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Report on the STECF Expert Working Group 17-12 Fisheries Dependent Information: 'New-FDI'

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a STECF expert working group

Edited by:

Holmes, S.J. and Zanzi, A.

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Contact information
Name: Steven Holmes
Address: DG Joint Research Centre
Directorate D - Sustainable Resources
Unit D.02 Water and Marine Resources - TP051
Via E. Fermi, 2749. I-21027 Ispra (VA), Italy
Email: steven.holmes@ec.europa.eu
Tel.: +39-0332-789648

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Acknowledgements

Authors

Holmes, S. J., Gibin, M., Scott, F., Zanzi, A., Adamowicz, M., Cano, S., Carlshamre, S., Demaneche, S., Egekvist, J., Elliot, M., Gancitano, V., Gheorghe, A., Godinho, S., Isajlovic, I., Jakovleva, I., Kempf, A., Kovsars, M., Labanchi, L., Moore, C., Motova, A., Nicheva, S., Nimmegeers, S., Reilly, T., Vanhee, W., van Helmond, A., Verlé, K., Vermard, Y.

Abstract

The STECF Expert Working Group (EWG) on Fisheries Dependant Information (FDI) took place in JRC, Ispra from 23 to 27 October 2017 to review the data transmitted by Member States under a new data call ('New-FDI').

The new data call specification was designed with three broad aims in mind

i) Compatibility between the New-FDI data and the data held in the Fleet Economic database.

ii) Ability to encompass all EU registered vessels including those from the Mediterranean, Black Sea and external waters fleets.

iii) Ability to assess effects of management measures.

The main purpose of the EWG was to judge if the call specification was appropriate to accomplish the above aims and to consider any difficulties encountered by member states in fulfilling the data call. Two terms of reference also allowed trial analyses to be conducted of a type relevant to the third broad aim.

The EWG addressed all Terms of Reference during the meeting and drew conclusions on the modifications required for the New-FDI data call going forwards.

Prior to the EWG it had been agreed by STECF Bureau that the report of the meeting would not be presented to STECF for approval as an STECF report but published separately (as a JRC technical report). This report therefore presents the data, methods observations and findings of an EWG of the STECF but the findings presented in this report do not necessarily constitute the opinion of the STECF or reflect the views of the European Commission and in no way anticipate the Commission's future policy in this area.

1 Introduction

The expert working group to assess the Fisheries Dependant information (FDI) data call, STECF-17-12, took place on 23rd to 27th October 2017 at JRC, Ispra, Italy. The workshop was attended by 23 experts from 16 Member States, 4 experts from the Joint Research Centre (JRC) and a focal point from DG MARE. The list of participants is included under annex 1 of this report.

Prior to the EWG it had been agreed by STECF Bureau that the report of the meeting would not be presented to STECF for approval as an STECF report but published separately (as a JRC technical report). This report therefore presents the data, methods observations and findings of an EWG of the STECF but the findings presented in this report do not necessarily constitute the opinion of the STECF or reflect the views of the European Commission and in no way anticipate the Commission's future policy in this area.

1.1 Terms of Reference (ToR)

The terms of reference for the working group were as follows.

1 – Review and document feedback from Member States on approaches used and problems encountered in responding to the data call.

1. Report on the level of completeness of data provided in response to the data call.

2. Compile in a concise manner a list of technical problems encountered by Member States in answering the data call and produce a table of any agreed modifications required in the data call for future years.

3. In the interests of establishing common best practices, review and document approaches taken by Member States in answering the data call.

   a. When alternative approaches exist, where possible conclude on the approach to be adopted for the future.

   b. Where a single approach is not considered appropriate/possible clearly state the rationale (or limiting factors) involved.

   c. Particular focus should be given to the relationship between data in Table C (discards at age) and Table A (catch at age); Table E (landings at age) and Table A (catch at age); Table D (discards at length) and Table B (catch at length); Table F (landings at length) and Table B (catch at length).

2 – Test the compatibility between the data collected in the New-FDI database and the data found in the Fleet Economic Performance database.

1. For data from 2015 map fleet segments found in the New-FDI database to fleet segments found in the Fleet Economic Performance database.

2. Compare sums of effort (kWdays-at-sea) and landings (tonnes) between New-FDI and Fleet Economic Performance databases by:

   a. Fleet segment.

   b. Gear type within fleet segment.

3 – 1. Example: Produce maps of spatial effort by c-squares

1. Produce maps of effort by c-square for the following regions (as defined in COM-2016-134 for areas other than 'distant waters') and major gear types (as defined in appendix 4 of the data call):

   a. Baltic; North Sea; North Western Waters; South Western Waters; Mediterranean and Black Sea; Distant waters

b. Trawls (except beam trawls) with mesh < 100mm; trawls (except beam trawls) with mesh ≥ 100mm; beam trawls with mesh < 120mm; beam trawls with mesh ≥120mm; seine nets; gillnets and entangling nets; dredges; hooks and lines; surrounding nets; pots and traps.

2. Identify areas within the regions listed in point 1a where the gear categories in point 1b can be sub-divided into categories unique under the Landings Obligation (using SPECON_LO). Produce effort maps by c-square for these sub-categories and compare to the maps for the overall gear type.

3. Identify areas and fleets where spatial data was not available and propose possible ways forward.

4 – 2. Example Discard information by Landings Obligation categories

1. Assess the extent to which discard information has been supplied to categories relevant to and unique under the Landings Obligation, i.e. fleet segments defined through the SPECON_LO field as subject to the landings obligation.

2. Where possible, derive the international discard rate for species linked to the Landings Obligation categories, i.e. species and fleet segment combinations that fall under the landings obligation.

5 – List the shortcomings of the new FDI data call and database in fulfilling the aims stated in the background section. Advise on possible ways to overcome the shortcomings and to achieve the stated aims.

1.2 Data call and data supply

The New-FDI data call was launched by DGMARE on 30th June 2017. The data upload facility was opened on 4th September 2017. The operational deadline was set as 9th October 2017 but in the interests in receiving a better representation of what it is possible for MS to upload, data were accepted until 17th October 2017. Also in the interests of assisting MS a 'frequently asked questions' document was posted on the data submission website and updated as new points for clarification became apparent.

The legal deadline for data upload (according to the DCF regulation) was 2nd October 2017. Because of the pilot nature of the call DGMARE concluded that data related to this specific exercise would not be subject to an assessment of data transmission failures but MS can take note of the time needed to respond to this year's call to help plan for future calls. Furthermore, the EWG concluded data provided during this pilot should not be publicly available and MS will be invited to resubmit data related to 2015-2016 next year.

2 The EWG

The results of the EWG will be presented according to each Term of Reference (ToR) addressed to the EWG. However, to achieve a more logical sequence, the report will present the ToRs as follows:

— ToR 1: Review and document feedback from Member States on approaches used and problems encountered in responding to the data call.

— ToR 5: List the shortcomings of the new FDI data call and database in fulfilling the aims stated in the background section. Advise on possible ways to overcome the shortcomings and to achieve the stated aims.

— ToR 2: Test the compatibility between the data collected in the New-FDI database and the data found in the Fleet Economic Performance database.

— ToR 3: Produce maps of spatial effort by c-squares.

— ToR 4: Discard information by Landings Obligation categories.

The New-FDI data call required data to be submitted to 10 data tables. As a shorthand these were labelled as tables A to J in the data call and the same notation is used in this report. The full data call is included in Annex 2 but as a quick reference the table letters together with short titles and notes (in brackets) are given below:

1. Table A: Catch at age (together with tables B and G refered to as the 'detailed' tables).

2. Table B: Catch at length (together with tables A and G refered to as the 'detailed' tables).

3. Table C: Discards at age (data aggregated by 'domains'. Domains are at the discretion of MS and intended to allow submission of data according to vessel groupings used to raise sampled data).

4. Table D: Discards at length (data aggregated by 'domains').

5. Table E: Landings at age (data aggregated by 'domains'. Table E included as well as table C in case domains differ between raising discards and raising landings).

6. Table F: Landings at length (data aggregated by 'domains'. Table F included as well as table D in case domains differ between raising discards and raising landings).

7. Table G: Effort (together with tables A and B refered to as the 'detailed' tables).

8. Table H: Spatially disaggregated landings

9. Table I: Spatially disaggregated effort.

10. Table J: Capacity and fleet segment specific effort data.

2.1 ToR 1: Review and document feedback from Member States on approaches used and problems encountered in responding to the data call

All submissions from Member States are reproduced in Annex 5. Common issues and issues of particular importance are considered in section 2.2. Others are replied to below or have been used to create a table of 'specific approaches' (section 2.1.5).

2.1.1 Issues raised by Member States

The following are issues not covered elsewhere in section 2.1 or in section 2.2, but for which a change to the data call was agreed or a brief explanation can be provided. Text under the 'issue' column is repeated from member state contributions but it was not considered necessary to identify the country in the table.

Table 1. Country specific or detailed issue dealt with or replied to.

Issue	Response
In table A catch at age data for 2015 and 2016 should be provided. It is not clear whether this implies all landings data or only the data for which age information can be provided?	All landings data.
The example written in appendix 5: "if data is collected according to a mesh size range specify the range, e.g. if data collected for vessels using gear with mesh sizes between 70 and 99 mm and using diamond mesh use code "70D99"', is very misleading as the code 70D99 is not a permitted code.	It was a sentence written before appendix 5 was finalised and then not edited. It is now removed.
The mesh sizes presented in appendix 11 are not always in accordance with the suggested mesh size coding in appendix 5 e.g. SPECON_LO code NSOTB4 for area 27.4, gear OTB and mesh size 32-69 mm; mesh size range for mobile gears in the North Sea is 32D80.	The mesh ranges were derived using the CFP technical regulations. If some vessels fell within a mesh range and the SPECON_LO and others within the mesh range but outside the SPECON_LO the SPECON_LO field could be used to make the distinction, (but see section 2.2.3 on removal of the SPECON_LO field).
It is not clear how the coding of specific conditions related to the landing obligation has to be assigned. In appendix 11 it is stated that total landings per vessel of all species in 2013 and 2014 have to be considered to determine the type of fishery. Does this imply the sum of the 2013 and 2014 landings or the average of the 2013 and 2014 landings? The use of 2013 and 2014 as reference years creates a mismatch as some vessels active in the period 2013-2014 with a specific gear and area combination may not be active with the same gear-area combination in the period 2015-2016 and vice versa.	It is expected member states will hold lists of affected vessels. It is possible that member states have constructed their lists using different assumptions. The JRC interpretation is that any threshold stated for 2013 and 2014 means the calculations are performed separately in 2013 and 2014 and a vessel needs to have exceeded the threshold in both years.

During 2015 and 2016, we had 625 kilograms of HMM caught with beam trawls. Since the beam trawls are mainly used for the catch of *Rapana venosa*, is it correct to use the fishery code TBB_MOL_0_0_0 also for the HMM?	Yes, because the fishery code includes the **target** species assemblage.
For areas 1, 2 and 10 it was unclear how to code it, as e.g. 27.2.A and 27.2.B exists as FAO codes, but here it referred to the economic zones. It would have been more transparent and easier to use the naming conventions used for the other areas (e.g. EU, COAST, RFMO)	Data call changed as suggested. See annex 3.
The time for doing the data was wide but in a period (summer/autumn) that people is on holydays or in surveys at sea, this made very difficult to answer to this data call.	The timing of the call in 2017 was necessitated by the continuation of the FDI-classic call in 2017. The intention is to make the FDI call run in parallel to the Mediterranean and Black Sea data call from 2018.
There were some doubts about of which species we have to provide biological data.	The requirements for provision of biological data are set out in Commission Implementing decision (EU) 2016/1251, tables 1A, 1B and 1C. If data is held with respect to any of these species/area combinations, it is expected to be supplied to the New-FDI database.
Why there are special codes for the Portuguese, Spanish and French islands abroad using the geographical indicator? Their waters are EU waters.	The geographic indicators were introduced by the Fleet Economic data call to allow economic analysis of the distant waters fleets. The FDI call includes the same indicator request to maintain compatibility with the economic call.
Some species (NDF, POT, BLZ and MAU) and some CECAF metiers were not accepted in the data upload.	Species codes are accepted according to the most recent publication of the FAO ASFIS table. It is possible for codes to be accepted by FAO between updates of the publically available table. Future calls will state the version of the ASFIS table used.
	Some RCM agreed metiers were missing from the initial look-up table and had to be added during the data call period. (See also section 2.2.3.1)
The duplication of the data (because of BSA) could generate confusions and mistakes in the interpretation of the data, as happened in the previous FDI data calls with DEEP and	Data specific for the BSA area were retained on specific request of DG MARE. The BSA is not straightforward to accommodate because it covers parts of 5 ICES divisions. The alternative to data

BSA information.	repetition would be to split entries for the 5 divisions into BSA and non-BSA entries.
It is possible that data of some species that have discards but no landings could miss.	If there are discards of a species but no landings an entry can still be made. The landings are recorded as zero.
Concerning the fleet population definition, a final decision should be ruled for the future data call in order to ensure the compatibility between the data call. The definition of Commission decision 2016/1251 *(any vessel registered on 31 December or which has fished at least one day in the year up to 31 December)* allow to have a comprehensive view of all the fishing effort implemented during the year and should be, in our view, preferred.	The change in fleet population definition implemented by decision 2016/1251 is adopted by both Fleet Economic and FDI data calls, for data from 2017 onward. For compatibility with the economic data set the definition for earlier years remains as in decision 2010/93/EU.
Table I (spatial effort): The field "EFFECTIVE_EFFORT" is asked as an integer which seems not in line with the methodology developed during the 2nd Transversal variables workshop.	The upload facility has been changed to allow real numbers.
Table J (capacity): Non active vessels could not be provided in the table J as no "fishing technique coding" are allowed for these vessels. Adding this possibility will be a good way to ensure and confirm that the part of the MS fleet not provided (regarding the MS fishing fleet register, see http://ec.europa.eu/fisheries/fleet/index.cfm) are only inactive vessels (e.g. that in the data provided, no part of the national fleet is missing).	In the Fleet Economic Performance database, inactive vessels are included in the capacity table using FISHING_TECH code 'INACTIVE'. This will be added to the FDI data call.
No consistencies between the mesh size range asked in the mesh size ranges coding (appendix 5) and the different mesh size ranges used for the fishery definitions.	The mesh ranges of appendix 5 were derived using the CFP technical regulations. The mesh ranges within metiers (fishery) definitions were agreed with respect to sampling programmes. It is anticipated the database will be used to answer questions based on current or proposed regulations. See also section 2.2.3.1
At the moment, no upload possibility for data with area information missing. That means that data with, for example, only FAO area information are not integrated in the response to the data call.	It is now permitted to enter the code for 'not known' against the sub-region field.
MIS and HAR gear codes are used in Croatia, that are included in the FAO list of fishing gears (ISSCFG Revision 1 (Annex M II) but	Gear code NK has been added to the list of accepted gear codes.

are not included in Appendix 4. In comparison, the Fleet economic data call allows to enter NK (unknown gear).	
Regarding large pelagic, we encountered problems concerning the requested aggregation level: for those species, in fact, the spatial reference for the sampling is the entire area in the DCF sampling and it is not divided in GSAs. In addition, biological parameters (age, sex and maturity) are estimated every 3 years with the exception of BFT (but only starting from the 2017).	A domain specified over more than one sub-region is possible. That is made clear by the new domain naming instructions in the updated data call. The domain naming allows indication of annual data. There is some loss of information if the code for annual data is used but not wrong as such if 3 yearly ageing data is used on annual numbers at length data.
The FDI Data Completion Guide must provide the appropriate code for other fishing techniques as well as for the situations of taking molluscs with divers. (so far there have been 3 variants: NONE, NO and NK). Hand fishing has no defined gear code in Appendix 4.	The gear code NO has been introduced, standing for 'No gear'. This code should be used for fishing techniques not requiring a fishing gear.
For vessels with lengths 0-6 m and 6-12 m we do not have coordinates, in this case what will we insert into the columns of tables H and I.	If it is not possible to submit data at a finer spatial resolution to that required for Table A do not submit data to the spatial data tables. This point has been added to the top of the text specifying tables H and I.
In table G (effort) we consider that a column should be also be added to specify the number of vessel that have been activated in quarters.	Added to updated data call.
Could not use fecR package	See section 2.1.5.1
Is it possible to include more fishery codes	See section 2.2.3.1

2.1.2 Issues related to small scale fleets

There is no single harmonised definition of small-scale fisheries (SSF). However, in relation to data collection, the group agreed that the under-10m fleet needs to be considered as a separate fleet segment for data collection purposes given the lack of a legal basis under the Control Regulation for direct reporting of activity using EU logbooks for those vessels (this applies to under-8m vessels in the Baltic based on the exception for vessels of 8m or more engaged in targeted fishing for cod in the Baltic Sea([1])).

Shortly prior to the New-FDI EWG a PGECON workshop[2] was held in which experts were requested to present their fishing activity (capacity, fishing effort and landings estimates) data collection procedures for SSF and data issues encountered. There are two data collection methodologies currently applied within the EU to estimate transversal data of vessels less than 10 meters: 1) Census approach and 2) Sampling approach.

Of seventeen countries that gave feedback, four use a sampling approach. For these countries, information on gear, mesh size, gear dimension and spatial distribution could be estimated based on the samples collected. The remaining 13 countries use a census approach. Information on gear, mesh size, gear dimension and spatial distribution is mainly available but approaches vary between countries and four of the 13 countries rely mostly on sales notes information. Sales notes do not contain information on gear, mesh size, or the spatial distribution of the fishing. Sales notes are thus insufficient to supply all the information asked in the New-FDI data call and as a consequence these countries encounter problems to answer it.

A number of meetings, research studies and workshops have concluded that the SSF data quality, accuracy, reliability and completeness has to be improved. For example, WGCATCH 2015[3] concluded that SSF are important in nearly all countries but seemed to be trapped in a vicious cycle where due to incompleteness and lower quality of existing data on this fleet sector, systematic lower importance was assigned to their characterization and sampling relative to larger scale fleets. More broadly a number of meetings, research studies and workshops have concluded data quality, accuracy, reliability and completeness has to be improved for SSF fleets. Several Member States are starting to look into the possibility of collecting the missing information using new technologies such as smart phone apps and geolocation tools. Others are using additional questionnaires, additional sampling based on geo-location or algorithms to define the métiers based on licenses and species composition. However, many of these approaches are still in the development phase.

Regarding the unified approach to calculating fishing days and days at sea proposed by the second workshop on transversal variables[4] and as advocated by the New-FDI call, in many cases departure time and arrival time are not collected such that the 'Days at Sea' measure can't be calculated based on the hours spent at sea and in turn the '24h period definition' (Days at Sea by a trip is calculated as commenced 24 hour periods expressed in whole numbers) can't be applied.

The agreed methodology also stipulates that each fishing trip has to be counted separately. The PGECON workshop noted that for SSF one day might involve two trips to make one landing of fish (the first to set and the second to retrieve gear) and that data

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[1] As covered by Regulation 2016/1139.
[2] Report on the PGECON subgroup DCF workshop on small scale fisheries, 25-29 September, 2017, The Hague, Netherlands.
[3] ICES .2016. Report of the Working Group on Commercial Catches (WGCATCH), 9-13 November 2015, Lisbon, Portugal. ICES CM 2015/SSGIEOM:34. 111 pp.
http://www.ices.dk/sites/pub/Publication%20Reports/Expert%20Group%20Report/SSGIEOM/2015/WGCATCH%20Report_01.pdf
[4] Castro Ribeiro, C., Holmes, S., Scott, F., Berkenhagen, J., Demaneche, S., Prista, N., Reis, D., Reilly, T., Andriukaitiene, J., Aquilina, M., Avdič Mravlje, E., Calvo Santos, A., Charilaou, C., Dalskov, J., Davidiuk, I., Diamant, A., Egekvist, J., Elliot, M., Ioannou, M., Jakovleva, I. Kuzebski, E., Ozernaja, O., Pinnelo, D., Thasitis, I., Verlé, K., Vitarnen, J., Wójcik, I. Report of the 2nd Workshop on Transversal Variables. Nicosia, Cyprus. 22-26 February 2016. A DCF ad-hoc workshop. 109pp.EUR 27897; doi 10.2788/042271.

collection procedures for SSF are often based on information provided on a day by day basis rather than trip by trip basis. In conclusion the PGECON meeting noted that less than 10m vessels have generally a daily activity and that it could be assumed that any trip(s) on a day is/are equivalent to 1 Day at Sea and 1 Fishing Day so long as no other data contradicted this assumption. However, it advised that as much as possible the approach adopted for SSF fisheries should be in line with that for vessels carrying logbooks, e.g. in apportioning days at sea and fishing days between gears and areas or in using calendar day as the basis for fishing day calculation.

2.1.3 Number of age and length measurements

When compiling numbers at age and numbers at length data age length and weight length keys (ALKs and WLKs) are often used. To improve the reliability of the keys, use of the maximum amount of data is preferable. Therefore, ALKs and WLKs are formed that not only span across the categories of the detailed tables (tables A and B) but also across domains as reported in Tables C to F. The EWG agreed the fields for recording number of age measurements and number of length measurements should only be included in the Tables C to F.

The debate was then focused on how the fields should be completed if an ALK or WLK spanned more than one domain. One approach could be to only count the number of age or length measurements taken under the specified domain, but then some cells could have an age/length distribution without having any age/length measurements or a very low number – and the number will not reflect the number actually going into the calculations. Alternatively, the number of measurements used to form the ALK/WLK could be entered with the additional possibility of adding an extra column informing on the percentage of samples coming from the specific domain.

No specific approach was agreed on during the meeting but this subject is one area cited for future agreement and guidelines, (see section 2.1.4).

2.1.4 Catches for mariculture

In Croatia young individuals of bluefin tuna are caught by purse seiners fishing for large pelagic fish (métier PS_LPF_>=14_0_0) and the entire catch is transferred live to bluefin tuna farms where the fish are raised for 1.5 – 2 years. Although there are no landings of that species, the effort data of this fishery were recorded and provided in Table G. Confirmation was requested on whether it was correct to only supply effort data.

Croatia does not record the landings of these fish because a) no fish are used for final consumption and b) Once grown on in the tuna farms and harvested they are reported in the aquaculture statistics.

2.1.5 Collating specific approaches used to complete fields within the New-FDI tables

The New-FDI data call was able to provide a package produced in the R coding environment([5]) that facilitated a standard calculation of days at sea and fishing days for active fishing gears. This was possible because of a process performed during two transversal variables workshops (Ribeiro et al. 2016) where

- Member States were canvassed to collate existing approaches.

- An agreed common approach was identified.

- The common approach was explained, transformed to pseudo code and then incorporated into an open source software package.

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[5] Finlay Scott, Nuno Prista and Thomas Reilly (2016). fecR: Fishing Effort Calculator in R. R package version 0.0.1. https://CRAN.R-project.org/package=fecR

To facilitate a standardised approach to data submission across Member States, a table will be sent before the next data call to all MS (both participants of the EWG 17-12 and national correspondents) tabulating which approaches were taken by Member States to complete the fields of the data call. A sample from the table is given in Figure 1 and the full table included in Annex 6. Items included to date were drawn from the Member States submissions to the EWG. Member States will be invited to add their country code against a description if it matches their own approach or to add a new row giving a new description if their approach is different. The current table is not considered a complete list but rather a way to start the process of better standardisation of data supply in response to future data calls.

Figure 1. Sample from a table of specific approaches used to complete fields within the New-FDI tables

A & B	TOTVALLANDG	The total value of the landings (traded or not through the auctions).	DNK, FRA
A & B	TOTVALLANDG	Calculated exclusively from sales notes.	DNK
		Sales notes not compulsory for all fish sales. Calculated from sales notes when available. Otherwise price is estimated from available sales note data.	FRA
A & B	TOTVALLANDG	**Currency conversion to Euro**	
		Annual average conversion rate used to convert national currency to Euros. This was taken from Eurostat.	SCO
		Not applicable	Euro zone MSs
		Not known	BGR, HRV, POL, ROU, SWE, GBR(not SCO)

2.1.5.1 The 'fecR' package

As noted above an R package was developed to allow consistent calculation of days at sea and fishing days across member states. Links allowing download of the package and directions to help files contained within the package were provided as part of the New-FDI data call. Some member states made use of the package and others consulted the guidance and/or the report of Ribeiro et al. (2016) to implement the methodology. The package, however, to date can only accept input data including ICES rectangle code which excluded use on areas outside of the ICES area. Because of this and a few other issues raised, the EWG felt it would be beneficial to dedicate one or two days in order to focus on revisions to the package to allow it to be used more generally. There were also requests for some form of training or guidance to help those less familiar with the R coding environment. Whether a form of 'drop in' surgery can be conducted depends primarily on availability of the fecR authors.

2.2 ToR 5: List the shortcomings of the new FDI data call and database in fulfilling the aims stated in the background section. Advise on possible ways to overcome the shortcomings and to achieve the stated aims

The EWG reviewed and discussed all comments and feedback received from Member States. Items of greatest significance are outlined in sub-sections below. A proposed data call document for the 2018 data call, taking into account all considerations for adaptation of the data call and database is included in Annex 3.

2.2.1 Discard information by Landings Obligation categories ('catch fractions')

The New-FDI data call requested MS to supply data according to catch fractions, following EUMAP implementing decision EU 2016/1251 ([6]). All MS were asked to separate total catch into components, referred to as 'catch fractions', such as the part of the catch landed above the minimum conservation reference size (MCRS), the part landed below the minimum conservation reference size, the part discarded below the minimum conservation reference size, *de minimis* discards or discards.

Only some countries that supplied discard information attempted to supply according to the different types of discard, Figure 2. It can also be noted from this figure confusion over how to answer to the data call. The 'discards' amount was intended as a sum of the different types of discard, i.e. it should always be >= to the constituent discard catch fractions. Clearly one country at least supplied data under the catch fraction 'nolo' that was not included in their 'discards' total.

The EWG observed that specific discards estimates (e.g. *de minimis*) can be taken from logbook based data as well as derived from directly observed quantities. Within Member States there are potentially conflicting results between logbook and sample data. Moreover, Member States are under pressure, given the potential for such detailed data to be used for compliance checking, to provide data from sources that show compliance with legal amounts, or to omit discard data if that data would clearly show illegal practice (e.g. discards for vessels under the LO when there is no exemption in place).

The EWG 17-12 proposes to replace all discard catch fractions – including landings below MCRS – by a single 'unwanted catch' field.

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[6] Implementing decision (EU) 2016/1251 adopting a multiannual Union programme for the collection, management and use of data in the fisheries and aquaculture sectors for the period 2017-2019.

Figure 2. Discards by member state supplied to Table C. 'discards' - Overall discards; 'deminimis' – discards allowed under a *de minimis* exemption; 'nolo' – discards of fish not under the Landings Obligation; 'd' – discards (without exemption) of fish under the Landing Obligation; 'hs' – discards allowed under a high survivability exemption.
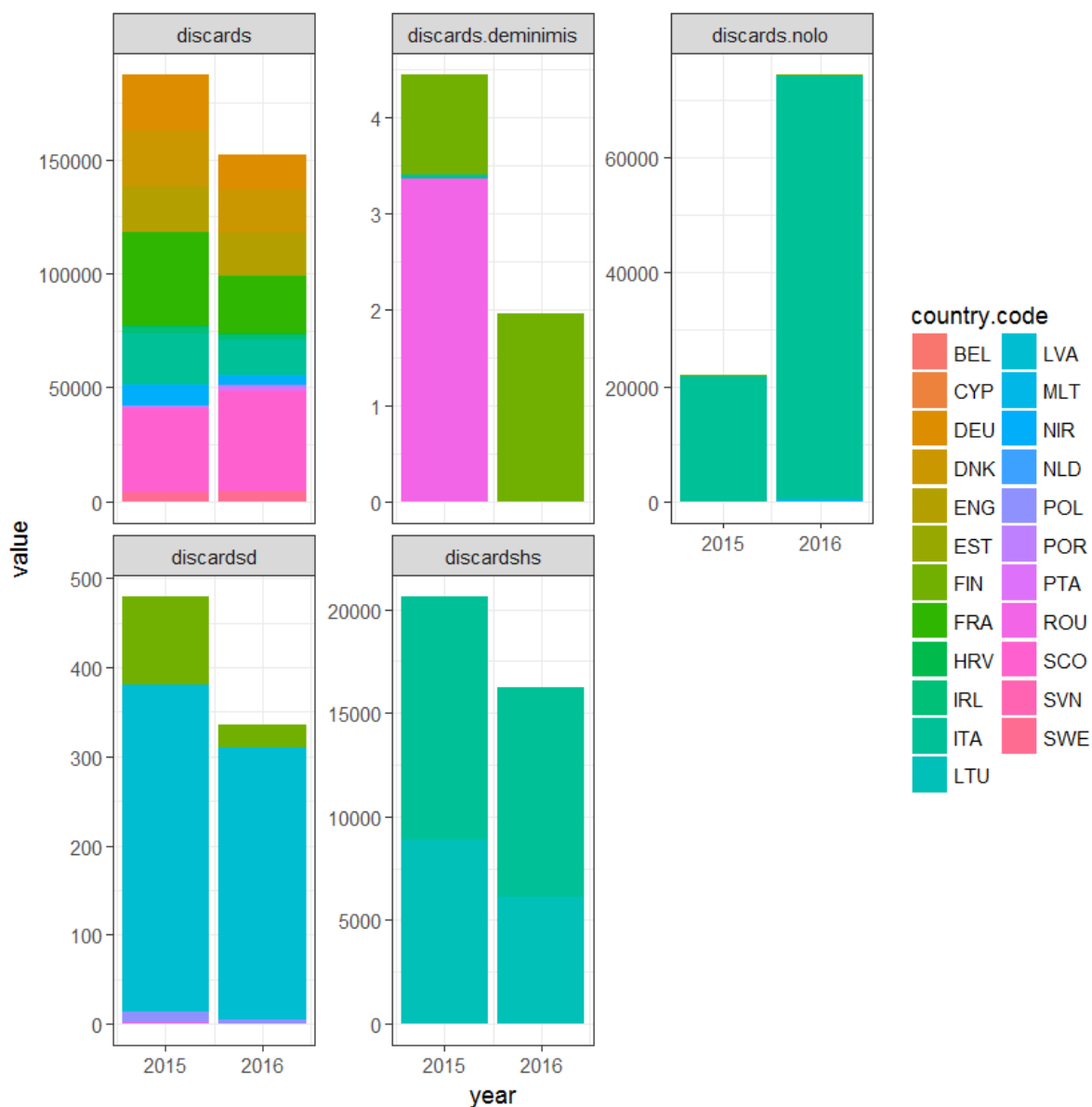
2.2.2 Partitioning of sampled data into detailed categories

There are currently 10 data tables, requested in the data call, 7 of these are: 2 catch tables (referred to in short hand as tables A & B or the 'detailed' tables) and 1 effort table that partitions the EU fleet into categories anticipated to be of interest to the Commission; and 4 tables (2 for discards, 2 for landings, tables C-F) that allow submission of data according to vessel groupings used to raise sampled data to estimate population totals. Tables A & B are linked to tables C-F through a 'domain' name (field DOMAIN_DISCARDS or DOMAIN_LANDINGS). MS were then expected to partition discards and numbers at age/length found in a domain into those categories (in tables A & B) contained within the domain.

