

# FIS Survey Activity Manual

Guide for conducting surveys on professional  
fishing sub-fleets



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January 2023

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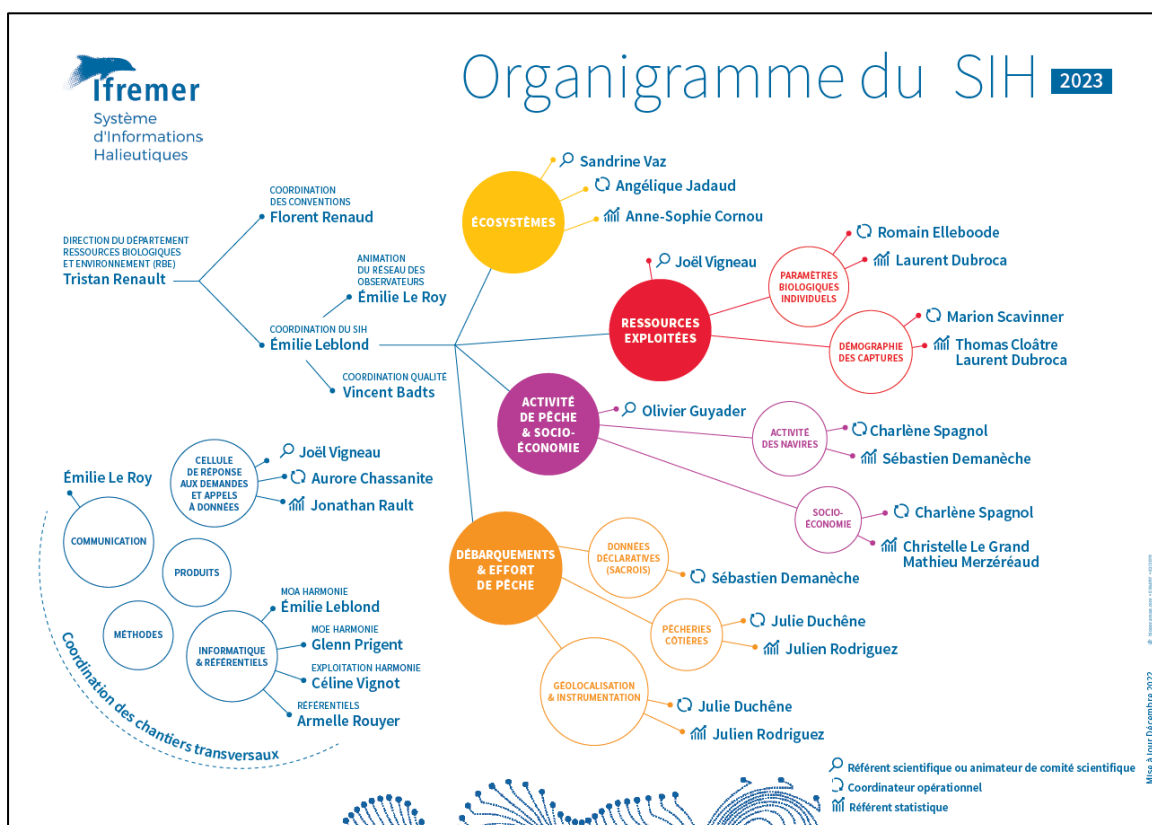
# 1 Context

## 1.1 The FIS

### 1.1.1 Presentation

The work of fisheries observers is part of the mission of the Department of Biological Resources and Environment at Ifremer, specifically the Fisheries Information System (FIS) [Système d'Informations Halieutiques] project. The FIS is a national scientific network for the observation of resources and all sub-fleets involved in professional vessel-based fishing. It provides knowledge for research and expertise, which contribute to sustainable exploitation.

### 1.1.2 Organigram



## 1.2 The observer's role

The observer's main function, for this information collection, is to participate in the observation of fishing activities by collecting, entering, validating and exporting data to the central database, 'Harmonie'. Each Ifremer observer is under the responsibility of their laboratory manager and the 'vessel activity' operational coordinator [coordinateur opérationnel 'activité des navires']; contracted observers are under the responsibility of their supervisor.

**A regular presence in the field** allows an observer:

- to know the monthly activity of each vessel of their portfolio: active or inactive, métiers practiced, characteristics of the fishing gear and fishing areas frequented;
- to pass on questions to the laboratories or the operational coordinator of the action who will provide them with the necessary information.

### 1.3 Data privacy

In the framework of the General Data Protection Regulation (GDPR), which regulates the processing of data in an equal manner throughout the European Union, the dissemination of individual information relating to fishing activities is strictly subject to the prior agreement of the president/CEO of Ifremer for data collected by the FIS, or of the General Directorate of Maritime Affairs, Fisheries and Aquaculture (DGAMPA) for declarative data.

A written and justified request from the person wishing to have access to nominative information must be addressed to the observation network leader.

### 1.4 Regulatory context

This work is part of the basic agreement between Ifremer and the DGAMPA.

This agreement establishes the framework for the actions carried out by Ifremer at the request of the DGAMPA with regard to:

- data collection and support for the fisheries and aquaculture information system,
- fisheries expertise and support for the development of public maritime fisheries policies,
- the scientific-professional partnership.

## 2 Building and monitoring the vessel portfolio

### 2.1 Composition of the vessel portfolio

Each observer is responsible for monitoring the activity of fishing vessels in their area of responsibility. This set of vessels is called the 'vessel portfolio' [*portefeuille navires*].

An observer's vessel portfolio consists of:

- vessels registered in the maritime district(s) or operating port(s) for which they are responsible,
- vessel owners and changes in ownership of these vessels,
- additional information from the European Union's 'Community Fishing Fleet' (CFR) file. The CFR file contains the history of changes to vessels since 01/01/1989 for France.

It is divided into three categories of vessels, all of which are registered in the CFR file:

- vessels over 10 metres subject to the European log book,
- vessels of less than 10 metres subject to the national fishing form,
- vessels over 12 metres subject to the VMS (Vessel Monitoring System) for which the position of the vessels is known.

A fourth category includes vessels not registered in the CFR because they are mostly registered under Marine Culture and Small-Scale Fishing (CMPP shipping category).

### 2.2 Monitoring the vessel portfolio

Despite the integration of updates relating to changes in vessel and owner characteristics, there is still a more or less significant discrepancy between the situation of the sub-fleet observed in the field and that recorded in the reference files.

If the observer is aware of any such changes affecting a vessel that are not reflected in the information in the vessel portfolio, they can report them to the Harmonie help desk [Harmonie@ifremer.fr](mailto:Harmonie@ifremer.fr). Changes may correspond to the following types:

- **The technical characteristics and registration district of a vessel without change of owner**  
In the event of a change in any of these data, it is necessary to specify the effective date of change and the new known characteristics of the vessel (tonnage in tonnes, power in kilowatts, length in centimetres).
- **End of a vessel's active life as a fishing vessel**  
This concerns vessels that are being withdrawn from the fleet (deregistration involving loss of operating licence), exported (change of vessel flag) or destroyed (intentional demolition or shipwreck). It is necessary to indicate the end date of a vessel's validity and, consequently, also to indicate the end date of the validity of the vessel/owner pair. **Vessels that are laid up<sup>1</sup> are kept in the vessel portfolio, but during the activity survey they will be declared as inactive for fishing.**
- **Change of owner**  
Change of owner is independent from the other changes concerning the vessel mentioned above. It is important to note the effective end date of the vessel/owner pair and to identify the new owner by their code. Maritime Affairs assigns a vessel-owner code to each vessel owner differentiated according to the nature of the vessel owner (collective vessel owner example: SPR 4154, individual vessel owner examples: 19782432 or 78B2432).
- **New vessel**  
The registration of a new vessel requires the provision all its required information (vessel's start date and technical characteristics, CFR and CMPP indicators, port of operation), and the association with a vessel owner (start date of the vessel/owner pair and vessel owner number).
- **New vessel owner**  
When registering a new vessel owner, it is necessary to know the vessel owner's code specified by Maritime Affairs and the person's date of birth if they are an individual vessel owner. The vessel-owner code differs according to the nature of the vessel owner (see paragraph on change of vessel owner above).
- Each maritime registrant is uniquely referenced by Maritime Affairs with a code such as '19690145' or '69H0145'. In this example, the reference of the new vessel owner in the FIS register will be '19690145', 1969 being the year of registration as a maritime registrant. For collective vessel ownership represented by a legal person, the first four characters are replaced by 'SPR' followed by a serial number.

### 3 Data entry

The 'Allegro' software program, distributed by Ifremer, allows surveys to be entered in a standardised manner on the scale of each seaboard, thanks to regionalised reference systems: North Sea, Channel, Atlantic, Mediterranean, Martinique, Guadeloupe, Guyana, Reunion and Mayotte.

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<sup>1</sup>A vessel is said to be laid up when its operation is suspended for more than one month, either at dock or at anchor, and this is not due to seasonal use.

At each Internet connection, the data entry software is updated via Ifremer's central database Harmonie in order to update the various administrative data sent by the DGAMPA.

This manual serves as a guide to entering data into Allegro. The instructions for assisting with data collection are systematically presented through figures showing the field form and screenshots of the data-entry interface.

## 4 Survey on the activity of professional fishing sub-fleets

The monitoring activity work undertaken is based on the observation that we will not, in the foreseeable future, have access to comprehensive declarative information on **effort and production by metier** for all French vessels (vessels active in the CFR and vessels operating in the CMPP - Marine Culture and Small-Scale Fishing - shipping category).

The aim is, therefore, to have minimum but comprehensive information on:

- **The general features of a vessel**, including information on:
  - annual effort: number of days at sea, number of fishing days, number of engine hours, auction and/or non-auction sales;
  - the completeness of the declarations made by the fisher (estimation of the monitoring rate via the declarative system, reliability of the declarations);
  - the level of cooperation from the fisher (quality of reception, agreement for further surveys, boarding, instrumentation to measure fishing effort, etc.).
- **The monthly activity calendar** of each vessel in the portfolio: metiers practiced during the month and main fishing areas by metier,

These two types of information will allow a complete description of the French sub-fleets and extrapolations of effort and production data to all fisheries.

During a survey made directly with a fisheries professional, it is essential to collect both types of information in order to have a complete picture of their fishing activity.

### 4.1 General information on a vessel

The purpose of the general information on a vessel is to obtain a synoptic and annual view of the vessel, but also of its owner. The vessel sheet initially contains information on the technical characteristics of the vessel and on the owner(s) of the year:

- Registration [*Immatriculation*] number
- Vessel name
- Indicator of a vessel registered in the CMPP
- Registration district [*Quartier d'immatriculation*]
- Date of start of validity [*Début validité*]
- Date of end of validity [*Fin validité*]
- Length [*Longuer*] in metres
- Tonnage [*Jauge*] expressed in tonnes (TX)
- Power [*Puissance*] expressed in kilowatts (KW)
- Year of construction [*Année construct.*]
- CFR [*FPC*] segment
- Community licence gears [*Engins licence européenne*]

Navire	Période validité	QIM	Nom	Longueur H.T (m)	Jauge brute (TJB)	Puissance (kW)	Année construct.	FPC	Engins licence européenne
103425	01/03/2011	BL	PREMIER FLOT	9.52	893	81	1974	Oui	

Dernier armateur	
4174 - BRISVILLE CHRISTIAN	VICTOR
549 RUE DU MOULIN - 80410	

Figure 1. 'Général' part of the field form printed from the Allegro data entry software

Immatriculation	Début validité	Fin validité	Nom du navire	Port d'exploitation	Jauge brute (TJB 1/100 tx)	Jauge (GT)	Puiss. adm. (kW)	Long. H.T (m)	Année de constr...	FPC
103425	01/03/2011		PREMIER FLOT	FBL - Le Hourdel (Cayeux...	893	840	81.0	9	1974	Oui

Immatriculation	Début immatric...	Fin immatricul...	Quartier d'immatricul...
103425	01/01/1974		BL - Boulogne-sur-Mer

Immatriculation	Code armate...	Début armement	Fin armement	Nom armateur	Prénom armateur	Date de naissance
103425	4174	01/01/1994				

Figure 2. 'Général' tab in the Allegro data entry software

#### 4.1.1 Information to identify vessels for evaluation in terms of production

In order to carry out the data extrapolation as well as possible, each observer must first have additional information for each vessel in their portfolio (actively fishing vessels):

- Can we consider that all of its activity is already taken into account by the entries in the log books [*journaux de bord*] or declarative fishing forms [*fiches de pêche*]?
- Does all its production go to auction?
- There is a certain type of case where the sum of the production declarations in the log books or declarative fishing forms and the landing data at auction can be used to determine the entire production of the vessel.
- Which species groups are entirely sold at auction?
- Which species groups are entirely sold elsewhere but at auction?

