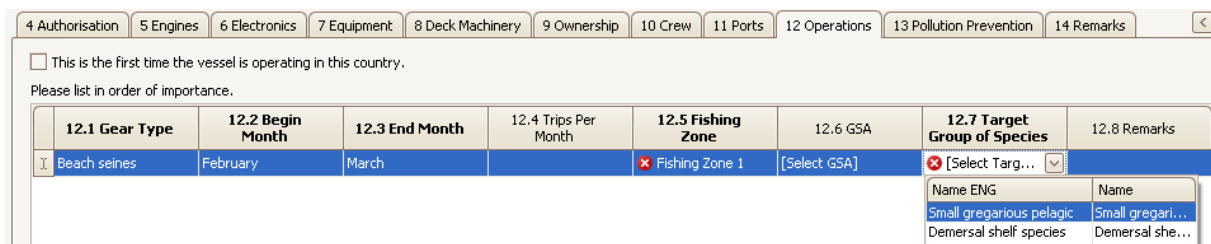
Figure 27. Operations

In the case of a new vessel record (new entry into the register) the check box at the top of the window must be marked so that the information requested becomes 'not compulsory'. This is also the case for a first time census.

13 Pollution prevention

Insert the type of oil residue disposal and other disposal information within this tab (see *Fig.28*) using the drop-down list provided. These fields are not compulsory.
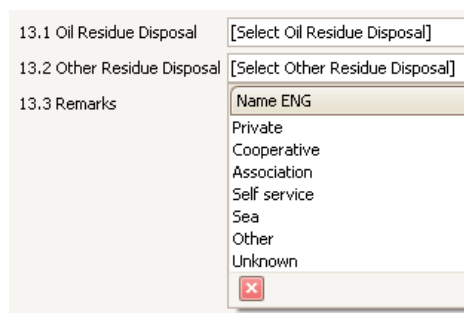

Figure 28. Pollution prevention

14 Remarks

Record here any comments that are needed for better understanding or clarification, or anything that may be of use in the processing and analysis of the data. Then press the Save button and, providing there are no missing compulsory data fields or contradictory information, the vessel record will come into view in the Fleet Register table.

However, should there be any errors (missing or out or range data, quality failures *etc*) a message will appear prompting the user to modify the error values. Saving vessels with missing compulsory values is not allowed. The message that appears when there are missing compulsory fields data is as displayed in *Fig. 29*.

Figure 29. Missing compulsory field

When any errors are detected by the data check routine, a message indicates the location of the mistakes so that the user can correct them (see *Fig.30*) or confirm their value (*e.g.* outliers):
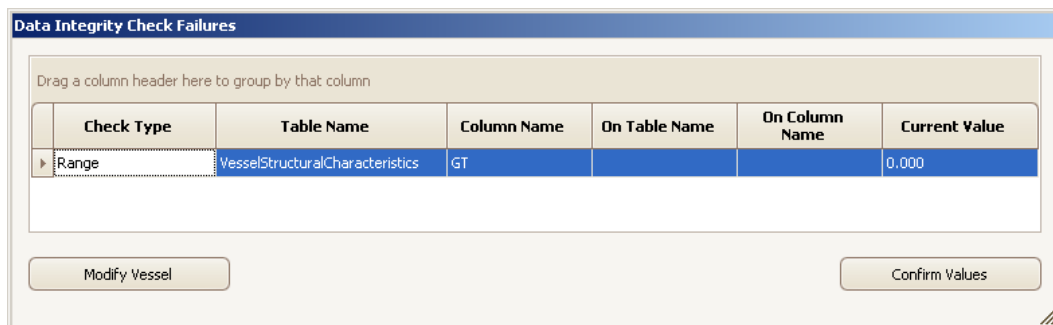
Figure 30. Error location and type

If the errors are corrected, the vessel record will be part of the Fleet Register and will be included at the bottom of the Fleet Register table, (see *Fig.31*). If the necessary modifications are not carried out, and the record is confirmed, the vessel will be saved in the Pending Vessels table. In order to include this record into the Fleet Register table, it will be necessary to authorise it in the Pending Vessels table (see next section for instructions).

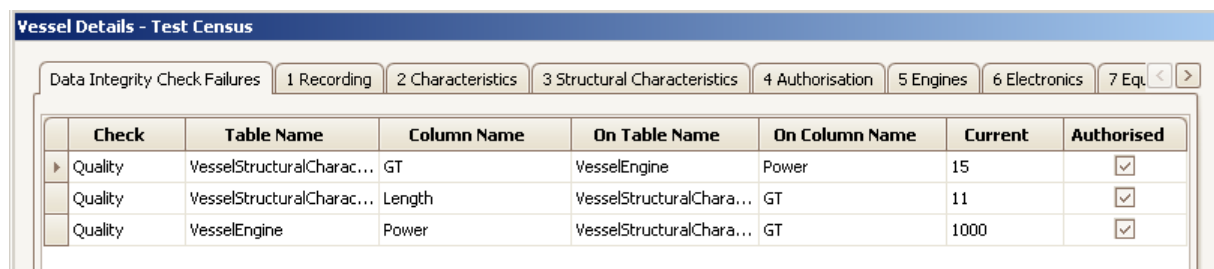| Unique Registration Number	Vessel Name	Registration Number	Fishery Department Registration Number	Vessel Type	Home Port	Operational Status	Length	GT	Power
ALB000000002	2	2	2	Trawlers	Port 2	Operational	11.00	15.000	1000.00
ALB000000005	5	5	5	Seiners	Port 1	Operational	12.00	16.000	1000.00
ALB000000006	6	6	6	T		Operational	12.00	18.000	900.00
ALB000000007	7	7	7	P		Operational	12.00	16.000	1500.00
ALB000000009	9	9	9	P		Operational	8.90	10.500	1000.00
ALB000000010	10	10	10	S		Operational	10.00	10.000	1000.00
ALB000000003	3	3	3	Purse seiners	Port 1	Operational	13.00	20.000	1250.00
ALB000000008	8	8	8	Dredgers	Port 3	Operational	9.00	14.000	750.00
ALB000000004	4	4	4	Seiners	Port 2	Operational	9.50	14.500	900.00
ALB22REG0011	Xanta	33445	yuty6	Seiners	Port 2	Operational	15.00	1.000	