To obtain age and length distributions and discards from sampled data an estimation procedure is required that respects the sampling design and whereby the level of disaggregation is determined by the number of samples. Because of the limited number of samples and the very high variability of the variables, the estimates often need to be calculated at a higher aggregation level than the detailed disaggregation level asked for in the New-FDI tables A and B. Calculating estimates from sampled data for the detailed table categories may be impossible (no data points) or estimates will likely not be statistically sound and may be biased[7].

The partitioning of discards requires a good expert knowledge of the relation between certain variables and the amounts discarded. Discards are often estimated/raised by an auxiliary variable, for instance effort, landings of all species, landings of target species, etc., that has a positive correlation to the amount of discards. There is not necessarily a positive correlation between landings and discards of a species. It is important that the most appropriate method for each stratum is chosen and this cannot be achieved by applying a simple algorithm.

The EWG suggested a partial solution to the issue which allows simplification of the data call. This solution consists of removing all columns in the detailed tables referring to age specific or length specific information. This removal of columns allows the two tables to be reduced to a single table. Member States would still be expected to complete an unwanted catch total within the remaining detailed table. They would be free to choose the criteria used to perform the partitioning. Age profiles and length profiles for landings and unwanted catch by detailed table entry (at the level of métier) would be performed by JRC using profiles from the domain information scaled according to relative landings and relative unwanted catch amounts respectively. This approach would facilitate the harmonisation of the procedure and reduce the burden on the MS during the data submission.

Nevertheless, the EWG emphasises the limited meaningfulness behind any partitioned estimates.

2.2.3 Partitioning of data according to fleet segments falling under the Landings Obligation during the transition arrangements (2015-2018)

The New-FDI data call introduced a field 'SPECON_LO' (specific condition landings obligation) intended to record separately catch fractions by vessel-species combinations subject to exemptions (de minimis, high survivability) under the landing obligation. During the LO transition phase, the use, in some cases, of catch thresholds in defining when vessels fall under a given landing obligation (LO) lead to a list of codes that effectively defined every existing LO and with conditions to force exclusive use of a single code. This was considered necessary to prevent double counting of effort and catches but resulted in a) criteria for assigning effort and landings to categories that were difficult to understand and implement, b) requiring data in the detailed tables to be even more finely partitioned (see section 2.2.2).

In parallel with recommending the removal of data requests by catch fraction the EWG 17-12 also recommended removal of the SPECON_LO field. It proposed as an alternative the introduction of a column to record target species assemblage (with codes as used in the definition of métiers under the DCF). In this way the EWG felt all the component pieces of data being used to define vessel groups falling under a LO were then included as separate column items. Without explicitly identifying specific LOs during the transition phase the métier categories involved could be split through use of the vessel lists (lists of vessels subject to any given LO) held by the Member States, as outlined in Figure 3.

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[7] Bias can arise because of the need to assume equal discard rates and length/age distributions among the disaggregated levels contained within the 'domain' estimates.

Figure 3. Proposed fields in New-FDI data call related to the Landing Obligation

Filled from vessel list held by MS

other cols	species	Sub-region	Gear-type	Meshsize range	Target assemblage	SPECON Tech	Under LO Species	Under LO Metier
	X	27.7.A	OTB	100-119	DEF	01	NO	NO
	X	27.7.A	OTB	100-119	DEF	01	YES	YES
	Y	27.7.A	OTB	100-119	DEF	01	NO	NO
	Y	27.7.A	OTB	100-119	DEF	01	NO	YES

Potential split of metier depending on last column

Redundant in 2020 (2019 data)

Introduce target assemblage column

The approach advocated can be considered an implementation of a métier focused FDI data call that respects national sampling strata (see Box 1).

Box 1. Métier approach to fisheries definition

A métier can be defined as a group of fishing operations targeting a similar assemblage of species, using similar gear, during the same period of the year and/or within the same area and which are characterized by a similar exploitation pattern (DCF, Reg. (EC) No 949/2008 and Commission Decision 2010/93/UE). Another important definition is that of a fleet segment. A fleet segment is a group of vessels with the same length class and predominant fishing gear during the year (DCF, Reg. (EC) No 949/2008 and Commission Decision 2010/93/UE). The link between these two definitions is that vessels can only be part of one fleet segment, however within this fleet segment a vessel can exhibit many behaviours during the year, these behaviours and shifts in fishing activities are defined as métiers.

These descriptive tools are now commonly employed in European fisheries and form the building blocks by which to describe the heterogeneity of fishing activity in both biological and economic terms. These building blocks facilitate the partitioning of landings and effort into 'sensible' sized units reflecting the fishing activities within them (ICES, 2003). The functionality of métiers is evident in the number of groups (i.e. DCF, ICES, RCG) who employ them for a variety of programs, such as the pre or post stratification/aggregation of national sampling programs (e.g. DCF, Reg. (EC) No 949/2008 and Commission Decision 2010/93/UE), bio-economic modelling (e.g. Ulrich, Reeves, Vermard, Holmes, & Vanhee, 2011) and management strategy evaluations (e.g. Vermard et al., 2008). Ultimately, well defined métiers provide the building blocks of more effective management (Davie & Lordan, 2011).

The following considers further how DCF métier level 6 information might be used instead of the SPECON_LO field. Example Landing Obligations for 2016 from the NWW are shown if Figure 4.

Figure 4. Example Landing Obligations for 2016 from the NWW

(g) Fisheries in ICES divisions VIIb, VIIc and VIIf-VIIk

Fishery	Gear Code	Fishing gear	Mesh Size	Landing Obligation
Common Sole (*Solea solea*)	TBB	All Beam trawls	All	Where the total landings per vessel of all species in 2013 and 2014 consist of more than 5 % of common sole, the landing obligation shall apply to common sole.
Common Sole (*Solea solea*)	GNS, GN, GND, GNC, GTN, GTR, GEN	All Trammel nets & Gill nets	All	All catches of common sole shall be subject to the landing obligation.

(h) Fisheries in ICES divisions VIIb, VIIc, VIIe and VIIf-VIIk

Fishery	Gear Code	Fishing gear	Mesh Size	Landing Obligation
Cod (*Gadus morhua*), Haddock (*Melanogrammus aeglefinus*), Whiting (*Merlangius merlangus*) and Saithe (*Pollachius virens*)	OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX	Trawls & Seines	All	Where total landings per vessel of all species in 2013 and 2014 consist of more than 25 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to whiting.

The legislation is defined based on species if interest (fishery), gear type (gear code & fishing gear description), mesh size and catch composition (landings by species). Three of these components can be found in the definition of the DCF level 6 métier (gear code, fishing gear description, mesh size) and the remaining two components can be determined by producing catch (or just landings/discards) profiles of relevant métiers (Figure 5).

An additional benefit of using métier level 6 instead of SPECON_LO is that métiers are used to determine the design of some national sampling programs and raising procedures, such that there is a direct link between these programs and procedures and the categories of the detailed tables.

Figure 5. Example of catch profiles by métier. The result is reproduced from ICES WGMIXFISH, therefore 'métier tags' are represented. Métier tags named using: country, ICES division, gear, target species, mesh range, selectivity device, vessel length and total landings.
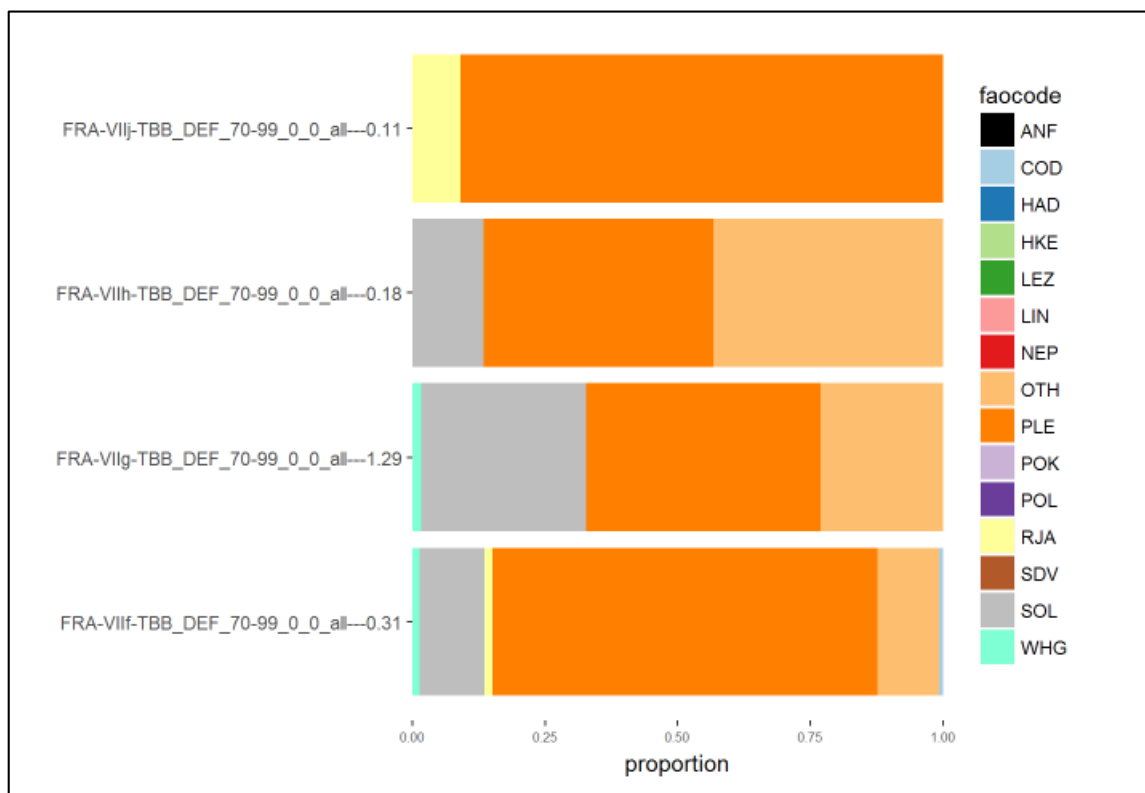
Source: ICES WGMIXFISH, 2017.

2.2.3.1 The use of metier definitions by Member States

There is considerable utility of holding data by métier level 6 components. However, it is clear that there needs to be a consistency in the description of métiers. A total of 322 unique métiers were submitted to the New-FDI data set (Figure. 6), with very few métiers used consistently across member states. A member state contribution to the meeting observed "difficulties arise also in the use of specific mesh size ranges by "métier" *(seem to have no general rules to define the mesh size ranges agreed by "métier")*". The EWG was aware that an RCG sponsored workshop with ToRs including attaining a uniform approach to métier definition will be held in January 2018 at DTU Aqua, Copenhagen. The EWG welcomed this development.

Figure 6. Summary of unique métiers submitted by countries to the FDI new.
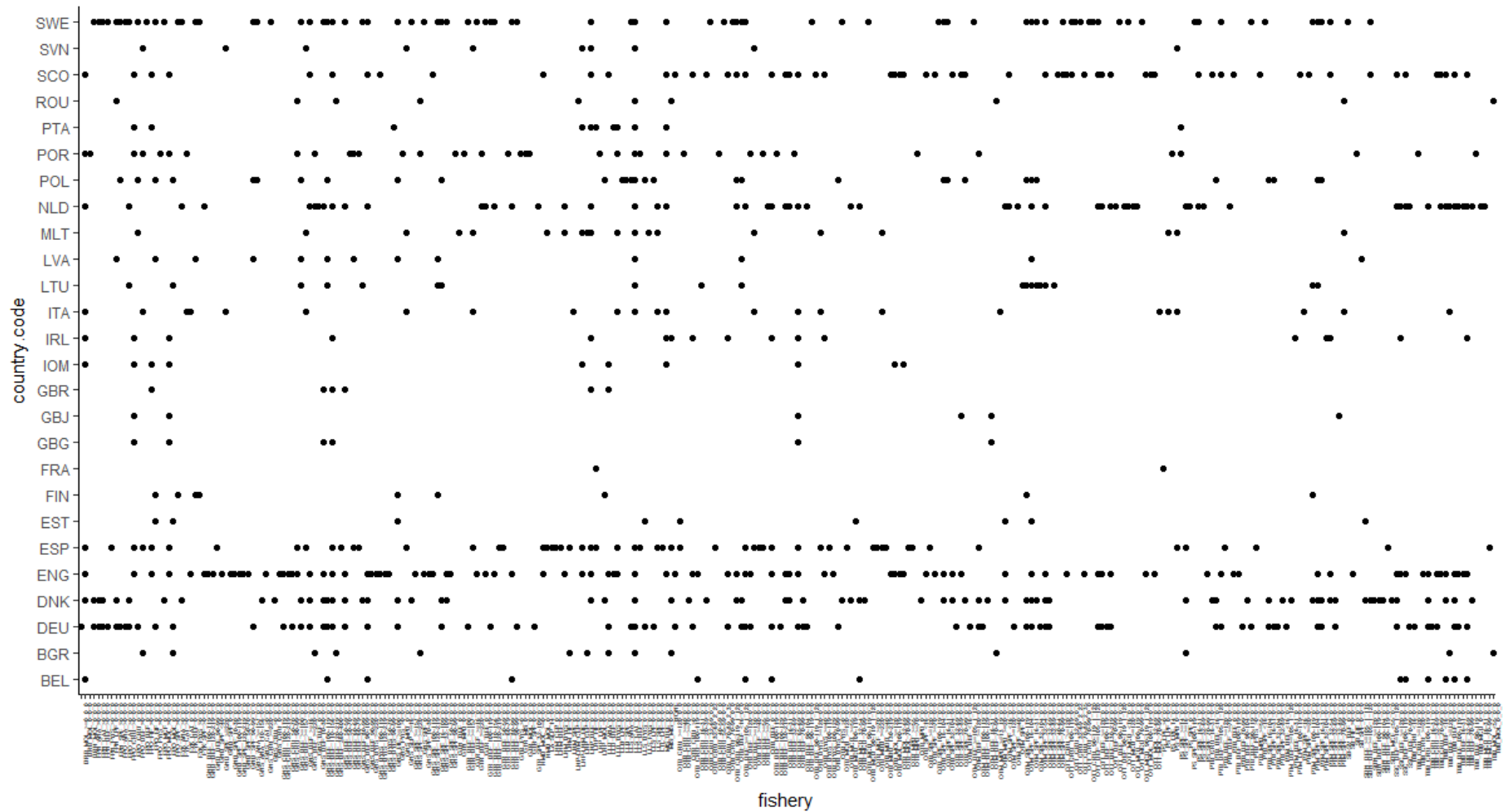
2.2.4 Recording of refusal rate

In the new FDI data call refusal rates on the discards sampling are requested in tables C and D by year, discards domain, species and age or length. The intension was to provide a measure that could alert end users to problems arising in the collection of sampled data. Only three member states provided refusal rates for the new FDI data call.

The main problem cited by the EWG is that refusal rates are recorded according to sampling frames (list of vessels that are contacted) and are not necessarily on the domain level. To give the refusal rate on a domain level, it would be necessary to know the métier of all the trips where an observer was refused at the time of phoning. Additionally, although unique refusal rates were only expected at the domain level the format of the data call required the value to be repeated for each species and age/length value.

The data call makes use of a definition of refusal rate as recommended in an ICES SGPIDS report (ICES, 2013), but there is still some subjectivity about what constitutes a refusal. This is an issue that could be considered further at ICES WGCATCH meetings. An additional consideration is that there might be issues regarding sensitivity of the information. High refusal rates could indicate that a member state could not fulfil DCF requirements. Possibly the reporting of refusal rates would be more appropriate in the DCF National Annual reports, where there is more room for explanations. An alternative measure already proposed for adoption in the annual reports is the number of unique vessels sampled within a sampling frame compared to the total number of vessels within that sampling frame.

Box 2. Example of refusal rate monitoring from Denmark

A new sampling system was introduced for the Danish at sea observer program in 2011, where vessels are selected on a stratified random basis, based on the previous year's fishing data. Vessels have been grouped according their main fisheries conducted and the home harbor; it is only possible for a vessel to be grouped in one frame. Presently Denmark is operating with 6 unique sampling frames for the observer sampling program at sea. The six frames are split based on the geography of Denmark for logistic reasons such that three of the sampling frames are linked to the North-western part of Denmark and the other three to the eastern part of Denmark. An observer calling a fisherman within a given frame needs to ask for participation on the next conducted trip and if the fisherman is going fishing with a gear not included in the frame, but still as a part of the total program, the observer will still need to conduct the trip.

Refusal rates are collected according to the recommendations in the SGPIDS III report (ICES, 2013) and the answers are divided into 6 categories; No contact, no contact information, not available, observer decline, industry decline and sampled. The fishers' answers are registered in a log. If a skipper decisively refuses to have an observer on board he is not contacted again within that year even if the ship is selected again by the system but the ship is registered with the same answer. If the skipper says "no" but in a way that is less categorical ("try again later" or "it is not very convenient right now") that skipper will be called again the next time the vessel is selected by the system.

One of the main quality improvements resulting from a sampling scheme based on statistical principles is that it enables us to calculate unbiased estimators e.g. catch at age and discard amount. The sampling program may still be biased due to refusal, but refusals are now tracked and it is therefore possible to check for biases by comparing the VMS tracks and logbook information between vessels where observers are welcomed and vessels where observers are refused. In the former program although bias was anticipated it was not possible to quantify the level.

2.2.5 Confidentiality

With respect to confidentiality, the recast DCF Regulation states "it is necessary to ensure the availability in a timely manner of the relevant data and respective methodologies to bodies with a research or management interest in the scientific analysis of data in the fisheries sector and to any interested parties, except in circumstances where protection and confidentiality are required under applicable Union law." Whilst some Member States are happy to provide very detailed data provided individual vessels aren't directly identifiable, this may cause issues for others where their own national rules and regulations may apply.

It was agreed by the EWG that the utility of the data would be reduced if Member States themselves treated data for confidentiality and this would be best done centrally by JRC before release of any outputs. This would mirror the approach adopted by Eurostat where Member States are not allowed to withhold data by reason of it being confidential but must flag confidential records to allow appropriate data treatment to be carried out. It was therefore proposed that a field is introduced to Tables A, G, H and I allowing potential data confidentiality to be flagged.

2.2.6 Naming of domains

To allow partitioning of sampled data (see section 2.2.2) the detailed tables (A & B) are connected to the tables holding nationally raised sampled data (tables C to F) through the fields 'DOMAIN_DISCARDS' and 'DOMAIN_LANDINGS'. Prior to the data call no naming convention existed for the domains used by Member States. In the interests of achieving maximum utility from the names a format was suggested, based on the same principles as those used for naming métiers, but a strict format was not imposed.

At the EWG the different types of name used were considered. Most Member States followed the suggested format to a greater or lesser extent, but there were some additions to the naming elements introduced. These were

- Quarter
- Vessel length
- Species
- Commercial category

Additionally it was suggested in the data call that if the domain covered multiple areas, gear types etc. the individual codes used to complete fields elsewhere in the data tables could be joined using the dash "-" symbol. This is reasonable if two or three codes need to be joined but becomes impracticable if the number of codes rises higher. For quarter, mesh size range, species commercial category and vessel length the term "all" can be used where appropriate (with respect to species this would simply signify multiple species, i.e. all species for which the domain was appropriate). For mesh size range and vessel length ">=" followed by the minimum mesh size or vessel length could also be used. For the area the supra-region code can be allowed to signify a domain that covers any sub-region within the supra-region.

For gear type it was considered to use the fishing technique code(s) when multiple gears are incorporated. This idea was dropped eventually because a) some fishing technique codes representing groups of gears are the same as individual gear codes and b) if the gears covered in a domain spanned more than one fishing technique this would require listing more than one fishing technique code which would likely lead to confusion given that for economic data vessels must only ever receive a single fishing technique code.

The naming convention proposed is therefore:

Countrycode(s)_quarter(s)_subregion(s)**or**supraregion_geartype(s)_targetassemblage(s) _meshsizerange_selectivedevice_meshrangeofselectivedevice_vessellength(s)_species_c ommercialcategory

Box 3. Fulfilling the aims of the New-FDI data call: Recommendations going forwards

— Replace all discard catch fractions – including landings below MCRS – by a single 'unwanted catch' field.

— In table A, remove all columns after column 21. Rename column 21 'UNWANTED_CATCH'. The revised table A to replace the current tables A and B.

— Member States to complete the unwanted catch field of table A wherever possible using a free to choice of the criteria used to perform the partitioning of data from table C.

— Age profiles and length profiles for landings and unwanted catch by table A entry to be performed by JRC using profiles from the domain information scaled according to relative landings and relative unwanted catch amounts respectively.

— JRC to calculate numbers at age and mean weight at age.

— Remove field 'SPECON_LO'. Introduce a field for target species assemblage (with codes as used in the definition of métiers under the DCF).

— Introduce a field allowing potential data confidentiality to be flagged.

— Receive information on observer refusal rates through stand-alone files, allowing data based on sampling frames. Consult DGMARE on whether refusal rate information is better recorded in national annual DCF reports, or needed at all if the currently proposed additions to the annual reports (recording proportion of vessels that are sampled within a sampling frame) are adopted.

2.3 ToR 2: Test the compatibility between the data collected in the New-FDI database and the data found in the Fleet Economic Performance database

To improve compatibility between the data provided to the New-FDI data call and data provided to the Fleet Economic Performance data call (also known as the annual economic report or AER data call), additional fields had been added to all New-FDI data submission templates (Figure. 7, additional fields highlighted in red). At the same time vessel length categories were updated to make them consistent with vessel length groups defined in the EUMAP.

The EWG noted that the New-FDI call made use of sub-national country codes whereas the fleet economic call was able to distinguish sub-national fleets through use of the 'geo indicator' field and thereby make use of a single country code for each member state. The New-FDI call had already introduced the geo indicator field so it was considered sensible to remove sub-national country codes for greater compatibility with the fleet economic data call.

Figure 7. Compatibility between STECF New-FDI & Economic data sets (annual economic report or AER).
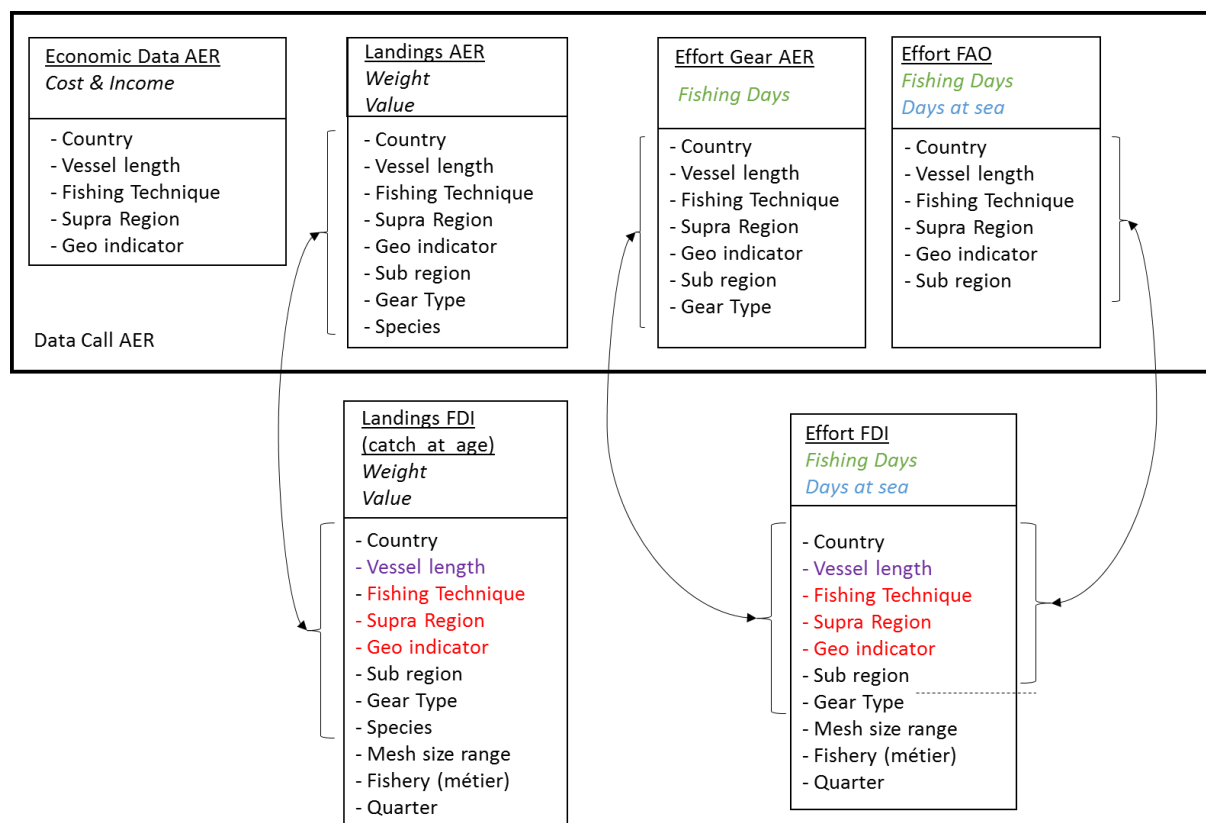
2.3.1 For data from 2015 map fleet segments found in the New-FDI database to fleet segments found in the Fleet Economic Performance database

A fleet segment in the AER is defined by a combination of country, vessel length, (dominant) fishing technique and supra region. Therefore, if the same categories are used for the common variables in both data calls, linking should theoretically be possible. The importance of the fleet segment concept is highlighted in box 4.

Differences between the databases can be for two reasons:

- Data quality issues: data submitted to the New-FDI and Economic databases may have been submitted by different people and/or different institutes, or unfamiliarity with the New-FDI data call may have led to wrong interpretations of the data call or mistakes in compilation.

- Structural differences in the databases: The more serious issue because fully correct and complete responses to each data call would still leave incompatibilities between data sets.

Figure 7 demonstrates how data categories have been made compatible through changes in the New-FDI. In the AER days at sea is not provided at the gear level as it has no meaning from an economic point of view. In the New-FDI, days at sea are split down to the métier level using the methodology proposed at the second workshop on transversal variables (Ribeiro et al., 2016). It is necessary, therefore, to aggregate FDI days at sea data to form data by fleet segments. A problem encountered was differences in sub-region coding. The FDI data call has EEZ information built into some sub-region names. Comparison between data sets would be more straightforward if the EEZ information was collected as a different field. For gears that can be used in parallel, e.g. passive gears

such as gill nets or pots that can be left in the water while the fishing vessel deploys another fishing gear, fishing days information may be repeated across gears. Fishing days can therefore be recorded with a higher total than days at sea for the same trip if it is recorded for each gear type used.

Box 4. Bio-economic modelling and scales of data collection for economic vs. transversal data

There is a need to evaluate the biological and economic consequences of proposed management actions. One of the challenges for the evaluations is the integration of the biological and economic data at the level of the proposed management plan, i.e. the spatial scale should be at the regional level and the economic descriptors of the fisheries should be at the fleet and gear level. However, there is a mismatch between the aggregation level of the economic variables in the Economic database and the level required by the evaluation, with the economic variables reported at Fleet Segment level.

Modelling approaches have been developed to overcome this mismatch (e.g. STECF 2012; Ribeiro et al. 2015; Scott et al 2015). These modelling approaches require common data between the Economic and FDI databases but one of the limitations of the current FDI-classic database is the absence of the Fleet Segment information meaning that more assumptions need to be made in the modelling approaches. By including the Fleet Segment in the New-FDI database it should become easier to integrate the economic and biological data and allow more detailed bio-economic analyses of management plans to be performed. However, it still requires common data between the databases, including the transversal data and the Fleet Segment information.

In comparing Fleet Segments there were five tables of data to explore:

- New FDI effort;
- New FDI landings;
- Economic data effort gear (fishing days);
- Economic data effort FAO (days at sea; fishing days);
- Economic data landings

The total number of unique fleet segments within the New-FDI tables and within the Fleet Economic tables, by supra-region, are presented in Table 2. Having more fleet segments in the New-FDI data can be expected because of clustering of fleet segments in the Economic data (see section 2.3.1.1). The OFR supra-region, however, has more fleet segments in the Fleet Economic data than in the New FDI data which is not correct and suggests data quality issues.