Ventes	
<input type="checkbox"/>	Totalité en criée
<input type="checkbox"/>	Totalité hors criée
<input type="checkbox"/>	Partiellement en criée

Caractéristiques de l'enquête	
Caractéristique	Valeur
<input type="checkbox"/> Qualification de l'enquête	Indirecte
<input type="checkbox"/> Fiabilité de l'enquête	Non renseigné
<input type="checkbox"/> Inactivité annuelle confirmée par l'observateur	
<input type="checkbox"/> Le professionnel accepterait-il de répondre à une autre enquête ?	
<input type="checkbox"/> Métiers déclarés dans les journaux de bord/fiches de pêche	
<input type="checkbox"/> Habitudes de vente à la criée	

Figure 3. Vessel production information in the field form (left) and Allegro data entry software (right).



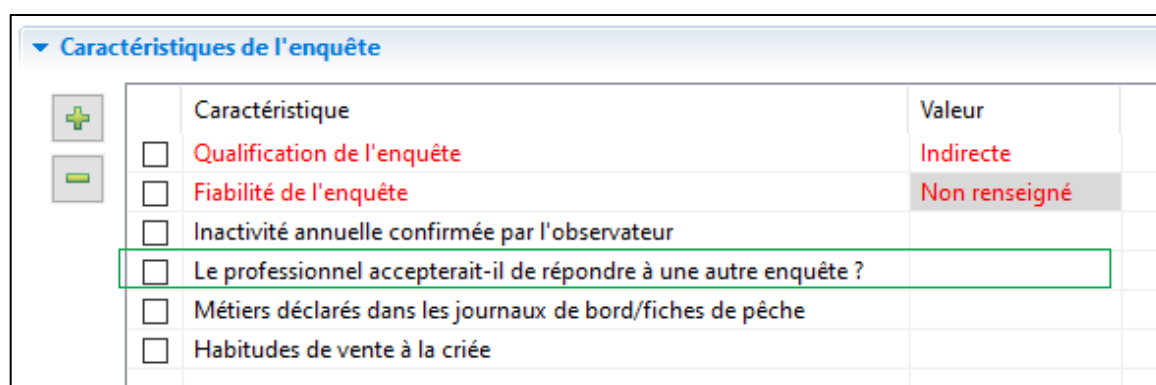
#### 4.1.2 Survey reliability

Given the information available via the declarative process, the observer can, **based on their expertise** or following a direct survey of a fisher, qualify the overall reliability of the survey as: reliable, unreliable or not specified (if it is difficult to give an opinion).

Figure 4. Reliability of the survey in the Allegro data entry software.

#### 4.1.3 Willingness to participate in multiple surveys

The observer may also indicate whether the fisher would be willing to participate in other complementary surveys, in particular the economic survey. This information will allow the compilation of a sample of fishers who are likely and willing to take part in repeated surveys (panel) or who agree to take Ifremer observers on board.



Caractéristiques de l'enquête			Valeur
<input type="checkbox"/>	Qualification de l'enquête		Indirecte
<input type="checkbox"/>	Fiabilité de l'enquête		Non renseigné
<input type="checkbox"/>	Inactivité annuelle confirmée par l'observateur		
<input type="checkbox"/>	Le professionnel accepterait-il de répondre à une autre enquête ?		
<input type="checkbox"/>	Métiers déclarés dans les journaux de bord/fiches de pêche		
<input type="checkbox"/>	Habitudes de vente à la criée		

Figure 5. Indicating the willingness of a fisher to take part in another survey in Allegro.

#### 4.1.4 Estimated monthly and annual fishing effort

**The monthly fishing effort, i.e. the number of days at sea and the number of fishing days per month, are to be filled in for all vessels.** For those equipped with VMS, the data from 'Sacris' can be kept. However, if it appears to be erroneous, it is important to report this to the action coordinator so that the Sacris algorithm can be modified. Data from the log books should be checked and corrected if necessary. For vessels for which no effort data is known, the fisher should be contacted to reconstruct the fishing effort for each month.

**When the activity calendar is completed at the same time as an economic survey, in addition to the monthly effort, the annual fishing effort should be collected: number of fishing days and days at sea per year and number of engine hours.** This last technical variable is the number of hours the engine has been running. This is essential information for the maintenance of the vessel's machinery and is, therefore, known to the fisherman. It makes it possible to approximate, in the absence of the number of days at sea, a number of days during which the vessel was active. This number of hours, although it takes into account the time spent in port, makes it possible to determine a ratio between the number of effective days at sea and the number of engine hours for a homogeneous sub-fleet.

The final objective of this survey is to estimate the total annual effort (fishing effort = fishing time, effort of absence = time spent at sea), for the entire fishing fleet in the CFR file and to enable the fishing effort calculated to be adjusted on the basis of the declarative system.

Effort annuel	Cumul saisies 2018	Enq ECO 2018
Nombre de jours de mer / an		
Nombre de jours de pêche / an		
Nombre d'heures moteur / an		
Nombre moyen hommes à bord / an		

Figure 6. Annual effort in the field form used in the economic survey.

## 4.2 Monthly activity calendar

The monthly activity calendar **covers at least all vessels registered in the CFR during the reference year for the surveys**. The activity calendars of other vessels (CMPP in particular) can also be collected, but do not take priority over CFR vessels. The calendars **thus entered into Allegro and the transfer of data to Harmonie** must be carried out regularly during the year and completed by **31 March of the following year at the latest**. This mode of operation is the only way to monitor the progress of the survey and to detect anomalies as soon as possible.

### 4.2.1 Variables to be collected


The activity calendar, shown below, involves collecting a certain amount of information each month. **For each month**, it should show:

- the main port of operation,
- the number of days at sea [*Nb jour mer*] and fishing [*Nb jours pêche*] for all metiers combined,
- the number of persons on board [*Nb pers. à bord*],
- the different metiers practiced: **a metier is defined as the use of fishing gear to catch one or more 'target' species in a given area and during a given period**,
- the most frequently used mesh size [*maillage*] of each metier for the reference year,
- the most frequently used dimension of each metier in the reference year.

Each metier must be associated with:

- the one or two main fishing area(s), taken from the fishing sector reference system available at: <https://sih.ifremer.fr/prive/Acces-aux-donnees/Extractions/Referentiels/Tables-de-reference>;
- the gradient of distance-to-shore associated with each zone (coastal <within 12 nm>, mixed <within and outside 12 nm>, open sea <beyond 12 nm>, beyond 200 nm, etc.). It

is also possible to enter the depth and distance-to-shore gradients of a particular area.



## Calendrier d'activité 2022

ACTIVITE

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**Navire**

Lieu d'immat. : \_\_\_\_\_ Immatriculation : \_\_\_\_\_ Nom: \_\_\_\_\_

**Qualification de l'enquête**

Directe    Indirecte    Estimée    Non réalisable

---

**Effort de pêche**

	Janvier	Février	Mars	Avril	Mai	Juin	Juillet	Août	Septembre	Octobre	Novembre	Décembre
Port												
Nb jours mer												
Nb jours pêche												
Nb pers. à bord												

---

**Métiers**

Métier												
Zone/Gradient												
Zone/Gradient												
Métier												
Zone/Gradient												
Zone/Gradient												
Métier												
Zone/Gradient												
Zone/Gradient												
Métier												
Zone/Gradient												
Zone/Gradient												

---

**Caractéristiques engins**

Métier					
Plus petit maillage étiré en mm					
Dimension					

**Ventes**

Totalité en criée  
 Totalité hors criée  
 Partiellement en criée

**Observateur**

Nom: \_\_\_\_\_  
Prénom: \_\_\_\_\_

Figure 7. Blank activity calendar

#### 4.2.1.1 Main port of operation

Port where the vessel docks in order to stop (even for just a night or a few hours) before resuming its activity.

It is not always the port for landing catches, the place of sale or the registration district. It should be noted that, in most cases, it corresponds to the landing port, but this is not systematic.

#### Precaution

The port of operation may vary during the year.

#### Data use

- Within the framework of the FIS: development of the ObsMer and ObsDeb sampling plans, production of summary reports.
- In the framework of research and expertise: evaluation of the wealth that fishing generates on the coast, beyond the notion of sales (land-use planning).

#### 4.2.1.2 Number of days at sea per month

Number of calendar days the vessel is at sea in a given month.

#### Special precautions for North Sea-Channel-Atlantic seaboard

- Do not fill in the form if the pre-documentation or the owner's information does not seem reliable.
- Favour the Sacrois pre-documentation for geolocated vessels: changes to the regulations and the various research projects underway mean that the majority of vessels over 12 metres are equipped, but not only these; a good number of vessels under 12 metres are gradually being equipped with geolocation systems (not necessarily VMS).

### Precautions for the Mediterranean seaboard and French Overseas Departments

- Make the most complete estimate possible, as the days at sea are a **fundamental source** for improving ObsDeb data (objective: 2 out of 3 vessels).
- In the absence of information, if the observer has no expertise on the vessel, leave this blank.

### Use of the data in the FIS and research/expertise activities

Calculation of fishing effort and validation of economic data.

#### 4.2.1.3 Number of fishing days per month

The number of calendar days the vessel is actively fishing in a given month, not including time spent steaming, holding station/hove to or broken down.

#### Precautions

For vessels under 12 metres, fishing days are generally the same as days at sea. The function 'copy days at sea' [*copier les jours de mer*] to fishing days in the Allegro data entry software is, therefore, recommended.

**Use of the data in the framework of the FIS and research/expertise:** calculation of fishing effort and validation of economic data.

#### 4.2.1.4 Number of persons on board per month

Corresponds to the number of persons taken on board. This is not the same as the number engaged.

#### Precautions

- This is important data for which the observer's expertise is required.
- If the number of persons varies in a given month, estimate a monthly average.

### Use of the data in the FIS and research/expertise activities

Validation of economic data, calculation of full-time equivalents (FTE), calculation of production resources.

#### 4.2.1.5 Metier practiced each month

Association of the [gear used] and the [target species or group of species].

##### Precautions

- Give priority to the diversity of fishing gears, taking into account the **target species** rather than those landed or caught in the majority. **If there is no target species, use the codes 'Miscellaneous fish – MZZ' [divers poissons – MZZ], 'Large crustaceans - \_GC' [gros crustacés - \_GC], 'small pelagics - \_SP' [petits pélagiques - \_SP].**
- Take care with regard to the Sacrois pre-documentation: **trust your experience** and do not multiply metiers according to the pseudo-target species observed per fishing sequence.

##### Use of the data in the FIS

Preparation of typologies, sampling plans and summary reports.

##### Some recommendations

**For trawling:** there is no need to specify the four or even five most important species on a monthly basis; **select the target species** of the trawl (e.g. Nephrops, cephalopods, or scallops). If the vessel does not target any particular species, use the target species 'miscellaneous fish, MZZ'). Be careful to **distinguish twin trawls -OTT [chaluts jumeaux]- from single trawls -OTB [chaluts simples].**

**For dredging -DRB-[la drague]:** describe the **metiers practiced according to the target species.**

#### 4.2.1.6 Main fishing areas each month

These are the main operating areas [*zones d'exploitation*] of the vessel.

##### Precautions

Do not alter the information on the fishing area specified in the statistical rectangle. Favour the use of sub-rectangles and statistical units whenever possible and systematically for the metiers practiced in estuaries, bays or roadsteads.

##### Precautions for the North Sea-Channel-Atlantic-Mediterranean seaboard

Preferentially use the pre-documentation of geolocated vessels.

##### Use of the data in the FIS and research/expertise activities

Determining the spatial activity.