10   out of 10   vessels listed

Figure 31. Vessel details added to bottom of Fleet Register table

Fleet functionalities

There are eleven functionalities dealing with the fleet, nine of which are accessible to all users. Only the *View Deleted Vessels* and *View Pending Vessels* functionalities are restricted to supervisors.
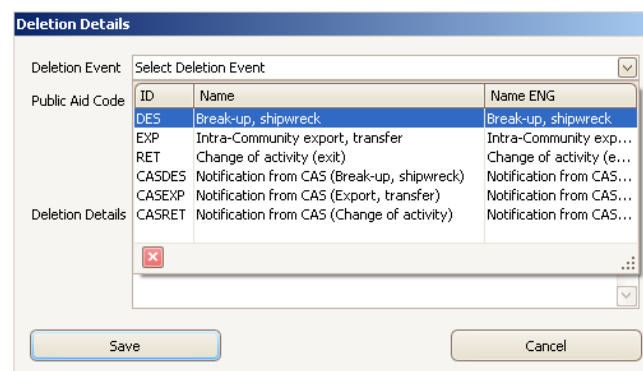
General functionalities

As explained earlier, click on the Fleet tab on the Menu bar and then the Load Fleet button. The list of vessels already inserted into the database will be brought into view. Select one vessel by clicking on it to highlight it and then go to the Fleet tab again and click on Load Vessel Details to open the corresponding window. Alternatively, double click on the vessel record in the Fleet table and the *Vessel Details* window will appear. If the vessel has any integrity check failures (range or quality), a tab listing them will appear in the *Vessel Details* window (see *Fig.32*). This tab will show the location and type of failure and the current value for that field. The user can click on the Modify Vessel button to carry out the necessary modifications and then click Save Changes.

Figure 32. Data integrity failure

The procedure to create a new vessel record is explained in a previous section of this user guide. The procedure for deleting any record is straightforward, simply select a vessel from the list and click on the Delete Vessel button. A new window will appear in which it is compulsory to indicate the *Deletion Event* and the *Public Aid Code*, (see *Fig.33*). Comments or details can be added in the lower window. Click on the Save button and a message will come into view indicating that the deletion was successful. The deleted record will disappear from the *Fleet table* and will be part of a *Deleted Vessels* table from which it can be reinstated (restored) to the *Fleet table* by a Supervisor.

Figure 33. Deletion of a vessel

When selecting the *Intra-community export, transfer* event from the *Deletion Event* field, the *Export Country* and the *Export Type* must be indicated.

In order to close the fleet table, click on the Fleet tab in the Menu bar and then select the Close Fleet option. The main census overview window will come into view with the original information that was in the census/register when it was loaded. In order to refresh this summary information then it is necessary to unload the census and load it again, for the changes to show.

View deleted/pending vessels

As mentioned earlier, these two functionalities are accessible only to Supervisor users.

Deleted Vessels

Deleted vessels are those that have been removed from the census/register for some reason, and they are defined as *Exits from the Fleet* and are stored in a separate database. A vessel that left the fleet could be reinserted later; for example, a vessel that was transferred to another country and has been transferred back, or a vessel that had changed its activity but had then returned to fishing.   In order to see the table with the deleted vessels records, click on the Fleet tab of the Menu bar, select View Deleted Vessels and the table will come into view, (see *Fig.34*). On the right hand side of each vessel record there is a check box to select the vessel to be reinstated. Click on the Reinstate button and the vessel will disappear from this table to be part of the census/register database.
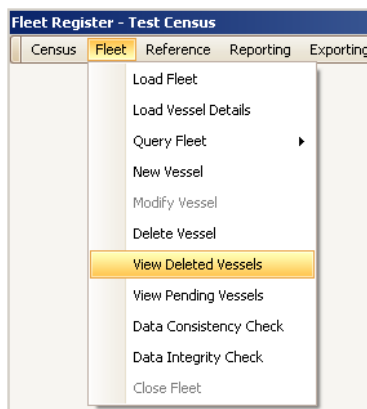
Figure 34. View deleted vessels

Pending Vessels

Pending vessels are those that have data integrity check failures yet to be corrected or authorised. They are not part of the census/register database, and they must be revised by the supervisor who will either correct the values for the indicated fields or authorise the inclusion of the record into the census/register database. The procedure is similar to the deletion of a vessel. Select the Fleet tab from the Menu bar and select View Pending Vessels. A table will appear with the list of pending vessels (see Fig.35).

Unique Registration Number	Vessel Name	Registration Number	Fishery Department Registration Number	Vessel Type	Home Port	Operational Status	Length	GT	Power
ALB000000008	8	8	8	0300	Port 3	Operational	9.00	14.000	750.00
ALB000000004	4	4	4	0200	Port 2	Operational	9.50	14.500	900.00

Figure 35. Pending vessels

Select one vessel by clicking on the record or on the left part of the row and click on View Details. A new window will open up with the Vessels Details of the record selected plus an extra tab (on the left hand side) listing the data checks failures (*Data Integrity Check Failures*), (see *Fig.36*).

Figure 36. Vessel details

The first column (*Check Type*) indicates whether the failures are range or quality errors. The second column (*Table Name*) indicates the *Vessel Details* tab where the failure was found, the third column (*Column*) indicates the data field where the failure was found and the fourth and fifth columns (*On Table Name* and *On Column*) indicate the data field to which the previous field value is wrong. Finally the sixth column (*Current Value*) indicates the value entered (failure) to be authorised or corrected. An extra column (*Authorised*) is included for the supervisor to authorise - or not - each one of the failures. Modifications can be carried out in the corresponding tab and saved; at the same time, some failures can be authorised (in the authorisation column). When all failures have been either modified or authorised the vessel can be accepted into the census/register database. To do this, click on the <u>Save Authorisations</u> button; the vessel will disappear from the pending vessels list and will appear in the census/register database (at the bottom of the list if modifications were done to it; if only authorizations are done, then it will keep its original position).