Looking at supra-region 27 in more detail revealed there were 107 Segments in the New-FDI data that did not also appear in the Fleet Economic data. This is to be expected given the clustering issue (see also Annex 7). More importantly there were 15 Segments in the Economic data that do not appear in the New FDI data. This is a potential source of concern as it is expected that all fleet segments in the Fleet Economic data also appear in the New-FDI data. To investigate further the Belgium fleet segments were explored in more detail. A fleet segment in the Fleet Economic data not present in the New-FDI data is *PMP_VL1824*. By consulting the capacity table in the Fleet Economic database it can be seen that the fleet segment *PMP_VL1824* was added to the Economic data as a cluster for the fleet segments *DFN_VL182* and*, DRB_VL2440*. The latter appear in the New-FDI database but not the Fleet Economic database. Figure 8 demonstrates how all Belgian fleet segments of supra-region 27 found in one database but not the other can be accounted for.

Table 2. Number of unique fleet segments by supra-region.

Supra-region	Data set	Number of unique Fleet Segments
Area 27	Economic	305
Area 27	New FDI	397
Area 37	Economic	186
Area 37	New FDI	194
OFR	Economic	53
OFR	New FDI	49

The number of unique Fleet Segments in each data set by supra-region can be seen in Table 3. Ideally, for a given supra-region, the fleet segments in tables holding effort and landings data will be the same. For the New-FDI data set the number of fleet segments in each table for supra-region 27 are very similar. However, the number of unique and common fleet segments is only 374, suggesting some data quality issues.

Table 3. Number of unique fleet segments by supra-region and by database table.

Supra-region	Data set	Number of unique Fleet Segments
Area 27	Economic effort FAO	299
Area 27	Economic effort gear	298
Area 27	Economic landings	304
Area 27	New FDI effort	385
Area 27	New FDI landings	386
Area 37	Economic effort FAO	185
Area 37	Economic effort gear	185
Area 37	Economic landings	186
Area 37	New FDI effort	178
Area 37	New FDI landings	121
NONE	New FDI landings	11
OFR	Economic effort FAO	53
OFR	Economic effort gear	51
OFR	Economic landings	53
OFR	New FDI effort	48
OFR	New FDI landings	47

2.3.1.1 Fleet segment clustering

Clustering (the grouping of fleet segments when there are sufficiently few vessels within the segments themselves to cause problems of data confidentiality) needs consideration when matching between New-FDI and economic data sets. An example of clustering found within the data sets considered is shown in Figure 8

Transversal data in the New-FDI will be available at the non-clustered fleet segment level and these fleet segments should be consistent with the economic data set. The clustering of fleet segments is currently provided in the capacity template of the current economic data call and can be used to map all FDI fleet segments to economic data clusters. It is important to maintain the clustering information within the economic database.

Figure 8. Names of fleet segments for fleet segments found in both New-FDI and economic databases and the names of the clusters to which the fleet segments have been mapped in the Economic database.
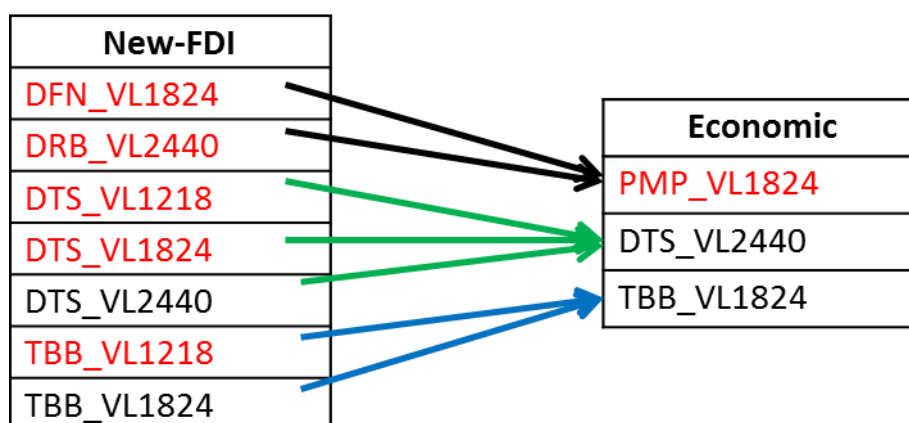
2.3.2 Compare sums of effort (kWdays-at-sea) and landings (tonnes) between New-FDI and Fleet Economic Performance databases by fleet segment and gear type within fleet segment

Effort data for the fleet economic data call are provided in 3 different effort templates at different levels of aggregation. For the comparison between data calls, fishing days were used from the 'effort gear' template and days at sea were taken from the 'effort FAO' template. For the purpose of this analysis a percentage difference was calculated as ((dataFDI – dataAER)/data(AER)*100). Therefore, results below 0 show cases when the sum of data provided for the new-FDI data set was lower than the sum of data provided for the AER data set.

2.3.2.1 Effort and landings overall and by supra-region

The results show that, in general, MS provided comparable data sets. The difference between data sets from the two calls was +-5% for 8 MS in the case of fishing days and for 7 MS in the case of sea days (Figure 9). During the EWG meeting it was determined that the discrepancies between the AER and FDI data submitted by Lithuania was because of a filtering step in the national calculation procedures that had been used incorrectly for the New-FDI call. This resulted in duplication of days at sea and fishing days variables provided in table G of the New-FDI for 2015. Therefore, Lithuania was removed from further analyses.

Figure 9. Differences in total fishing days (left) and days at sea (right) between New-FDI and AER data sets, expressed as a percentage difference.
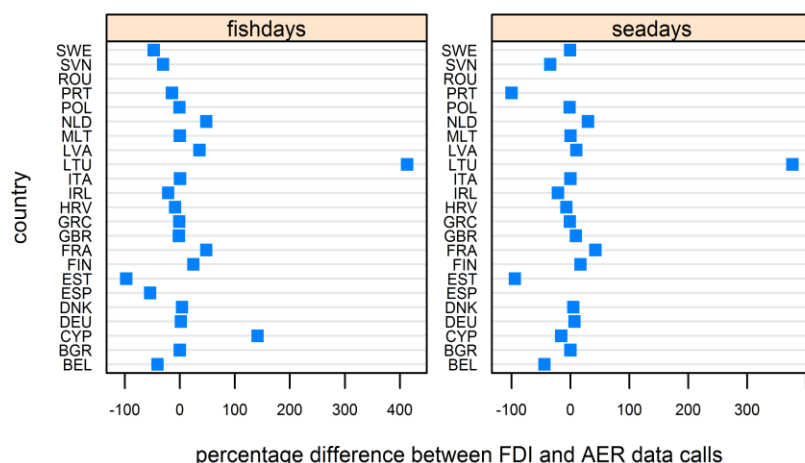
For landings the difference between two data sets was +-5% for 14 MS in case of value of landings and for 10 MS in case of weight of landings, (Figure 10). Some discrepancies had been highlighted by experts during the meeting and appear due to different definitions of the fleet population, (whether a snap shot of active vessels from a single date is used or whether the activity of any vessel active at any point in the year is used). However definition of the population should be consistent going forwards because of a revision to the requirement with respect to economic data in the new DCF[8], which came into force in 2017.

Figure 10. Differences in total value of landings (left) and weight of landings (right) between New-FDI and AER data sets, expressed as a percentage difference.
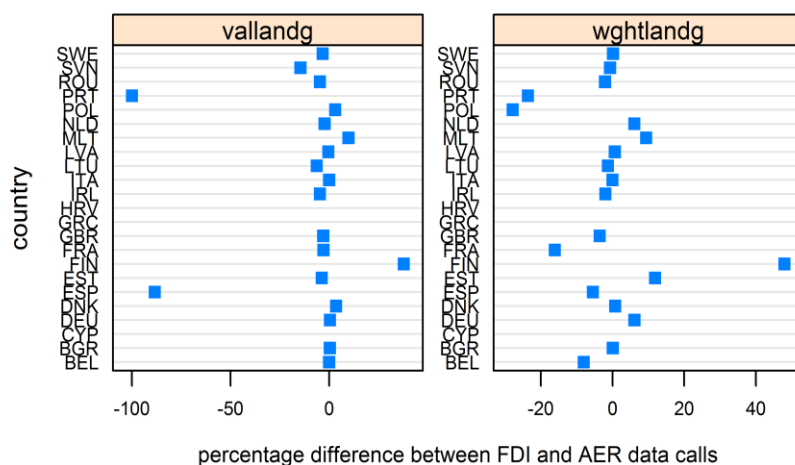
Considering results by supra region, the results for the two effort measures can be seen in Figure 11. Portugal didn't provide days at sea to the New-FDI call, but the data was available for the economic data call, hence a difference of -100%. In supra region 37, the considerably higher value of fishing days in the New-FDI data set for Cyprus is believed to be because the method for calculating fishing days recommended in the New-FDI data call appendix 15 (notably allowing two or more passive gears to each be assigned the full fishing day, i.e. treating passive gears as fishing in parallel) was followed for the FDI call

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[8] Commission Implementing decision (EU) 2016/1251 of 12 July 2016 adopting a multiannual Union programme for the collection, management and use of data in the fisheries and aquaculture sectors for the period 2017-2019.

and this constituted a change from what had already been implemented in answer to the Economic call. The higher values of both fishing days and days at sea for France in the New-FDI data set was because of a more complete submission of data to the New-FDI data call which included in particular the less than 10 meters fleet using data from monitoring by a catch assessment survey.

Comparison of weight and value of landings between data provided to the AER and FDI data calls is presented in the Figure 12. The value of landings for Lithuania was removed from the analysis as data was not provided for vessels over 40 metre operated in the Baltic Sea due to confidentiality reasons, causing a substantial difference between FDI and AER totals. Portugal didn't provide value of landings to the FDI data call and Spain only for supra-region 37. Also Portugal provided weight of landings for supra-region 37 only and Spain for supra-region 27 only.

Figure 11. Differences in total fishing days (left) and days at sea (right) between New-FDI and AER data sets, for the two main supra-regions, expressed as a percentage difference.
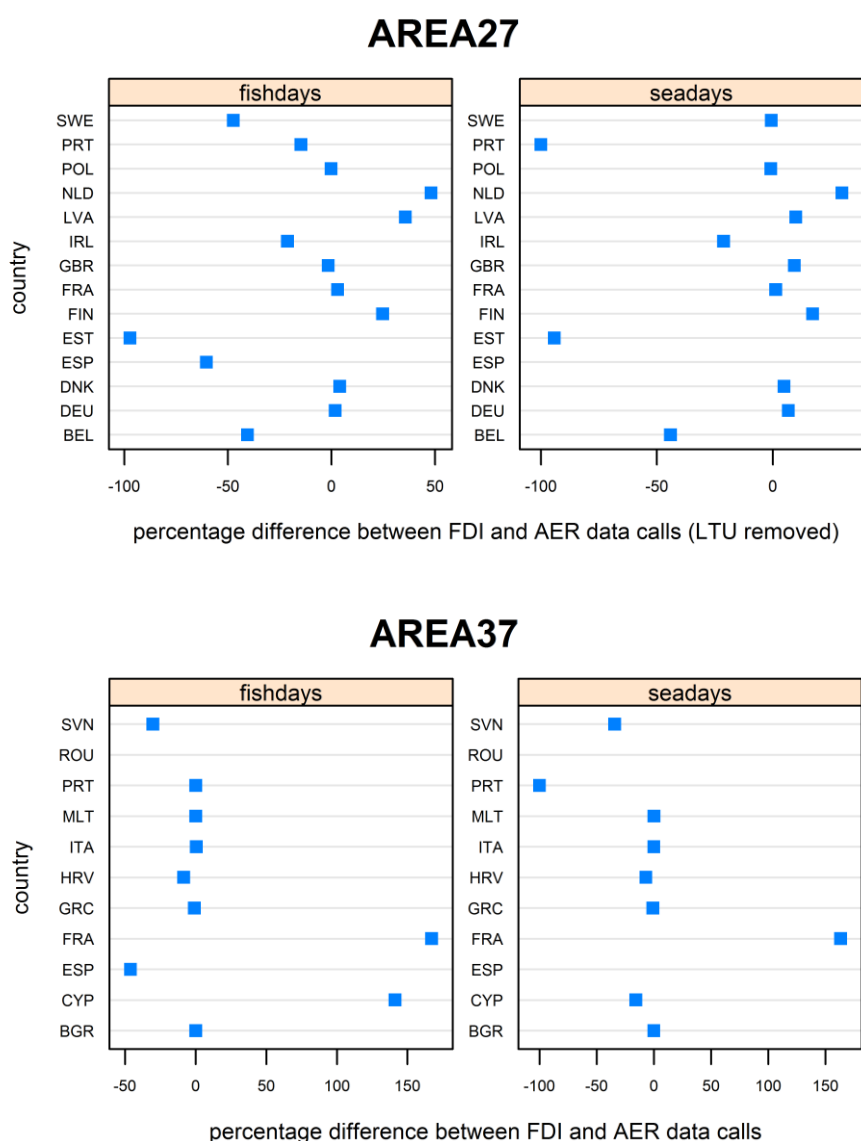
Figure 12. Differences in total value of landings (left) and weight of landings (right) between New-FDI and AER data sets, for the two main supra-regions expressed as a percentage difference.

percentage difference between FDI and AER data calls (LTU removed)

percentage difference between FDI and AER data calls
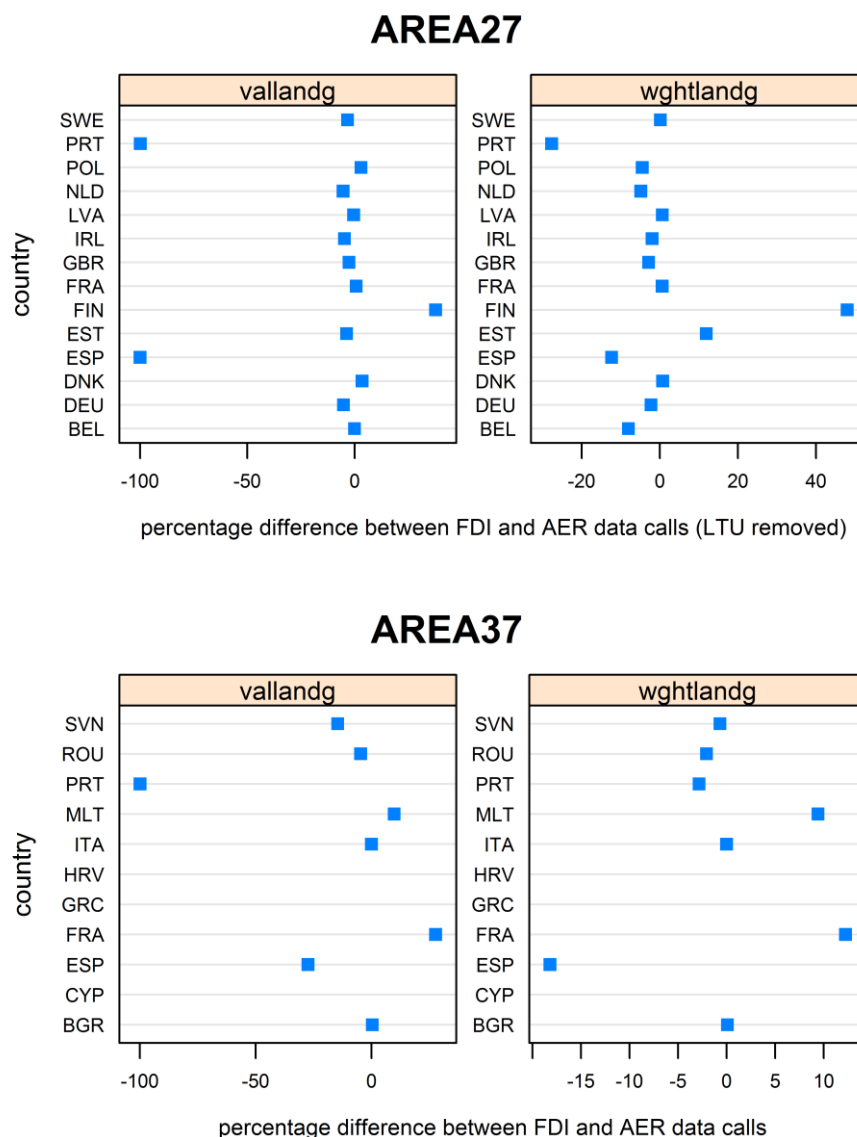
2.3.2.2 Effort and landings by fleet-segment and sub-fleet segment

2.3.2.2.1   North Sea case study

A case study was used to assess the compatibility between the Fleet Economic and New-FDI datasets in terms of effort and landings by Fleet Segment and gears within a Fleet Segment. For this case study it was decided to look at the landings of North Sea cod.

When comparing gear types between the two datasets mismatches were found. This was largely the result of errors/differences in the way a member state has coded a gear between data calls. For example, both data calls allow the codes DRB (boat dredges) and DRH (hand dredges). One country classified the gear used under the Economic data call as DRH, however the equivalent effort and landings in the FDI dataset was recorded under gear code DRB. However, where the gear information is not known there could still be better harmonisation between data calls, in the Economic "NK" is used and in the FDI data call "NONE" is used.

To match the days at sea between datasets Table G of the FDI data call was matched with the 'effort FAO' table from the Fleet Economic data call. The 'effort FAO' table is the

only table within the Fleet Economic database containing the days at sea measure and does not hold data to a finer resolution than the fleet segment. The fishing days were also assessed, comparing Table G of the FDI data call with the 'effort gear' table of the economic data call.

It was decided to focus on those fleet segments with the highest landings of cod. In all cases with the exception of fleet segment BEL_VL2440_TBB, there is a close match between datasets (Figure 13 and Figure 14).

Figure 13. Comparison of total 'days at sea' by fleet segment and member state combination landing the greatest weight of North Sea cod.
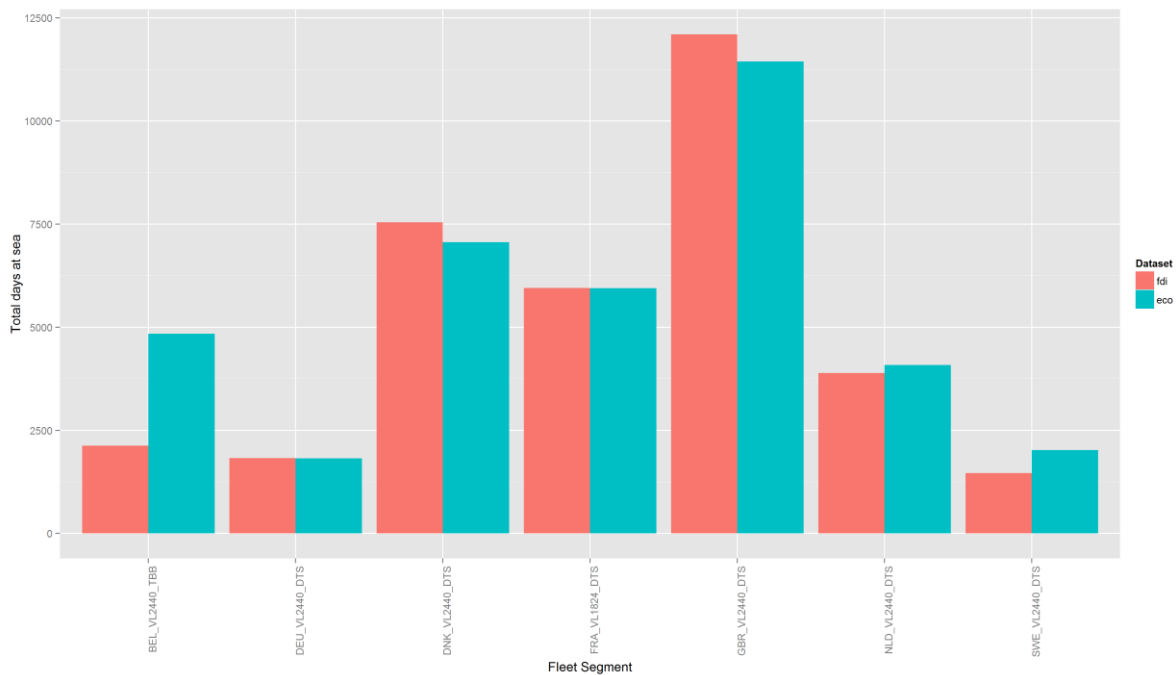
Figure 14. Comparison of total 'fishing days' by fleet segment and member state combination landing the greatest weight of North Sea cod.
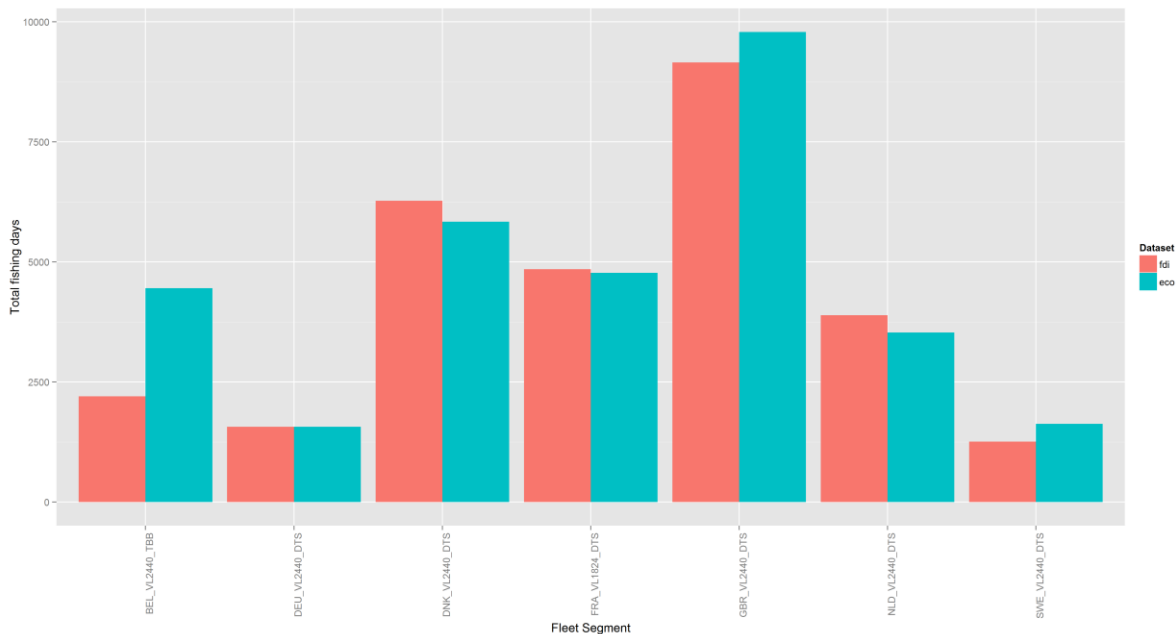
As there is not an Economic dataset with days at sea by gear it was decided to assess compatibility between datasets by fishing days. The top 3 fleet segments in terms of landings of North Sea cod were chosen to assess dataset comparability between fishing days by different gears within a fleet segment. The top 3 fleet segments in order were *GBR_VL2440_DTS*, *DNK_VL2440_DTS* and *DEU_VL2440_DTS*. In the case of the results for the UK (GBR) and Germany (DEU) there is a close match between the fishing days recorded in the Fleet Economic dataset and the FDI dataset (Table 4). For Denmark (DNK) however, there is a mismatch between the datasets. This is a result of the assignment of a "main" gear to a vessel at the start of the year for the economic call. In this example all demersal trawls have been grouped to gear code OTB, as can be seen by comparing the totals. Recorded effort is higher in the Fleet Economic database for GBR data but the reverse is observed for DNK.

Comparison between datasets at a fleet segment level show landings totals match closely (see annex 7). Taking the fleet segment with the highest cod landings from each member state and comparing between data calls conveys the compatibility between data calls for both landings weight and landings value (Figure 15). The ability to match between data calls has also facilitated the calculation of landings per unit effort (LPUE) by fleet segment (Figure 16).

Again taking the top three fleet segments but comparing weight of cod landed between data calls it can be seen the GBR values now match exactly (Table 5). The differences in the fishing days values for the same member states may point to revised calculation methods used within a member state or updates to the national database. The DNK data shows the same difference of allocation to a dominant gear code in the Fleet Economic data submission compared to retention of all gear types in the New-FDI data submission as seen for the effort data.

Table 4. Comparison of fishing days for the top 3 fleet segments (cod landings) in the North Sea.

GEAR	FDI_TOTAL_FISHDAYS	ECO_TOTAL_FISHDAYS
GBR_VL2440_DTS Fishing Days by Gear		
NONE	1	NA
OTB	4059	4266.67
OTT	750	856.43
PTB	3045.33	3260.23
SDN	108	122.2
SSC	1191	1279.74
NK	NA	1
DNK_VL2440_DTS Fishing Days by Gear		
NONE	86	NA
OTB	5297	5837.5
OTM	595	NA
PTB	14	NA
PTM	7	NA
SSC	275	NA
DEU_VL2440_DTS Fishing Days by Gear		
OTB	977	977
OTT	72	72
SSC	429	432
TBB	89	90

Table 5. Comparison of landings (tonnes) for the top 3 fleet segments (cod landings) in the North Sea.

GEAR	FDI_TOTAL_LANDED	ECO_TOTAL_LANDED
GBR_VL2440_DTS cod Landings by Gear		
NONE	0.5933	NA
OTB	3034.2386	3034.2386
OTT	839.9529	839.9529
PTB	4378.9199	4378.9199
SDN	93.7426	93.7426
SSC	1196.7986	1196.7986
NK	NA	0.5933
DNK_VL2440_DTS cod Landings by Gear		
NONE	4.748	NA
OTB	2575.307	3023.87
OTM	3.28	NA
PTB	1.83	NA
SSC	430.465	NA
DEU_VL2440_DTS cod Landings by Gear		
OTB	550.018	540.453
OTT	1.861	1.834
SSC	1300.516	1290.84
TBB	0.51	0.54

Figure 15. Comparison of total cod landings by fleet segment and member state combination landing the greatest weight of North Sea cod. Upper panel: weight of landings in tonnes; lower panel: value of landings in Euro.
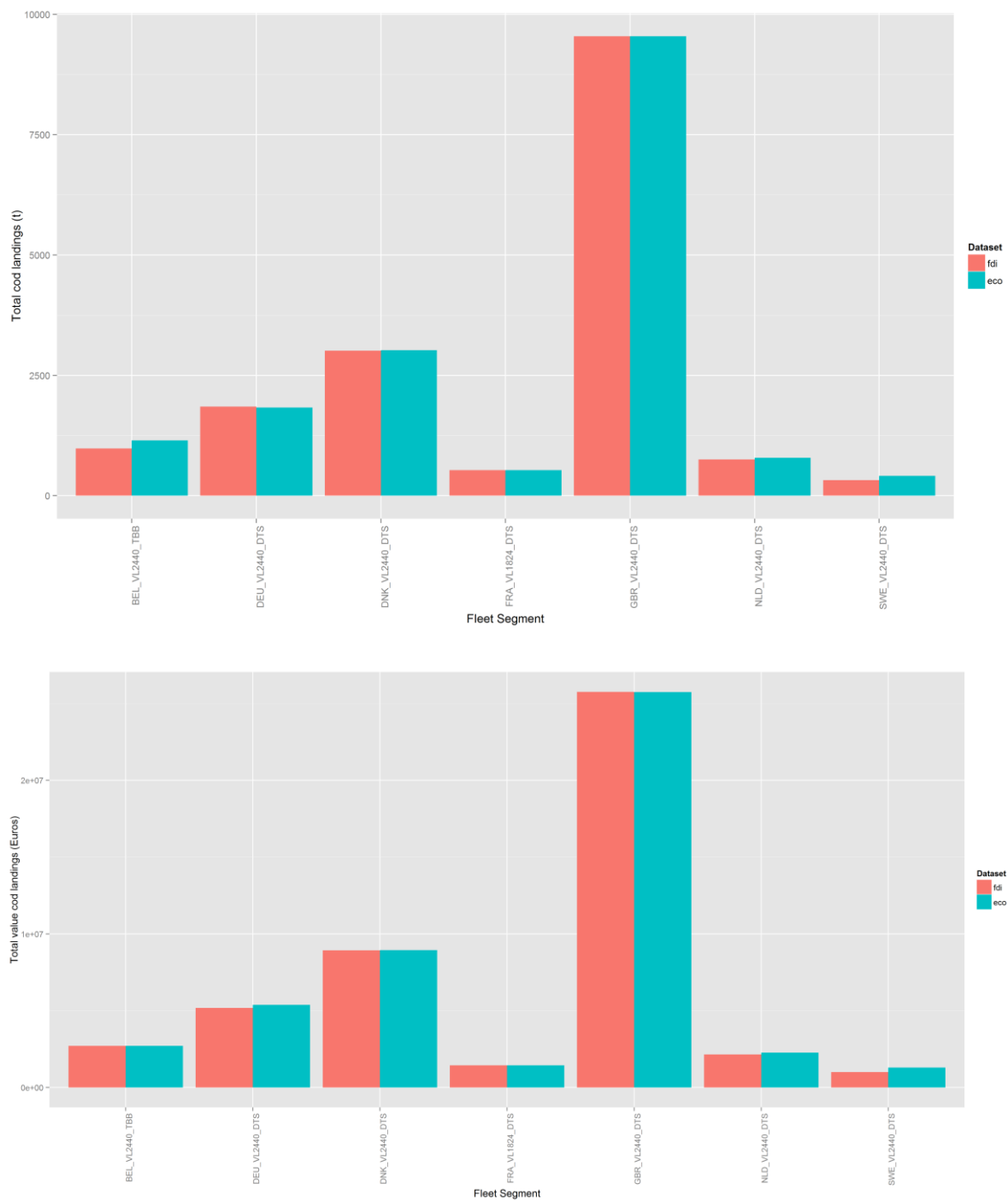
Figure 16. Comparison of lpue of cod by fleet segment and member state combination landing the greatest weight of North Sea cod.
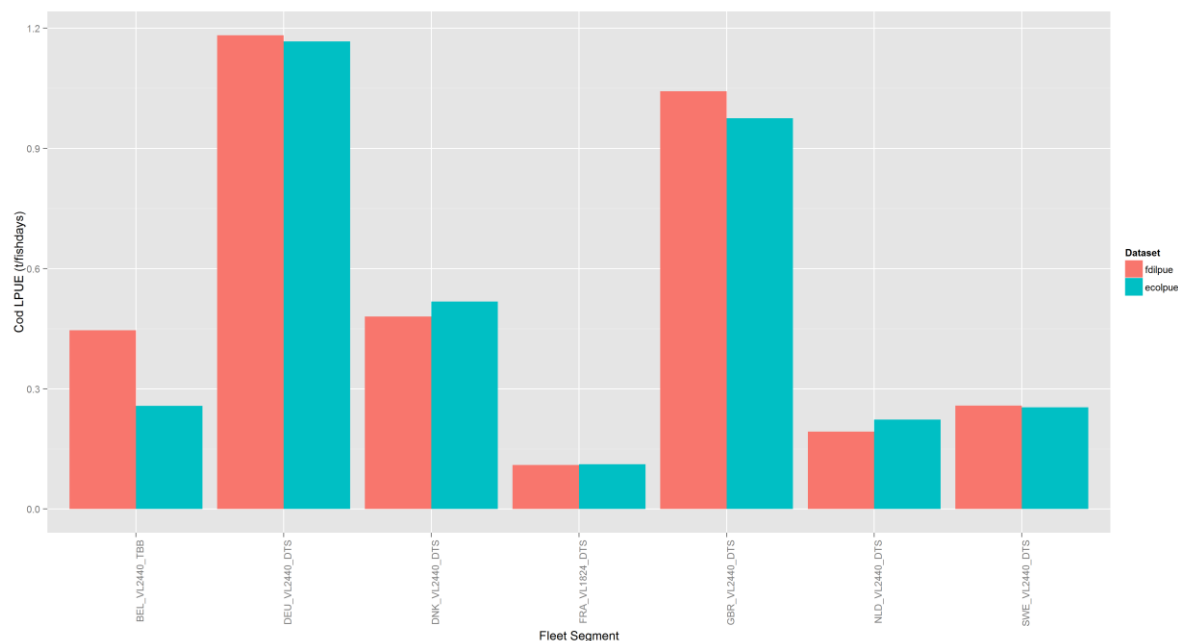
2.3.2.2.2 UK demersal trawl fleet segments

For additional detailed investigations by fleet segment, gear type and sub-region the EWG considered two UK demersal trawl segments. Figure 17 shows days at sea by sub-region. The figure shows that the same information could be obtained from both data sets but that different codes have been used between data calls for some sub-regions. The FDI call uses sub-region codes to differentiate, where relevant, between EU waters, waters under control of a non-EU country and waters under juristiction of a non-EU RFMO. This complicates the process of matching to economic data. The distinction would be better achieved through a separate field in the data call.