##### Entering fishing areas

In the Allegro data entry software, it should be ensured that the fishing area filter takes into account statistical rectangles, statistical sub-rectangles and statistical units. To do this, open a calendar and integrate these location levels in the 'Location Filter' [*Filtre sur les lieux*] **as shown below. The filter will be maintained for all your entries in Allegro.**

1. Click on the 'Location Filter' [*Filtre sur les lieux*] link.
2. Click on the link 'Selection of location levels' [*Sélection des niveaux de lieu*].
3. Select the missing location level by double-clicking it (statistical unit [*unité statistique*]...).
4. Click on 'OK' in the 'Selection of location levels' [*Sélection des niveaux de lieu*] window.
5. Click on 'Apply' [*Appliquer*] in the 'Location Filter' window.

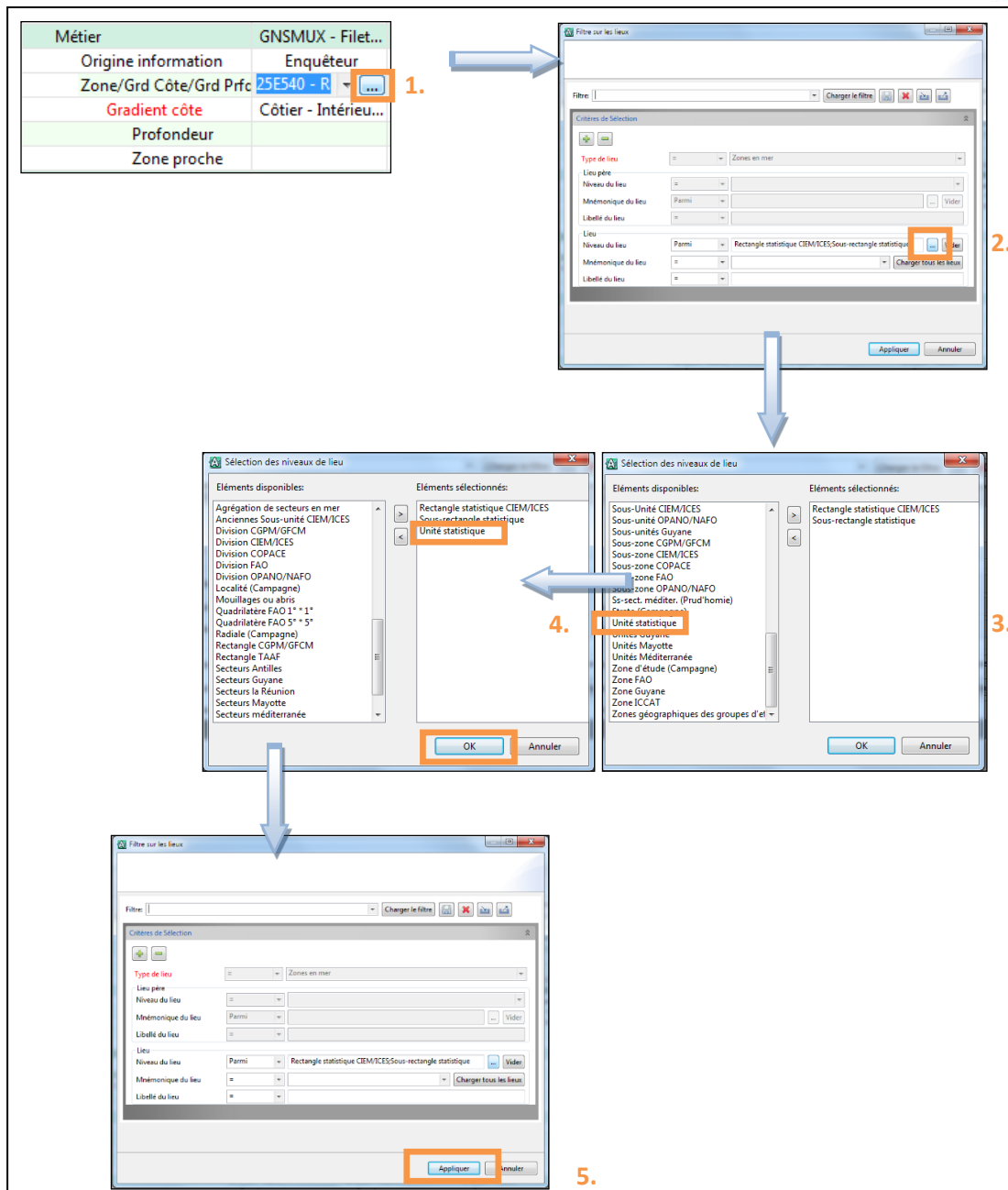


Figure 8. Adding a location level in Allegro

#### 4.2.1.7 Gradient of distance-to-shore

Distance gradient to the nearest coast in **French waters**:

- Gradient C = coastal, less than 12 nm from the coast,
- Gradient L = offshore, beyond 12 nm but within 200 nm,
- Gradient M = mixture of both within and beyond 12 nm,
- Gradient E = outside French waters.

#### Precautions

Do not overlook the importance of the gradient of distance-to-shore in narrowing down the activity when it is practiced at the scale of a statistical rectangle.

### Data use

- Within the framework of the FIS: identifying spatial activity, producing summary reports and location-at-sea forms.
- In the context of research and expertise: identifying spatial activity, identifying vessels in marine parks or marine protected areas (MPAs).

#### 4.2.1.8 Depth gradient

The depth gradient can be used to provide information on fishing activity targeting a wide range of demersal species. **It provides information on the average depth at which the fishing activities were carried out.** The depth classes proposed depend on the maximum depth of the fishing sector.

**Precaution** - Only the observer's expertise can provide the depth gradient.

**Use of data in the FIS framework** - Production of location summary documents

#### 4.2.1.9 Local area

This indicator specifies whether, in the area of operation, the vessel is in the vicinity of:

- a fish aggregation device (FAD),
- an aquaculture sector,
- an artificial reef,
- a reserve.

#### 4.2.1.10 Mesh size and dimension

The mesh size and dimension to be entered are defined for each gear in the file that can be found in the FIS website working tools. They are also listed in the appendix of the manual and in when hovering over each métier in the 'gears' [*engins*] tab in Allegro.

These data complement the gear characteristics derived from the declarative documents and ObsDeb observations. **The roadmap contains a 'direct survey' [*Enquête directe*] column that shows a '1' when, for a given vessel, a direct survey is recommended, in which case the gear characteristics must be requested from the fisher and then entered into the activity calendar.**

In the roadmap, for a vessel to be marked '1' indicating 'direct survey to be carried out', it is necessary, among other things, for its gear characteristics data to be missing. This implies that they are not present in the ObsMer data, the ObsDeb data or data from the declarative process. The activity calendar is, therefore, the ultimate and final source that can be used to complete the gear characteristics of a sub-fleet. Vessels are then randomly selected so that these characteristics can be collected for 20% of each sub-fleet. Therefore, the gear characteristics from the pre-documentation must not be put in the activity calendar because, if they exist, they have already been judged as inconsistent by the algorithm.

#### Important

The gear characteristics, mesh sizes and dimensions must, therefore, be collected from the fishers rather than retrieved from the pre-documentation.

A single métier may have different mesh sizes and dimensions over the course of a year. We only require one value in order for the data to be of good quality and usable: the one the most frequently used.

Caractéristiques engins				
Métier				
Plus petit maillage étiré en mm				
Dimension				

Figure 9. View of gear characteristics in the field form

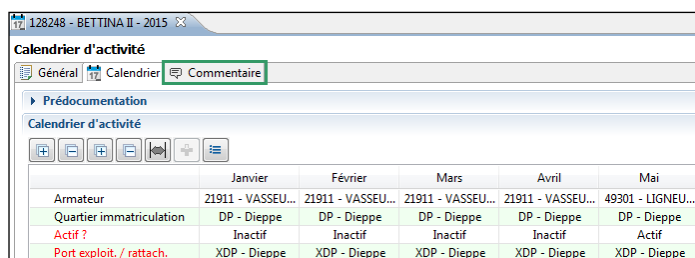
Général																																		
<div style="display: flex; justify-content: space-between;"> <span>Calendrier</span> <span>Engins</span> <span>Commentaire</span> </div>																																		
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Figure 10. View of gear characteristics in Allegro

#### 4.2.2 Comments

In Allegro, the 'Comment' [*Commentaire*] tab allows you to add any information you wish to your calendar. Such comments are kept from one year to the next. It is, therefore, recommended to associate a date and name of data entrant, for example: 'December 2014, name of data entrant: work on vessels planned in January 2016'.





	Janvier	Février	Mars	Avril	Mai
Armateur	21911 - VASSEU...	21911 - VASSEU...	21911 - VASSEU...	21911 - VASSEU...	49301 - LIGNEU...
Quartier immatriculation	DP - Dieppe	DP - Dieppe	DP - Dieppe	DP - Dieppe	DP - Dieppe
Actif ?	Inactif	Inactif	Inactif	Inactif	Actif
Port exploit. / rattach.	XDP - Dieppe	XDP - Dieppe	XDP - Dieppe	XDP - Dieppe	XDP - Dieppe

Figure 11. 'Comment' [*Commentaire*] tab in Allegro

### 4.2.3 Qualitative classification of a survey

The information in the activity calendar is obtained:

- **By direct survey**  
with the vessel owner, skipper or a member of the vessel's crew, in person or by telephone.
- **By indirect survey**  
in the absence of the skipper/owner, from a fisher not working on the surveyed vessel, by obtaining information from a fish merchant, at an auction or via a fisheries committee (exceptionally and as a last resort).
- **By estimation**  
based on the activity calendar of the previous year, provided that there has been no change of vessel owner or métier in the meantime, by rigorous exploitation of the pre-documentation resulting from the processing of the declarative documents submitted by fisheries professionals (log books, declarative fishing forms, sales recorded at fish auctions) and of the Sacrois pre-documentation.  
In the absence of a direct or indirect survey, the activity calendar is based on the various existing documents and on the observer's expert knowledge. The activity survey is then classified as estimated.
- **Case of a survey not being feasible**  
In a very few cases, it is not possible to obtain any knowledge on the fishing activity of a vessel. This may be due to a lack of data in the pre-documentation (administrative, fishing trips, sales) and to the fact that the vessel cannot be found, or the owner cannot be contacted. **The vessel is then entered as inactive** for every month of the year. It is, therefore, essential to classify the survey as unfeasible so that there is no confusion with genuinely inactive vessels.

#### Precautions

Direct surveys can be carried out in the framework of different actions: vessel activity, economic surveys, during embarkations on board fishing vessels in the framework of the ObsMer action or during observations of landings (ObsDeb). **It is important that all these surveys are consistent.**

#### Use of the survey qualitative classification in the FIS framework

Where different data sources conflict, a direct survey is considered the most reliable source (e.g. compilation of ObsMer vessel lists).

### Important

All vessels in a portfolio should be surveyed directly at least once every three years.

#### North Sea-Channel-Atlantic seaboard

**Direct surveys** should focus on the vessels identified in the roadmap and reach a minimum of **40%** for a maritime district.

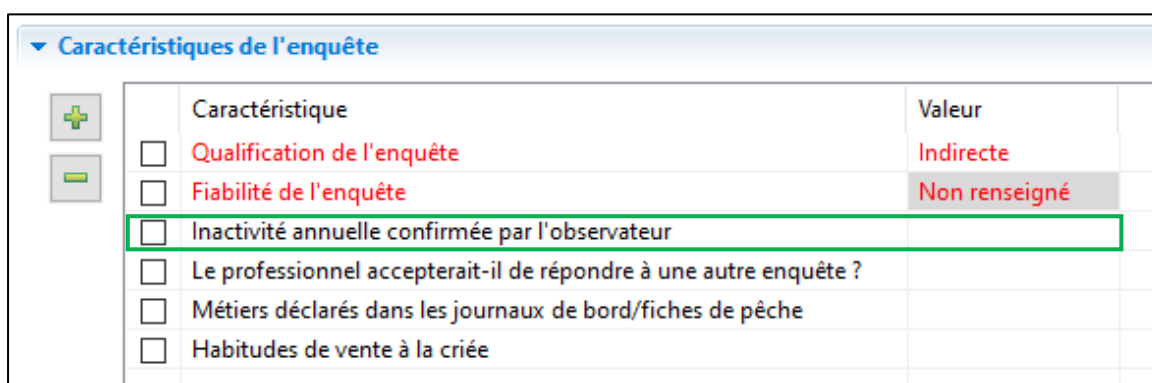
#### Mediterranean seaboard and French Overseas Departments

**The direct survey rate is increased to 60%** when a fishing trip sampling scheme at landing (ObsDeb) is implemented in the absence of a declarative system, with the purpose of increasing information on catches and fishing effort for certain fishing sub-fleets.