Data checks

Apart from the Digit Checks which is performed at the data entry, there are other consistency and integrity checks available to all users (Consistency Vessel/Gear/Species has been already mentioned in "Characteristics section above):

Data consistency checks

These checks indicate the records for which one or more compulsory fields are empty (null) or for which the responses do not correspond with the reference tables. This type of check is run when importing data from sources other than this software, and the user wants to check whether there are missing data, repeated *Unique Registration Numbers*, *etc.* It is not necessary to run a data consistency check in the register database built with this software because, when entering vessel data, records with missing compulsory fields will not be saved (*i.e.* the check runs automatically).

In order to run a data consistency check in the register database, select the <u>Fleet</u> tab from the Menu bar and then select the <u>Data Consistency Check</u>. A new window will open up showing the data consistency check failures together with a note at the top indicating the number of pending vessels.

The first column indicates the *Unique Registration Number* and the second column the error found in the register database. In order to correct the errors, close the window and open the corresponding vessel record and make the necessary modifications. Once the modifications have been saved, re-run the data consistency check and the errors should have disappeared from the list.

Data integrity checks

These checks indicate the records which contain fields with values that are out of range or which have quality failures (according to the data in the *Range Checks* and *Quality Checks* tables respectively in the <u>Reference</u> *tab* of the Menu bar). The quality failures are checks done on the Length, Power and Gross Tonnage of a vessel. These vessel characteristics are related to each other by certain empirical equations. Therefore, if one of them does not relate to the others (or does not fall within certain calculated limits), it is considered a *Quality Failure* and the value has to be revised. The same applies to the *Range Checks* (individual characteristics that do not fall within certain range limits).

Note that, unless disabled through the Fleet Register Configurator, the census is scanned for data integrity errors before an export is generated to be sent to international authorities. This is to avoid exporting erroneous or inaccurate data. Note also that in this case, the user is given the option of creating a sealed copy of the census. This is simply for audit reasons, so that a snapshot of the data at the point in time that the data was sent may be retained for future reference.

In order to run a data integrity check, select the <u>Fleet </u>tab from the Menu bar and select the <u>Data Integrity Check</u>. A new *Data Integrity Check Failures* window will come into view, (see *Fig.37*).

Check Type	Unique Registrati...	Table Name	Column Name	On Table Name	On Column Name	Current Value	Authorised
Quality	ALB000000009	VesselEngine	Power	VesselStructur...	GT	1000	☑
Quality	ALB000000010	VesselStructur...	GT	VesselEngine	Power	10	☑
Quality	ALB000000010	VesselStructur...	GT	VesselStructur...	Length	10	☑
Quality	ALB000000010	VesselStructur...	Length	VesselStructur...	GT	10	☑
Quality	ALB000000010	VesselEngine	Power	VesselStructur...	GT	1000	☑
Quality	ALB000000008	VesselStructur...	GT	VesselStructur...	Length	14.000	☐
Quality	ALB000000008	VesselStructur...	Length	VesselStructur...	GT	9.00	☐
Quality	ALB000000008	VesselEngine	Power	VesselStructur...	GT	750.00	☐
Quality	ALB000000008	VesselStructur...	GT	VesselEngine	Power	14.000	☐
Quality	ALB000000004	VesselStructur...	GT	VesselStructur...	Length	14.500	☐
Quality	ALB000000004	VesselStructur...	Length	VesselStructur...	GT	9.50	☐
Quality	ALB000000004	VesselEngine	Power	VesselStructur...	GT	900.00	☐
Quality	ALB000000004	VesselStructur...	GT	VesselEngine	Power	14.500	☐

View Details
Save Authorisations   Close

Figure 37. Data integrity check failure window

The first column indicates the *Check Type* (range or quality), the second column indicates which record has the error, the third column indicates in which *Vessel Details* tab the error is located, the fourth column indicates the data field, the fifth and sixth columns indicate the data field in reference to which the previous field value is wrong; finally the seventh column (*Current Value*) indicates the value entered (failure). The procedure is similar to that for the pending vessels. Therefore, the last column on the right side (*Authorised*) indicates whether the failure has been authorised or not. Modifications can be done by clicking on the <u>View Details</u> button and following the same procedure as for the pending vessels (see previous bullet point). The corrected failures will disappear from the table, and if the vessel was pending it will now form part of the register database (once all failures related to that vessel have been corrected).

The Data Integrity checks are run either automatically (when saving the data of a new vessel and one value is incorrect, a message will appear indicating it and prompting the user to modify it or authorise it), or may be launched by the user, as explained in this section, in which case it will run on the registry database and the pending vessels table. This is usually done when importing an old database into the system to make sure that the vessels included in the fleet comply with this check.

Querying

The querying functionality allows the user to undertake a customized selection (filter) of the records in the fleet register (through selection of specific values of specific fields). This will provide the user with a sub-part of the fleet register from which data can be exported and reports can be produced (statistical, *etc*), thereby allowing customised analysis of the data.

Two types of querying can be made: simple and advanced. To do this, click on the <u>Fleet</u> tab of the Menu bar and select the <u>Query Fleet</u> option and then <u>Simple</u> or <u>Advanced Query</u>.

Simple Query

The Simple Query allows the selection of values (responses) from eleven of the most commonly important data fields in order to obtain a particular section of the database records that is of interest to the user. These filtering fields include the main vessel characteristics, like Length, GT and Power, and also vessel type, gear class, and others (see *Fig.38*).