Figure 17. Comparison of effort (days at sea) by sub-region for two fleet segments between the New-FDI and fleet economic data sets.
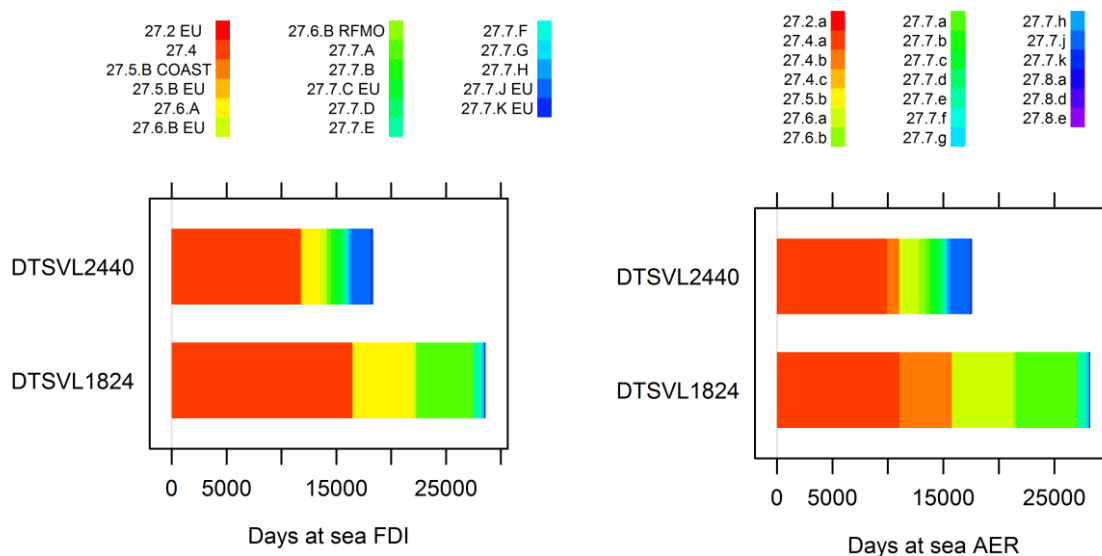
Figure 18 shows a comparison between the same two fleet segments for fishing days by gear type. Here it can be seen that the two data sets are fully comparable. Figure 19 makes the same comparison for landings; again the two data sets are fully comparable.

Figure 18. Comparison of effort (fishing days) by gear type for two fleet segments between the New-FDI and fleet economic data sets.
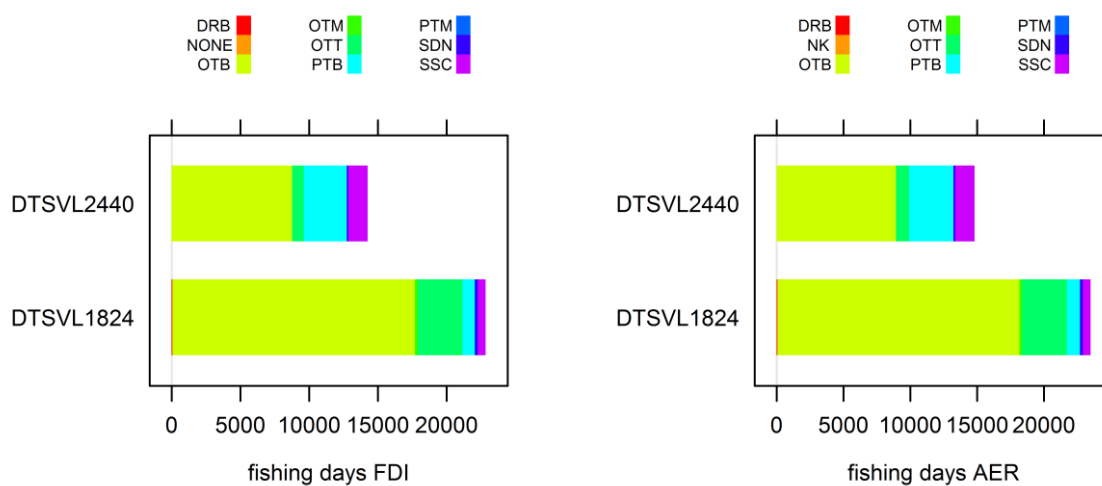
Figure 19. Comparison of landings (upper panels: by value; lower panels: by weight) by gear type for two fleet segments between the New-FDI and fleet economic data sets.
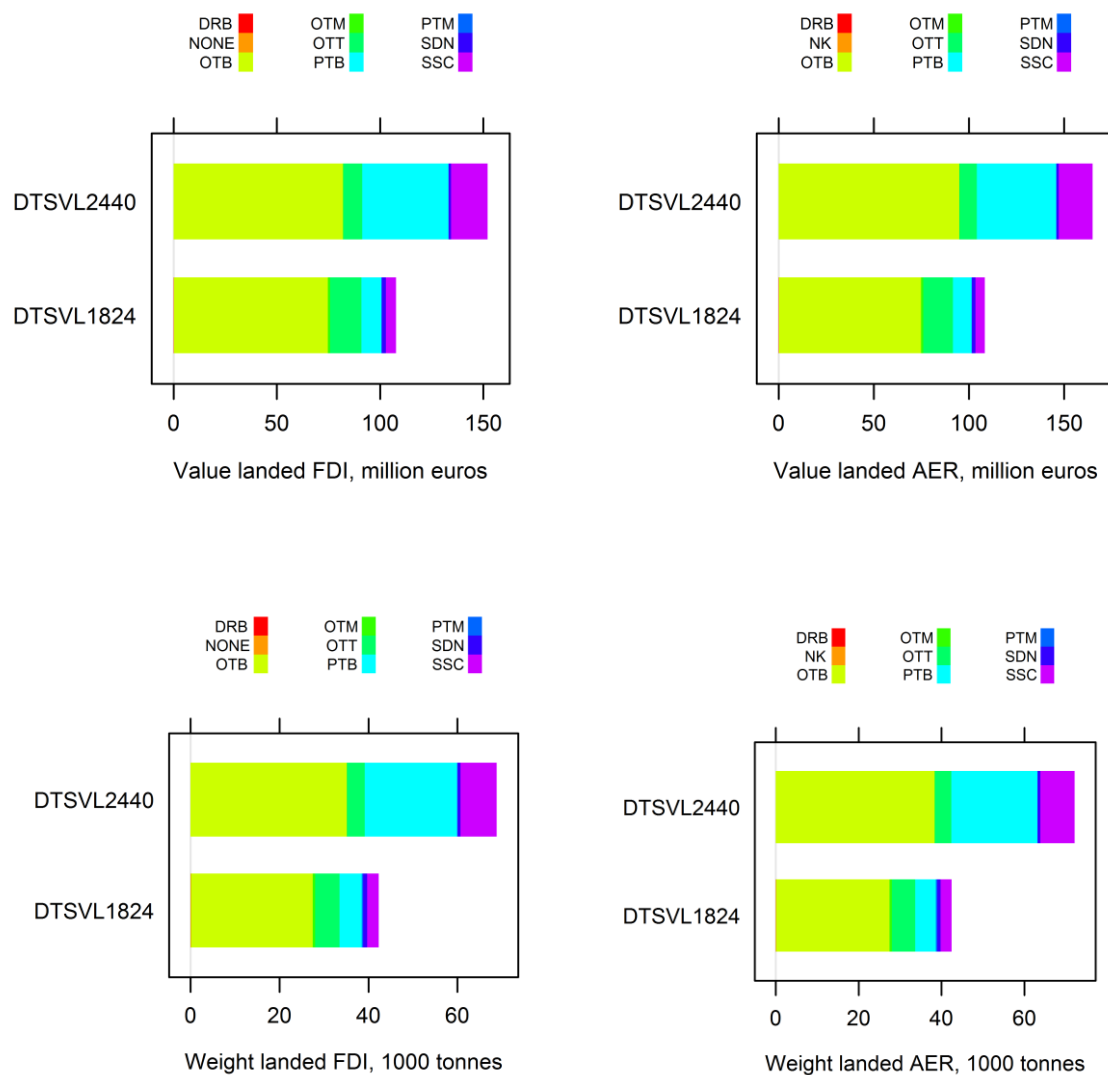
Box 5. Use of different métiers by fleet segments and number of fleet segments that undertake effort in a given métier

Analysis that is made possible when collecting both information on fleet segment and data by métier is the use of different métiers within a given fleet sector and the number of fleet segments that undertake effort in a given métier. The large variety of metiers possible within a given fleet segment is illustrated by Figure 20 which uses two UK demersal trawl segments. Taking two of the largest metiers (in terms of fishing days) of those shown in Figure 20, Figure 21 shows how a single metier can be used by multiple fleet segments.

Figure 20. Metiers present within two UK demersal trawl segments
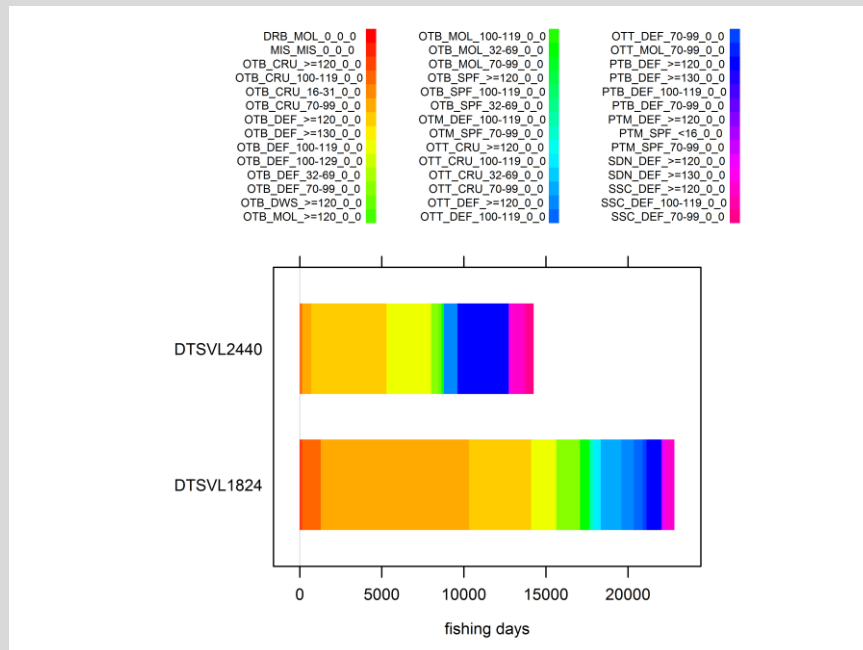
Figure 21. Metier effort by UK fleet segments for two commonly recorded metiers
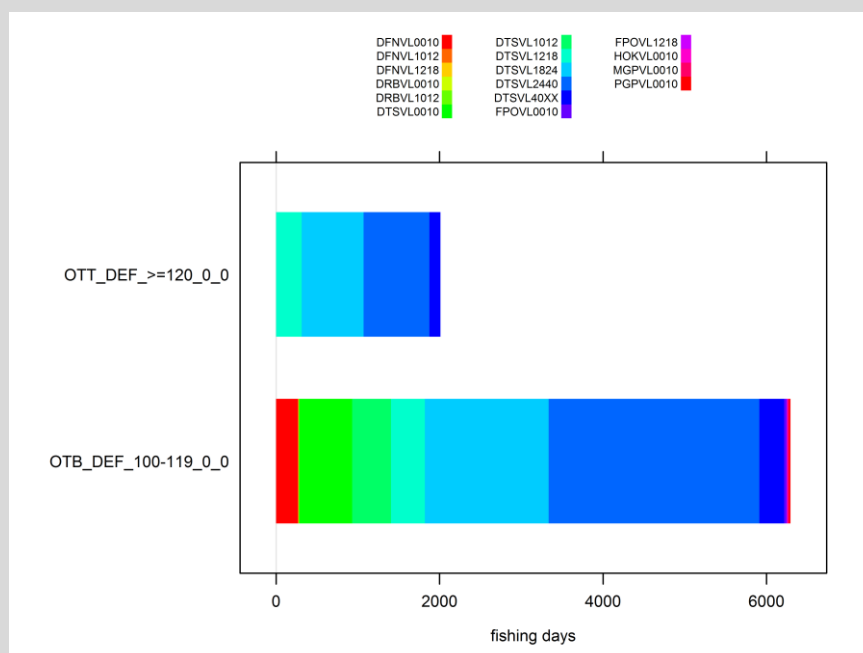
2.3.3 Longer term considerations

Inclusion of the fleet segment definition to the new FDI data call has increased possibilities for the analysis of economic fleet segments, e.g. it makes possible production of maps like that shown in Figure 22, produced for UK demersal trawlers (fishing technique code 'DTS') 18-28m length (code VL1824). The figure also shows the complexity of activities performed by the same fleet segment over one year and the number of different management areas (North Sea, West of Scotland, Irish Sea, English Channel, etc.) where the same fleet segment was operating. The data set used for the New-FDI, AER analysis also allows for analysing the spatial distribution of métiers used within a fleet segment or the seasonality of the fishing activities in different regions.

Figure 22. Example of mapping of fleet segment activity made possible by inclusion of fleet segment information in the New-FDI spatial effort and landings tables (tables H and I).
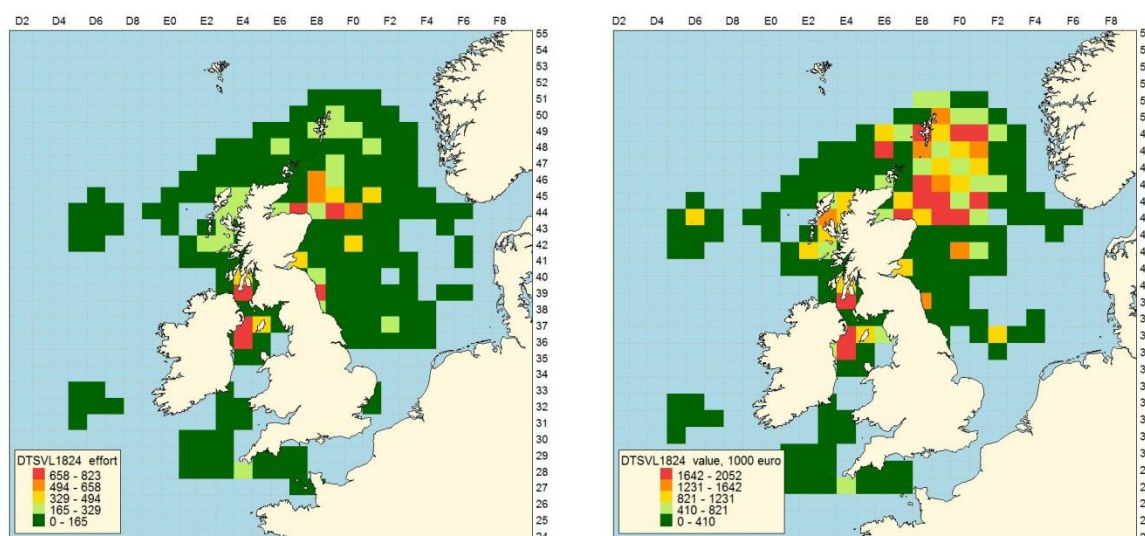
One aspiration for the New-FDI data call is that it can result in a rationalisation of DCF related data calls. The EWG considered whether it was now technically possible and desirable to meet the transversal data requirements (effort, landings and capacity) of the annual Economic Data call with that for FDI.

Of the two datasets, the FDI data were more complete, including information for landings not associated with any fleet segment e.g. from sales notes and hand-fishing.

For capacity, it was suggested that this would better reside with the economic call where it acted as a dataset against which all of the other datasets were validated. Other than for completeness of transversal data, the purpose of its inclusion in the FDI call was not fully understood.

Additionally, the possibility of the FDI dataset meeting a wider range of EU data needs (e.g. nominal catch statistics for Eurostat, FAO, NAFO and ICES) was also briefly considered. It was agreed that using a single centralised data collection system would allow elimination of discrepancies between different data collections, reduce burdens on Member States in supplying data to multiple agencies and to different data calls and eliminate potential for criticism by the European Court of Auditors. It was noted that discrepancies in fisheries and aquaculture data collections held by different EU agencies (JRC for DCF, Eurostat for statistics and DG MARE for control and enforcement) had twice been the topic of special reports by the European Court of Auditors in the past decade.

2.4 ToR 3: Produce maps of spatial effort by c-squares

The data contained in Table I of the New FDI was used to answer ToR 3. Table I contains data on effort by Member States with a spatial resolution of 0.5 c-square which correspond to a global grid of 0.5 x 0.5 degrees. Member states were asked to report the geographical coordinates, in the WGS 84 coordinate reference system, of the bottom left corner of the c-square were the main fishing effort occurs or, alternatively, for those areas and Member States where the ICES rectangles geography was available to report the centre of the ICES rectangle. After the geocoding process, the effort data were mapped according to the fishing zones (Baltic, North Sea etc.) and main gear type definitions required. As additional output the working group produced two files containing the geographical extents of fishing zones and the list of the FAO Divisions (sub-region field) contained in each fishing zone. The spatial effort data maps answering Tor 3.1.a and 3.1.b were produced as images and also stored separately. The entire mapping process was documented, automated and made available through a series of R scripts. In addition to the image maps and the scripts to reproduce the mapping process the working group produced a Tableau([9]) dashboard. Such a dashboard can be used to

- Allow Member States to check for correct specification of the spatial data. Data from one Member State appeared to have the latitude and longitude coordinates interchanged and this became clear immediately on inspection of the data displayed on the Tableau page.

- Explore landings and effort according to different filters applied to the data, e.g. gear type, mesh size range, vessel length etc.

During the data submission phase the Tableau facility can be made available through a secure log in process. At the point where it is considered the data is suitable (sufficiently complete and error free) to be made available to the general public a version can be provided to a public URL. The appropriate level of disaggregation of data to be made available needs to be considered at that point.

2.4.1 Produce Maps of effort by c-square for the regions as defined in COM-2016-134 and major gear types

In all regions the effort (in fishing days) was very uneven. To display greater contrast at lower levels of fishing effort the values were log transformed (natural logarithm) and displayed using a continuous yellow to red colour ramp. Consideration should be given in subsequent EWGs to the best colour scale to use, including the merits of continuous scale compared to dividing the data into classes. It was possible to plot for all combinations of fishing zone and gear type specified and these have been stored in a compressed file containing 58 image files. The following figures are to illustrate certain points only. Figure 23 shows all data gathered on fishing effort from distant waters (all gears combined). This is all data new to the FDI database. Thought needs to be given, however, to how the level of completeness of the data can be verified. Future work could include cross checking sums of effort by FAO sub-area with the effort totals submitted to table G by the same sub-area. Figure 24 shows the map of all effort by hooks. This gear is selected because of the large geographical distribution of the effort. Attention is drawn to the straight line boundary effects running west from the Strait of Gibraltar and south from the southern tip of Greenland. These 'boundaries' reflect the extent of defined ICES rectangle codes and highlight a likely spurious effect created by the limited extent of this geographical coding system.

Figure 23. Map of all effort reported for distant waters at the resolution of 0.5 x 0.5 degree c-squares.
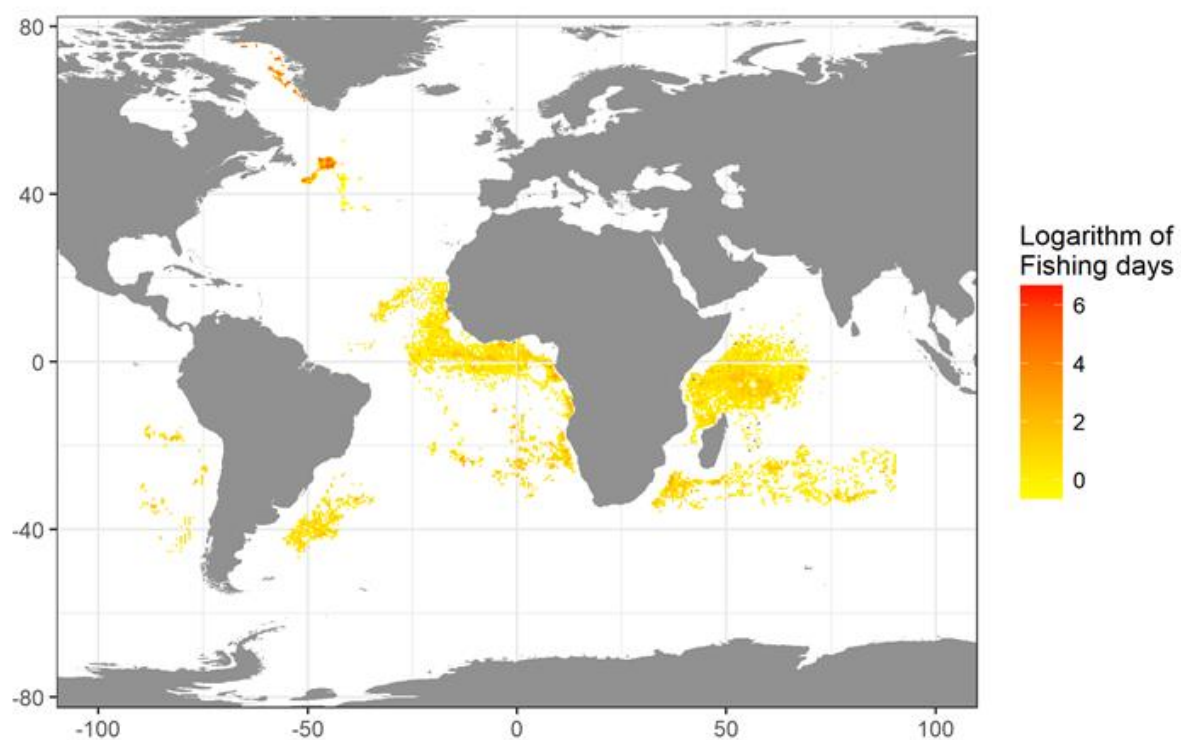
Figure 24. Map of all effort reported for gear 'hooks' at the resolution of 0.5 x 0.5 degree c-squares.
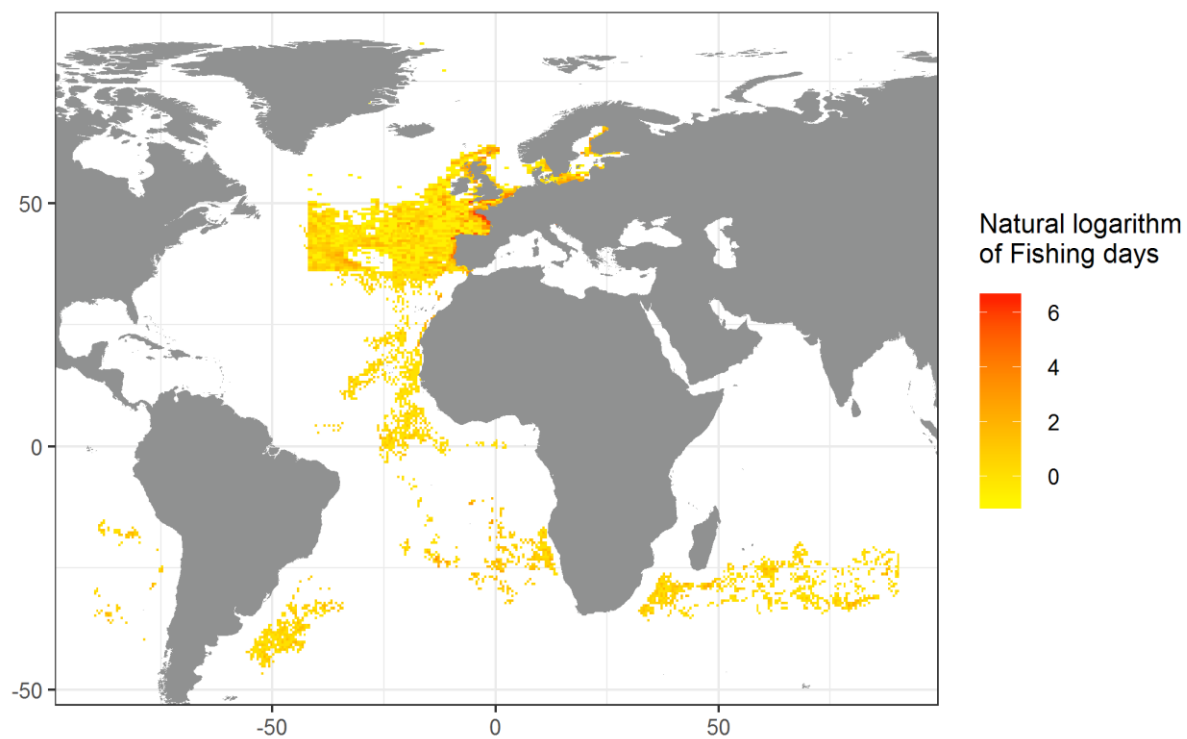
Figure 25 shows the map of all effort submitted with respect to the North Western Waters fishing zone. For the FDI-classic, a cross check between location of the rectangle and the FAO sub-area (or division) was introduced. This needs to be repeated because it can be seen from Figure 25 some data reported as from the North Western Waters are actually located in the North Sea. Inconsistencies between stated FAO area and actual location were found for other fishing zones.

Figure 25. Map of all effort reported for the North Western Waters region at the resolution of 0.5 x 0.5 degree c-squares. NWW defined as FAO areas 27.5 (excluding 27.5.a and non-Union waters of 27.5.b), 27.6 and 27.7
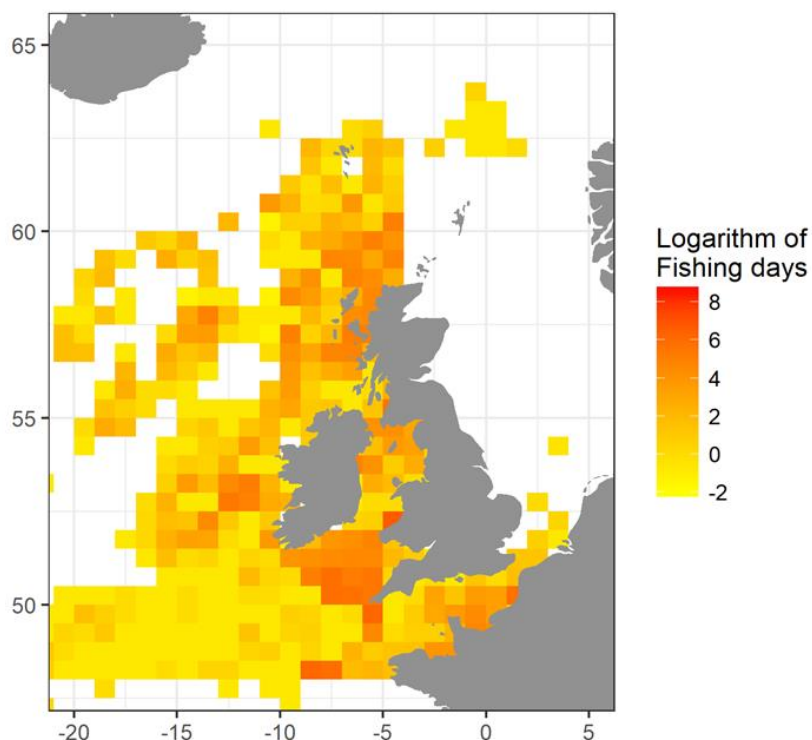
2.4.2 Identify areas and fleets where spatial data was not available and propose possible ways forward

20 MS submitted data with the resolution required in the data call letter. However, processing of the data was complicated by different approaches used in supplying the data, namely

- Member States submitted data using the coordinates of the bottom left corner of the c-square.
- Member States submitted data using the centre of the c-square.
- Member States submitted data using the middle point of the west border of the c-square.