### 4.2.4 Case of vessels inactive throughout the year

There are two reasons for recording a vessel as inactive throughout the year:

- case of a survey that is not feasible, see section 4.2.3 on the previous page, because we have no information on the vessel;
- **case of a vessel that has been effectively inactive all year, confirmed by the skipper or another trusted source.** In this case, you can tick a box to show this in the 'survey characteristics' [*Caractéristiques de l'enquête*] section of Allegro.



Caractéristiques de l'enquête		Valeur
<input type="checkbox"/>	Qualification de l'enquête	Indirecte
<input type="checkbox"/>	Fiabilité de l'enquête	Non renseigné
<input type="checkbox"/>	Inactivité annuelle confirmée par l'observateur	
<input type="checkbox"/>	Le professionnel accepterait-il de répondre à une autre enquête ?	
<input type="checkbox"/>	Métiers déclarés dans les journaux de bord/fiches de pêche	
<input type="checkbox"/>	Habitudes de vente à la criée	

Figure 12. Confirmation of year-round inactivity of a vessel in Allegro

### 4.2.5 Priorities for conducting direct surveys

In order to guide observers in the selection of vessels to be directly surveyed, the roadmap specifies which vessels there are. There are four reasons for a direct survey:

- a new vessel on the seaboard,
- a new vessel owner,
- missing gear characteristics,
- a vessel with poor reliability regarding the completeness of its declarative data, sales and activity calendars of previous years ('Orion' application).

To better understand which vessels we consider to have missing gear characteristics or poor data completeness, we will expand on these two points below.

#### 4.2.5.1 Gear characteristics

This indicator is collected through two other FIS data collection actions: ObsDeb in overseas territories and ObsMer in France, during year N. The declarative process also provides some gear characteristics from log books and declarative fishing forms.

The activity calendar, reconstructed in the first quarter of year N+1, therefore, complements these three other data sources.

From a statistical point of view, it is necessary to have these gear characteristics for 20% of the vessels in each sub-fleet.

Among the vessels for which we do not have this data we, therefore, make a random selection to reach the 20% rate of gear characteristics for each sub-fleet.

Vessels practicing the aggregated metiers 'activity other than professional fishing' [*activité hors pêche professionnelle*], 'marine cultures' [*cultures marines*], 'fishing on foot and diving' [*pêche à pieds et plongée*] are excluded because these metiers are not included.

#### 4.2.5.2 Reliability score

To complete this approach, a study carried out in 2022 as part of the development of the Orion application made it possible to better define the reliability of a vessel in terms of its available data. Thus, for each vessel, a completeness score is calculated. This uses several indicators such as (non-exhaustive list):

- the proportion of declared MZZ (misc. marine fish),
- comparison of the number of months of vessel activity and the number of vessel months with Sacrois declarative data,
- comparison of the number of days of vessel activity and the number of vessel days with Sacrois declarative data,
- completeness of the metier information in the activity journal with the declarative data used by Sacrois,
- comparisons of the vessel's CPUE/fishing trip with the CPUE/fishing trip distribution of its length class,
- comparison of the vessel's CPUE/fishing trip with the CPUE/fishing trip distribution of its length class and sub-fleet,
- comparison of CPUE/median Sacrois fishing trip by number of crew and length class,
- comparison of the annual number of fishing trips for a vessel with one fisher on board with the distribution of the annual number of fishing trips for all vessels with one fisher on board belonging to its owner's age class.

In order to calculate a score, each indicator has to be broken down into classes. This breakdown will make it possible to assign a score to each class of the indicator.

The sum of these scores will form a score for each vessel and for each year. Thus, we will be able to see the vessel's reliability score improve or decline over time, reflecting the evolution of the quality of its declarations.

The summarisation of these indicators in the form of a score makes it possible to identify the vessels for which the individual fishing effort data can be considered reliable (score > 0.8) and thus to have a representative sample of vessels.

#### 4.2.5.3 Roadmap

The data reliability of a vessel can, therefore, change over time. This information is entered in the **roadmap**, which must be extracted from the private [FIS \[SIH\] website > collecte > Activité des navires > Feuille de route et Prédoc](#) **before each collection campaign by the Ifremer observer or the contracted supervisor**. **The fieldwork can then be started directly.**

The roadmap contains all of the vessels of a maritime district. Among other things, it indicates whether a direct survey is deemed necessary by the reliability score, in addition to the following additional information:

- reference year,
- vessel name and registration number,
- the 'direct survey' score (where '1' indicates that such a survey is necessary and '0' indicates that an indirect or estimated survey would be sufficient),
- qualitative classifications of previous years' activity surveys,
- the technical characteristics of the vessel,
- the characteristics of the vessel owner.

Once the priority direct surveys have been completed, there is nothing to prevent the observer from surveying other vessels directly even if they are scored 0 or if the 40% of direct surveys has been reached.

### 4.3 Pre-documentation of fishing activities

In order to facilitate the survey in the field or the estimation of a calendar, additional information is provided to the observer. These support variables come from Ifremer reference systems, administrative information transmitted by the DGAMPA, the declarative process, Sacrois algorithm and observation data (ObsDeb).

#### 4.3.1 Pre-documentation PDF

The pre-documentation of a given vessel in PDF format is a summary of all the data available for this vessel: administrative data (vessel characteristics, roster/ownership), declarative process (fishing trip data), sales, Sacrois, activity calendar surveys and observation data (ObsDeb). This document can be downloaded from the FIS website at:

<https://sih.ifremer.fr/prive/Collecte/Activite-des-navires/Feuille-de-route-et-Predoc>.

The pre-documentation provides the value of monthly production either by species (for sales), by gear/species/area (for declarative fishing forms/log books) or by metier/species/area (for Sacrois). Values are expressed in €.

#### Note

**The pre-documentation presents the value of the catches but not the tonnage.** A metier or species will be considered significant in the activity of a vessel not because it represents a large tonnage, but because it generates a significant income for this vessel.

The pre-documentation is a simplification of vessel activity (e.g. only the two main fishing areas appear). It does not attempt to reflect the complete declared activity of vessels. **It is an internal, supporting document and an aid for filling in the activity calendars.** It is, therefore, not recommended to show it to the fisheries professionals interviewed.

##### 4.3.1.1 Administrative data section

The first page contains administrative information about the vessel:

- **The known technical characteristics** of the vessel in the selected reference year. This first table may have one or more rows if the characteristics of the vessel change during the year.
- **The references of the vessel owner(s)**, for the selected reference year.

- **Information from the roster [*Rôles*] data:**
  - Type of roster: individual or collective (**owner** with several vessels). In the latter case, the list of registration numbers of vessels belonging to this roster is displayed.
  - Number of days of ownership by shipping category.
- **European licences from the European Community fishing fleet file (CFR):** 3 gears of the European Community licence until 2004, then only 2 gears from 2005.
- **Vessel ownership data**, for each month:
  - The number of enrolled persons (*Nb\_Hommes*) corresponding to the average monthly number of enrolled persons, calculated from the daily information of the roster [*Rôle*] data stream. Please note that only French seafarers are listed on the vessel's roster.
  - The number of days of ownership (*Nbj\_Armement*) corresponding to the sum of the days of ownership for the different shipping categories (*genre de navigation*).

#### 4.3.1.2 Log book and declarative fishing forms section

The information relating to the fishing trips, i.e. the production declared in the declarative fishing forms or log books, is cumulated to obtain, for each vessel and for the reference year, details of the value of the catches made by month/gear/fishing sector/species. The catch price is defined, for the species sold at auction, by multiplying the tonnage by the average selling price at the level of all the auctions, for the year and month considered, according to the unit of the catch estimation, which, by default, is the kilogram.

The information is provided in a summary table for the twelve months of the reference year. A first sub-table provides:

- **The main port of operation [*port d'exploitation principal*]:** main place of return, corresponding to the top port of the month in terms of income.
- **The number of days at sea and days of fishing [*nombre de jours de mer et de pêche*]:** For this calculation of the number of days in a given month, only the fishing trips ending in that month are taken into account. Fishing trips that start in one month but end in the following month will be taken into account in the calculation of the next month's effort. The number of days at sea corresponds to the time spent at sea by the vessel (including time spent returning, fishing, stationary/hove to or broken down). The number of fishing days is the number of days during which the vessel was engaged in fishing activity.
- Two modes of calculation are provided for each variable.
  - **Total number of days at sea per month [*Nbj\_Mer total mois*]:** for all fishing trips ending in a given month, this is the total number of days at sea (return date - departure date), even if some of these trips started in the previous month(s), these days are included. Days at sea of fishing trips starting in the given month but ending after the end of the month are not included in this calculation.
  - **Effective number of days at sea per month [*Nbj\_Mer effectifs mois*]:** for all fishing trips ending in a given month, this is the number of days at sea that actually took place in the given month (thus excluding the days in the previous month(s)). Days at sea of fishing trips starting in the given month but ending after the end of the month are not included in this calculation (same rule as above). This number of days is, therefore, a subset of the '*Nbj\_Mer total mois*'.

- **Total number of fishing days per month [*Nbj\_Pêche total mois*]**: for all fishing trips ending in a given month, this is the count of the separate calendar days over all the vessel's fishing sequences (even if these sequences took place in the previous month). The days at sea of fishing trips starting in the given month but ending after the end of the month are not included in this calculation.
- **Effective fishing days per month [*Nbj\_Mer effectifs mois*]**: for all fishing trips ending in a given month, this is the number of days at sea that actually took place in the given month (thus excluding the days in the previous month(s)). Days at sea of fishing trips starting in the given month but ending after the end of the month are not included in this calculation (same rule as above). This number of days is, therefore, a subset of the '*Nbj\_Pêche total mois*'.

Example:

	Janvier	Février	Mars
		<div style="background-color: #4a86e8; color: white; padding: 5px; margin-bottom: 5px;">marée A (suite) 2 jours</div> <div style="background-color: #c0392b; color: white; padding: 5px; margin-bottom: 5px;">marée B 4 jours</div> <div style="background-color: #7ed321; color: white; padding: 5px;">marée C 3 jours</div>	<div style="background-color: #7ed321; color: white; padding: 5px; margin-bottom: 5px;">Marée C (suite) 2 jours</div> <div style="background-color: #6b46c2; color: white; padding: 5px;">marée D 4 jours</div>
Jmer Total :	0	8 (marées A + B)	9 (marées C+D)
Jmer Effectif :	0	6 (jours de marée A en février + marée B)	6 (jours de marée C en mars + marée D)

A second sub-table then provides:

- **The declared gears [*engins déclarés*]**, in descending order of income.
- For each of the declared fishing gears:
  - **the two main fishing areas [*zones de pêche*]** (by value).
  - **the list of species caught [*espèces capturées*] and their value [*valeur*]**, sorted in descending order of income (the value being calculated on the basis of the declared tonnage according to the rule described above). The list is limited to species with a total monthly value of €50 or more.

#### 4.3.1.3 Inter-auction sales section (*RIC*)

Until 2008, the sales data included a proportion of non-auction sales. Since 2009, only auction sales have been available and used in the pre-documentation. Sales only provide information on the species and selling price. The gears and fishing sectors are not recorded at auctions.

The information is provided in a summary table for the twelve months of the reference year. A first sub-table provides:

- **The total annual amount of sales and total amount of auction sales** [*montant total annuel des ventes* and *montant total des ventes en criée*] recorded by the inter-auction network (*Réseau Inter-Criée de France Agrimer: RIC*). From 2009 onwards, these two amounts have been equal because only auction sales are now included.

Then for each month, a second sub-table provides:

- **The number of days of sales** (*Nbj\_Vente*): this is the cumulative number of calendar days on which a sale took place.
- **The main place of sale** '*Port/Criée*' of the month: this is the top port/auction in terms of income.
- **The total amount of sales for the month and the total amount of auction sales for the month** (same remark as above).
- **The list of species landed and their value** (directly from sales), sorted in descending order of income. The list is limited to species with a total monthly value of €50 or more.