Figure 38. Simple query

To carry out a simple query, first select the desired field by clicking in the check box beside it (left). Then input the searched value or part of it (sub-string) in the blank area (*e.g.* Name in *Fig.38* above) in order for the query tool to find all records that match the entered value for that field (or at least that the sub-string is contained in the field response). Some fields have drop down lists to choose the selection criteria from (*e.g.* Fleet Segment) and some other fields have numerical responses (*e.g.* Length). A range of values can therefore be entered giving a choice between a minimum and a maximum value for the querying tool. Alternatively, just the minimum value can be entered in order to select 'greater than' values, or only the maximum value can be entered in order to select 'smaller than' values'. In the simple query there is also a grid (table) allowing selection of gear types. The gear type is compulsory in this selection and also an indication on whether this type is to be included or excluded in the selection. For the selection of a whole gear class a field is available outside of this grid.

These operations can be repeated for several fields in order to restrict the search. When all selection criteria have been set, click the <u>Submit</u> button at the bottom of the page. The window will close and the *Fleet* table will show with the records that comply with all the criteria entered. At the bottom of the table there will be a note indicating how many records out of the total comply with the selected criteria (see

example in *Fig.39* below). This sample of the fleet can be the basis of a report or export. In order to see the full fleet table again, press the Show All Vessels button at the bottom of the window.
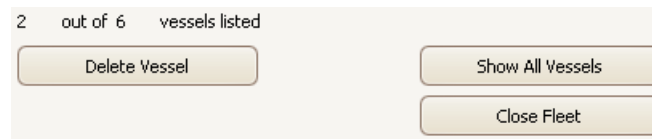

Figure 39. Selected sample

Other options are also available through the query tool. The general rules are:
- if a field is not marked then all records are taken into account,
- if it is marked with a value entered in the blank area then only records corresponding to that value will be selected,
- if there is a sub-string in the blank area, all records containing this sub-string in this specific field will be selected,
- if the user clicks on the *Not Blank* check box on the right side of the query window, the tool will use all records that have a value on it, but not those that have no information for that field (this could be useful, for example, to select only records that have information in the fields selected).

The bottom table (grid) allows selection of a specific gear type within a gear class. By selecting the check box at the right hand side, the user can include or exclude this specific gear type from being selected. For example, gear class *Trawls,* gear type *bottom trawls*; if the user clicks in the Exclude check box, the tool will select all trawl types apart from the bottom trawls; if the box is clicked twice, and is therefore unselected, only bottom trawls will be selected from all trawls. Several gear types can be selected by inserting more gears in the table. The tool searches in all gears, not only the main gear. If only the main gear is to be selected, then the user has to refer to the *Advanced Query*.

The Reset button will remove all selections made in the present query window. After running a simple query, the pre-selected criteria are not retained for the subsequent query run which will be in the full fleet register again.

Advanced query

The *advanced query* follows the same principles as the simple query but includes all tabs and all fields from the *Vessel Details* window. The selection criteria can be set throughout the tabs in a similar way to that of the simple query. Some fields have blank spaces to enter the criteria (response) or a sub-string (that has to be contained in the response) and other fields provide drop-down lists, ranges or tables (grids) to select values from.

The functionalities available are also the same (Submit*,* Reset and Cancel) with the addition of a Reset All button to reset all fields in all tabs (the Reset button resets only the tab that is opened), and the Hide Query Form button that allows the user to consult any other parts of the software while building up a query.

In addition, in the advanced query, there is the facility to count the number of items recorded for a specific field group (table) if such a group is allowed multiple entries (and is therefore displayed in a grid), for example, gears, ports, engines, equipment, winches, owners and fishing operations. Therefore, this tool allows selection of vessels according to the number of gears, engines, *etc* set in the selection. The tool counts the number of records (vessels) having the indicated number of items (gears, engines, *etc*) set up in the criteria, (see *Fig.40*). In the advanced query there is also the option of selecting the gears according to their rank, for which the main gear would be rank '1', the secondary gear rank '2', and so on.

Figure 40. Counting, ranking etc.

After running an advanced query, the pre-selected criteria will be kept for the following query, which will be run in the full fleet register again. This utility allows the narrowing of the query in subsequent steps (by adding ever more criteria or modifying them).

Reference

The reference tab of the Menu bar includes the tables where all data related to the companies are stored, the tables with the values (range or quality) for integrity checks and the reference tables (codification system) of the application.

Companies

The information relating to the owners of the fishing vessels is stored in this section, where it can be consulted, modified, added to or deleted following the same procedures as for the vessel records in the Fleet table. There are several types of companies (national, foreign or joint venture, cooperative, fishing company, *etc*). It is also possible for an individual person to be the 'company'.

There are several basic functionalities dealing with the owners' information:

> ***Load Companies*** In order to load the data related to the vessel owners, other sections like the Fleet table have to be closed. Once the overview window of a specific census/register database is on view, click on the <u>Reference</u> tab from the Menu bar and select <u>Companies</u>. Then select the <u>Load Companies</u> option. This window allows viewing some of the company's details.

> ***Load Company details*** In order to consult the information stored in a particular record of the companies table, select one of the companies' records and click on the <u>Load Company Details</u> button from the <u>Reference</u> tab in the Menu bar. A window will come into view showing all stored information related to that particular company.

> ***New Company*** To create a new owner record, either select the Reference tab from the Menu bar and then select <u>Company</u>, <u>New Company</u> and start inputting the data, or, from the companies' table, click on the <u>New Company</u> button and enter the data. At least the name of the company is necessary (compulsory) for the record to be saved and stored. If this information is not provided, the application will display an error message (Error Saving!). When all information is entered, click on the <u>Save</u> button. The new companies' records will appear at the bottom of the table.

> ***Modify Company*** The same double procedure is available to modify the company details. Select the company to be modified and then, either from the <u>Reference</u> tab on the Menu bar or from the companies' table, click on the <u>Modify company</u> button and enter the necessary modifications. Then click on the <u>Save Modifications</u> button.

> ***Delete Company*** Select the company record to be deleted from the table and click on the <u>Delete Company</u> button either from the <u>Reference</u> tab in the Menu bar or from the companies' table. A message will prompt you to confirm the deletion and another message will indicate whether the operation took place or not.

Close Companies In order to get back to the overview window, it is necessary to close the companies' table from the <u>Reference</u> tab in the Menu bar.