In addition, Member States with vessels operating in both the ICES area and elsewhere provided data according to the ICES rectangle centres where appropriate and according to c-square coordinates otherwise. It was agreed at the working group that it would simplify data processing if an extra field were included in the tables H and I where the resolution of the data provided was given, e.g. 'ICES' if data by ICES rectangle is being provided, 'csqr' if data by the 0.5*0.5 degree c-square resolution is being provided.

Global c-square notations at several resolutions are available at the official c-square website[10] but to facilitate the work of Member States the following were prepared and will be available ahead of any future calls

- A polygon shapefile containing the global c-square grid at 0.5 degrees resolution.
- A point shapefile containing the coordinates of the centroids of all c-squares at 0.5 degrees resolution.
- An R data file containing the c-square geography.

The data call adopted the convention of using the values -1 for those variables whose values were unknown or impossible to report. During the geocoding and mapping process, all records in Table I with -1 for both longitude and latitude were omitted. However, the location -1, -1 is a valid fishing location. Valid data intended for this particular c-square can be accepted as long as the latitude and longitude positions submitted are offset from -1, -1 exactly.

The data call allowed Member States to submit data using ICES rectangle centroids, effectively halving the resolution of the data. ICES rectangles correspond to two 0.5 degrees c-squares. During the mapping process effort reported by ICES rectangle was divided by two and each half attributed to the corresponding c-squares. This practice is based on the strong assumption that effort is uniformly distributed in the ICES rectangle. The proportional apportionment approach is plausible if the areas to which it is applied are small enough to assume that the variable of interest is uniformly distributed. ICES rectangles cover a rather extensive surface (1 x 0.5 degree) and the assumption of uniform distribution might not be valid.

The resulting maps of effort at c-square level show recurring double colour patterns that might hamper map readability as shown in Figure. 26

Figure 26. Illustration of how proportional apportionment of data by 1 x 0.5 degree ICES rectangle into 0.5 x 0.5 degree c-squares creates 'twinned' c-squares
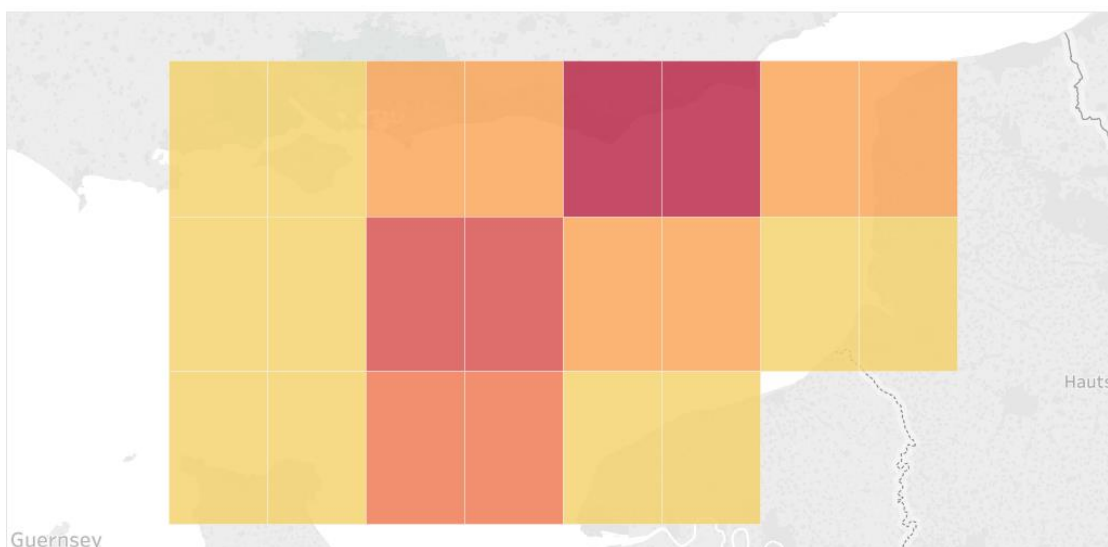
An additional complication to the proportional apportionment is that for those ICES rectangles straddling land and sea, assigning half the value to each associated c-square is less likely to be a valid assumption as no effort can occur on land. A possible solution suggested by the EWG is to consider only that part of the ICES rectangle at sea and then proportionally apportion the effort taking into account the proportion of remaining area taken by each c-square.

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[10] http://www.cmar.csiro.au/csquares/resources.html

2.5 ToR 4: Discard information by Landings Obligation categories

2.5.1 Assess the extent to which discard information has been supplied to categories relevant to and unique under the Landings Obligation, i.e. fleet segments defined through the SPECON_LO field as subject to the landings obligation

Landings and discards by SPECON_LO are found in the tables A and B. Figure 27 shows the number of unique SPECON_LO codes by country and year, where SPECON_LO=NONE is shown as blue and the number of other SPECON_LO codes is shown as orange. The figure illustrates the limited use of the SPECON_LO codes. Data has not been supplied by these categories including from member states for which some are known to apply. The majority of the member states have not provided discards in table A and B, but only by the domains in tables C and D, Figure 28, (see also section 2.2.2, ToR 5).

Figure 27. Number of unique SPECON_LO codes by country and year
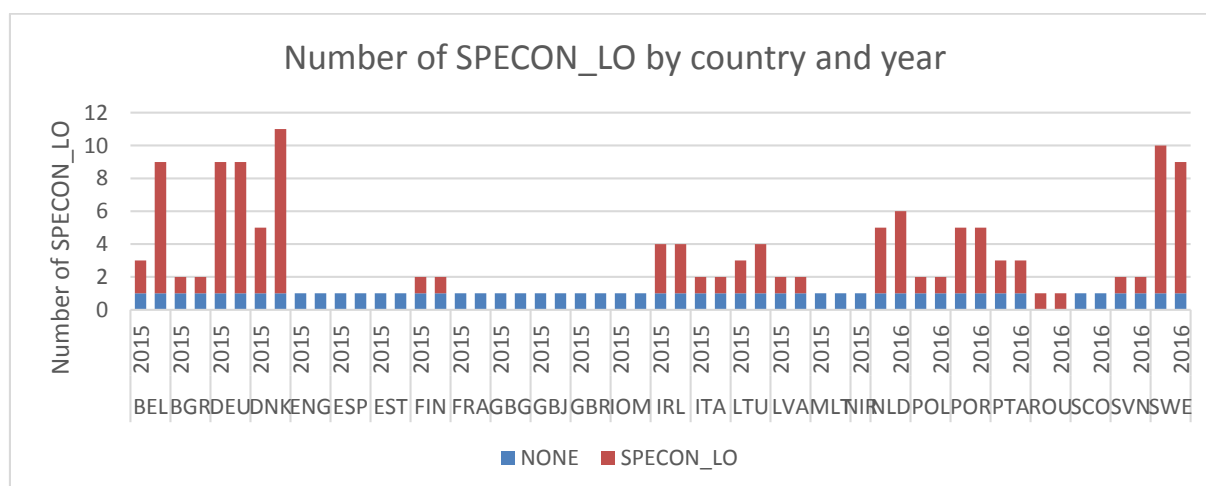
Source: JRC, Eurostat, 2016.

Figure 28. Discards (tonnes) by country and year as submitted to the New-FDI table A and the table C
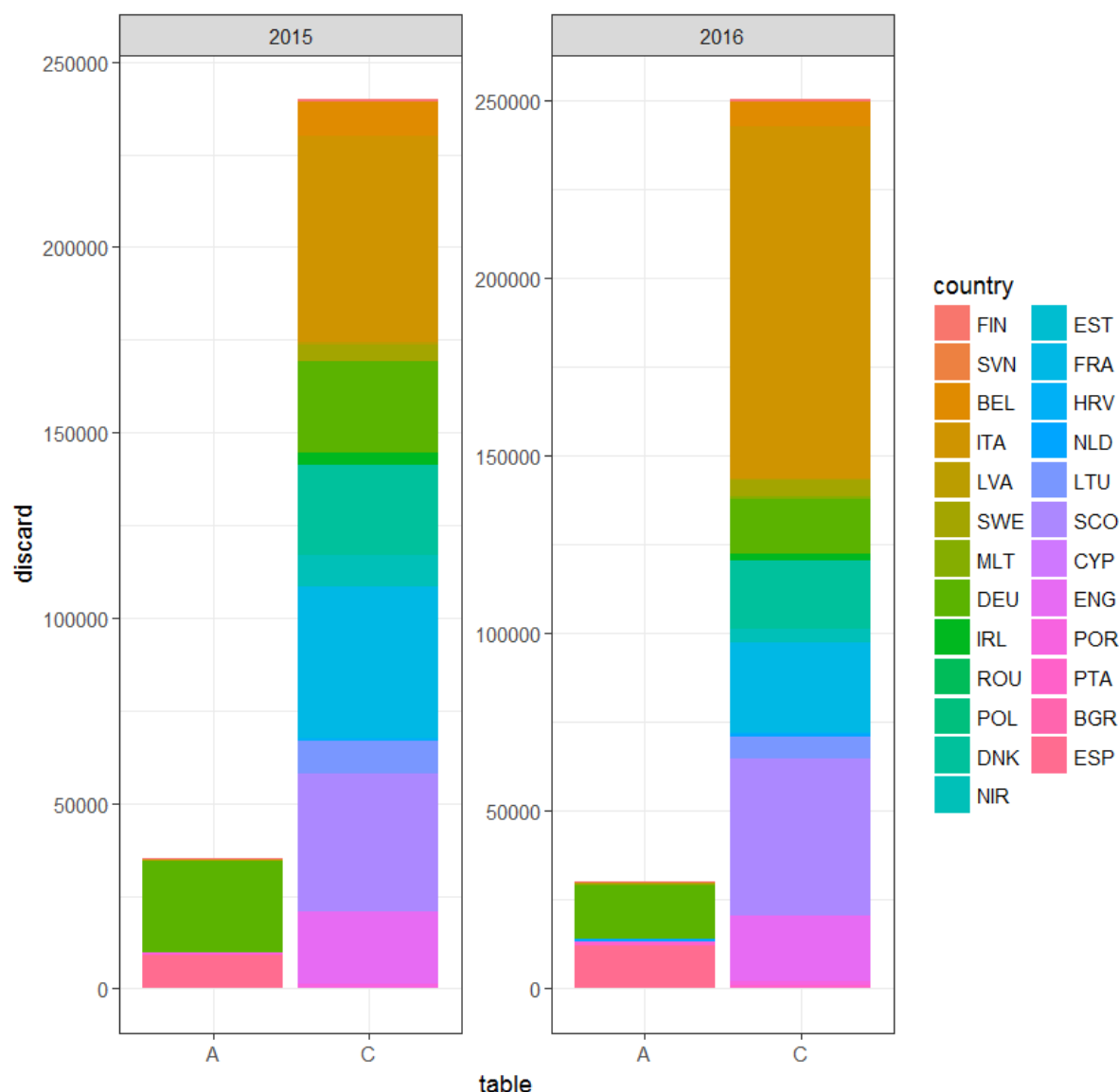
2.5.2 Where possible, derive the international discard rate for species linked to the Landings Obligation categories, i.e. species and fleet segment combinations that fall under the landings obligation

As the majority of the member states have not provided discards in tables A and B, but only by the domains in tables C and D, it is not possible to provide the international discards rates by species and fleet segment combinations falling under the landing obligation. It can only be derived by the DOMAIN_DISCARDS categories found in tables C and D.

3 Conclusions

3.1 Compatibility between New-FDI and Fleet Economic data sets

Given the size of the databases it was not possible to complete a full analysis in the time available but, relatively minor adjustments to definition of country codes and sub-region codes aside, there were no structural problems in linking the two data sets, therefore providing the possibility to undertake bio-economic modelling using these datasets. This conclusion was supported by results from the North Sea cod case study.

Some of the problems encountered when trying to link the Fleet Economic and New-FDI databases were due to data quality issues (e.g. different values for the same measure between databases). This report is less interested in data quality issues given the lack of familiarity with the New-FDI data call, however, disentangling data quality and structural issues is not always straightforward and errors may be confounded. Going forwards it may be possible to write automatic routines that compare the values in the databases at different levels of aggregation.

The Fleet Economic database has a subset or aggregation of the fleet segments in the New-FDI data call. The aggregation is described in the capacity table of the Economic database. This means that the two databases can be linked through the fleet segment using the capacity table, provided that the data is complete.

The Economic and New-FDI data calls request some of the same variables, i.e. the transversal data (landings and effort) and the Fleet Segments. To ensure compatibility it is important that the variables are reported by the member states in the same way in both data calls. For example, there are two measures of effort that are of interest: Days at Sea and Fishing Days. In the New-FDI data call these measures are requested according to an agreed methodology (Ribeiro et al., 2016), and with a coding package made available for the calculations (Scott et al., 2017). However, the effort measures in the Economic data call are not necessarily calculated in the same way. The JRC needs to ensure that the common variables between the data calls are requested in the same way.

3.2 Mapping of spatial effort and landings

The work performed during the EWG demonstrated the ability to handle data at different spatial scales within a single table and the ability of Member States to supply data from the distant waters. An online mapping tool (Tableau) has been prepared such that member states can make rapid visual checks of the data submitted, which should help to improve data quality.

Further consideration needs to be given to whether data provided at different spatial scales should be mapped at a single scale or kept separate. A means of determining the level of completeness of data (especially from distant waters where initial data is likely to be from VMS rather than logbooks) also needs to be considered.

3.3 Recommendations for adjustments to the New-FDI data call

Detailed tables (currently tables 'A' and 'B')

- Replace all discard catch fractions – including landings below MCRS – by a single 'unwanted catch' field.

- In table A, remove all columns after column 21. Rename column 21 'UNWANTED_CATCH'. The revised table A to replace the current tables A and B.

- Remove field 'SPECON_LO'. Introduce a field for target species assemblage (with codes as used in the definition of métiers under the DCF).

- Introduce a field allowing potential data confidentiality to be flagged.

Spatial data

- Introduce a new column in tables H and I allowing specification of the definition (spatial scale) of the data submitted, e.g. "0.5" for 0.5*0.5 degree squares, "ICES" for ICES rectangles, "1.0" for 1.0*1.0 degree squares.

General

- One country code (Fleet Economic call compatible) for all member states. Allow sub-national identification through use of the geo-indicator field.

- Remove EEZ information from sub-region names. Introduce EEZ field.

- Replace 'NONE' by 'NK' to signify 'not known' for text fields.

3.4 Other Recommendations

Detailed tables (currently tables 'A' and 'B')

- Member States to complete the unwanted catch field of table A wherever possible using a free to choice of the criteria used to perform the partitioning of data from table C.

- Age profiles and length profiles for landings and unwanted catch by table A entry to be performed by JRC using profiles from the domain information scaled according to relative landings and relative unwanted catch amounts respectively.

- JRC to calculate numbers at age and mean weight at age.

Tables dealing with sampled data

- Receive information on observer refusal rates through stand-alone files, allowing data based on sampling frames. Consult DGMARE on whether refusal rate information is better recorded in national annual DCF reports, or needed at all if the currently proposed additions to the annual reports (recording proportion of vessels that are sampled within a sampling frame) are adopted.

Spatial data

- Introduce a cross check between rectangle location and stated FAO sub-area (or division).

- Introduce a cross check comparing (by MS) summed totals of effort (and landings) within FAO sub-areas (or divisions) with amounts for those areas submitted to tables A, (B) or G.

- Consider further the colour ramp used for maps.

- If conducting proportional apportionment, investigate use of calculating proportion of each receiving square on dry land if appropriate.

General

- Circulate specific approaches table around member states.

- Introduce a web based 'data validation tool'.

- Revise the fecR package to allow it to be used by more member states.

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List of abbreviations and definitions

AER   Annual Economic Report

ALK   Age-length Key

DCF   Data Collection Framework

EUMAP   European Union Multi Annual Plan

EWG   Expert Working Group

FAO   Food and Agriculture Organisation of the United Nations

FDI   Fisheries Dependent Information

ICES   International Council for the Exploration of the Sea

JRC   Joint Research Centre

LO   Landings Obligation

MS   Member State

NAFO   North Atlantic Fisheries Organisation

PGECON   Planning group on Economic Issues

RFMO   Regional Fisheries Management Organisation

SSF   Small Scale Fisheries

WLK   Weight-length Key

Days at Sea: Any continuous period of 24 hours (or part thereof) during which a vessel is present within an area and absent from port (COMMISSION IMPLEMENTING DECISION (EU) 2016/1251).

Fishing Days: Any calendar day at sea in which a fishing operation takes place, without prejudice to the international obligations of the Union and its Member States. One fishing trip can contribute to both the sum of the fishing days for passive gears and the sum of the fishing days for active gears on that trip. (COMMISSION IMPLEMENTING DECISION (EU) 2016/1251)

Fleet segment: Group of vessels with the same length class (LOA, length overall) and predominant fishing gear during the year (COMMISSION IMPLEMENTING DECISION (EU) 2016/1251), i.e., combination of country, vessel length, (dominant) fishing technique and supra region.

Métier: A group of fishing operations targeting a similar (assemblage of) species, using similar gear, during the same period of the year and/or within the same area and which are characterized by a similar exploitation pattern (COMMISSION IMPLEMENTING DECISION (EU) 2016/1251).

Sub-region: Areas defined in COMMISSION DECISION 2010/93/EU, appendix II. They are compatible with divisions or sub-divisions of FAO major marine fishing areas (depending on the broader region).

Supra-region: Combinations of sub-regions and also defined in COMMISSION DECISION 2010/93/EU, appendix II.

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Annex 1. Participants

[1] - Information on EWG participant's affiliations is displayed for information only. In any case, Members of the STECF, invited experts, and JRC experts shall act independently. In the context of the STECF work, the committee members and other experts do not represent the institutions/bodies they are affiliated to in their daily jobs. STECF members and experts also declare at each meeting of the STECF and of its Expert Working Groups any specific interest which might be considered prejudicial to their independence in relation to specific items on the agenda. These declarations are displayed on the public meeting's website if experts explicitly authorized the JRC to do so in accordance with EU legislation on the protection of personnel data. For more information: http://stecf.jrc.ec.europa.eu/adm-declarations

STECF members			
Name	Address[1]	Telephone no.	Email
Motova, Arina	Seafish, 18 Logie Mill, Logie Green Road, Edinburgh EH7 4HS, UK		arina.motova@seafish.co.uk
VanHee, Willy	Hospitaalstraat 12, 8400 Oostende, Belgium		wvanhee@telenet.be

Invited experts			
Name	Address	Telephone no.	Email
Adamowicz, Maciej	National Marine Fisheries Research Institute, Kollataja 1, 81-332 GDYNIA, Poland		madamowicz@mir.gdynia.pl
Cano, Suzana	DGRM - Direção-Geral de Recursos Naturais- Segurança e Serviços Marítimos, Av. Brasília, 1449-030, Lisbon, Portugal		sfcano@dgrm.mm.gov.pt
Carlshamre, Sofia	SLU- Inst. of Marine Research, Turistgatan 5, 453 30 Lysekil, Sweden		sofia.carlshamre@slu.se
Demaneche, Sébastien	IFREMER B.P. 70, 29280, Plouzané, France		sdemanec@ifremer.fr
EGEKVIST Josefine	DTU Aqua Kemitorvet Building 201, Room 147 2800 Kgs. Lyngby Denmark		jsv@aqua.dtu.dk
Elliott, Matthew	Marine Management Organisation (MMO), Foss House- Kings Pool-1-2 Peasholme Green York YO17PX, UK		matt.elliott@marinemanagement.org.uk
Gancitano, Vita	CNR IAMC, Via Luigi Vaccara-61, 91026 Mazara del Vallo, Italy		vita.gancitano@iamc.cnr.it

Gheorghe, Alexandru	National Agency for Fisheries and Aquaculture- NAFA, 2 Transilvaniei Str- sector1, Bucharest, Romania		alexandru.gheorghe20@yahoo.com
Godinho, Susana	DGRM - Direção-Geral de Recursos Naturais- Segurança e Serviços Marítimos, Av. Brasília, 1449-030, Lisbon, Portugal		sgodinho@dgrm.mam.gov.pt
Isajlovic, Igor	Institute of Oceanography and Fisheries, Ste. I. Mestrovica 63, 21000 Split, Croatia		igor@izor.hr
Jakovleva, Irina	Fisheries Service under Ministry of Agriculture, Naujoji uosto 8ª, LT-92119 Klaipeda,Lithuania		irina.jakovleva@zuv.lt
Kempf, Alexander	Thuenen Institute of Sea Fisheries Herwigstraße 31. 27570 Bremerhaven		alexander.kempf@thuenen.de
Kovsars, Maksims	Fish Resources Research department (BIOR), Latvia		Maksims.Kovsars@bior.gov.lv
Labanchi, Lucio	MABLY, Via Vito Lembo 14, 84129 Salerno, Italy		labanchi@mably.it
Moore, Claire	Marine Institute, Rinville, Oranmore, Ireland		Claire.moore@marine.ie
Nicheva, Simona	Executive Agency for Fisheries and Aquaculture, 1 Knyaz Aleksander Batenberg Str., 8000 Burgas, Bulgaria		simona.nicheva@iara.government.bg
Nimmegeers, Sofie	Research Institute for Agriculture, Fisheries and Food (ILVO), Ankerstraat 1, 8400 Oostende (Belgium)		sofie.nimmegeers@ilvo.vlaanderen.be
Reilly, Thomas	Fisheries Research Services, Victoria Road, Aberdeen, United Kingdom		Thomas.Reilly@scotland.gsi.gov.uk
van Helmond, Aloysius 'Edmond'	IMARES Haringkade 1, 1976 CP, IJmuiden, Netherlands		edwin.vanhelmond@wur.nl
Verlé, Katrien	Research Institute for Agriculture, Fisheries and Food (ILVO), Ankerstraat 1, 8400 Oostende (Belgium)		katrien.verle@ilvo.vlaanderen.be
Vermard, Youen	IFREMER, Rue de l'ile d'yeu, 44000 Nantes, France		youen.vermard@ifremer.fr

JRC experts			
Name	Address	Telephone no.	Email
Holmes, Steven (chair)	DG Joint Research Centre		steven.holmes@ec.europa.eu
Gibin, Maurizio	DG Joint Research Centre		maurizio.gibin@ec.europa.eu
Scott, Finlay	DG Joint Research Centre		finlay.scott@ec.europa.eu
Zanzi, Antonella	DG Joint Research Centre		antonella.zanzi@ec.europa.eu

European Commission			
Name	Address	Telephone no.	Email
Holmes, Steven	DG Joint Research Centre, STECF secretariat		jrc-stecf-segretariat@ec.europa.eu
Zanzi, Antonella	DG Joint Research Centre, STECF secretariat		jrc-stecf-segretariat@ec.europa.eu

Observers			
Name	Address	Telephone no.	Email
n/a			

EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR MARITIME AFFAIRS AND FISHERIES

FISHERIES POLICY ATLANTIC, NORTH SEA, BALTIC AND OUTERMOST REGIONS
The Director

Brussels,

E-MAIL

To:	National Correspondents for the Data Collection Framework	**Telephone:**	
		Fax:	
Cc:	Permanent Representations of EU Member States		
	STECF FDI EWG chair		datasubmission@jrc.ec.europa.eu
From:	Hélène CLARK	**Telephone:**	(32-2) 296 37 44
		e-mail:	Mare-C@ec.europa.eu
Number of pages:	2+74		
Subject:	**Call for data for the Fisheries Dependent Information (FDI); New-FDI**		

The STECF Fisheries Dependent Independent (FDI) database was developed to support management of fishing effort management regimes. With new area-based multi-annual plans (MAPs) leading to the repeal of the existing effort management regimes, there is an opportunity to both rationalise the data base and move to the collection of an EU wide data set of fishing capacity, effort, landings, and discards.

The Commission will therefore request the STECF to collect and review data in relation to a newly specified Fisheries Dependent Information Database (New-FDI). The Commission herewith asks the Member States to provide data for 2015 and 2016 from within their National Data Collection programs[1]. The present data call refers to DCF data aggregation in relation to i) the provisions of Regulation 199/2008, and ii) the gentlemen's agreement (DG MARE - Member States) on evaluation of the fishing effort regimes (continued from the classical FDI data call).

The data should provide values for effort, landings and discards structured by age and by length, for 2015 and 2016. The data format to be used is described in Annex I. Data sets should be uploaded on the DCF data collection website (https://datacollection.jrc.ec.europa.eu/), where uploading guidelines are available. The data collection website will be opened on **4 September 2017**.

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[1] Commission Decision of 18 December 2009 No 2010/93/EU adopting a multiannual Community programme for the collection, management and use of data in the fisheries sector for the period 2011-2013 and Commission implementing Decision C(2013)5243 of 13.8.2013 extending the multiannual Union programme for the collection, management and use of data in the fisheries sector for the period 2011-2013 to the period 2014-2016

This data call requests 2015 and 2016 data only.

As per Article 20 of Council Regulation (EC) No 199/2008, Member States are requested to supply the data as specified within 1 month from receipt of this request for data. We would appreciate submission of the data no later than **2 October 2017**. Member States should follow the agreed procedure for transmission of data (by upload onto the JRC server) and abide to the data handling procedures for the STECF Expert Working Groups [2]. The STECF Working Group will take place (23-27 October 2017).

Further guidance, complementary information or password information can be obtained by contacting the JRC data submission team (JRC-DATASUBMISSION@ec.europa.eu)

We look forward to your contributions.

Hélène CLARK
Director

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[2] Visit https://datacollection.jrc.ec.europa.eu/documents/10213/881778/2015-02-06_Data-handling+procedure+for+EWG.pdf for a copy of the document.

Annex I.

All missing values (empty data cells) must be indicated by:
-1 if a numeric field; 'NONE' if an alpha-numeric field.

A. Catch at age data for 2015 and 2016. Please ensure that data entries are fully consistent with coding given in the Appendixes.

1. COUNTRY: to be given according to the code list provided in Appendix 1.
2. YEAR: to be given in four digits, like 2004.
3. QUARTER: to be given as one digit, like 1, 2, 3, or 4.
4. VESSEL_LENGTH: to be given according to the code list provided in Appendix 2.
5. FISHING_TECH: to be given according to the code list provided in Appendix 3.
6. GEAR_TYPE: to be given according to the code list provided in Appendix 4.
7. MESHSIZERANGE: to be given according to the code list provided in Appendix 5.
8. FISHERY: to be given according to Appendix 6.
9. DOMAIN_DISCARDS: text in format specified in Appendix 7[3].
10. DOMAIN_LANDINGS: text in format specified in Appendix 7.
11. SUPRA_REGION: to be given according to the code list in Appendix 8.
12. SUB_REGION: to be given according to the code list in Appendix 8.
13. GEO_INDICATOR: to be given according to the code list in Appendix 9.
14. SPECON_TECH: to be given according to Appendix 10, if SPECON is not available or not applicable, "NONE" should be given.
15. SPECON_LO: to be given according to Appendix 11, if SPECON is not available or not applicable, "NONE" should be given.
16. DEEP: Enter "DEEP" or "NONE". (i.e. all landings, discards and other biological parameters falling under the Deep Sea regulations should be indicated with "DEEP". If fishing is not falling under the Deep Sea regulations "NONE" should be given.)
17. SPECIES: to be given according to the FAO three alpha code, see Appendix 12.
18. TOTWGHTLANDG: estimated landings in **tonnes**.
19. TOTVALLANDG: estimated total value of the landings in **Euro**.
20. TOTWGHTLANDG_ABOVE_MCRS: estimated landings above the minimum conservation reference size (MCRS) in **tonnes**. If it is not possible to distinguish between landings above and below MCRS enter "-1".
21. TOTWGHTLANDG_BELOW_MCRS: estimated landings below the minimum conservation reference size (MCRS) in **tonnes**. If it is not possible to distinguish between landings above and below MCRS enter "-1".
22. DISCARDS: estimated discards - of any type - in **tonnes**. If age based information is present, this quantity should correspond to the sum of products.
23. DISCARDS_TYPE: enter "DMIN" or "HS" or "D" or "NOLO". Enter "DMIN" if discards related to a de-minimis exemption; enter "HS" if discards related to a high survivability exemption or protected species that must be returned to sea; enter "D" where discards recorded for species under LO with no exemption; enter "NOLO" if vessel-gear-species combination is not subject to the landings obligation.
24. MIN_AGE: integer with minimum value 0. If no age information available enter "-1".
25. MAX_AGE: integer with minimum value 0. If no age information available enter "-1".
26. AGE: integer (MIN_AGE <= AGE <= MAX_AGE) . If no age information available enter "-1".
27. NO_LANDS_AGE: number of fish landed at that age, (unit of individuals). If no age information available enter "-1".
28. MEAN_WEIGHT_LANDS: mean weight of landed fish at that age, (kg, precision in gram=3 digits after the decimal). If no age information available enter "-1".
29. MEAN_LENGTH_LANDS: mean length of landed fish at that age, (cm, precision in mm=1 digits after the decimal). If no age information available enter "-1".
30. NO_DISCARD_AGE: number of fish discarded at that age, (unit of individuals). If no age information available enter "-1".

---

[3] Domains refer to the group of vessels used to calculate estimates (discards, numbers at age, number at length) by a country. The domain may or may not be equivalent to a metier**.**

31. MEAN_WEIGHT_DISCARD: mean weight of discarded fish at that age, (kg, precision in gram=3 digits after the decimal). If no age information available enter "-1".
32. MEAN_LENGTH_DISCARD: mean length of discarded fish at that age, (cm, precision in mm=1 digits after the decimal). If no age information available enter "-1".