#### 4.3.1.4 Fishing effort section

This section provides a summary table of fishing effort, for the twelve months of the reference year, by gear-mesh size. It is based on the declarations of the professionals in the log books and declarative fishing forms.

A first sub-table provides the following by month:

- A reminder of the number of days at sea (*Nbj\_Mer effectifs mois* and *Nbj\_Mer total mois*), taken from the log book and declarative fishing forms section.
- A reminder of the number of fishing days (*Nbj\_Peche effectifs mois* and *Nbj\_Peche total mois*), taken from the log book and declarative fishing forms
- The number of fishing trips in the month (*Nb\_Marées*)
- The average duration (in hours) of the month's fishing trips (*Durée\_Moyenne\_Marée*)

Then, a second sub-table provides the following for each gear declared in the given month:

- The gear code
- The stretched mesh size of the gear,
- The gear dimensions,
- Monthly cumulative and daily average effort by gear: vessel fishing time, gear fishing time, number of gears (if available), number of fishing operations, effort indicator if mobile gear is used (engine power expressed in kWh/100)

#### 4.3.1.5 Sacrois section

Sacrois is a tool for cross-referencing and checking the consistency of the various sources of data available. These multiple sources may be complementary, but sometimes also contradictory. Sacrois thus produces an output of validated, consolidated and qualitatively classified datasets on production and effort.

The data sources taken into account in Sacrois are the following:

- **Administrative data** on vessels and vessel owners (source: European Fleet Register containing the entire history of movements and characteristics of the vessels and their owners).
- **Fishing trip data declared** in log books for vessels of 10 metres or more, including electronic log books, and declarative fishing forms for vessels of less than 10 metres: data



on gear, fishing sector, catches, landings and effort, which may sometimes be incomplete or questionable (data entry errors, coding errors, over- or underestimation, etc.). This data source will be referred to hereafter as 'declared fishing trips' [*Marées déclarées*].

- **Auction sales data** recorded by the inter-auction network: these are only auction sales; non-auction sales are not available. Only sales data by species are available (in volume and value), as are the characteristics of the sale (no effort data). As the gear and sector information are optional, very little information is provided.
- **Fishing trips resulting from processed geolocation data:** specific processing of geolocation data is carried out in order to reconstruct fishing trips. The position data used are mainly from VMS (satellite tracking of European Community vessels over 12 metres) and Recopesca (around 80 vessels in mainland France have this equipment). These data allow a better estimation of the spatialised efforts of the vessels. They do not contain any data on the catches or fishing gear used.
- **The previous year's activity calendar data:** supporting data used to determine the metiers.

Based on an operational algorithm, Sacrois integrates and cross-references (compares) the data sources one after another, day-by-day, selecting at each step the best possible source of information for catches and effort.

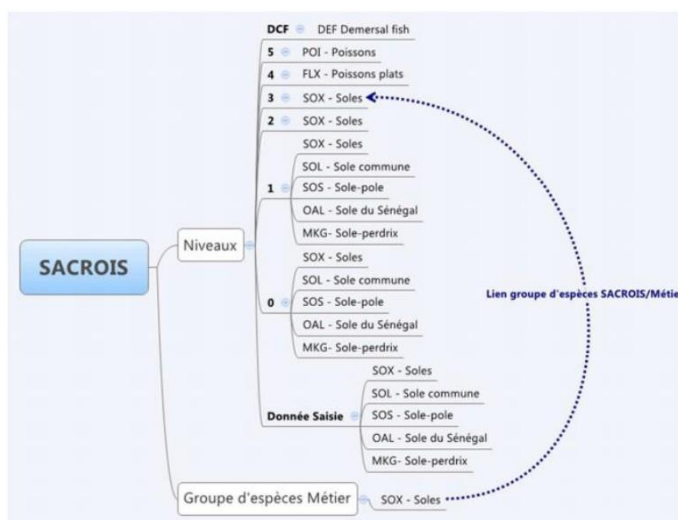
It is important to note that **Sacrois does not correct the data** but proposes the best possible estimate of spatialised and adjusted fishing effort and catch, taking into account all available data sources. The quality of Sacrois output data is, therefore, highly dependent on the quality of the input data, some of which may contain errors from declaration, input, interpretation or calculation.

### Assignment of metiers

*The full process of how Sacrois assigns a metier is given in the appendix to this manual.*

The assignment of metiers is done at the level of the fishing sequences, all sectors combined. Thus, for each day\*gear (mesh size, dimensions), the main species in terms of value is identified.

There are also several possible levels of species aggregation (see diagram below). Within a fishing sequence, therefore, Sacrois also calculates the values of each of these groups (from level 0 to level 4) and identifies the main species group for each aggregation level.





Given the very high frequency of errors in the gears entered in the declared fishing trips (errors that are reflected in the Sacrois fishing trips), the activity calendar data are used as a support for determining or validating the metiers in the Sacrois fishing sequences.

When the pre-documentation is generated, the activity calendar data for year N have not yet been collected. We, therefore, use the data for the year N-1, provided that the vessel owner has not changed in the meantime.

The metiers in the N-1 calendar are listed and ranked in descending order of the number of months of presence in the year. The first step is to identify the main species or group of species in a sequence and to compare it with the metiers present in the calendar for the year N-1.

### Description of the Sacrois section of the pre-documentation

In the pre-documentation, the Sacrois data is presented in a form comparable to that of the log book and declarative fishing forms section [*Log Book et Fiches de Pêche*] in a summary table for the twelve months of the reference year. A first table provides the following for each month:

- **The number of days at sea** (*Nbj\_Mer du mois*): this is a number of calendar days during which the vessel was at sea, i.e. a date count. Thus, if the fishing trip starts on 12 June at 12:00 and ends on 14 June at 5:00, the number of days at sea will be 3. Only calendar days that are in the month are counted. Thus, for a fishing trip starting on 29 January and ending on 2 February, 3 sea days will be allocated to January and 2 to February. The count is made only on Sacrois fishing trips: orphan sales (i.e. sales for which it was impossible to match a declared or geolocated fishing trip) are not taken into account in the calculation of days.
- **The number of fishing days** (*Nbj\_Peche du mois*): this is a number of calendar days during which the vessel was fishing, i.e. a date count, taking only those days when a fishing sequence took place. The calculation rules are the same as for days at sea. The count is based on the fishing trip sequences of the Sacrois fishing trips. As for the calculation of the days at sea, orphan sales are not taken into account.
- **The main port of operation** [*port d'exploitation principale*]: the main place of return for the Sacrois fishing trips, corresponding to the top port in terms of income for the month. (In the case of orphan sales, this is the port associated with the place of sale).

A second sub-table then provides a list of the metiers per month (limited to 15) encountered at least once in the Sacrois fishing trips and ranked in descending order of income. For each of these it gives:

- **The metier code**: code taken from the metier reference system
- **The two main fishing sectors** (by value). An asterisk \* to the right of the sector code indicates that it is derived from geolocation data (VMS or Recopesca).
- **The number of fishing days for this metier** (Nb days): this is a number of calendar days, i.e. a date count of the days when a fishing sequence with this metier took place.
- **The total income of the metier in euros** (total value): this is the sum of the values of all the species for the fishing sequences during which this metier was identified. In the case where no value could be assigned to a species (only the tonnage is available), it will not be included in the total.
- **The list of species caught and their value**, sorted in descending order of income. The list is limited to a maximum of 5 species.

**The full process of how Sacrois assigns a metier is given in the appendix to this manual.**

#### 4.3.1.6 ObsDeb section

In the ObsDeb pre-documentation PDF file, only the sampled fishing trip data were used (not the weekly calendars), as the pre-documentation ranks the metiers in descending order of volume fished (the calendars only contain metiers and sectors, not production). It is planned to make it possible to integrate data from weekly calendars in the future.

#### 4.3.1.7 Activity calendar section

When available for the requested reference year, the collected activity calendar can also be provided in a specific section of the pre-documentation. For each month of the year, this section groups the following information in a table whose data definition is described in the earlier part of this document '4.2 Monthly activity calendar':

- Qualitative classification of the survey
- The number of persons on board (*Nb\_Hommes à bord*)
- Number of days at sea for all metiers (*Nbj\_Mer effectifs mois*)
- Number of fishing days for all metiers (*Nbj\_Pêche effectifs mois*)
- The main operating port of the month
- The different metiers practiced
- For each metier, the two main fishing areas and the gradient of distance-to-shore associated with each area, e.g. C = Coastal, M = Mixed, L = Offshore [*Large*] etc. (the details of the codes are available from the private FIS website <https://sih.ifremer.fr/prive/Acces-aux-donnees/Extractions/Referentiels/Tables-de-reference>: choose the 'Gradients' table).

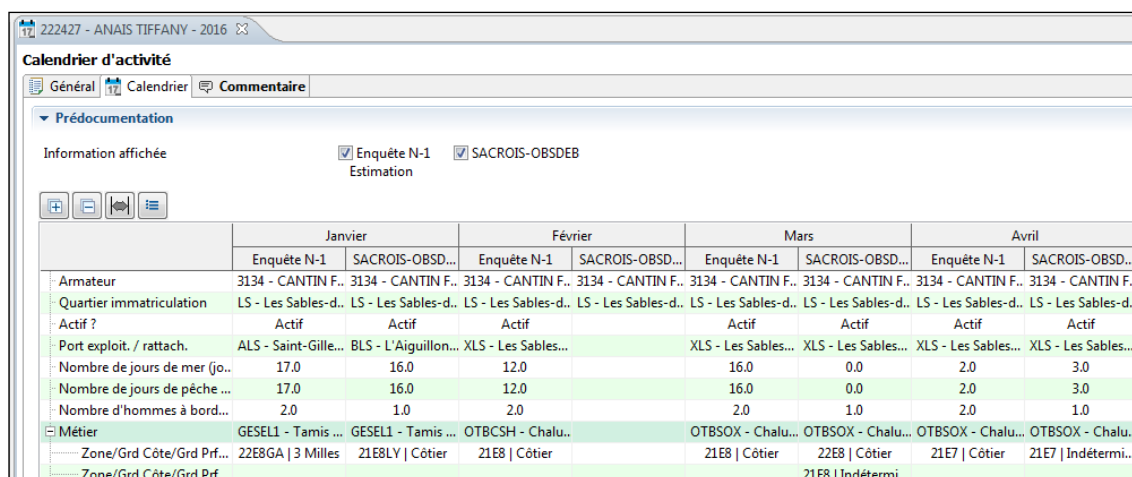
#### 4.3.2 Electronic pre-documentation

The pre-documentation called electronic [*électronique*] is the version accessible, for each vessel, in the 'activity calendar' [*calendrier d'activité*] section of the Allegro data entry software.

Its purpose is to facilitate the input of calendars by copying and pasting from the electronic pre-documentation to the calendar of year N.

Three data sources are proposed:

- **the N-1 activity calendar;**
- **the Sacrois pre-documentation for year N**, the content of which is detailed in the previous paragraph '4.3.1.5 Sacrois section', for regions where there is no ObsDeb data collection;
- **the ObsDeb pre-documentation for year N** for the DOM and the Mediterranean.



	Janvier		Février		Mars		Avril	
	Enquête N-1	SACROIS-OBSD...	Enquête N-1	SACROIS-OBSD...	Enquête N-1	SACROIS-OBSD...	Enquête N-1	SACROIS-OBSD...
Armateur	3134 - CANTIN F..	3134 - CANTIN F..	3134 - CANTIN F..	3134 - CANTIN F..	3134 - CANTIN F..	3134 - CANTIN F..	3134 - CANTIN F..	3134 - CANTIN F..
Quartier immatriculation	LS - Les Sables-d..	LS - Les Sables-d..	LS - Les Sables-d..	LS - Les Sables-d..	LS - Les Sables-d..	LS - Les Sables-d..	LS - Les Sables-d..	LS - Les Sables-d..
Actif ?	Actif	Actif	Actif	Actif	Actif	Actif	Actif	Actif
Port exploit. / rattach.	ALS - Saint-Gille...	BLS - L'Aiguillon...	XLS - Les Sables...		XLS - Les Sables...	XLS - Les Sables...	XLS - Les Sables...	XLS - Les Sables...
Nombre de jours de mer (jo...)	17.0	16.0	12.0		16.0	0.0	2.0	3.0
Nombre de jours de pêche ...	17.0	16.0	12.0		16.0	0.0	2.0	3.0
Nombre d'hommes à bord...	2.0	1.0	2.0		2.0	1.0	2.0	1.0
Métier	GESELL - Tamis ...	GESELL - Tamis ...	OTBCSH - Chalu...		OTBSOX - Chalu...	OTBSOX - Chalu...	OTBSOX - Chalu...	OTBSOX - Chalu...
Zone/Grd Côte/Grd Prf...	22E8GA   3 Milles	21E8LY   Côtier	21E8   Côtier		21E8   Côtier	22E8   Côtier	21E7   Côtier	21E7   Indétermi...
Zone/Grd Côte/Grd Prf...						21E8   Indétermi...		