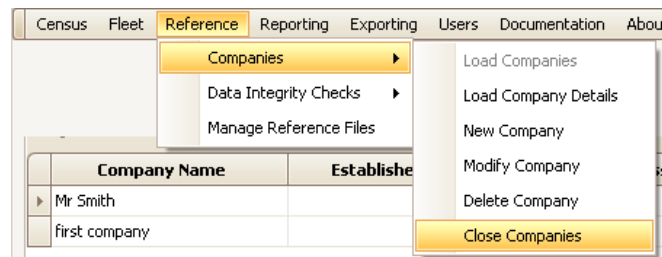See all of these options in *Fig.41*.

Figure 41. Companies option

Data Integrity Checks

As explained in the Fleet Functionalities section, the data integrity check is a tool that searches for values that are out of range and for values considered to be quality failures. In order to determine whether the values entered into the database (vessel records) present range or quality failures, it is necessary to compare the entered values with reference ones. These reference values are stored in two tables which are assigned default values during the setup of the software. Access to these tables is restricted to users with supervisor rights who are able to review and update the values contained in them to ensure that they comply with national values, (see *Fig.42).*
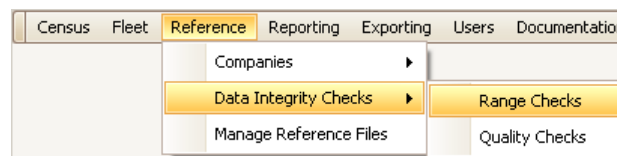
Figure 42. Data integrity checks

Range Checks

To consult or modify the table with the *Range Checks* values, the fleet table must be closed. Select the <u>Reference</u> tab from the Menu bar, select <u>Data Integrity Checks</u> and then select <u>Range Checks</u>. The range check table will come into view, including a number of columns that indicate the *Census/Register* database for which the references are set, the *Vessel Details* tab and the specific data field to which the values refer (*Column Name*). The last two columns indicate the range of accepted values, *i.e.,* the minimum and maximum values accepted to be correct. An extra column is available to record any remarks that could be of interest. For example, for the main vessel characteristics the length is set to be between 3 and 60 meters. Any value above or below this will be considered a *Range Failure*, (see *Fig.43).*

Figure 43. Range checks

The default data included in this table refers mainly to three parameters: length, gross tonnage and power for each census/register database, However, a supervisor can set ranges for as many parameters as needed by adding them to the table.

Thus *Range Checks* can be modified, deleted, new ones created following the same procedure used in other tables (grids) by using the buttons at the bottom of the table. Modifications can also be made by clicking directly on the item of the table to be modified and choosing a value from the drop-down list or from the spin edit (arrows). Additionally, there is the option of changing the database that the range is applied to by using the drop-down list available in the first column.

The supervisor has to be fully aware of the implications of the changes in ranges on the database and all reports and exports produced. These changes should be based upon sound review of national fleet data.

Quality Checks

The quality checks, as indicated in a previous section of this document (Fleet Functionalities), search for failures in the relationships (correlations) between the three main vessel characteristics: the length, the GT and the power. These relationships are defined by certain empirical equations (linear regressions) which contain a series of coefficients (see references: Appendix I, Statistics in the Training Manual).

The relationships (equations) and coefficients are calculated for the following variables:
- length on GT,
- GT on length,
- GT on power, and
- power on GT.

The application uses a default set of correlation coefficients calculated for the whole Mediterranean fleet by fleet segment (GFCM fleet segments). A percentage of tolerance over these values can also be set (normally 10%) in order to allow for some variability.

As in the range table, the quality check table contains several columns indicating: the census database to which the reference values (coefficients) refer, the *Vessel Details* tab and the field (*Column Name*) of the variable (*e.g.* length) compared to the second (related) variable according to the correlation coefficients extracted from the fleet. Further columns indicate the fleet segment, the corresponding correlation coefficients and the tolerance level allowed for the value of the first variable to be accepted, (see *Fig. 44*).

Figure 44. Quality checks

The variable in the column 'Column Name' is calculated from the variable in the column 'On Column Name'.

In order to fine tune the quality checks, the coefficients *a* and *b* of the linear regression can be calculated by fleet segment for the whole vessel population (fleet) of the country and then input in the *Quality Check* table of the *Reference* tab (in order to replace the default set of coefficients). This can easily done by plotting each pair of variables (as indicated above) for the national data (preferably by fleet segment), and plotting the linear regression (see example in *Fig.45* below).
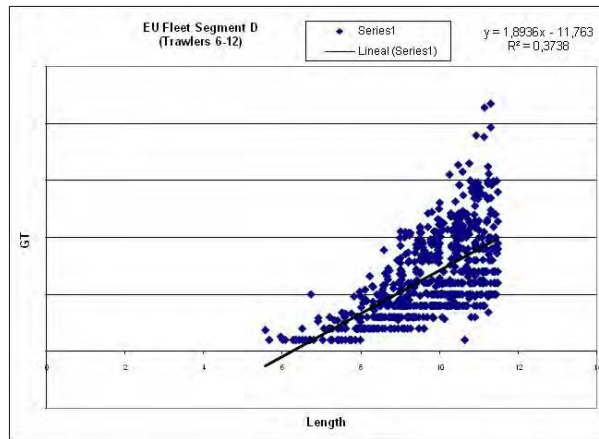
Figure 45. example linear regression

When plotting each pair of variables, the coefficients *a* and *b* of the linear regression can be recorded and displayed in a table prepared for this purpose (see *Fig.46* below).

FleetSegment	Column (X)	ColumnOn (Y)	CoefficientA	CoefficientB	R2	Tolerance		Equations	
A	Length	GT	-0,2	0,2	0,31	10	Polyvalent < 12 no engine	y = 0.2049x - 0.2091	R2 = 0.3149
A	GT	Length				10			
A	GT	Power				10			
A	Power	GT				10			
B	Length	GT	0,87	0,33	0,27	10	Polyvalent < 6	y = 0.3312x - 0.8728	R2 = 0.2749

Figure 46. Example of coefficients table

The coefficients can then be replaced in the Quality Check Reference table.