B. Catch at length data for 2015 and 2016. Please ensure that data entries are fully consistent with coding given in the Appendixes.

1. COUNTRY: to be given according to the code list provided in Appendix 1.
2. YEAR: to be given in four digits, like 2004.
3. QUARTER: to be given as one digit, like 1, 2, 3, or 4.
4. VESSEL_LENGTH: to be given according to the code list provided in Appendix 2.
5. FISHING_TECH: to be given according to the code list provided in Appendix 3.
6. GEAR_TYPE: to be given according to the code list provided in Appendix 4.
7. MESHSIZERANGE: to be given according to the code list provided in Appendix 5.
8. FISHERY: to be given according to Appendix 6.
9. DOMAIN_DISCARDS: text in format specified in Appendix 7[4].
10. DOMAIN_LANDINGS: text in format specified in Appendix 7.
11. SUPRA_REGION: to be given according to the code list in Appendix 8.
12. SUB_REGION: to be given according to the code list in Appendix 8.
13. GEO_INDICATOR: to be given according to the code list in Appendix 9.
14. *SPECON_TECH* to be specified in accordance with Appendix 10, if SPECON is not available or not applicable, "NONE" should be given.
15. *SPECON_LO* to be specified in accordance with Appendix 11, if SPECON is not available or not applicable, "NONE" should be given.
16. DEEP: Enter 'DEEP' or 'NONE'. (i.e. All landings, discards and other biological parameters falling under the Deep Sea regulations should be indicated with 'DEEP'. If fishing is not falling under the Deep Sea regulations "NONE" should be given.)
17. SPECIES: to be given according to the FAO three alpha code list, see Appendix 12.
18. TOTWGHTLANDG: estimated landings in **tonnes**.
19. TOTVALLANDG: estimated total value of the landings in Euro.
20. TOTWGHTLANDG_ABOVE_MCRS: estimated landings above the minimum conservation reference size (MCRS) in **tonnes**. If it is not possible to distinguish between landings above and below MCRS enter "-1".
21. TOTWGHTLANDG_BELOW_MCRS: estimated landings below the minimum conservation reference size (MCRS) in **tonnes**. If it is not possible to distinguish between landings above and below MCRS enter "-1".
22. DISCARDS: estimated discards - of any type - in **tonnes**. If age based information is present, this quantity should correspond to the sum of products.
23. DISCARDS_TYPE: enter "DMIN" or "HS" or "D" or "NOLO". Enter "DMIN" if discards related to a de-minimis exemption; enter "HS" if discards related to a high survivability exemption or protected species that must be returned to sea; enter "D" where discards recorded for species under LO with no exemption; enter "NOLO" if vessel-species combination is not subject to the landings obligation.
24. LENGTHUNIT: unit of length classes, "mm"=millimetre, "cm"=centimetre.
25. MIN_LENGTH: integer with minimum value 1. If no length information available enter "-1".
26. MAX_LENGTH: integer with minimum value 1. If no length information available enter "-1".
27. LENGTH: integer (MIN_LENGTH <= LENGTH <= MAX_LENGTH). If no length information available enter "-1".
28. NO_LANDS_LENGTH: number of fish landed at that length, (unit of individuals). If no length information available enter "-1".
29. NO_DISCARDS_LENGTH: number of fish discarded at that length, (unit of individuals). If no length information available enter "-1".

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[4] Domains refer to the group of vessels used to calculate estimates (discards, numbers at age, number at length) by a country. The domain may or may not be equivalent to a metier**.**

C. Discards biological data (age based) for 2015 and 2016 aggregated (sum) except for mean weight and length (arithmetic mean). Please ensure that data entries are fully consistent with coding given in the Appendixes.

1. COUNTRY: to be given according to the code list provided in Appendix 1.
2. YEAR: to be given in four digits, like 2004.
3. DOMAIN_DISCARDS: text in format specified in Appendix 7.
4. SPECIES: to be given according to the FAO three alpha code list, see Appendix 12.
5. TOTWGHTLANDG: estimated landings in **tonnes**.
6. DISCARDS: estimated discards - of any type combined - in **tonnes**. If age based information is present, this quantity should correspond to the sum of products.
7. DISCARDS_DEMINIMIS: discards related to a de-minimis exemption, in **tonnes.** If de-minimis does not apply enter a zero; if de-minimis exemption is relevant but fraction of discards related to de-minimis cannot be calculated – e.g. sampling frame includes both vessels with and without exemption - enter "-1".
8. DISCARDS_HS: discards related to a high survivability exemption, in **tonnes.** If high survivability does not apply enter a zero; if high survivability exemption is relevant but fraction of discards related to high survivability cannot be calculated – e.g. sampling frame includes both vessels with and without exemption - enter "-1".
9. DISCARDS_D: discards where vessel-species combination is subject to the landings obligation, there is no exemption but discards were recorded anyway. If not applicable enter a zero; if relevant but fraction of discards related to this category cannot be calculated – e.g. sampling frame includes both vessels inside and outside landings obligation - enter "-1".
10. DISCARDS_NOLO: discards where vessel-species combination is not subject to the landings obligation, in **tonnes.** If not applicable enter a zero; if relevant but fraction of discards related to non-landings obligation discarding cannot be calculated – e.g. sampling frame includes both vessels inside and outside landings obligation - enter "-1".
11. NO_SAMPLES_DISCARDS: the number of TRIPS should be given that relate to discards only; a number should be given only if it relates to this domain; otherwise "–1" should be given.
12. REFUSAL_RATE: the refusal rate for discard observers to be given according to Appendix 13.
13. NO_AGE_MEASUREMENTS_DISCARDS: the number of age measurements should be given that relate to discards only; a number should be given only if it relates to this sample frame; otherwise "–1" should be given.
14. MIN_AGE: the minimum age in the data for this SPECIES & DOMAIN combination; if minimum age and maximum age are both "–1", no age based data are given; minimum age and maximum age must either both be "-1" or both be not "-1".
15. MAX_AGE: the true maximum age in the data for this SPECIES & DOMAIN combination (no plus group is allowed); if minimum age and maximum age are both "–1", no age based data are given; minimum age and maximum age must either both be "-1" or both be not "-1".
16. AGE: integer (MIN_AGE <= AGE <= MAX_AGE). If both MIN_AGE and MAX_AGE are -1 write "-1".
17. NO_DISCARD_AGE: Number of fish discarded at that age, (unit of individuals). If no age specific information available write "-1".
18. MEAN_WEIGHT_DISCARD: mean weight of discarded fish at that age, (**kg**, precision in gram=3 digits after the decimal). If no age specific information available write "-1".
19. MEAN_LENGTH_DISCARD: mean length of discarded fish at that age, (**cm**, precision in mm=1 digits after the decimal). If no age specific information available write "-1".

D. Discards biological data (length based) for 2015 and 2016 aggregated (sum). Please ensure that data entries are fully consistent with coding given in the Appendixes.

1. COUNTRY: to be given according to the code list provided in Appendix 1.
2. YEAR: to be given in four digits, like 2004.
3. DOMAIN_DISCARDS: text in format specified in Appendix 7.
4. SPECIES: to be given according to the FAO three alpha code list, see Appendix 12.
5. TOTWGHTLANDG: estimated landings in **tonnes**.
6. DISCARDS: estimated discards - of any type combined - in **tonnes**.
7. DISCARDS_DEMINIMIS: discards related to a de-minimis exemption, in **tonnes.** If de-minimis does not apply enter a zero; if de-minimis exemption is relevant but fraction of discards related to de-minimis cannot be calculated – e.g. sampling frame includes both vessels with and without exemption - enter "-1".
8. DISCARDS_HS: discards related to a high survivability exemption, in **tonnes.** If high survivability does not apply enter a zero; if high survivability exemption is relevant but fraction of discards related to high survivability cannot be calculated – e.g. sampling frame includes both vessels with and without exemption - enter "-1".
9. DISCARDS_D: discards where vessel-species combination is subject to the landings obligation, there is no exemption but discards were recorded anyway. If not applicable enter a zero; if relevant but fraction of discards related to this category cannot be calculated – e.g. sampling frame includes both vessels inside and outside landings obligation - enter "-1".
10. DISCARDS_NOLO: discards where vessel-species combination is not subject to the landings obligation, in **tonnes.** If not applicable enter a zero; if relevant but fraction of discards related to non-landings obligation discarding cannot be calculated – e.g. sampling frame includes both vessels inside and outside landings obligation - enter "-1".
11. NO_SAMPLES_DISCARDS: the number of TRIPS should be given that relate to discards only; a number should be given only if it relates to this sample frame; otherwise "–1" should be given.
12. REFUSAL_RATE: the refusal rate for discard observers to be given according to Appendix 13.
13. NO_LENGTH_MEASUREMENTS_DISCARDS: the number of length measurements should be given that relate to discards only; a number should be given only if it relates to this domain; otherwise "–1" should be given.
14. LENGTHUNIT: unit of length classes, "mm"=millimetre, "cm"=centimetre. If length data not available write 'NONE'.
15. MIN_LENGTH: this is the minimum length in the data for this SPECIES & DOMAIN combination; if minimum length and maximum length are both "–1", no length based data are given; minimum length and maximum length must either both be "-1" or both be not "-1".
16. MAX_LENGTH: this is the maximum length in the data for this SPECIES & DOMAIN combination; if minimum length and maximum length are both "–1", no length based data are given; minimum length and maximum length must either both be "-1" or both be not "-1".
17. LENGTH: integer (MIN_LENGTH <= LENGTH <= MAX_LENGTH). If both MIN_LENGTH and MAX_LENGTH are -1 write "-1".
18. NO_LENGTH_DISCARDS: number of fish discarded at that length, (unit of individuals). If no length specific information available write "-1".

E. Landings biological data (age based) for 2015 and 2016 aggregated (sum) except for mean weight and length (arithmetic mean). Please ensure that data entries are fully consistent with coding given in the Appendixes.

1. COUNTRY: to be given according to the code list provided in Appendix 1.
2. YEAR: to be given in four digits, like 2004.
3. DOMAIN_LANDINGS: text in format specified in Appendix 7.
4. SPECIES: to be given according to the FAO three alpha code list, see Appendix 12.
5. TOTWGHTLANDG: estimated landings in **tonnes**.
6. NO_SAMPLES_LANDINGS: the number of TRIPS should be given that relate to landings only; a number should be given only if it relates to this domain; otherwise "–1" should be given.
7. NO_AGE_MEASUREMENTS_LANDINGS: the number of age measurements should be given that relate to landings only; a number should be given only if it relates to this domain; otherwise "–1" should be given.
8. MIN_AGE: the minimum age in the data section; if minimum age and maximum age are both "–1", no age based data are given; minimum age and maximum age must either both be "-1" or both be not "-1".
9. MAX_AGE: the true maximum age in the data section (no plus group is allowed); if minimum age and maximum age are both "–1", no age based data are given; minimum age and maximum age must either both be "-1" or both be not "-1".
10. AGE: integer (MIN_AGE <= AGE <= MAX_AGE) If both MIN_AGE and MAX_AGE are -1 write "-1".
11. NO_LANDS_AGE: Number of fish landed at that age, (unit of individuals). If no age specific information available write "-1".
12. MEAN_WEIGHT_LANDS: mean weight of landed fish at that age, (**kg**, precision in gram=3 digits after the decimal). If no age specific information available write "-1".
13. MEAN_LENGTH_LANDS: mean length of landed fish at that age, (**cm**, precision in mm=1 digits after the decimal). If no age specific information available write "-1".

F. Landings biological data (length based) for 2015 and 2016 aggregated (sum). Please ensure that data entries are fully consistent with coding given in the Appendixes.

1. COUNTRY: to be given according to the code list provided in Appendix 1.
2. YEAR: to be given in four digits, like 2004.
3. DOMAIN_LANDINGS: text in format specified in Appendix 7.
4. SPECIES: to be given according to the FAO three alpha code list, see Appendix 12.
5. TOTWGHTLANDG: estimated landings in **tonnes**.
6. NO_SAMPLES_LANDINGS: the number of TRIPS should be given that relate to landings only; a number should be given only if it relates to this domain; otherwise "–1" should be given.
7. NO_LENGTH_MEASUREMENTS_LANDINGS: the number of length measurements should be given that relate to landings only; a number should be given only if it relates to this domain; otherwise "–1" should be given.
8. LENGTHUNIT: unit of length classes, "mm"=millimetre, "cm"=centimetre. If length data not available write 'NONE'
9. MIN_LENGTH: this is the minimum length in the data for this SPECIES-DOMAIN combination; if minimum length and maximum length are both "–1", no length based data are given; minimum length and maximum length must either both be "-1" or both be not "-1".
10. MAX_LENGTH: this is the true maximum length in the data for this SPECIES-DOMAIN combination; if minimum length and maximum length are both "–1", no length based data are given; minimum length and maximum length must either both be "-1" or both be not "-1".
11. LENGTH: integer (MIN_LENGTH <= LENGTH <= MAX_LENGTH). If both MIN_LENGTH and MAX_LENGTH are -1 write "-1".
12. NO_LENGTH_LANDS: number of fish landed at that length, (unit of individuals). If no length specific information available write "-1".

G. Effort data for 2015 and 2016.

1. COUNTRY: to be given according to the code list provided in Appendix 1.
2. YEAR: to be given in four digits, like 2004.
3. QUARTER: to be given as one digit, like 1, 2, 3, or 4.
4. VESSEL_LENGTH: to be given according to the code list provided in Appendix 2.
5. FISHING_TECH: to be given according to the code list provided in Appendix 3.
6. GEAR_TYPE: to be given according to the code list provided in Appendix 4
7. MESHSIZERANGE: to be given according to the code list provided in Appendix 5.
8. FISHERY: to be given according to Appendix 6.
9. SUPRA_REGION: to be given according to the code list in Appendix 8.
10. SUB_REGION: to be given according to the code list in Appendix 8.
11. GEO_INDICATOR: to be given according to the code list in Appendix 9.
12. SPECON_TECH: to be given according to Appendix 10, if SPECON is not available or not applicable, "NONE" should be given.
13. SPECON_LO: to be given according to Appendix 11, if SPECON is not available or not applicable, "NONE" should be given.
14. DEEP: Enter 'DEEP' or 'NONE'. (i.e. all landings, discards and other biological parameters falling under the Deep Sea regulations should be indicated with 'DEEP'. If fishing is not falling under the Deep Sea regulations "NONE" should be given.)
15. TOTSEADAYS: nominal fishing activity should be given in days at sea; if nominal fishing activity is not available, "-1" should be given. For recommended calculation method of days at sea, see Appendix 15.
16. TOTKWDAYSATSEA: effort should be given in kW-days, i.e. engine power in kW times days at sea; if nominal effort is not available, "-1" should be given. For recommended calculation method of days at sea, see Appendix 15.
17. TOTGTDAYSATSEA: effort should be given in gross tonnage * days at sea; if not available, "-1" should be given. For recommended calculation method of days at sea, see Appendix 15.
18. TOTFISHDAYS: nominal fishing activity should be given in fishing days; if fishing days is not available, "-1" should be given. For recommended calculation method of fishing days, see Appendix 15.
19. TOTKWFISHDAYS: effort should be given in kW-days, i.e. engine power in kW times fishing days; if not available, "-1" should be given. For recommended calculation method of fishing days, see Appendix 15.
20. TOTGTFISHDAYS: effort should be given in gross tonnage * fishing days; if not available, "-1" should be given. For recommended calculation method of fishing days, see Appendix 15.
21. HRSEA: hours at sea (within the sub-region), if the number is not available, "-1" should be given.
22. KWHRSEA: kW* hours at sea (within the sub-region), if the number is not available, "-1" should be given.
23. GTHRSEA: gross tonnage * hours at sea (within the sub-region), if the number is not available, "-1" should be given.

H. Landings data by rectangle for 2015 and 2016 in tonnes

Location code to be as defined by c-squares schema (0.5 by 0.5 degree); see Appendix 14.

1.   COUNTRY: to be given according to the code list provided in Appendix 1.
2.   YEAR: to be given in four digits, like 2004.
3.   QUARTER: to be given as one digit, like 1, 2, 3, or 4.
4.   VESSEL_LENGTH: to be given according to the code list provided in Appendix 2.
5.   FISHING_TECH: to be given according to the code list provided in Appendix 3.
6.   GEAR_TYPE: to be given according to the code list provided in Appendix 4.
7.   MESHSIZERANGE: to be given according to the code list provided in Appendix 5.
8.   FISHERY: to be given according to Appendix 6.
9.   SUPRA_REGION: to be given according to the code list in Appendix 8.
10. SUB_REGION: to be given according to the code list in Appendix 8.
11. GEO_INDICATOR: to be given according to the code list in Appendix 9.
12. SPECON_TECH: to be given according to Appendix 10, if SPECON is not available or not applicable, "NONE" should be given.
13. SPECON_LO to be given according to Appendix 11, if SPECON is not available or not applicable, "NONE" should be given.
14. DEEP: Enter 'DEEP' or 'NONE'. (i.e. all landings, discards and other biological parameters falling under the Deep Sea regulations should be indicated with 'DEEP'. If fishing is not falling under the Deep Sea regulations "NONE" should be given.)
15. RECTANGLE_LAT: (Latitude in decimal degrees, precision to 0.5 degrees; see Appendix 14).
16. RECTANGLE_LON: (Longitude in decimal degrees, precision to 0.5 degrees; see Appendix 14).
17. SPECIES: to be given according to the FAO 3 alpha code list, see Appendix 12.
18. TOTWGHTLANDG: estimated landings in tonnes, precision to 3 digits after the decimal.
19. TOTVALLANDG: estimated total value of the landings in Euro. If not available "-1" should be given.

I. Specific effort data by rectangle for 2015 and 2016 in units of fishing days

Location code to be as defined by c-squares schema (0.5 by 0.5 degree); see Appendix 14.

1. COUNTRY: to be given according to the code list provided in Appendix 1.
2. YEAR: to be given in four digits, like 2004.
3. QUARTER: to be given as one digit, like 1, 2, 3, or 4.
4. VESSEL_LENGTH: to be given according to the code list provided in Appendix 2.
5. FISHING_TECH: to be given according to the code list provided in Appendix 3.
6. GEAR_TYPE: to be given according to the code list provided in Appendix 4.
7. MESHSIZERANGE: to be given according to the code list provided in Appendix 5.
8. FISHERY: to be given according to Appendix 6.
9. SUPRA_REGION: to be given according to the code list in Appendix 8.
10. SUB_REGION: to be given according to the code list in Appendix 8.
11. GEO_INDICATOR: to be given according to the code list in Appendix 9.
12. SPECON_TECH: to be given according to Appendix 10, if SPECON is not available or not applicable, "NONE" should be given.
13. SPECON_LO: to be given according to Appendix 11, if SPECON is not available or not applicable, "NONE" should be given.
14. DEEP: Enter 'DEEP' or 'NONE'. (i.e. all landings, discards and other biological parameters falling under the Deep Sea regulations should be indicated with 'DEEP'. If fishing is not falling under the Deep Sea regulations "NONE" should be given.)
15. RECTANGLE_LAT: Latitude in decimal degrees, precision to 0.5 degrees; see Appendix 14.
16. RECTANGLE_LON: Longitude in decimal degrees, precision to 0.5 degrees; see Appendix 14.
17. EFFECTIVE_EFFORT: fishing days. For recommended calculation method see Appendix 15.

J. Capacity and fleet segment specific effort data for 2015 and 2016

1. COUNTRY: to be given according to the code list provided in Appendix 1.
2. YEAR: to be given in four digits, like 2004.
3. VESSEL_LENGTH: to be given according to the code list provided in Appendix 2.
4. FISHING_TECH: to be given according to the code list provided in Appendix 3.
5. SUPRA_REGION: to be given according to the code list in Appendix 8.
6. GEO_INDICATOR: to be given according to the code list in Appendix 9.
7. TOTTRIPS: simple integer. Total of trips by a fishing vessel from a land location to a landing place, excluding non-fishing trips.
8. TOTKW: nominal fishing capacity to be given in kW. If nominal fishing capacity in kW is not available, "-1" should be given.
9. TOTGT: nominal fishing capacity to be given in gross tonnage. If nominal fishing capacity in GT is not available, "-1" should be given.
10. TOTVES: simple integer value of vessels in the fleet segment, (fleet segment equals combination of fishing technique category and vessel length category); if the number is not available, "-1" should be given.
11. AVGAGE: average age of the vessels in the fleet segment, (fleet segment equals combination of fishing technique category and vessel length category); if the number is not available, "-1" should be given.
12. AVGLOA: Average length over all of the vessels in the fleet segment, (fleet segment equals combination of fishing technique category and vessel length category); if the number is not available, "-1" should be given.
13. MAXSEADAYS: The average number of days at sea of the top 10 most active vessels in a fleet segment), if the number is not available, "-1" should be given.

Appendix 1

Country coding

COUNTRY	CODE
Belgium	BEL
Bulgaria	BGR
Croatia	HRV
Cyprus	CYP
Denmark	DNK
Estonia	EST
Finland	FIN
France	FRA
Germany	DEU
Greece	GRC
Ireland	IRL
Italy	ITA
Latvia	LVA
Malta	MLT
Lithuania	LTU
Netherlands	NLD
Poland	POL
Portugal (mainland)	POR
Portugal (Azores)	PTA
Portugal (Madeira)	PTM
Romania	ROU
Slovenia	SVN
Spain (mainland)	SPN
Spain (Canaries islands)	SPC
Sweden	SWE
United Kingdom (Jersey)	GBJ
United Kingdom (Guernsey)	GBG
United Kingdom (Alderny/Sark/Herm)	GBC
United Kingdom (England and Wales)	ENG
United Kingdom (Isle of Man)	IOM
United Kingdom (Northern Ireland)	NIR
United Kingdom (Scotland)	SCO

Appendix 2

Vessel length coding

Member States are requested to submit data according to the following segmentation

Fishing in the Baltic Sea

Vessel length classes (length over all)	Code
Length over all shorter than 8 m.	VL0008
Length over all of 8 m. to shorter than 10 m.	VL0810
Length over all of 10 m. to shorter than 12 m.	VL1012
Length over all of 12 m. to shorter than 18 m.	VL1218
Length over all of 18 m. to shorter than 24 m.	VL1824
Length over all of 24 m. to shorter than 40 m	VL2440
Length over all of 40 m. or longer	VL40XX

Fishing in the Mediterranean

Vessel length classes (length over all)	Code
Length over all shorter than 6 m.	VL0006
Length over all of 6 m. to shorter than 12 m.	VL0612
Length over all of 12 m. to shorter than 18 m.	VL1218
Length over all of 18 m. to shorter than 24 m.	VL1824
Length over all of 24 m. to shorter than 40 m	VL2440
Length over all of 40 m. or longer	VL40XX

Fishing effort regimes in all other waters

Vessel length classes (length over all)	Code
Length over all shorter than 10 m.	VL0010
Length over all of 10 m. to shorter than 12 m.	VL1012
Length over all of 12 m. to shorter than 18 m.	VL1218
Length over all of 18 m. to shorter than 24 m.	VL1824
Length over all of 24 m. to shorter than 40 m	VL2440
Length over all of 40 m. or longer	VL40XX

Appendix 3

Fishing Technique coding

Description	Code to be used when answering the data call
Drift and/or fixed netters	DFN
Dredgers	DRB
Demersal trawlers and/or demersal seiners	DTS
Vessels using pots and/or traps	FPO
Vessels using hooks	HOK
Vessel using other active gears	MGO
Vessels using polyvalent active gears only	MGP
Vessels using passive gears only for vessels < 12m	PG
Vessels using other passive gears	PGO
Vessels using polyvalent passive gears only	PGP
Vessels using active and passive gears	PMP
Purse seiners	PS
Pelagic trawlers	TM
Beam trawlers	TBB

Appendix 4

GEAR_TYPE coding

Gear classes	Description	Gear code to be used when answering the data call
DREDGES	Boat dredges	DRB
DREDGES	Mechanised dredges including suction dredges	HMD
DREDGES	Hand dredges	DRH
GILLNETS AND ENTANGLING NETS	Driftnets	GND
GILLNETS AND ENTANGLING NETS	Set gillnets (anchored)	GNS
GILLNETS AND ENTANGLING NETS	Encircling gillnets	GNC
GILLNETS AND ENTANGLING NETS	Trammel nets	GTR
GILLNETS AND ENTANGLING NETS	Combined gillnets-trammel nets	GTN
LIFT NETS	Boat-operated lift nets	LNB
LIFT NETS	Shore-operated stationary lift nets	LNS
HOOKS AND LINES	Handlines and pole-lines (mechanised)	LHM
HOOKS AND LINES	Handlines and pole-lines (hand-operated)	LHP
HOOKS AND LINES	Drifting longlines	LLD
HOOKS AND LINES	Set longlines	LLS
HOOKS AND LINES	Troll lines	LTL
SEINE NETS	Danish seines (Anchored seine)	SDN
SEINE NETS	Pair seines	SPR

SEINE NETS	Scottish seines (Fly shooting seine)	SSC
SEINE NETS	Beach seines	SB
SEINE NETS	Boat seines	SV
SURROUNDING NETS	Purse seines	PS
SURROUNDING NETS	Lampara nets	LA
TRAPS	Pots and Traps	FPO
TRAPS	Stationary uncovered pound nets	FPN
TRAPS	Fyke nets	FYK
TRAWLS	Bottom otter trawl	OTB
TRAWLS	Otter twin trawl	OTT
TRAWLS	Bottom pair trawl	PTB
TRAWLS	Midwater otter trawl	OTM
TRAWLS	Pelagic pair trawl	PTM
TRAWLS	Beam trawl	TBB
GLASS EEL FISHING		GEF

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Appendix 5   *Mesh size coding*

Specify recorded mesh size and whether cod end contains diamond mesh or square mesh.

If data is collected according to a mesh size range specify the range, e.g. if data collected for vessels using gear with mesh sizes between 70 and 99mm and using diamond mesh use code "70D99".

If there is no lower limit to the mesh size range the first integer is '00'

If there is no upper limit to the mesh size range the last integer is replaced by 'XX'

Gear type	Code
Diamond mesh	<integer>D<integer>
Square mesh	<integer>S<integer>
Not applicable	NONE[1]

[1] Valid for gear codes DRB, HMD, DRH, LHM, LHP, LLD, LLS, LTL, FPO.

Permitted mesh size ranges

Mediterranean and Black Sea MESH_SIZE_RANGE	CODE
Diamond mesh < 14 mm	00D14
Diamond mesh >=14 mm and < 16 mm	14D16
Diamond mesh >=16 mm and < 20 mm	16D20
Diamond mesh >=20 mm and < 40 mm	20D40
Diamond mesh >=40 mm and < 50 mm	40D50
Diamond mesh >=50 mm and < 100 mm	50D100
Diamond mesh >=100 mm and < 400 mm	100D400
Diamond mesh >=400 mm	400DXX
Square mesh < 40 mm	00S40
Square mesh >= 40 mm	40SXX

Baltic Reg 1098/2007 repealed on 19/07/2016 Replaced by 1139/2016	
MOBILE	
MESH_SIZE_RANGE	**CODE**
Diamond mesh < 16 mm	00D16
Diamond mesh >=16 mm and < 32 mm	16D32
Diamond mesh >=32 mm and < 90 mm	32D90
Diamond mesh >=90 mm and < 105 mm	90D105
Diamond mesh >=105 mm and < 110 mm	105D110
Diamond mesh >=110 mm	110DXX
PASSIVE	
Diamond mesh >=16 mm and < 32 mm	16D32
Diamond mesh >=32 mm and < 90 mm	32D90
Diamond mesh >=90 mm and < 110 mm	90D110
Diamond mesh >=110 mm and < 156 mm	110D156
Diamond mesh >=157 mm	157DXX

North Sea	
MOBILE	
MESH_SIZE_RANGE	**CODE**
Diamond mesh < 16 mm	00D16
Diamond mesh >=16 mm and < 32 mm	16D32
Diamond mesh >=32 mm and < 80 mm	32D80
Diamond mesh >=80 mm and < 100 mm	80D100
Diamond mesh >=100 mm and < 110 mm	100D110
Diamond mesh >=110 mm and < 120 mm	110D120
Diamond mesh >=120 mm	120DXX
PASSIVE	
Diamond mesh >=10 mm and < 31 mm	10D31
Diamond mesh >=50 mm and < 71 mm	50D71
Diamond mesh >=71 mm and < 100 mm	71D100
Diamond mesh >=100 mm and < 120 mm	100D120
Diamond mesh >=120 mm and < 220 mm	120D220
Diamond mesh >=220 mm and < 250 mm	220D250
Diamond mesh >=250 mm	250DXX

North Western Waters	
MOBILE	
MESH_SIZE_RANGE	**CODE**
Diamond mesh >=16 mm and < 32 mm	16D32
Diamond mesh >=32 mm and < 70 mm	32D70
Diamond mesh >=70 mm and < 80 mm	70D80
Diamond mesh >=80 mm and < 100 mm	80D100
Diamond mesh >=100 mm and < 110 mm	100D110
Diamond mesh >=110 mm and < 120 mm	110D120
Diamond mesh >=120 mm	120DXX
PASSIVE	
Diamond mesh >=50 mm and < 90 mm	50D90
Diamond mesh >=90 mm and < 100 mm	90D100
Diamond mesh >=100 mm and < 120 mm	100D120
Diamond mesh >=120 mm and < 130 mm	120D130
Diamond mesh >=130 mm and < 150 mm	130D150
Diamond mesh >=150 mm and < 220 mm	150D220
Diamond mesh >=220 mm and < 250 mm	220D250
Diamond mesh >=250 mm	250DXX

South Western Waters	
ALL GEARS	
MESH_SIZE_RANGE	**CODE**
Diamond mesh >=16 mm and < 20 mm	16D20
Diamond mesh >=20 mm and < 40 mm	20D40
Diamond mesh >=40 mm and < 55 mm	40D55
Diamond mesh >=55 mm and < 60 mm	55D60
Diamond mesh >=60 mm and < 65 mm	60D65
Diamond mesh >=65 mm and < 70 mm	65D70
Diamond mesh >=70 mm and < 100 mm	70D100
Diamond mesh >=100 mm	100DXX

Outermost Regions	
ALL GEARS	
MESH_SIZE_RANGE	**CODE**
Diamond mesh >= 14 mm and < 20 mm	14D20
Diamond mesh >= 20 mm and < 40 mm	20D40
Diamond mesh >= 40 mm and < 45 mm	40D45
Diamond mesh >= 45 mm and < 50 mm	45D50
Diamond mesh >= 50 mm and < 65 mm	50D65
Diamond mesh >= 65mm and < 100 mm	65D100
Diamond mesh >=100 mm	100DXX

Appendix 6   Fishery definitions

All regions excluding external fleet

Metier definitions follow the recommendation of STECF (report JRC 49816) on definitions consistent with level 6 of the Commission Decision 2010/93. The labels should follow the format

Gear type_Target assemblage_Mesh size (range)_Selective device_Mesh size (range) in the selective device

Each field within the label is connected by an underscore.