Figure 10. View of the pre-documentation in Allegro.

## ObsDeb electronic pre-documentation: generation of metiers and fishing sectors

### Metiers

In Allegro *Activité*, the Sacrois source is used to generate, for a given vessel\*month [*navire\*mois*], the metiers classified in descending order of **catch value by commercial species**. A maximum of 5 metiers are displayed per month (so that it can be read on the screen).

In Allegro ObsDeb, production by species is available, but only for the fishing trips sampled and **in terms of quantity rather than value** (as in Sacrois).

In Allegro *Activité*, the ObsDeb electronic pre-documentation uses both ObsDeb and Sacrois to rank the metiers from these two sources. It is not possible to compare the production in terms of quantity of a sample of ObsDeb fishing trips with the production in terms of value of a larger number of fishing trips from Sacrois.

Thus, to rank the metiers for a given vessel\*month [*navire\*mois*], the data in the Sacrois and ObsDeb pre-documentation materials is used, applying the following rule:

- First, the **metiers from ObsDeb**, listed in **descending order of quantity**,
- then the **Sacrois metiers absent from ObsDeb**. These are ranked first on the basis of their reliability score, putting the most reliable (1) followed by the least reliable (2), and then on the basis of **decreasing production value**.

### Main sectors by metier

The electronic pre-documentation in Allegro allows up to two main sectors to be displayed for each metier in a vessel\*month. Here are the chosen rules to assign sectors to each vessel\*month\*metier.

- When a metier is present in only one of the two sources, the sectors and gradients used are those of that source.
- If a metier is present in both sources, there can be up to four sectors. Only the two most accurate areas will be selected.

- In the case where there are more than two sectors of the same precision level, the two most important sectors **in terms of quantity** are selected, with their associated gradients if the source is ObsDeb.

## 5 Quality control

### 5.1 Checks carried out by the observers

Once the activity calendars have been entered, an initial visual check must be made on the PDF file or paper printout of the annual activity calendar. This check will allow the **rapid identification of missing information and any anomalies in the input or import of information from the previous year's calendar or pre-documentation**. The check should also cover the fishing sectors and associated gradients.

For vessels that have changed portfolio during the reference year, observers should synchronise their work to avoid overlap between the two activity calendars.

#### **Non-existent vessel**

When a vessel appears not to be present in the maritime district and is unknown to all: inform the assistance desk at [Harmonie@ifremer.fr](mailto:Harmonie@ifremer.fr). If, after searching, the vessel still cannot be found, enter a calendar for it, specifying its inactivity during the reference year.

#### **Synchronisation with the economic survey**

Consultation between activity observers and economic observers (Ifremer or service provider) is essential to ensure that the data in the activity calendar are consistent between the economic and activity surveys and that the data are entered in the correct manner.

### 5.2 Checking in the Valparaiso application

The 'Valparaiso' application, developed from 2021 onwards, makes it possible to check, validate and qualify FIS data, including the data from activity calendars.

There is a specific guide you can consult to familiarise yourself with this tool, which is available at: <https://archimer.ifremer.fr/doc/00776/88782/>

The following is a list of things that must be checked for in Valparaiso:

- incomplete calendar;
- regionalisation of the metier;
- monthly activity detected by Sacrois for an inactive month in a calendar;
- gear characteristics;
- metier entered in ObsDeb but absent from a calendar;
- area entered in ObsDeb for a given metier but absent from a calendar, taking into account that only two fields can be entered per metier in the activity calendar, unlike in ObsDeb;
- for overseas territories: inconsistent metier\*sector pairs (according to the same reference system; used for checking ObsDeb data);
- distance from the coast of vessels measuring < 10 metres in length (verified by mapping);
- fishing areas for vessels exploiting shellfish beds (scallops, clams, etc.);
- fishing areas used by vessels fishing with elver sieves: only estuaries should be entered, no coastal gradient;
- fishing areas and gradients of shoreline fisheries: hand dredges, cast nets, lift nets, foot fishing, diving, beach seines and fyke nets.

## 6 Survey form

The survey form is available on the FIS website and in the Allegro software:

- select one or more vessels in the explorer,
- click on the right mouse button,
- select '*Export pdf*' then click on '*Formulaire terrain vierge*' (blank field form) or '*Formulaire avec données*' (form with data).

## 7 Work organisation and sequence of tasks

Activity data can be collected throughout the year, not only during dedicated field trips. Actions carried out during sampling at auctions, during ObsMer on board interventions, during meetings in a CDPM/CRPM (departmental/regional maritime fisheries committee), or as part of a research project, are all opportunities to gather information on the fishing practices of a vessel. This data can be entered in real time and can be completed when the calendars are finalised.

Three sectors can be distinguished that have different methodologies:

- **The North Sea-Channel-Atlantic seaboard** where vessel activity data must correspond with economic data collection and ObsMer fishing trips.
- **The Mediterranean seaboard**, where the vessel activity survey recorded in the calendars must be consistent with the economic surveys and the ObsMer fishing trips.
- **The French Overseas Departments [DOM]**: Reunion, Mayotte, Martinique, Guadeloupe and French Guiana, where the observation of fishing trips on landing (ObsDeb action) progressively provides information on the activity of the majority of vessels. The finalisation stage aims to ensure complete consistency between the data from ObsDeb and the activity.

In these three sectors, the phase of finalising the calendars takes place from 1 January to 31 March of year N+1. During this period, the following steps should be followed to optimise direct surveys and data entry in the calendars:

1. Consult the roadmap for the **priority list of vessels to be surveyed** (see section '4.2.5 Priorities for conducting direct surveys', p 18) with collection of **gear characteristics**.
2. Establish the list of vessels to be surveyed directly.
3. Consult the pre-documentation PDF file of the vessels to be surveyed directly in the field.
4. Conduct direct surveys.
5. Enter the calendars of the surveyed vessels directly into Allegro **based on your expertise**.
6. Export the calendars one by one after entering them rather than exporting them together at the end of the day, otherwise the software may crash.
7. Consult the pre-documentation on non-surveyed vessels to estimate their activity, enter them and export them to the Harmonie database.
8. Carry out the mandatory checks in the Valparaiso application by **15 March each year**.
9. Correct vessels with errors in Allegro.
10. Export the corrected and validated calendars to the Harmonie database by **31 March of each year**.

## 8 Reference system [*Référentiels*]

The whole reference system with all reference types is available on the FIS website via download forms of the Harmonie database. You are strongly advised to read the short extraction guide that introduces each form.

### 8.1 Metiers, gears and species

The metiers, gears and species references are available on the following page:

<https://sih.ifremer.fr/prive/Acces-aux-donnees/Extractions/Referentiels/Tables-de-reference>

In particular, this page provides access to the following references:

- Regionalised metier reference system
- Gears - FAO coding
- Species - FAO coding
- Gradients - List of gradients

To view references online, tick 'HTML'. Otherwise, to be able to import the references into an Excel file, for example, tick 'CSV'.

## 8.2 Administrative data

On the FIS website, you can also access administrative data on vessel owners and vessels:

<https://sih.ifremer.fr/prive/Acces-aux-donnees/Extractions/Donnees-administratives>

**For a vessel owner**, you can view their data as well as the history of the vessels they have operated.

**For a vessel**, you will see the history of the vessel's registration districts and owners.

To view the administrative data online, check 'HTML'. Otherwise, to be able to import the references into an Excel file, for example, tick 'CSV'.

Please note that to obtain the history of vessel owners or vessels, do not enter a year otherwise you will obtain the data for the year entered in the form.

## 9 Contact details

### **Operational coordination of the action**

Charlène Spagnol, Centre Ifremer de Bretagne, Plouzané

[Charlene.Spagnol@ifremer.fr](mailto:Charlene.Spagnol@ifremer.fr)

02.98.22.49.26

### **Harmonie Helpdesk**

Centre Ifremer de Bretagne, Brest

[Harmonie@ifremer.fr](mailto:Harmonie@ifremer.fr)

## 10 Summary of working documents

All working documents are available on the private FIS website:

<https://sih.ifremer.fr/prive/Collecte/Activite-des-navires>

Document	Source
<b>FIS Survey Activity Manual [Manuel de l'enquête activité du SIH]</b>	<i>Web privé SIH &gt; Collecte &gt; Activité des navires &gt; Manuel</i>
<b>Simplified procedure for collecting vessel activity data [Procédure simplifiée de collecte des données d'activité des navires]</b>	<i>Web privé SIH &gt; Collecte &gt; Activité des navires &gt; Manuel</i>
<b>Roadmap [Feuille de route]</b>	<i>Web privé SIH &gt; Collecte &gt; Activité des navires &gt; Feuille de route et Prédoc</i>
<b>Pre-documentation PDF</b>	<i>Web privé SIH &gt; Collecte &gt; Activité des navires &gt; Feuille de route et Prédoc</i>
<b>Electronic pre-documentation</b>	Allegro, in the calendar of each vessel
<b>Survey form</b>	<i>Web privé SIH &gt; Collecte &gt; Activité des navires &gt; Manuel</i> <i>In Allegro, click right on one or more vessels</i>
<b>Definition of gear characteristics</b>	<i>Web privé SIH &gt; Collecte &gt; Activité des navires &gt; Engins et métiers</i>
<b>Reference system [Référentiels]</b>	<i>Web privé SIH &gt; Accès aux données &gt; Extractions &gt; Référentiels &gt; Tables de référence</i>
<b>Administrative data</b>	Pre-documentation PDF Allegro, General tab of each vessel <i>Web privé SIH &gt; Accès aux données &gt; Extractions &gt; Référentiels &gt; Tables de référence</i>
<b>Fisher contacts</b>	Observer: no telephone contact is recorded for reasons of confidentiality
<b>Contacts for the 'vessel survey accuracy' [Enquête activité des navires] team</b>	<i>Web privé SIH &gt; Collecte &gt; Activité des navires</i>



## Appendix 1 - Definition of mesh sizes and gear dimensions

This file is regularly updated on the FIS private website, so it is best to refer to the online version:  
<https://sih.ifremer.fr/prive/Collecte/Activite-des-navires/Engins-et-metiers>