The items in the Range Checks table can be modified by clicking on them and choosing from drop-down lists, or spin editors (arrows). The Data Quality Checks records, can be modified, deleted, new ones created, *etc*, by using the tools at the bottom of the table ("+", "-", "X", *etc*) as explained earlier in this document. Once all modifications, additions or deletions have been done, click on the Update button in order to save and store them in the Quality Check table.

The use of national-specific coefficients is highly recommended; however, it is not strictly necessary if the national data fits the default quality check settings.

In cases where the national data does not fit the default settings nor the national-specific ones, it is also possible to disable the quality check in order to be able to input the national fleet data (otherwise all vessels could be classified as pending.

Managing **Reference** *Files*

This functionality is part of the customisation of the application; it is addressed to users that need to do small corrections/additions to the Reference tables. The main use of this functionality is that of amending the national terms (in national language) or the introduction of definitions to the answers of the fields. Text or numbers can be input/modified in these two columns by just clicking on them. For the changes to take place click on the Update button and a message will indicate that the changes carried out have been successfully registered.

The real customisation of the software takes place during the set up of the software by using the Fleet Register Configurator (see section I).

Section IV - Outputs of the system/application

All the requirements of official institutions (national and international) have to be catered for in the output of the system. For this purpose a list should be drawn up of all the requirements of each body; it is important to have this list at the outset, otherwise it will be more difficult to modify the system.

There are two types of outputs:

- ***unprocessed data output (data):*** this is usually a copy of the databank or a part of the databank which can be presented in different formats (xls, csv, xml, *etc*) in readable or coded versions, and

- ***processed data output (statistics):*** these could be tables, data files, graphs, *etc.,* issued at national, regional, international, or biological/technical levels. These tables or graphs can have summarised data or basic statistics according to the requested criteria.

Another important classification of the outputs of a fleet register system is the following:

- Official/international outputs: like those required by international bodies (EU snapshot, FAO FishStat FF-1 and FF-2, and GFCM Task-1, AVL list or the Fleet Register are some examples)

- National outputs: those that can be customised according to different needs of the national organisms requiring the data (Fisheries Ministry, National Statistical Office, *etc*)

The application presents its outputs organised in two tabs of the menu bar (reporting and exporting).

Reporting

The Reporting functionality provides different types of reports produced by analysing the data included in the database. These reports can include tables and/or pie charts showing the result of the analyses carried out. These analyses usually consist of basic statistics or summarised data. The software provides a list of standard reports that can be obtained by just selecting the Reporting tab of the Menu bar. Some of the options include official reports (following international standards/requests) and others provide useful summaries or descriptions of the national fleet. Additional customised reports can be added to the software according to national needs.

The following are the reports currently available in the application (see figure 1 below):

Official Reports
Generally, these are whole census datasets required by international institutions. For example FAO reports comprise:

- Fishstat FF-1 (summary table of decked vessels by vessel type and length classes)
- Fishstat FF-2 (summary table of undecked vessels by vessel type and length classes)

When requesting this type of report, the software will provide the option of creating a Sealed Copy of the current census dataset (see *Fig.47)* which will allow future consultations. This option is very useful when, at a later stage, there is the need to revise or review the census dataset for that precise moment (when reporting to an international organisation) in order to carry out amendments or produce new reports.
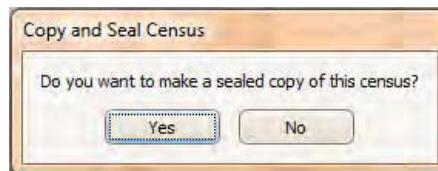
Figure 47. Sealed copy option

National reports

These reports comprise basic statistics only, and can be run for the whole fleet or for a section of the fleet selected by the user. In order to produce a report on a query, first run the query (at the bottom of the fleet table there will be an indication of the number of vessels out of the total involved in the query) and then request the report.

The national reports can be produced in English or in the national language. The software automatically requests a language selection before producing the report (see *Fig.48*).
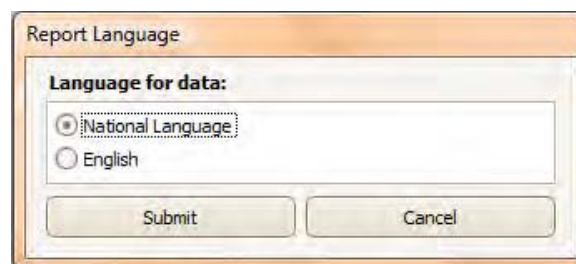
Figure 48. Selection of language for report

There are two types of national reports (Fleet reports and Statistical reports):

 1. ***Fleet Reports*** comprising a table with information on the vessel records:

   • Small Fleet Report (consisting of a summary table showing the most important information for each vessel of the fleet: registration details, flag, vessel name and type, operational status and port) (see an example in *Fig.51* later).

   • Standard Fleet Report (consisting of a summary page of information per each vessel of the fleet).

   • Full Fleet Report (listing of all fields of information for each vessel of the fleet).

   • Custom Fleet Report (including only those groups of fields selected by the user).

 2. ***Statistical Reports***

 These reports provide a chart or a table indicating a percentage for the characteristics selected in the fleet. A summary of this information can be found at the bottom of the chart. The majority of statistical reports show the distribution of the number of vessels by a certain field (port, gear type, etc). The following statistical reports are available in the application:

   • Vessel Distribution by Port (see Figs. 52 and 53 later)

   • Vessel Distribution by Minor Stratum

   • Vessel Distribution by Vessel Type

   • Vessel Distribution by Main Gear Class

   • Vessel Distribution by Vessel Type and Length

- Vessel Distribution by Manufacturing Country and Length

- Distribution by Port and Vessel Type

- Distribution by Vessel Type and Port

- Crew Distribution by Vessel Type

- Equipment Distribution

- Basic Numerical Statistics (provides basic statistics for each one of the three main variables of a vessel: length, GT and power)

- National Statistics Summary (includes all of the above)

Downloading

This function allows obtaining a copy of a selected dataset for transferring into a peripheral office (or from the peripheral into the central office). The transfer, as explained in a previous section, is performed by an 'Upload' and 'Update' in the correspondent office.