Metier definitions to conform to those agreed by the relevant RCMs

Descriptions of the target assemblage and selective device codes within the labels are given below.

Target assemblage codes:

Code	Description
ANA	Anadromous
CAT	Catadromous
CEP	Cephalopods
CRU	Crustaceans
DEF	Demersal fish
DWS	Deep-water species
FIF	Finfish
FWS	Freshwater species
GLE	Glass eel
LPF	Large pelagic fish
MCD	Mixed crustaceans and demersal fish
MCF	Mixed cephalopods and demersal fish
MDD	Mixed demersal and deepwater species
MOL	Molluscs
MPD	Mixed pelagic and demersal fish
SLP	Small and large pelagic fish
SPF	Small pelagic fish

Selective device codes:

Code	Description
0	Not mounted
1	Exit window / Selection panel
2	Grid

Appendix 7   Domain definitions

Domains refer to the group of vessels used to calculate estimates (discards, numbers at age, number at length) by a country. The domain may or may not be equivalent to a metier.

Domain definitions are likely to be very country specific but the following format for their presentation to this data call is requested in the interest of obtaining the maximum information possible on the constitution of the domain from the name itself.

Countrycode(s)_subregion(s)_Gear type(s)_Target assemblage(s)_Mesh size (range)_Selective device(s)

Each field (county code(s), subregion(s) etc) within the label is connected by an underscore.

If multiple entries within a field e.g. multiple subregions, connect by a dash "-".

Country codes as in appendix 1.

Subregion codes as in appendix 8.

Gear type codes as in appendix 4.

Target assemblage codes as used in fishery definitions (appendix 6).

Mesh size range: minimum and maximum meshes. If all mesh sizes are included in one group enter "0".

Selectivity device codes as used in fishery definitions (appendix 6).

Appendix 8 *Area coding*

Baltic Sea

IBSFC areas for Baltic	Supra Region Code	Sub Region Codes in bold to be used in relation to the compulsory provisions of the Commission Decisions 2010/93/EU and 2016/1251/EU	Sub Region Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes
III.c.22	**AREA27**	**27.3.C.22**	
III.c.23	**AREA27**	**27.3.B.23**	
III.c.24	**AREA27**	**27.3.D.24**	
III.c.25	**AREA27**	**27.3.D.25**	
III.c.26	**AREA27**	**27.3.D.26**	
III.c.27	**AREA27**	**27.3.D.27**	
III.c.28.1	**AREA27**		**27.3.D.28.1**
III.c.28.2	**AREA27**		**27.3.D.28.2**
III.d.29	**AREA27**	**27.3.D.29**	
III.d.30	**AREA27**	**27.3.D.30**	
III.d.31	**AREA27**	**27.3.D.31**	
III.d.32	**AREA27**	**27.3.D.32**	

North Sea, Skagerrak, Kattegat and Eastern Channel

ICES statistical areas	Supra Region Code	Sub Region Codes in bold to be used in relation to the compulsory provisions of the Commission Decisions 2010/93/EU and 2016/1251/EU	Sub Region Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes
2 EU waters	**AREA27**	(27.2)	**27.2 EU**
3.a.N	**AREA27**	(27.3.A)	**27.3.A N**
3.a.S	**AREA27**		**27.3.A S**
4	**AREA27**	**27.4**	
7.d	**AREA27**	**27.7.D**	

Northern Shelf

ICES statistical areas	Supra Region Code	Sub Region Codes in bold to be used in relation to the compulsory provisions of the Commission Decisions 2010/93/EU and 2016/1251/EU	Sub Region Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes
1 RFMO	AREA27	27.1.A	
1 COAST	AREA27	27.1.B	
2 non EU waters	AREA27	27.2.A	
	AREA27	27.2.B	
5.a	AREA27	27.5.A	
5.b EU waters	AREA27	(27.5.B)	27.5.B EU[8]
5.b non EU waters	AREA27		27.5.B COAST
	AREA27		27.5.B RFMO
6.a	AREA27	27.6.A	
6.b EU waters	AREA27	(27.6.B)	27.6.B EU
6.b non EU waters	AREA27		27.6.B RFMO
7.a	AREA27	27.7.A	
7.b	AREA27	27.7.B[5]	
7.c EU Waters	AREA27	(27.7.C)	27.7.C EU
7.c non EU Waters	AREA27		27.7.C RFMO
7.e	AREA27	27.7.E	
7.f	AREA27	27.7.F	
7.g	AREA27	27.7.G[6]	
7.h	AREA27	27.7.H[7]	
7.j EU waters	AREA27	(27.7.J)	27.7.J EU[9]
7.j non EU waters	AREA27		27.7.J RFMO
	AREA27		
7.k EU waters	AREA27	(27.7.K)	27.7.K EU
7.k non EU waters	AREA27		27.7.K RFMO
12	AREA27	27.12	

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[5] ICES statistical rectangles of ICES division VIIb and corresponding to the BSA shall be included.

[6] ICES statistical rectangles of ICES division VIIg and corresponding to the BSA shall be included.

[7] ICES statistical rectangles of ICES division VIIh and corresponding to the BSA shall be included.

[8] 5b EU to be considered as covering the following ICES statistical rectangles: 49D6, 49D7, 49D8, 49D9, 49E0, 49E1, 49E2, 49E3, 49E4, 50E5.

[9] ICES statistical rectangles of ICES division VIIj and corresponding to the BSA shall be included.

14.a	AREA27	27.14.A	
14.b	AREA27	(27.14.B)	27.14.B COAST
			27.14.B RFMO

The following only to be used for tables A, B and G.

Data for the BSA represents a duplication of data supply to accomodate an overlapping area definition, i.e. the BSA area overlaps fractions of ICES divisions 7a, 7b, 7g, 7h, 7j

| Biologically Sensitive Area | AREA27 | | BSA |
| To be considered as covering the following ICES statistical rectangles: 35D8, 35D9, 35E0, 35E1, 34D8, 34D9, 34E0, 34E1, 33D8, 33D9, 33E0, 33E2, 32D8, 32D9, 32E0, 32E1, 32E2, 31D8, 31D9, 31E0, 31E1, 31E2, 30D9, 30E0, 30E1, 30E2, 29D9, 29E0, 29E1, 29E2, 28D9, 28E0, 28E1, 28E2. | | | |

Southern Shelf

ICES statistical areas	Supra Region Code	Sub Region Codes in bold to be used in relation to the compulsory provisions of the Commission Decisions 2010/93/EU and 2016/1251/EU	Sub Region Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes
8.a	AREA27	27.8.A	
8.b	AREA27	27.8.B	
8.c	AREA27	27.8.C	
8.d EU waters	AREA27	(27.8.D)	27.8.D EU
8.d non EU waters	AREA27		27.8.D RFMO
8.e EU waters	AREA27	(27.8.E)	27.8.E EU
8.e non EU waters	AREA27		27.8.E RFMO
9.a	AREA27	27.9.A	
9.b EU waters	AREA27	(27.9.B)	27.9.B EU
9.b non EU waters	AREA27		27.9.B RFMO
10 EU waters	AREA27		27.10.A
10 non EU waters	AREA27		27.10.B

GFCM

FAO statistical areas	Supra Region Code	Sub Region
		Codified GFCM Geographical Sub-Areas as defined in Resolution GFCM/33/2009/2[10]
Northern Alboran Sea	**AREA37**	**GSA1**
Alboran Island	**AREA37**	**GSA2**
Southern Alboran Sea	**AREA37**	**GSA3**
Algeria	**AREA37**	**GSA4**
Balearic Island	**AREA37**	**GSA5**
Northern Spain	**AREA37**	**GSA6**
Gulf of Lion	**AREA37**	**GSA7**
Corsica Island	**AREA37**	**GSA8**
Ligurian and North Tyrrhenian Sea	**AREA37**	**GSA9**
South Tyrrhenian Sea	**AREA37**	**GSA10**
Sardinia (west)	**AREA37**	**GSA11.1**
Sardinia (east)	**AREA37**	**GSA11.2**
Sardinia	**AREA37**	**GSA11**
Northern Tunisia	**AREA37**	**GSA12**
Gulf of Hammamet	**AREA37**	**GSA13**
Gulf of Gabes	**AREA37**	**GSA14**
Malta Island	**AREA37**	**GSA15**
South of Sicily	**AREA37**	**GSA16**
Northern Adriatic	**AREA37**	**GSA17**
Southern Adriatic Sea	**AREA37**	**GSA18**
Western Ionian Sea	**AREA37**	**GSA19**
Eastern Ionian Sea	**AREA37**	**GSA20**
Southern Ionian Sea	**AREA37**	**GSA21**
Aegean Sea	**AREA37**	**GSA22**
Crete Island	**AREA37**	**GSA23**
North Levant	**AREA37**	**GSA24**
Cyprus Island	**AREA37**	**GSA25**
South Levant	**AREA37**	**GSA26**
Levant	**AREA37**	**GSA27**
Marmara Sea	**AREA37**	**GSA28**
Black Sea	**AREA37**	**GSA29**
Azov Sea	**AREA37**	**GSA30**

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[10] Resolution GFCM/33/2009/2 on the establishment of Geographical Sub-Areas in the GFCM area amending the resolution GFCM/31/2007/2 (http://www.fao.org/gfcm/data/map-geographical-subareas/en/).

CECAF

FAO statistical areas	Supra Region Code	Sub Region Codes to be used in relation to the compulsory provisions of the Commission Regulation (EC) 216/2009	Sub Region Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes
34.1.1 EU waters	OFR		34.1.1 EU
34.1.1 non EU waters	OFR		34.1.1 COAST
34.1.2 EU waters	OFR		34.1.2 EU
34.1.2 non EU waters	OFR		34.1.2 COAST
	OFR		34.1.2 RFMO
34.1.3	OFR		34.1.3 COAST
	OFR		34.1.3 RFMO
34.2.0 EU waters	OFR		34.2.0 EU
34.2.0 non EU waters	OFR		34.2.0 COAST
	OFR		34.2.0 RFMO
34.3.1	OFR	34.3.1	
34.3.2	OFR	34.3.2	
34.3.3	OFR	34.3.3	
34.3.4	OFR	34.3.4	
34.3.5	OFR	34.3.5	
34.3.6	OFR	34.3.6	
34.4.1	OFR	34.4.1	
34.4.2	OFR	34.4.2	

ADITIONAL AREAS.

The level of area detail to be consistent with requirements specified in 93/2010, appendices 1 and 2.

Areas identified above and below include seas subject to the International Convention for the Conservation of Atlantic Tunas.

IOTC

FAO area 51 (Indian Ocean, Western)

Supra Region Code: OFR

Sub regions as defined by Regulation (EC) 216/2009

FAO area 57 (Indian Ocean, Eastern)

Sub regions as defined by FAO web site

http://www.fao.org/fishery/area/Area57/en

NAFO

FAO area 21 (Northwest Atlantic)

Sub regions as defined by FAO web site

http://www.fao.org/fishery/area/Area21/en

CCAMLR

FAO area 48 (Atlantic Antarctic)

Sub regions as defined by FAO web site

http://www.fao.org/fishery/area/Area48/en

FAO area 58 (Antarctic and Southern Indian Ocean)

Sub regions as defined by FAO web site

http://www.fao.org/fishery/area/Area58/en

FAO area 88 (Antarctic)

Sub regions as defined by FAO web site

http://www.fao.org/fishery/area/Area88/en

OTHER AREAS (not under above listed RFMOs)

FAO area 18 (Arctic Sea)

Sub regions as defined by FAO web site

http://www.fao.org/fishery/area/Area18/en

FAO area 31 (Atlantic Western Central)

Sub regions as defined by FAO web site

http://www.fao.org/fishery/area/Area31/en

FAO area 41 (Atlantic Southwest)

Sub regions as defined by Regulation (EC) 216/2009

FAO area 47 (Atlantic Southeast)

Sub regions as defined by Regulation (EC) 216/2009

FAO area 61 (Pacific Northwest)

Sub regions as defined by FAO web site

http://www.fao.org/fishery/area/Area61/en

FAO area 67 (Pacific Northeast)

Sub regions as defined by FAO web site

http://www.fao.org/fishery/area/Area67/en

FAO area 71 (Pacific Western Central)

Sub regions as defined by FAO web site

http://www.fao.org/fishery/area/Area71/en

FAO area 77 (Pacific Eastern Central)

Sub regions as defined by FAO web site

http://www.fao.org/fishery/area/Area77/en

FAO area 81 (Pacific Southwest)

<mark>**Supra Region Code: OFR**</mark>

Sub regions as defined by FAO web site

http://www.fao.org/fishery/area/Area81/en

FAO area 87 (Pacific Southeast)

<mark>**Supra Region Code: OFR**</mark>

Sub regions as defined by FAO web site

http://www.fao.org/fishery/area/Area87/en

Appendix 9: *Geographical Indicator*

Provision of this information is not compulsory.

Code to distinguish fishing fleets operating in outermost regions and fleets operating exclusively in non-EU waters (international waters + third countries including those with fishing partner agreements).

Name	*Definition*	*Code*
Non EU waters	More than 50% of activity occurs in non-EU waters	NEU
International waters exclusively	100% of activity occurs in non-EU waters	IWE
Madeira	Portuguese outermost region (autonomous region)	P2
Azores	Portuguese outermost region (autonomous region)	P3
Canaries	Spanish outermost region (autonomous region)	CN
Reunion	French outermost region (overseas department)	RE
Martinique	French outermost region (overseas department)	MQ
Mayotte	French outermost region (overseas department)	YT
Guadeloupe	French outermost region (overseas department)	GP
French Guiana	French outermost region (overseas department)	GF
Saint-Martin	French outermost region (since 2009)(overseas community)	MF
No geographical indicator	EU waters, i.e. EEZ of any EU member state	NGI

Appendix 10

Coding of specific conditions related to Technical Measures

WITH THE EXCEPTION OF THE BALTIC AND THREE MEASURES FOR THE ICES AREAS 3a & 4 THIS Appendix IS A PLACE HOLDER; IN ANTICIPATION OF FUTURE TECHNICAL MEASURES THAT ARE REQUIRED TO BE IDENTIFIED UNIQUELY

Condition	Code
Baltic	
Gear equipped with a BACOMA	BACOMA
Gear equipped with a T90	T90
North Sea & Kattegat	
OTB, TBN ≥ 70mm equipped with selective grid with 35mm max bar spacing	GRID35
OTB, TBN ≥ 90mm equipped with top panel ≥ 270mm diamond or ≥ 140mm square mesh	P270D140S
TBB 80-119mm with increased mesh size in the extension of the beam trawl.	TBB1T
NWW	
SWW	
MED & BS	

Appendix 11

Coding of specific conditions related to the Landings Obligation

Landings (and discards) data for **all** species caught by a vessel-gear-area combination subject to the code in the right hand column must be given the same code. Effort data for any vessel-gear-area combination subject to the code in the right hand column must be given the same code. Species listed under 'Landing Obligation' are those to which the LO actually applies.

Regional Group						
Baltic						
Area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation(s)	Code and first year
All Baltic areas	Cod (Gas/us morlllla), herring (*Clupea harengus*), sprat (*Sprattus sprattus*), salmon (*Salmo salar*).	All except FPO, FPN, FYK	all	Cod (Gas/us morlllla), herring (*Clupea harengus*), sprat (*Sprattus sprattus*), salmon (*Salmo salar*). Species codes: **COD, HER, SAL, SPR**	none	BAL1 2015

Regional Group						
Black Sea						
Area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation(s)	Code and first year
Black Sea	Turbot (*Psetta maxima*)	GNS (Bottom set gill nets)	all	Turbot (*Psetta maxima*) Species code: **TUR**	none	BS1 2015

Regional Group or Region						
Mediterranean						
Area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation(s)	Code and first year
GSA areas 1 to 23 (Western Med, northern Adriatic, southern Adriatic & Ionian, Malta Island & South of Sicily, Aegean & Crete)	Anchovy (*Engraulis encrasicolus*), Sardine (*Sardina pilchardus*), Mackerel (*Scomber scombrus*), Horse mackerel (*Trachurus spp.*)	OTM, PTM, PS (Mid water pelagic trawls and purse seines)	all	Anchovy (*Engraulis encrasicolus*), Sardine (*Sardina pilchardus*), Mackerel (*Scomber scombrus*), Horse mackerel (*Trachurus spp.*) Species code: **ANE, PIL, MAC, HMM, JAX, HOM, HMC, HMZ, HMG, TUZ**	**De-minimis** Western Med and northern Adriatic (GSA areas 1-12, 17) ≤ 5% all species **De-minimis** Southern Adriatic and Ionian Sea, Malta Island & South of Sicily (GSA areas 13-16, 18-21) ≤ 3% all species for gear PS; ≤ 7% in 2015 & 2016 and ≤ 6% in 2017 all species for gear OTM, PTM. **De-minimis** Aegean Sea & Crete Island (GSA areas 22-23) ≤ 3% all species for gear PS	MED1 2015

Regional Group						
NWW						
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.6.A, 27.6.B and 27.5.B EU	Mackerel (S*comber scombrus*),herring (*Clupea harengus*), horse mackerel (*Trachurus spp.*), blue whiting (*Micromesistius poutassou*), boarfish (*Caproidae*), argentine (*Argentina spp.*).	OTB, OTM	all	Mackerel (S*comber scombrus*),herring (*Clupea harengus*), horse mackerel (*Trachurus spp.*), blue whiting (*Micromesistius poutassou*), boarfish (*Caproidae*), argentine (*Argentina spp.*). Species codes: **MAC, HER, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ, WHB, BOR, ARG, ARU, ARY, JXX** From 2016 only vessels not in NWWHAD1HKE1NEP1 NWWHAD1HKE1 NWWHAD1NEP1 NWWHAD1 NWWNEP1	**De-minimis** BOARFISH (**BOR**) area 27.6: ≤ 1% in 2015 and ≤ 0.75% in 2016 **De-minimis** Blue whiting (**WHB**) if processed on board for surimi base: ≤ 7% in 2015-2016 and ≤ 6% in 2017	NWWOTMPTM1 2015
27.6.A, 27.6.B and 27.5.B EU	Mackerel (S*comber scombrus*), Herring (*Clupea harengus*)	PTM	all	Mackerel (S*comber scombrus*),Herring (*Clupea harengus*) Species codes: **MAC, HER** Applies to the gear and the two species	none	NWWPTM1 2015

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.6.A, 27.6.B and 27.5.B EU	Mackerel (S*comber scombrus*),blue whiting (*Micromesistius poutassou*)	PS	all	Mackerel (S*comber scombrus*),blue whiting (*Micromesistius poutassou*) Applies to the gear and the two species. Species codes: **MAC, WHB**	**De-minimis** Blue whiting (**WHB**) if processed on board for surimi base: ≤ 7% in 2015-2016 and ≤ 6% in 2017 HS exemption Mackerel (**MAC**): If area is 27.6 and • The gear is fitted with visible buoys marking the point of retrieval. • The extent that purse seine has been hauled is recorded for each haul by electronic recording and documenting system. • Point of retrieval is <= 80% closure.	NWWPS1 2015
27.5.B EU, 27.6.A and 27.6.B	Mackerel (S*comber scombrus*)	PTB, LTL	all	Mackerel (S*comber scombrus*) Species code: **MAC** From 2016 only vessels not in NWWHAD1HKE1NEP1 NWWHAD1HKE1 NWWHAD1NEP1 NWWHAD1 NWWNEP1	none	NWWMAC1 2015

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.5.B EU, 27.6.A, 27.6.B and 27.7	Mackerel (*Scomber scombrus*)	LMH	na	Mackerel (S*comber scombrus*) Species code: **MAC** From 2016 only vessels not in NWWHKEMAC	none	NWWMAC1 2015
27.7.B-C,F-K	Albacore tuna (*Thunnus alalunga*)	LTL	na	Albacore tuna (Thunnus alalunga) Species code: **ALB** From 2016 only vessels not in NWWHKEALB	none	NWWALB1 2015
27.7.B-C,F-K	Mackerel (S*comber scombrus*),herring (*Clupea harengus*), horse mackerel (*Trachurus spp.*), blue whiting (*Micromesistius poutassou*), boarfish (*Caproidae*), Albacore tuna (*Thunnus alalunga*)	OTM, PTM	all	Mackerel (S*comber scombrus*),herring (*Clupea harengus*), horse mackerel (*Trachurus spp.*), blue whiting (*Micromesistius poutassou*), boarfish (*Caproidae*), Albacore tuna (*Thunnus alalunga*) Species codes: **MAC, HER, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ, WHB, BOR, ALB**	**De-minimis** Albacore tuna (**ALB**) & Gear **PTM** ≤ 7% in 2015-2016 and ≤ 6% in 2017	NWWOTMPTM2 2015

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.7.B-C,F-K	Herring (*Clupea harengus*)	OTB	all	Herring (*Clupea harengus*) Species code: **HER** From 2016 only vessels not in NWWHKE1NEP1WHG1 NWWHKE1NEP1 NWWHKE1WHG1 NWWNEP1WHG1 NWWHKE1 NWWNEP1 NWWWHG1	none	NWWHER1 2015
27.7.B-C,F-K	Mackerel (*Scomber scombrus*), horse mackerel (*Trachurus spp.*)	PS	all	Mackerel (*Scomber scombrus*),horse mackerel (*Trachurus spp.*) Species codes: **MAC, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ**	none	NWWPS2 2015
27.7.D-E	Sprat (*Sprattus sprattus*)	OTB	all	Sprat (*Sprattus sprattus*) Species code: **SPR** From 2016 only vessels not in NWWHKE1NEP1WHG1 NWWHKE1NEP1 NWWHKE1WHG1 NWWNEP1WHG1 NWWHKE1 NWWNEP1 NWWWHG1	none	NWWSPR1 2015

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.7.D-E	Mackerel (*Scomber scombrus*),herring (*Clupea harengus*)	GND	all	Mackerel (*Scomber scombrus*),herring (*Clupea harengus*) Species codes: **MAC, HER** From 2016 only vessels not in NWWHKESOL	none	NWWGND1 2015
27.7.D-E	Mackerel (*Scomber scombrus*),herring (*Clupea harengus*), horse mackerel (*Trachurus spp.*), boarfish (*Caproidae*), sprat (*Sprattus sprattus*)	OTM	all	Mackerel (*Scomber scombrus*),herring (*Clupea harengus*), horse mackerel (*Trachurus spp.*), boarfish (*Caproidae*), sprat (*Sprattus sprattus*) Species codes: **MAC, HER, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ, BOR, SPR**	**De-minimis** Mackerel (**MAC**),herring (**HER**), horse mackerel (**JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ**) & VESSEL_LENGTH ≤ 24M ≤ 3% in 2015 and ≤ 2% in 2016	NWWOTM1 2015
27.7.D-E	Horse mackerel (*Trachurus spp.*)	PTM	all	Horse mackerel (*Trachurus spp.*) Species code: **JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ**	none	NWWPTM1 2015
27.7.D-E	Mackerel (*Scomber scombrus*), Horse mackerel (*Trachurus spp.*)	PS	all	Mackerel (*Scomber scombrus*), Horse mackerel (*Trachurus spp.*) Species code: **MAC, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ**	none	NWWPS2 2015
27.7.A	Herring (*Clupea harengus*)	OTM, PTM	all	Herring (*Clupea harengus*) Species codes: **HER**	none	NWWOTMPTM3 2015

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.5.B EU, 27.6.A and 27.7.A (Fisheries in ICES division Via and Union waters of ICES division Vb)		OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX	all	Haddock (Mela/logrammus *aeg!efinus),* Hake (*Merlllccius* merluccius), Norway lobster (*Nephrops norvegicus*) Species codes: **HAD, HKE, NEP** Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 10 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to haddock. & Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 30 % of Norway lobster, the landing obligation shall apply to Norway lobster. & Where total landings per vessel of all species in 20I3 and 2014 consist of more than 30 % of hake, the landing obligation shall apply to hake.	**De-minimis** "For Norway lobster (*Nephrops norvegicus), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6% in 2018 of the total annual catches of this species by vessels obliged to land Norway lobster in…* *" ICES division VIa"* *"ICES sub-area VII"*	NWWHAD1HKE1NEP1 2016
27.5.B EU, 27.6.A and 27.7.A (Fisheries in ICES division Via and Union waters of ICES division Vb)		OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX	all	Haddock (Mela/logrammus *aeg!efinus),* Norway lobster (*Nephrops norvegicus*) Species codes: **HAD, NEP** Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 10 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to haddock. & Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 30 % of Norway lobster, the landing obligation shall apply to Norway lobster. Only vessels not in NWWHAD1HKE1NEP1	**De-minimis** "For Norway lobster (*Nephrops norvegicus), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6% in 2018 of the total annual catches of this species by vessels obliged to land Norway lobster in…* *" ICES division VIa"* *"ICES sub-area VII"*	NWWHAD1NEP1 2016

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.5.B EU, 27.6.A and 27.7.A (Fisheries in ICES division Via and Union waters of ICES division Vb)		OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX	all	Haddock (Mela/logrammus *aeg!efinus),* Hake (*Merlllccius* merluccius) Species codes: **HAD, HKE** Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 10 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to haddock. **&** Where total landings per vessel of all species in 20I3 and 2014 consist of more than 30 % of hake, the landing obligation shall apply to hake. Only vessels not in NWWHAD1HKE1NEP1	none	NWWHAD1HKE1 2016
27.6.A and 27.5.B EU; 27.7.A	Cod (Gas/us morlllla), Haddock (Mela/logrammus *aeg!efinus), Whi*ting *(MerlatlgillS* rnerlatlgus) and Saithe (*Pollachius virens*).	OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX	all	Haddock (Mela/logrammus *aeg!efinus)* Species code: **HAD** Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 10 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to haddock. Only vessels not in NWWHAD1HKE1NEP1 NWWHAD1HKE1 NWWHAD1NEP1	none	NWWHAD1 2016

NWW	**(cont)**					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.7.D	Hake (*Merlllccius* merluccius), Norway lobster (*Nephrops norvegicus*), Common sole (*Solea solea*), Whiting (*Merlangius merlangus*) plus Cod (Gas/us morlllla), Haddock (Mela/logrammus *aeg!efinus)* and Saithe (*Pollachius virens*).	OTB, OTT, PTB, TBN, TBS, TB, OT, PT, TX	< 100mm	Hake (*Merlllccius* merluccius)*,* Norway lobster (*Nephrops norvegicus*), Common sole (*Solea solea*), Whiting (*Merlangius merlangus*) Species codes: **HKE, NEP, SOL, WHG** Where total landings per vessel of all species in 20I3 and 2014 consist of more than 30 % of hake, the landing obligation shall apply to hake. & Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 30 % of Norway lobster, the landing obligation shall apply to Norway lobster. & Where total landings per vessel of all species in 2013 and 2014 consist of more than 5% of common sole, the landing obligation shall apply to Common sole. & Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 25 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to whiting.	**De-minimis** Norway lobster (**NEP**) "For Norway lobster (*Nephrops norvegicus),* up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6% in 2018 of the total annual catches of this species by vessels obliged to land Norway lobster in ICES sub area VII" **De-minimis** Whiting (**WHG**) *"for whiting (Merlangius merlangus), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of less than 100 mm to catch whiting in ICES divisions Vlld and VIIe"*	NWWHKE1NEP1SOL1WHG1 2016

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.7.D	Hake (*Merlllccius* merluccius), Norway lobster (*Nephrops norvegicus*), Common sole (*Solea solea*)	OTB, OTT, PTB, TBN, TBS, TB, OT, PT, TX	< 100mm	Hake (*Merlllccius* merluccius), Norway lobster (*Nephrops norvegicus*), Common sole (*Solea solea*) Species codes: **HKE, NEP, SOL** Where total landings per vessel of all species in 20I3 and 2014 consist of more than 30 % of hake, the landing obligation shall apply to hake. & Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 30 % of Norway lobster, the landing obligation shall apply to Norway lobster. & Where total landings per vessel of all species in 2013 and 2014 consist of more than 5% of common sole, the landing obligation shall apply to Common sole. Only vessels not in NWWHKE1NEP1SOL1WHG1	**De-minimis** Norway lobster (**NEP**) "For Norway lobster (*Nephrops norvegicus*), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6% in 2018 of the total annual catches of this species by vessels obliged to land Norway lobster in ICES sub area VII"	NWWHKE1NEP1SOL1 2016
27.7.D	Hake (*Merlllccius* merluccius), Common sole (*Solea solea*), Whiting (*Merlangius merlangus*) plus Cod (Gas/us morlllla), Haddock (Mela/logrammus aeg!efinus) and Saithe (*Pollachius virens*).	OTB, OTT, PTB, TBN, TBS, TB, OT, PT, TX	< 100mm	Hake (*Merlllccius* merluccius), Common sole (*Solea solea*), Whiting (*Merlangius merlangus*) Species codes: **HKE, SOL, WHG** Where total landings per vessel of all species in 20I3 and 2014 consist of more than 30 % of hake, the landing obligation shall apply to hake. & Where total landings per vessel of all species in 2013 and 2014 consist of more than 5% of common sole, the landing obligation shall apply to Common sole. & Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 25 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to whiting. Only vessels not in NWWHKE1NEP1SOL1WHG1	**De-minimis** Whiting (**WHG**) "for whiting (*Merlangius merlangus*), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of less than 100 mm to catch whiting in ICES divisions VIId and VIIe"	NWWHKE1SOL1WHG1 2016