ENGIN CODE	ENGIN LIBELLE	DIMENSION	MAILLAGE
DHB	Dragues à main manoeuvrées à partir du bateau	Largeur cumulée (drague) (m)	Maillage étiré de l'engin (plus petite maille en mm)
DHS	Dragues à main manoeuvrées à partir du rivage	Largeur cumulée (drague) (m)	Maillage étiré de l'engin (plus petite maille en mm)
DRB	Dragues remorquées par bateau	Largeur cumulée (drague) (m)	Maillage étiré de l'engin (plus petite maille en mm)
FAG	Balais, Fagots	Nombre de casiers nasses ou poches levés	Maillage à la jauge (plus petite maille en mm)
FCN	Eperviers	Longueur levée (m)	Maillage étiré de l'engin (plus petite maille en mm)
FDV	Aprée	Nombre de plongeurs	Sans objet
FIX	Pièges (non spécifiés)	Nombre de casiers nasses ou poches levés	Maillage à la jauge (plus petite maille en mm)
FOO	Pêche à pied	Nombre de pêcheurs	Sans objet
FPO	Nasses (casiers non spécifiés)	Nombre de casiers nasses ou poches levés	Maillage à la jauge (plus petite maille en mm)
FSN	Filets à l'étalage (diablies)	Longueur levée (m)	Maillage étiré de l'engin (plus petite maille en mm)
FWR	Barrages, parcs, bordigues, etc.	Nombre de casiers nasses ou poches levés	Maillage à la jauge (plus petite maille en mm)
FVK	Verveux	Nombre de casiers nasses ou poches levés	Maillage à la jauge (plus petite maille en mm)
GEN	Filets maillants et filets emmêlants (non spécifiés)	Longueur levée (m)	Maillage étiré de l'engin (plus petite maille en mm)
GES	Tamis	Diamètre d'ouverture (m)	Maillage étiré de l'engin (plus petite maille en mm)
GN	Filets maillants (non spécifiés)	Longueur levée (m)	Maillage étiré de l'engin (plus petite maille en mm)
GNC	Filets maillants encerclements	Longueur levée (m)	Maillage étiré de l'engin (plus petite maille en mm)
GND	Filets maillants dérivants	Longueur levée (m)	Maillage étiré de l'engin (plus petite maille en mm)
GNE	Filets flottants	Longueur levée (m)	Maillage étiré de l'engin (plus petite maille en mm)
GNS	Filets maillants calés	Longueur levée (m)	Maillage étiré de l'engin (plus petite maille en mm)
GTN	Trémaux et filets maillants combinés	Longueur levée (m)	Maillage étiré de l'engin (plus petite maille en mm)
GTR	Trémaux	Longueur levée (m)	Maillage étiré de l'engin (plus petite maille en mm)
HES	Haveneaux	Diamètre d'ouverture (m)	Maillage étiré de l'engin (plus petite maille en mm)
HMD	Dragues mécanisées	Largeur cumulée (drague) (m)	Maillage étiré de l'engin (plus petite maille en mm)
HMS	Scoubidou	Sans objet	Sans objet
LA	Filets tournants sans coulisse (filet lamparo)	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
LH	Lignes à main	Nombre hameçons levés	Sans objet
LHJ	Jigs (ligne à main ou avec canne)	Nombre hameçons levés	Sans objet
LHM	Lignes à main et lignes avec cannes (mécanisées)	Nombre hameçons levés	Sans objet
LHP	Lignes à main et lignes avec cannes (manoeuvrées à la main)	Nombre hameçons levés	Sans objet
LL	Palangres (non spécifiées)	Nombre hameçons levés	Sans objet
LLD	Palangres dérivantes	Nombre hameçons levés	Sans objet
LLF	Palangres calées flottantes	Nombre hameçons levés	Sans objet
LLS	Palangres calées (fixes)	Nombre hameçons levés	Sans objet
LNB	Filets soulevés manoeuvrés du bateau	Longueur levée (m)	Maillage étiré de l'engin (plus petite maille en mm)
LNP	Filets soulevés portatifs	Nombre de casiers nasses ou poches levés	Maillage à la jauge (plus petite maille en mm)
LNS	Filets soulevés fixes manoeuvrés du rivage	Longueur levée (m)	Maillage étiré de l'engin (plus petite maille en mm)
LSP	Lignes calées (avec ou sans canne)	Nombre hameçons levés	Sans objet
LTF	Lignes trainantes de fond	Nombre hameçons levés	Sans objet
LTL	Lignes de traîne	Nombre hameçons levés	Sans objet
LTP	Lignes de traîne profondes	Nombre hameçons levés	Sans objet
LTS	Lignes de traîne de surface	Nombre hameçons levés	Sans objet
LVD	Palangres verticales dérivantes	Nombre hameçons levés	Sans objet
LVS	Palangres verticales	Nombre hameçons levés	Sans objet
LX	Hameçons et lignes (non spécifiés)	Nombre hameçons levés	Sans objet
OTB	Chaluts de fond à panneaux	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
OTM	Chaluts pélagiques à panneaux	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
OTT	Chaluts jumeaux à panneaux	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
PRE	Charter de pêche récréative	Sans objet	Sans objet
PS	Filets tournants avec coulisse (sennes coulissantes)	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
PTB	Chaluts boeufs de fond	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
PTM	Chaluts boeufs pélagiques	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
PTT	Chaluts jumeaux boeufs de fond	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
SB	Sennes de plage	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
SDN	Sennes danoises	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
SDV	Plongée	Nombre de plongeurs	Sans objet
SPR	Sennes manoeuvrées par deux bateaux	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
SSC	Sennes écossaises	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
SV	Sennes halées à bord	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
SX	Sennes (non spécifiées)	Longueur de la corde de dos (cumulée si jumeaux) (m)	Maillage étiré de l'engin (plus petite maille en mm)
TBB	Chaluts à perche	Longueur des perches cumulées (m)	Maillage étiré de l'engin (plus petite maille en mm)
TMB	Gangui	Longueur des perches cumulées (m)	Maillage étiré de l'engin (plus petite maille en mm)

## Appendix 2 - Full process for preparing the Sacrois section of the pre-documentation PDF

Sacrois is a tool for cross-referencing and checking the consistency of the various sources of data available. These multiple sources may be complementary, but sometimes also contradictory. Sacrois thus produces output consisting of validated, consolidated and qualitatively classified production and effort datasets.

The data sources taken into account in Sacrois are the following:

- **Administrative data** on vessels and vessel owners (source: the European Fleet Register, which contains the entire history of movements and characteristics of the vessels and their owners).
- **Fishing trip data declared** in logbooks for vessels of 10 metres or more, including electronic log books, and declarative fishing forms for vessels of less than 10 metres: data on the gear, fishing sector, catches, landings and effort, which may sometimes be incomplete or questionable (data entry errors, coding errors, over- or underestimation, etc.). This source of data will be referred to as 'Declared fishing trips' [*Marées déclarées*] hereafter.
- **Auction sales data** recorded by the inter-auction network: these are only auction sales; non-auction sales are not available. Only sales data by species are available (in volume and value), as are the characteristics of the sale (no effort data). As the gear and sector information are optional, very little information is provided.
- **Fishing trips resulting from the processing of geolocation data:** specific processing of geolocation data is carried out in order to reconstruct fishing trips. The position data used are mainly from VMS (satellite tracking of European Community vessels over 12 metres) and Recopesca (around 80 vessels in mainland France have this equipment). These data allow a better estimation of the spatialised efforts of the vessels. They do not contain any data on catches or on the gear used.
- **The previous year's activity calendar data:** supporting data used to determine the métiers.

Based on an operational algorithm, Sacrois integrates and cross-references (compares) the data sources one after another, day-by-day, selecting at each step the best possible source of information for catches and effort. The different cross-referencing modules (corresponding to each step of the algorithm) are presented below:

- **Module 1:** Pre-qualification of fishing trips calculated on the basis of geolocation data. Comparison of the fishing trips from the geolocation with the inter-sales periods observed in the sales data. This makes it possible to improve and validate the fishing trips resulting from the geolocation. Output data: fishing trips from the pre-qualified geolocation.
- **Preliminary-module 'Declared fishing trips' [*Marées déclarées*]:** Comparison of catches and landings declared in the log books. Output data: an estimate of selected catches adjusted according to declared landings, for each fishing trip.
- **Module 2:** Comparison of the pre-qualified fishing trips from geolocation (from module 1) with the declared fishing trips. Output data: geolocated/declared fishing trips, including improved spatialisation and refined estimation of effort and landing data. NB: within the fishing trips, the detail of the data remains at the daily scale of the fishing sequences.
- **Module 3:** Comparison of geolocated/declared fishing trips (from module 2) and sales at auction. The aim is to identify 'orphan' sales (no fishing trips declared or geolocated) and

to adjust/refine catch data on the basis of sales. Output data: fishing trips combining geolocation/declarations/sales with catches strengthened on the basis of sales.

- **Module 4:** Assigning a value (in Euros) to catch data. Up to this stage, catches (adjusted by comparison with the landings and then the sales) are expressed in volume. This module then assigns a value, using the prices observed for the vessel in its auction sales, when the vessel is selling at auction, or in a price reference when this is not the case.

The algorithm, therefore, outputs Sacrois fishing trips for each vessel, containing the following information:

- Dates and ports of departure/return, time at sea (number of days at sea)
- Indicators for the quality classification of the Sacrois fishing trip (making it possible to know what data were available/ used to produce it)

For each sequence of the (daily) fishing trip:

- The gear, its mesh size, its dimensions
- The sector (statistical rectangle + area defined by another country when necessary)
- Fishing effort grouped by day, gear, mesh size, dimensions, sector
- Catches by species (state\*presentation\*commercial category): quantity and value are grouped
- The metier (see 'Assignment of metiers' section below)

It is important to note that **Sacrois does not correct data** but proposes the best possible estimate of spatialised and adjusted fishing effort and catch, taking into account all available data sources. The quality of Sacrois output data is, therefore, highly dependent on the quality of the input data, some of which may contain errors from declaration, input, interpretation or calculation.

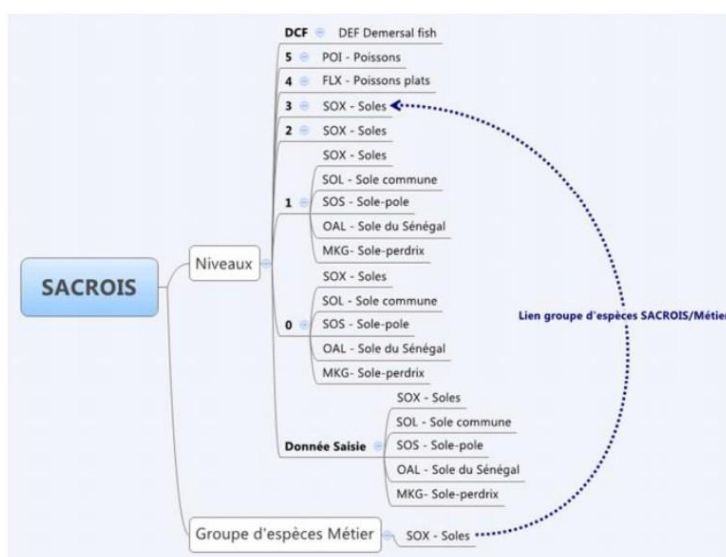
There are many different possible cases, according to what different types of input data exist. For each vessel and each fishing trip, depending on whether only VMS data is available for the vessel (= 'orphan VMS trips' [*Marées VMS orphelines*]), or only sales data ('orphan sales' [*Ventes orphelines*]), or both VMS fishing trips and sales data, or both declared fishing trips and sales data, etc., the information output in the Sacrois fishing trips will come from different sources. These are summarised in the table below. NB: In some cases, several data are provided for fishing areas and estimated fishing time.

Cas de figure (sources de données disponibles)	Origine des données fournies dans les marées SACROIS			
	Zone de pêche	Captures	Engin/maillage	Temps de pêche
Marée géolocalisation « orpheline »	Zones géoloc.	Pas de captures	Données historiques (mois antérieurs) ou enquêtes activité	Tps pêche géoloc.
Vente « orpheline »	Données historiques (mois antérieurs) ou enquêtes activité	Tonnage par esp. issu des ventes	Données historiques (mois antérieurs) ou enquêtes activité	Pas de temps de pêche
Marée déclarée « orpheline »	Zones déclarées	Tonnage par esp. déclaré	Engin/maillage déclaré dans SACAPT	Tps pêche déclaré
Marée VMS + Vente(s)	Répartition des captures au prorata du tps de pêche dans les zones géoloc.	Tonnage par esp. issu des ventes	Données historiques (mois antérieurs) ou enquêtes activité	Tps pêche géoloc.
Marée déclarée + Marée géolocalisation	Zones géoloc. + Zones déclarées + Zones VMS/déclarées	Tonnage par esp. déclaré	Engin/maillage déclaré	Tps pêche géoloc. + Tps pêche déclaré + Tps pêche consolidé par croisement VMS/déclaré
Marée déclarée + Vente(s)	Zones déclarées	Tonnage par esp. consolidé par le croisement Marées déclarées / Ventes	Engin/maillage déclaré	Tps pêche déclaré
Marée déclarée + Marée géolocalisation + Vente(s)	Zones géoloc. + Zones déclarées + Zones géoloc. /déclarées	Tonnage par esp. consolidé par le croisement Marées déclarées / Ventes	Engin/maillage déclaré	Tps pêche géoloc. + Tps pêche déclaré + Tps pêche consolidé par croisement VMS/déclaré

## Assignment of métiers

The assignment of métiers is done at the level of the fishing sequences, all sectors combined. Thus, for each day\*gear (mesh size, dimensions), the main species in terms of value is identified.

There are also several possible levels of species aggregation (see diagram below). Within a fishing sequence, therefore, Sacrois also calculates the values of each of these groups (from level 0 to level 4) and identifies the main species group for each aggregation level.