There are two options available: 'Downloading the Current View for Transfer' can be used when the full Fleet is loaded or over a query and 'Downloading the Full Fleet for Transfer' produces a copy of the full dataset.

Note: The downloading function is not used in its usual context (it is a typical function in a client /server environment); it is more like an Exporting data, data set, data files or the entire fleet vessel register (data export is available in digital or paper formats; digital format can be a Flat file, a CSV file, Excel decoded tables or Excel Coded tables (mirror tables), etc).

Exporting (full DB, part or updates)

The Export functionality provides for the export of the data included in the database in different ways. The data exported can be either related to the fleet (vessel records) or to the reference files. In the second case an XML file will be produced which includes all information in the reference tables. This can be saved for future consultations. The exporting functionality related to vessel records provides the following types of exports:

Official exports

These types of exports, generally requested by international organisations, refer to the full dataset or the updates only, for example:

1. *GFCM exports*
   - Full Fleet Register (.xml format)

   - Fleet Register Updates (includes only the updates from an specific date)

   - Authorised Vessels List (including information on vessels > 15m)

   - Task-1 (indicate reporting year and reporting authority)

Figure 49. GFCM export

2. European Union exports

- EU Snapshot (indicate starting date for updates)

- Full Fleet Register Export (.csv format)

National exports

These exports involve either part or the whole register.

1. Fleet exports

(xls, xml, coded or readable):

- Current View Export (Exporting on queries; see an example on figure 5)

- Full Fleet export (see *Fig.54* below)

- Catch and Effort Assessment Export (exporting the information for the CAS survey)

For these export types (except for the CAS), the user can select the format for the export and the data (see *Fig.50*).

Figure 50. Selection of formats for export and data

Ideally a census/fleet register system should allow addition/development of further customised reports in order to fulfil national and international requirements. Moreover, the Export functionality includes the possibility of exporting the Reference files in .XML format.
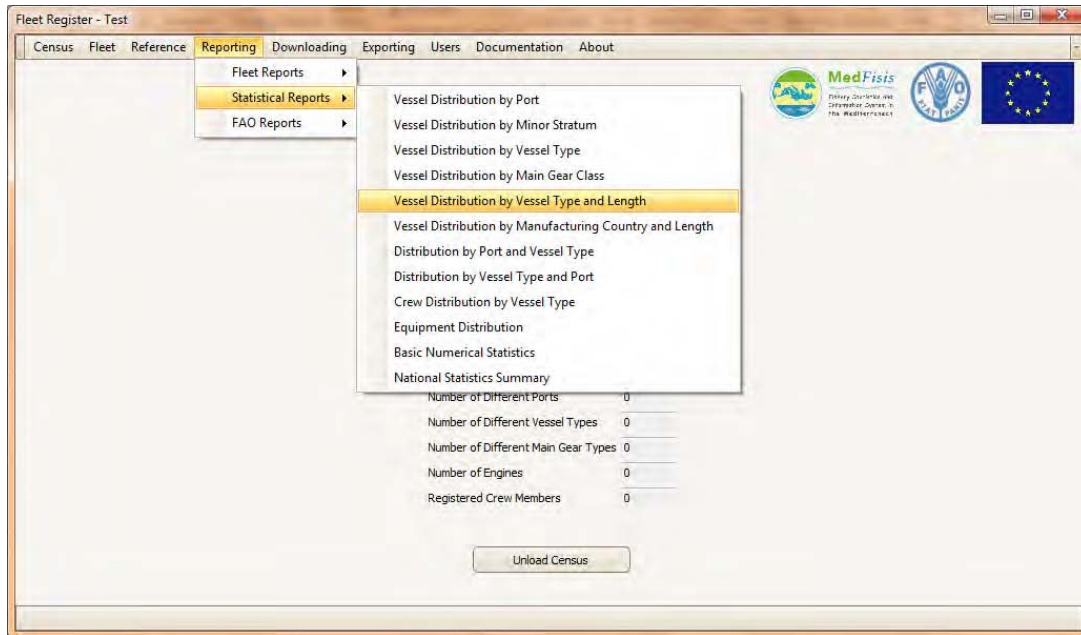
Figure 51. Screenshot of the reporting window of the fleet register software developed by MedFisis

Figure 52. Example of a small fleet report
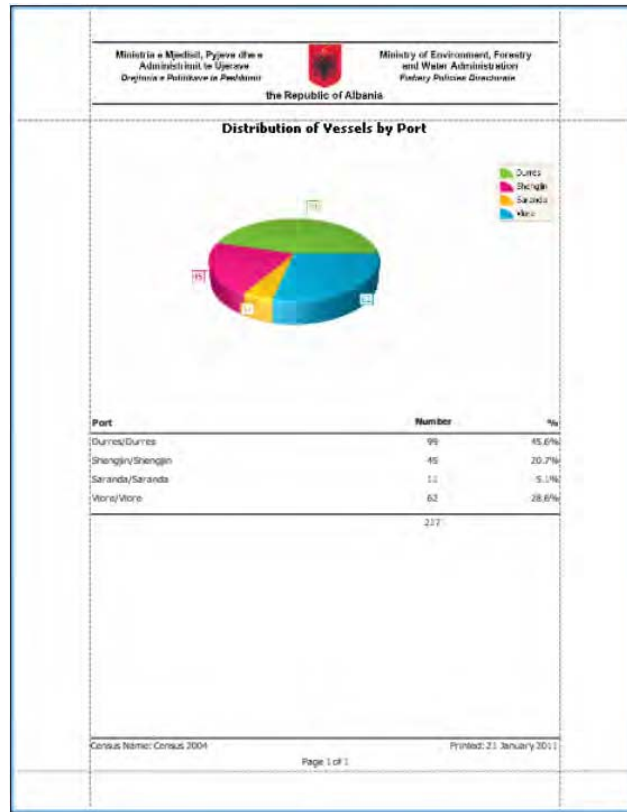
Figure 53. Example of a statistical report (distribution of vessels by port)