Given the very high frequency of errors in the gears entered in the declared fishing trips (errors that are reflected in the Sacrois fishing trips), the activity calendar data are used as a support for determining or validating the métiers in the Sacrois fishing sequences.

When the pre-documentation is generated, the activity calendar data for year N have not yet been collected. Therefore, the data for the year N-1 is used, provided that the vessel owner has not changed in the meantime.

The metiers in the N-1 calendar are listed and ranked in descending order of the number of months of presence in the year. The first step is to identify the main species or group of species in a sequence and to compare it with the metiers present in the calendar for the year (N-1).

- Case 1: Among the metiers of the year, we look for the one whose species corresponds to the main species in terms of the value of the sequence.

- Case 1.1: If one (and only one) metier corresponds, it is thus assigned to the sequence.

**Ex. 1:** Main species of the sequence: BSE (Bass not classified elsewhere) [*Bar nca*] – gear of the sequence (from SACAPT, an application for the consultation of fishing declarations): OTM

In the previous year's activity calendar, we find: OTMBSE = 4 months; DRBSCE = 5 months.

Only the OTMBSE metier corresponds from the point of view of the main species. Therefore, OTMBSE is selected for the sequence (regardless of the gear declared in the sequence).

**Ex. 2:** Main species of the sequence: BSE (Bass not classified elsewhere) [*Bar nca*] – gear of the sequence (from SACAPT): OTB

In the previous year's activity calendar, we find: OTMBSE = 4 months; DRBSCE = 5 months.

Only the OTMBSE metier corresponds from the point of view of the main species. Therefore, OTMBSE is selected for the sequence (regardless of the gear declared in the sequence).

- Case 1.2: If no metier corresponds when comparing the species of the sequence with the metiers, the same thing is done at the different levels of aggregation of the species (we stop before the level MZZ 'Marine fish not classified elsewhere' [*Poissons marins nca*], which does not distinguish groups), until we eventually find a corresponding metier.

**Ex. 1:** Main species of the sequence: COD (Cod) – gear of the sequence (from SACAPT): OTM

In the previous year's activity calendar, we find: OTBGAD = 4 months; DRBSCE = 5 months.

No metier in the activity calendar corresponds to the COD species, but there is a metier corresponding to one of the cod aggregation levels (GAD: gadidae). The metier OTBGAD is, therefore, assigned to the sequence (regardless of the gear declared in the sequence).

- Case 2: If the main species or group of species in the sequence is present in several metiers in the calendar year N-1, we look at the gear declared in the sequence, then:
  - If the combination of this gear and the species (or group of species) of the sequence results in one of the metiers present in the activity calendar, then this metier is assigned to the sequence.

**Ex:** Main species of the sequence: BSE – gear of the sequence (from SACAPT):  
OTM

In the previous year's activity calendar, we find: OTMBSE = 4 months; LLDBSE = 5 months.

Two metiers correspond to the main species in the sequence (OTMBSE and LLDBSE). The combination of gear and species in the sequence gives OTMBSE, i.e. one of the two metiers in the calendar. This metier is, therefore, selected for the sequence.

- Otherwise, we go back to the level of the gear family deduced from the gear in the Sacrois sequence and we select the metier in the calendar corresponding to this gear family.

**Ex:** Main species of the sequence: BSE – gear of the sequence (from SACAPT):  
OTB

In the previous year's activity calendar, we find: OTMBSE = 4 months; LLDBSE = 5 months.

Two metiers correspond to the main species in the sequence (OTMBSE and LLDBSE), but no metier corresponds to the combination of gear and species of the sequence.

We, therefore, go to the level of the gear family. The OTB gear belongs to the 'Trawl' [*Chalut*] gear family. Within the calendar year (N-1), another metier is in the same gear family: OTMBSE. This metier is, therefore, selected for the sequence.

- If a match still cannot be found, the metier with the highest number of months in the calendar in year N-1 is used.

**Ex:** Main species of the sequence: BSE - gear of the sequence (from SACAPT):  
OTM

In the previous year's activity calendar, we find: OTMBSE = 4 months; LLDBSE = 5 months.

Two metiers correspond to the main species in the sequence (OTMBSE and LLDBSE), but no metier corresponds to the combination of gear and species of the sequence. None of them match in terms of gear family either. The metier assigned to the sequence will, therefore, be the metier most practiced in the year according to the calendar N-1, namely LLDBSE.

- Case 3: If the main species or group of species in the sequence does not correspond to any metier in the calendar for year N-1, we check that the association of the gear in the sequence and the species (or group of species) corresponds to a metier that exists in the reference system. If this is the case, then this metier is assigned to the sequence.

**Ex:** Main species of the sequence: LBE (American lobster) – gear of the sequence (from SACAPT): FPO

In the previous year's activity calendar, we find: GNSMNZ = 10 months; GTRFLX = 1 month.

There are no metiers in the metier activity calendar that correspond to the species LBE. However, the association of species and gear corresponds to an existing metier (FPOLBE: lobster pot). This metier is, therefore, assigned to the sequence (even though it was absent from the previous year's calendar).



- Case 4: If the association of the gear and the main species (or group of species) of the sequence does not correspond to a metier existing in the metier reference system, there are several possibilities:
  - Case 4.1: If the calendar for the year (N-1) contains one and only one metier (over the whole year), then this metier is assigned to the sequence, regardless of the gear and species declared in the sequence (a very rare case, only 0.01% of cases in 2012).
  - Case 4.2: If several metiers exist, and one of them corresponds to the gear declared in the sequence, then it is assigned to it (0.3% of cases in 2012).
- Case 5: If, at this stage, no metier can be assigned, then the sequence remains without an entered metier, as the gears and/or species of the sequence could not be determined, probably due to errors in the source data (input, declaration, etc.)

The metier is also accompanied by a reliability score to track how it was determined and potentially validated by the activity. The list of the scores, corresponding to the case types in the above list, is shown in the table below:

Pointeur de fiabilité	Origine et pointeur de fiabilité du métier
A	Métier présent dans l'activité et cohérent avec Sacrois (cas 1.1)
B	Métier présent dans l'activité, déduit du groupe d'espèces dominant de la séquence (cas 1.2)
C	Métier principal de l'activité lorsqu'il existe plusieurs métiers ciblant le même groupe d'espèces dominant de la séquence (cas 2)
D	Métier déduit du référentiel des métiers à partir du couple engin-espèce de la séquence Sacrois, mais absent de l'activité (cas 3)
E	Métier unique dans l'activité affecté à la séquence sans correspondance engin ni espèce (cas 4.1)
F	Métier recherché dans l'activité sous l'hypothèse que l'engin Sacrois est bon mais pas le groupe d'espèces (cas 4.2)
G	Correction manuelle du métier par un expert
H	Métier non déduit par l'algorithme (cas 5)

### Important

In the pre-documentation, only the metiers with a score between A and D (inclusive) are presented, as the uncertainty is too great for the others. Fishing sequences for which no metier could be assigned, or for which the metier has a score between E and G, are included in the totals displayed in the pre-documentation, but with an empty metier (not specified).

Furthermore, to simplify the representation in the pre-documentation, the better scores are grouped into 2 main categories:

Score 1 = A + B: good reliability.

Score 2 = C + D: uncertain reliability

### Description of the Sacrois section of the pre-documentation

In the pre-documentation, the Sacrois data is presented in a form comparable to that of the log book and declarative fishing forms section [*Log Book et Fiches de Pêche*] in a summary table for the twelve months of the reference year. A first table provides the following for each month:

- **The number of days at sea (*Nbj\_Mer du mois*):** this is a number of calendar days during which the vessel was at sea, i.e. a date count. Thus, if the fishing trip starts on 12 June at 12:00 and ends on 14 June at 5:00, the number of days at sea will be 3. Only calendar days that are in the month are counted. Thus, for a fishing trip starting on 29 January and ending on 2 February, 3 sea days will be allocated to January and 2 to February. The count is made only on Sacrois fishing trips: orphan sales (i.e. sales for which it was impossible to match a declared or geolocated fishing trip) are not taken into account in the calculation of days.

- **The number of fishing days** (*Nbj\_Peche du mois*): this is a number of calendar days during which the vessel was fishing, i.e. a date count, taking only those days when a fishing sequence took place. The calculation rules are the same as for days at sea. The count is based on the fishing trip sequences of the Sacrois fishing trips (as for the calculation of the days at sea, orphan sales are not taken into account).
- **The main port of operation** [*port d'exploitation principale*]: the main place of return of the Sacrois fishing trips, corresponding to the top port of the month in terms of income. (In the case of orphan sales, this is the port associated with the place of sale).

A second sub-table then provides a list of the metiers per month (limited to 15) encountered at least once in the Sacrois fishing trips and ranked in descending order of income. For each of these it gives:

- **The metier code:** FAO metier code
- **A reliability score:** The Sacrois application proposes a metier for each fishing sequence taking into account the gear and the species, with a varying degree of reliability.
  - **Score = 1: good reliability.**
  - **Score = 2: uncertain reliability.**
- Sacrois is an algorithm that interprets data, so by its very nature, it cannot handle all the cases encountered perfectly. Regardless of the reliability score (1 or 2), it is, therefore, strongly recommended that you check the metier(s) proposed.
- **The two main statistical sectors** (in terms of value). An asterisk to the right of the sector code indicates that it is derived from geolocation data (VMS or Recopesca).
- **The number of fishing days for this metier** (*Nb jours*): this is a number of calendar days, i.e. a count of dates taking into account the days when a fishing sequence took place with this metier.
- **The total income of the metier in euros** (*Valeur totale*): this is the sum of the values of all the species, for the fishing sequences during which this metier was identified. In the case where no value could be assigned to a species (only the tonnage is available), it will not be included in the total.
- **The list of species caught and their value**, sorted in descending order of income. The list is limited to a maximum of 5 species.

Only the metiers identified by Sacrois with a reliability score between A and D (see above) in a given month are reported in the pre-documentation. Sometimes it is impossible to identify the metier of a fishing sequence (for example, because the species caught could not be determined; in the case of fishing trips derived solely from geolocation, known as '*orphelines*'; or because the combination of gear and species does not correspond to a valid metier), or the metier identified is unreliable (scores E to G). In the pre-documentation, this results in a row with the reliability score field '*Métier (Pointeur fiabilité)*' left empty. The 2 main areas of these sequences are specified in the '*Zones*' field, the number of fishing days and the total values of all these sequences are cumulated and specified in the number of days/total value fields: '*Nb Jours/Valeur totale*'. The observer is advised to be careful in cases where the number of days or the value are high: this is a sign that a significant part of the vessel's activity could not be assigned to a metier, and that it will be necessary to prioritise a direct survey or an in-depth analysis of the source data (declared sales or fishing trips) in order to identify the missing metier(s).



## Appendix 3 - List of acronyms used

Acronym	Definition
ICES	International Council for the Exploration of the Sea
CNPMEM	<i>Comité National des Pêches Maritimes et des Elevages Marins</i> – national maritime fisheries and marine culture committee
CPP	<i>Conchyliculture Petite Pêche</i> – shellfish farming and small-scale fishing <sup>2</sup>
DAMGM	<i>Direction des Affaires Maritimes et des Gens de Mer</i> – directorate of maritime affairs and seafarers
FAD	Fish Aggregation Device
DDAM	<i>Direction Départementale des Affaires Maritimes</i> – departmental directorate of maritime affairs
DGAMPA	<i>Direction Générale des Affaires Maritimes, de la Pêche et de l'Aquaculture</i> – general directorate of maritime affairs, fisheries and aquaculture
DSI	<i>Direction des Services Informatiques</i> – directorate of computing services
ENIM	<i>Etablissement National des Invalides de la Marine</i> – national establishment for marine invalids
CFR	Community Fishing Fleet Register

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<sup>2</sup>The CPP shipping category, which covered marine cultures and small-scale fishing activities has been split for the sake of clarity into CMP (marine culture fisheries) and CM (marine cultures). Since 5 January 2007, new vessels can no longer adopt the CPP shipping category that vessels already registered in the CPP keep for a maximum of 5 years.

Marine culture vessels engaged in fishing will be required to have a PME (operating permit) and take the CMP shipping category. Vessels whose sole activity is marine culture must be declared as CM.