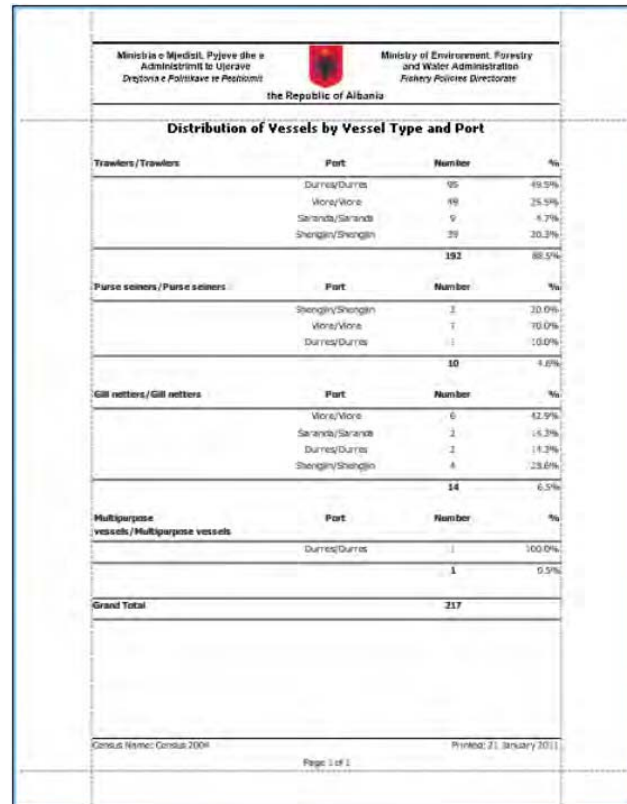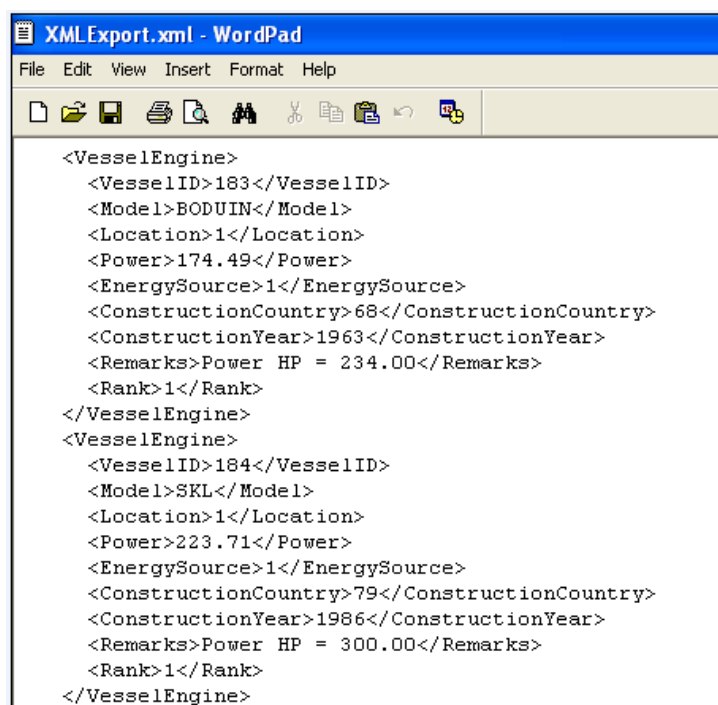*Figure 54. Another example of a statistical report (distribution of vessels by port)*

Figure 55. Example of a fleet export (XML)

Documentation

This section contains useful documentation related to the application, *i.e.,* a set of three documents for the recorders (Recorder Documents: Census Questionnaire, Data Field Descriptions and References), a summary (Statistical Recorder´s Book) from the "Operational Manual – Supplement 0" (see References in next section) indicating the relationship among the previous three Recorder Documents, plus the software manuals (User Guide and Technical Documentation). The whole set of documentation is presented in PDF format.

The recorder's documents follow the same logic as in the application for ease of use and the numbering of fields is the same as in the questionnaire, data field descriptions and the application. Therefore, it is easy to refer to a particular field in a fast way. The reference tables are indicated in the questionnaire and in the drop down lists of the application. The reference tables are in alphabetic order in the References document.

The software User Guide (this document) is also available to be checked easily while working with the application. The software Technical Documentation contains indications for IT experts on the structure and development of the application.
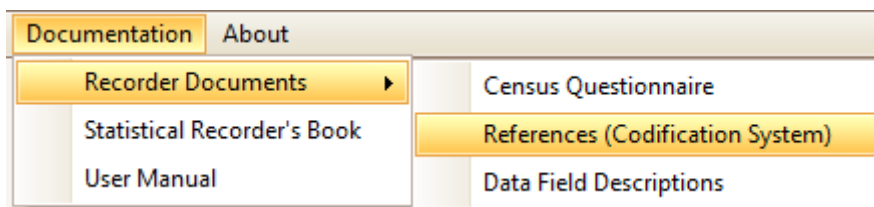

Figure 56. Documentation

About

This section includes information on the national version of the software, on the MedStat system, on the MedFisis project and the Intellectual Property Rights (all in PdF format).

Figure 57. About

References

Coppola, S., Mosteiro, A. and Camilleri M. 2011. MedStat 2011 – Fishing Vessel Census; Census design and implementation. GCP/INT/918/EC/MedFisis - MedFisis Technical Document, 95 pp.

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Pilgrim, D., Coppola, S., Mosteiro, A. and Camilleri M. 2011. MedStat 2011 – Fishing Vessel Census; Training Manual. GCP/INT/918/EC/MedFisis - MedFisis Technical Document, 55 pp.

This document is produced as part of a series of MedFisis technical documents and is intended to serve as a guide for users operating the MedStat Fishing Vessel Register Software. It is subject to being updated depending on alterations and additional features introduced into the software and customization at national level, following the release of this version.