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.7.D	Norway lobster (*Nephrops norvegicus*), Common sole (*Solea solea*), Whiting (*Merlangius merlangus*) plus Cod (*Gas/us morlllla*), Haddock (*Melanogrammus aeglefinus)* and Saithe (*Pollachius virens*).	OTB, OTT, PTB, TBN, TBS, TB, OT, PT, TX	< 100mm	Norway lobster (*Nephrops norvegicus*), Common sole (*Solea solea*), Whiting (*Merlangius merlangus*) Species codes: **NEP, SOL, WHG** Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 30 % of Norway lobster, the landing obligation shall apply to Norway lobster. & Where total landings per vessel of all species in 2013 and 2014 consist of more than 5% of common sole, the landing obligation shall apply to Common sole. & Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 25 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to whiting. Only vessels not in NWWHKE1NEP1SOL1WHG1	**De-minimis** Norway lobster (**NEP**) "For Norway lobster (*Nephrops norvegicus),* up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6% in 2018 of the total annual catches of this species by vessels obliged to land Norway lobster in ICES sub area VII" **De-minimis** Whiting (**WHG**) *"for whiting (Merlangius merlangus), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of less than 100 mm to catch whiting in ICES divisions VIId and VIIe"*	NWWNEP1SOL1WHG1 2016
27.5.B EU, 27.6.A and 27.7		OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX	all	Hake (*Merlllccius* merluccius)*,* Norway lobster (*Nephrops norvegicus*) Species codes: **HKE, NEP** Where total landings per vessel of all species in 20I3 and 2014 consist of more than 30 % of hake, the landing obligation shall apply to hake. & Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 30 % of Norway lobster, the landing obligation shall apply to Norway lobster. Only vessels not in NWWHAD1HKE1NEP1 NWWHKE1NEP1SOL1WHG1 NWWHKE1NEP1SOL1 NWWHKE1NEP1WHG1	**De-minimis** "For Norway lobster (*Nephrops norvegicus),* up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6% in 2018 of the total annual catches of this species by vessels obliged to land Norway lobster in… " ICES division VIa" "ICES sub-area VII"	NWWHKE1NEP1 2016

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.7.D	Norway lobster (*Nephrops norvegicus*), Common sole (*Solea solea*), Whiting (*Merlangius merlangus*) plus Cod (Gas/us morlllla), Haddock (Melanogrammus *aeglefinus)* and Saithe (*Pollachius virens*).	OTB, OTT, PTB, TBN, TBS, TB, OT, PT, TX	< 100mm	Norway lobster (*Nephrops norvegicus*), Common sole (*Solea solea*), Whiting (*Merlangius merlangus*) Species codes: **HKE, SOL** Where total landings per vessel of all species in 20I3 and 2014 consist of more than 30 % of hake, the landing obligation shall apply to hake. & Where total landings per vessel of all species in 2013 and 2014 consist of more than 5% of common sole, the landing obligation shall apply to Common sole. Only vessels not in NWWHKE1NEP1SOL1WHG1 NWWHKE1NEP1SOL1 NWWHKE1SOL1WHG1	none	NWWHKE1SOL1 2016

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.7.B-K	Hake (*MerIIIccius* merluccius)*,* Whiting (*Merlangius merlangus*) plus Cod (Gas/us morIIIIa), Haddock (Melanogram mus *aeglefinus)* and Saithe (*Pollachius virens*).	OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX	all	Hake (*MerIIIccius* merluccius)*,* Whiting (*Merlangius merlangus*) Species codes: **HKE, WHG** Where total landings per vessel of all species in 20I3 and 2014 consist of more than 30 % of hake, the landing obligation shall apply to hake. & Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 25 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to whiting. Only vessels not in NWWHKE1NEP1SOL1WHG1 NWWHKE1NEP1WHG1 NWWHKE1SOL1WHG1	**De-minimis** Whiting (**WHG**) *"for whiting (Merlangius merlangus), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of less than 100 mm to catch whiting in ICES divisions VIId and VIIe"* **De-minimis** *"for whiting (Merlangius merlangus) up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of not less than 100 mm to catch whiting in ICES divisions VIIb-VIIj;"* **De-minimis** *"for whiting (Merlangius merlangus), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of less than 100 mm to catch whiting in ICES subarea VII, except divisions VIIa, d and e."*	NWWHKE1WHG1 2016

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.7.D	Norway lobster (*Nephrops norvegicus*), Common sole (*Solea solea*)	OTB, OTT, PTB, TBN, TBS, TB, OT, PT, TX	< 100mm	Norway lobster (*Nephrops norvegicus*), Common sole (*Solea solea*), Whiting (*Merlangius merlangus*) Species codes: **NEP, SOL, WHG** Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 30 % of Norway lobster, the landing obligation shall apply to Norway lobster. & Where total landings per vessel of all species in 2013 and 2014 consist of more than 5% of common sole, the landing obligation shall apply to Common sole. Only vessels not in NWWHKE1NEP1SOL1WHG1 NWWHKE1NEP1SOL1 NWWNEP1SOL1WHG1	**De-minimis** Norway lobster (**NEP**) "For Norway lobster (*Nephrops norvegicus*), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6% in 2018 of the total annual catches of this species by vessels obliged to land Norway lobster in ICES sub area VII" and VIIe"	NWWNEP1SOL1 2016

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.7.B-K	Norway lobster (*Nephrops norvegicus*), Whiting (*Merlangius merlangus*) plus Cod (Gas/us morlllla), Haddock (Mela/logrammus *aeg!efinus)* and Saithe (*Pollachius virens*).	OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX	all	Norway lobster (*Nephrops norvegicus*), Whiting (*Merlangius merlangus*) Species codes: **NEP, WHG** Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 30 % of Norway lobster, the landing obligation shall apply to Norway lobster. **&** Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 25 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to whiting. Only vessels not in NWWHKE1NEP1SOL1WHG1 NWWHKE1NEP1WHG1 NWWNEP1SOL1WHG1	**De-minimis** Norway lobster (**NEP**) *"For Norway lobster (Nephrops norvegicus), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6% in 2018 of the total annual catches of this species by vessels obliged to land Norway lobster in ICES sub area VII"* **De-minimis** Whiting (**WHG**) *"for whiting (Merlangius merlangus), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of less than 100 mm to catch whiting in ICES divisions VIId and VIIe"* **De-minimis** *"for whiting (Merlangius merlangus) up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of not less than 100 mm to catch whiting in ICES divisions VIIb-VIIj;"* **De-minimis** *"for whiting (Merlangius merlangus), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of less than 100 mm to catch whiting in ICES subarea VII, except divisions VIIa, d and e."*	NWWNEP1WHG1 2016

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.7.D	Common sole (*Solea solea*), Whiting (*Merlangius merlangus*) plus Cod (Gas/us morlllla), Haddock (Melanogramm us *aeglefinus)* and Saithe (*Pollachius virens*).	OTB, OTT, PTB, TBN, TBS, TB, OT, PT, TX	< 100mm	Common sole (*Solea solea*), Whiting (*Merlangius merlangus*) Species codes: **SOL, WHG** Where total landings per vessel of all species in 2013 and 2014 consist of more than 5% of common sole, the landing obligation shall apply to Common sole. & Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 25 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to whiting. Only vessels not in NWWHKE1NEP1SOL1WHG1 NWWHKE1SOL1WHG1 NWWNEP1SOL1WHG1	**De-minimis** Whiting (**WHG**) *"for whiting (Merlangius merlangus), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of less than 100 mm to catch whiting in ICES divisions Vlld and VIIe"*	NWWSOL1WHG1 2016
27.6.A and 27.5.B EU, 27.7	Norway lobster (*Nephrops norvegicus)*	OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX, FPO, FIX	all	Norway lobster (*Nephrops norvegicus)* Species code: **NEP** Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 30 % of Norway lobster, the landing obligation shall apply to Norway lobster Only vessels not in NWWHAD1HKE1NEP1 NWWHAD1NEP1 NWWHKE1NEP1SOL1WHG1 NWWHKE1NEP1SOL1 NWWHKE1NEP1WHG1 NWWNEP1SOL1WHG1 NWWHKE1NEP1 NWWNEP1SOL1 NWWNEP1WHG1	**De-minimis** *"For Norway lobster (Nephrops norvegicus), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6% in 2018 of the total annual catches of this species by vessels obliged to land Norway lobster in…* *" ICES division VIa"* *"ICES sub-area VII"*	NWWNEP1 2016

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.6, and 27.5.B EU; 27.7	Hake (*Merlllccius* merluccius)	OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX	all	Hake (*Merlllccius* merluccius) Species code: **HKE** Where total landings per vessel of all species in 20l3 and 2014 consist of more than 30 % of hake, the landing obligation shall apply to hake. Only vessels not in NWWHAD1HKE1NEP1 NWWHAD1HKE1 NWWHKE1NEP1SOL1WHG1 NWWHKE1NEP1SOL1 NWWHKE1NEP1WHG1 NWWHKE1NEP1 NWWHKE1SOL1 NWWHKE1WHG1	none	NWWHKE1 2016
27.7.B-K	Hake (*Merlllccius* merluccius); Common sole (*Solea solea*),	GNS, GN, GND, GNC, GTN, GTR, GEN	all	Hake (*Merlllccius* merluccius), Common Sole (*Solea solea*) Species codes: **HKE, SOL**	**De-minimis** Sole **(SOL)** in areas **27.7.D-G** "For common sole (Solea solea) up to a maximum of 3% in 2016, 2017 and 2018 of the total annual catches of this species by vessels using trammel and gill nets to catch common sole in divisions VIId, VIIe, VIIf and VIIg"	NWWHKE2SOL2 2016

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.5.B EU, 27.6 AND 27.7.A	Hake (*Merlllccius* merluccius);	GNS, GN, GND, GNC, GTN, GTR, GEN	all	Hake (*Merlllccius* merluccius); Species code: **HKE**	none	NWWHKE2 2016
27.5.B EU, 27.6, 27.7	Hake (*Merlllccius* merluccius) &/or Mackerel (S*comber scombrus*)	LHM	all	Hake (*Merlllccius* merluccius), Mackerel (S*comber scombrus*) Species codes: **HKE, MAC**	none	NWWHKEMAC1 2016
27.5.B EU, 27.6	Hake (*Merlllccius* merluccius) &/or Mackerel (S*comber scombrus*)	LTL	all	Hake (*Merlllccius* merluccius), Mackerel (S*comber scombrus*) Species codes: **HKE, MAC**	none	NWWHKEMAC2 2016
27.7.B-C,F-K	Hake (*Merlllccius* merluccius) &/or Mackerel (S*comber scombrus*)	LTL	all	Hake (*Merlllccius* merluccius), Albacore tuna (Thunnus alalunga) Species codes: **HKE, ALB**	none	NWWHKEALB 2016
27.5.B EU, 27.6 AND 27.7	Hake (*Merlllccius* merluccius)	LL, LLS, LLD, LX, LHP, LTL, LHM	all	Hake (*Merlllccius* merluccius) Species cods: **HKE** Only vessels not in NWWHKEMAC1 NWWHKEMAC2 NWWHKEALB	none	NWWHKE3 2016

NWW	**(cont)**					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.7.D Fisheries in ICES division VIId	Common Sole (*Solea solea*)	OTT, OTB, TBS, TBN, TB, PTB, OT, PT, TX	< 100mm	Where total landings per vessel of all species in 20l3 and 2014 consist of more than 5 % of common sole, the landing obligation shall apply to common sole. Only vessels not in NWWHKE1NEP1SOL1WHG1 NWWHKE1NEP1SOL1 NWWHKE1SOL1WHG1 NWWHKE1SOL1 NWWNEP1SOL1 NWWSOL1WHG1	none	NWWSOL1 2016
27.7.D	Common Sole (*Solea solea*)	TBB	all	Common Sole (*Solea solea*) Species code: **SOL**	**De-minimis** Sole **(SOL)** *For mesh ≥ 80mm* *"for common sole (So/ea solea), up to a maximum of 3 % in 2016, 2017 and 2018 of the total annual catches of this species by vessels using gear with increased selectivity (TBB gear with mesh size of 80-199 mm) in ICES divisions VIId, VIIe, VIIf and VIIg"*	NWWSOL2 2016
27.7.E	Common Sole (*Solea solea*)	TBB	all	Common Sole (*Solea solea*) Species code: **SOL** Where total landings per vessel of all species in 20l3 and 2014 consist of more than 10 % of common sole, the landing obligation shall apply to common sole.	**De-minimis** Sole **(SOL)** *For mesh ≥ 80mm* *"for common sole (So/ea solea), up to a maximum of 3 % in 2016, 2017 and 2018 of the total annual catches of this species by vessels using gear with increased selectivity (TBB gear with mesh size of 80-199 mm) in ICES divisions VIId, VIIe, VIIf and VIIg"*	NWWSOL3 2016

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.7.B, 27.7.C, 27.7.H, 27.7.J, 27.7.K	Common Sole (*Solea solea*)	TBB	all	Common Sole (*Solea solea*) Species code: **SOL** Where total landings per vessel of all species in 20I3 and 2014 consist of more than 5 % of common sole, the landing obligation shall apply to common sole.	*none*	NWWSOL4 2016
27.7.F and 27.7.G	Common Sole (*Solea solea*)	TBB	all	Common Sole (*Solea solea*) Species code: **SOL** Where total landings per vessel of all species in 20I3 and 2014 consist of more than 5 % of common sole, the landing obligation shall apply to common sole.	*"for common sole (So/ea solea), up to a maximum of 3 % in 2016, 2017 and 2018 of the total annual catches of this species by vessels using gear with increased selectivity (TBB gear with mesh size of 80-199 mm) in ICES divisions VIId, VIIe, VIIf and VIIg"*	NWWSOL5 2016
27.7.D; 27.7.E	Cod (Gas/us morIIIIa), Haddock (Melanogrammus *aeglefinus), Whiti*ng *(Merlangius merlangus*) and Saithe (*Pollachius virens*).	OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX	<100mm	*Whiti*ng (*Merlangius merlangus*) species code: **WHG** Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 25 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to whiting. Only vessels not in NWWHKE1NEP1SOL1WHG1 NWWHKE1NEP1WHG1 NWWHKE1SOL1WHG1 NWWHKE1WHG1 NWWNEP1WHG1 NWWSOL1WHG1	**De-minimis** Whiting **(WHG)** *"for whiting (Merlangius merlangus), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of less than 100 mm to catch whiting in ICES divisions VIId and VIIe"*	NWWWHG1 2016

NWW	(cont)					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code & first year
27.7.B; 27.7.C; 27.7.D; 27.7.E; 27.7.F; 27.7.G; 27.7.H; 27.7.J	Cod (Gas/us morllla), Haddock (Melanogrammus *aeglefinus), Whiti*ng *(Merlangius merlangus*) and Saithe (*Pollachius virens*).	OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX	>=100mm	*Whiti*ng *(Merlangius merlangus*) species code: **WHG** Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 25 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to whiting.	**De-minimis** Whiting **(WHG)** *"for whiting (Merlangius merlangus) up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of not less than 100 mm to catch whiting in ICES divisions Vllb-Vllj;"*	NWWWHG2 2016
27.7.B; 27.7.C; 27.7.F; 27.7.G; 27.7.H; 27.7.J; 27.7.K	Cod (Gas/us morllla), Haddock (Melanogrammus *aeglefinus), Whiti*ng *(Merlangius merlangus*) and Saithe (*Pollachius virens*).	OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX	<100mm	*Whiti*ng *(Merlangius merlangus*) species code: **WHG** Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 25 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to whiting.	**De-minimis** Whiting **(WHG)** *"for whiting (Merlangius merlangus), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of less than 100 mm to catch whiting in ICES subarea VII, except divisions VIIa, d and e."*	NWWWHG3 2016
27.7.K	Cod (Gas/us morllla), Haddock (Melanogrammus *aeglefinus), Whiti*ng *(Merlangius merlangus*) and Saithe (*Pollachius virens*).	OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX	>=100mm	*Whiti*ng *(Merlangius merlangus*) species code: **WHG** Where total landings per vessel of all species in 20 I3 and 2014 consist of more than 25 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to whiting.	*none*	NWWWHG4 2016

Regional Group						
SWW						
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.8	Anchovy (Engrraulis encrasicolus), mackerel (Scomber scombrus), horse mackerel (Trachurus spp.), sprat (Spratus sprattus)	PS	all	Anchovy (Engrraulis encrasicolus), mackerel (Scomber scombrus), horse mackerel (Trachurus spp.), sprat (Spratus sprattus) Species codes: **ANE, MAC, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ, SPR**	**De-minimis** Anchovy (**ANE**), mackerel (**MAC**), horse mackerel (**JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ**) *"in the purse seine fishery in ICES zones VIII, IX and X and in CECAF areas 34.1.1, 34.1.2 and 34.2.0 targeting the following species: up to a maximum of 5% in 2015 and 2016, and 4% in 2017, of the total annual catches of horse mackerel (Trachurus spp.) and mackerel (Scomber scombrus); and up to a maximum of 2% in 2015 and 2016, and 1% in 2017, of the total annual catches of anchovy (Engrraulis encrasicolus)"*	SWWPS1 2015
27.8		PTM	all	Anchovy (Engrraulis encrasicolus), mackerel (Scomber scombrus), horse mackerel (Trachurus spp.), Albacore tuna (Thunnus alalunga) Species codes: **ANE, MAC, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ, ALB**	**De-minimis** Albacore tuna **(ALB)** *"up to a maximum of 7% in 2015 and 2016 and 6% in 2017 for Albacore tuna (Thunnus alalunga) of the total annual catches in the albacore tuna directed fisheries using midwater pair trawls (PTM) in ICES zone VIII"* **De-minimis** Anchovy **(ANE)**, mackerel **(MAC)**, horse mackerel **(JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ)** *"up to a maximum of 5% in 2015 and 2016 and 4% in 2017 of the total annual catches in the pelagic trawl fishery for Anchovy (Engrraulis encrasicolus), mackerel (Scomber scombrus), horse mackerel (Trachurus spp.) in ICES zone VIII"*	SWWPTM1 2015

SWW	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.8	*Anchovy (Engrraulis encrasicolus), mackerel (Scomber scombrus), horse mackerel (Trachurus spp.), Albacore tuna (Thunnus alalunga), Blue whiting (Micromesistius poutassou)*	OTM	all	*Anchovy (Engrraulis encrasicolus), mackerel (Scomber scombrus), horse mackerel (Trachurus spp.), Albacore tuna (Thunnus alalunga), Blue whiting (Micromesistius poutassou)* Species codes: **ANE, MAC, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ, ALB, WHB**	**De-minimis** Anchovy **(ANE)**, mackerel **(MAC)**, horse mackerel **(JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ)** *"up to a maximum of 5% in 2015 and 2016 and 4% in 2017 of the total annual catches in the pelagic trawl fishery for Anchovy (Engrraulis encrasicolus), mackerel (Scomber scombrus), horse mackerel (Trachurus spp.) in ICES zone VIII"* **De-minimis** Blue whiting **(WHB)** *"for blue whiting (Micromesistius poutassou) up to a maximum of 7% in 2015 and 2016 and 6% in 2017 of the total annual catches in the industrial pelagic trawler fishery targeting that species in ICES zone VIII and processing that species on board to obtain surimi base"*	SWWOTM1 2015
27.8, 27.9	*mackerel (Scomber scombrus), Albacore tuna (Thunnus alalunga),*	LHM, LTL, BB	all	*mackerel (Scomber scombrus), Albacore tuna (Thunnus alalunga),* Species codes: **MAC, ALB**	*none*	SWWLHM1 2015
27.9	*Anchovy (Engrraulis encrasicolus), mackerel (Scomber scombrus), horse mackerel (Trachurus spp.)*	PS	all	*Anchovy (Engrraulis encrasicolus), mackerel (Scomber scombrus), horse mackerel (Trachurus spp.)* Species codes: **ANE, MAC, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ**	**De-minimis** Anchovy (**ANE**), mackerel (**MAC**), horse mackerel (**JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ**) *"in the purse seine fishery in ICES zones VIII, IX and X and in CECAF areas 34.1.1, 34.1.2 and 34.2.0 targeting the following species: up to a maximum of 5% in 2015 and 2016, and 4% in 2017, of the total annual catches of horse mackerel (Trachurus spp.) and mackerel (Scomber scombrus); and up to a maximum of 2% in 2015 and 2016, and 1% in 2017, of the total annual catches of anchovy (Engrraulis encrasicolus)"*	SWWPS2 2015

SWW	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.10, 34.1.1, 34.1.2, 34.2.0	*Jack mackerel (Trachurus spp.)*	PS	all	*Jack mackerel (Trachurus spp.)* Species codes: **JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ**	**De-minimis** Jack mackerel (**JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ**) *"in the purse seine fishery in ICES zones VIII, IX and X and in CECAF areas 34.1.1, 34.1.2 and 34.2.0 targeting the following species: up to a maximum of 5% in 2015 and 2016, and 4% in 2017, of the total annual catches of horse mackerel (Trachurus spp.) and mackerel (Scomber scombrus); and up to a maximum of 2% in 2015 and 2016, and 1% in 2017, of the total annual catches of anchovy (Engraulis encrasicolus)"*	SWWPS3 2015
27.10, 34.1.1, 34.1.2, 34.2.0	*Albacore tuna (Thunnus alalunga),*	LHP, BB	all	*Albacore tuna (Thunnus alalunga),* Species code: **ALB**	*none*	SWWLHP 2015
27.10, 34.1.1, 34.1.2, 34.2.0	*Albacore tuna (Thunnus alalunga),*	LLD	all	*Albacore tuna (Thunnus alalunga),* Species code: **ALB**	*none*	SWWLLD 2015
27.8.A-B,D-E	Norway lobster (*Nephrops norvegicus*), Common sole (*Solea solea*),	OTB,OTT, PTB, TBN, TBS, TB, OT,PT, TX	70-100mm	Norway lobster (*Nephrops norvegicus*), Common sole (*Solea solea*), Species codes: **SOL, NEP**	**HS-exemption** Norway lobster (**NEP**) *"exemption… …high survival rates shall apply in 2016 to Norway lobster (Nephrops norvegicus) caught in ICES subareas VIII and IX by trawls (gear codes: OTB, OTT, PTB, TBN, TBS, TB, OT, PT and TX)"* **De-minimis** Common sole (**SOL**) *"for common sole (Solea solea) up to a maximum of 5% of the total annual catches of this species by vessels using bean trawl (gear code TBB) and bottom trawls (gear codes: OTB, OTT, PTB, TBN, TBS, TB, OT, PT and TX) targeting this species in ICES divisions VIIIa and VIIIb"*	SWWOTB1 2016

SWW	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.8.A-B,D-E	Hake (*Merlllccius* merluccius), Norway lobster (*Nephrops norvegicus*)	OTB,OTT, PTB, TBN, TBS, TB, OT,PT, TX	≥100mm	Hake (*Merlllccius* merluccius), Norway lobster (*Nephrops norvegicus*) Species codes: **HKE, NEP**	**HS-exemption** Norway lobster (**NEP**) *"exemption… …high survival rates shall apply in 2016 to Norway lobster (Nephrops norvegicus) caught in ICES subareas VIII and IX by trawls (gear codes: OTB, OTT, PTB, TBN, TBS, TB, OT, PT and TX)"* **De-minimis** Hake (**HKE**) *"for hake (Merlllccius merluccius) up to a maximum of 7% in 2016 and 2017 and up to 6% in 2018 of the total annual catches of this species by vessels using trawls (gear codes: OTT, OTB, PTB, OT, PT, TBN, TBS, TX, SSC, SPR, TB, SDN, SX and SV) targeting this species in ICES subareas VIII and IX"*	SWWOTB2 2016
27.8.A-B,D-E	Hake (*Merlllccius* merluccius)	SDN, SSC, SPR, SX, SV	≥100mm	Hake (*Merlllccius* merluccius) Species code: **HKE**	**De-minimis** Hake (**HKE**) *"for hake (Merlllccius merluccius) up to a maximum of 7% in 2016 and 2017 and up to 6% in 2018 of the total annual catches of this species by vessels using trawls (gear codes: OTT, OTB, PTB, OT, PT, TBN, TBS, TX, SSC, SPR, TB, SDN, SX and SV) targeting this species in ICES subareas VIII and IX"*	SWWOTB3 2016
27.8.A-B,D-E	Common sole (*Solea solea*),	TBB	70-100mm	Common sole (*Solea solea*), Species code: **SOL,**	**De-minimis** Common sole (**SOL**) *"for common sole (Solea solea) up to a maximum of 5% of the total annual catches of this species by vessels using bean trawl (gear code TBB) and bottom trawls (gear codes: OTB, OTT, PTB, TBN, TBS, TB, OT, PT and TX) targeting this species in ICES divisions VIIIa and VIIIb"*	SWWTBB 2016

SWW	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.8.A-B,D-E	Common sole (*Solea solea*), Hake (*Merlllccius* merluccius)	GNS, GN, GND, GNC, GTN, GEN	≥100mm	Common sole (*Solea solea*), Hake (*Merlllccius* merluccius) Species codes: **SOL, HKE**	**De-minimis** Common sole (**SOL**) *"for common sole (Solea solea) up to a maximum of 3% of the total annual catches of this species by vessels using trammel nets and gillnets (gear codes:GNS, GN, GND, GNC, GTN, GTR and GEN) targeting this species in ICES divisions VIIIa and VIIIb"*	SWWGNS1 2016
27.8.A-B,D-E	Common sole (*Solea solea*),	GTR	≥100mm	Common sole (*Solea solea*), Species code: **SOL**	*none*	SWWGTR1 2016
27.8.A-B,D-E	Hake (*Merlllccius* merluccius)	LL, LLS	all	Hake (*Merlllccius* merluccius) Species code: **HKE**	*none*	SWWLL1 2016
27.8.C; 27.9.A	Norway lobster (*Nephrops norvegicus*)	OTB,OTT, PTB, TBN, TBS, TB, OT,PT, TX	≥70mm	Norway lobster (*Nephrops norvegicus*) Species code: **NEP** only vessels not in SWWOTB5	**HS-exemption** Norway lobster (**NEP**) *"exemption… …high survival rates shall apply in 2016 to Norway lobster (Nephrops norvegicus) caught in ICES subareas VIII and IX by trawls (gear codes: OTB, OTT, PTB, TBN, TBS, TB, OT, PT and TX)"*	SWWOTB4 2016

SWW	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.8.C; 27.9.A	Hake (*Merlllccius* merluccius), Norway lobster (*Nephrops norvegicus*)	OTB,OTT, PTB, TBN, TBS, TB, OT,PT, TX	≥70mm	Hake (*Merlllccius* merluccius), Norway lobster (*Nephrops norvegicus*) Species codes: **HKE, NEP** Total hake landings in the period 2013/2014 consist of more than 10 % of all landed species and more than 10 metric tons.	**HS-exemption** Norway lobster (**NEP**) *"exemption… …high survival rates shall apply in 2016 to Norway lobster (Nephrops norvegicus) caught in ICES subareas VIII and IX by trawls (gear codes: OTB, OTT, PTB, TBN, TBS, TB, OT, PT and TX)"* **De-minimis** Hake (**HKE**) *"for hake (Merlllccius merluccius) up to a maximum of 7% in 2016 and 2017 and up to 6% in 2018 of the total annual catches of this species by vessels using trawls (gear codes: OTT, OTB, PTB, OT, PT, TBN, TBS, TX, SSC, SPR, TB, SDN, SX and SV) targeting this species in ICES subareas VIII and IX"*	SWWOTB5 2016
27.8.C; 27.9.A	Hake (*Merlllccius* merluccius)	SDN, SSC, SPR, SX, SV	≥100mm	Hake (*Merlllccius* merluccius) Species code: **HKE** Total hake landings in the period 2013/2014 consist of more than 10 % of all landed species and more than 10 metric tons.	**De-minimis** Hake (**HKE**) *"for hake (Merlllccius merluccius) up to a maximum of 7% in 2016 and 2017 and up to 6% in 2018 of the total annual catches of this species by vessels using trawls (gear codes: OTT, OTB, PTB, OT, PT, TBN, TBS, TX, SSC, SPR, TB, SDN, SX and SV) targeting this species in ICES subareas VIII and IX"*	SWWOTB6 2016

SWW	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.9	*Horse mackerel (Trachurus spp.)*	GND/SB	all	*Horse mackerel (Trachurus spp.)* Species codes: **JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ** From 2016 only vessels not in SWWGNS2	*none*	SWWGND1 2015
27.9.A	Hake (*Merlllccius* merluccius), *Horse mackerel (Trachurus spp.)*	GND	80-99mm	Hake (*Merlllccius* merluccius), *Horse mackerel (Trachurus spp.)* Species codes: **HKE, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ** Total hake landings in the period 2013/2014 consist of more than 10 % of all landed species and more than 10 metric tons.	*none*	SWWGNS2 2016
S7.8.C, 27.9.A	Hake (*Merlllccius* merluccius)	GNS, GN, GND, GNC, GTN, GEN	80-99mm	Hake (*Merlllccius* merluccius) Species code: **HKE** Total hake landings in the period 2013/2014 consist of more than 10 % of all landed species and more than 10 metric tons. Only vessels not in SWWGNS2	*none*	SWWGNS3 2016
27.9.A	Common sole (*Solea solea*),plaice (*Pleuronectes platessa*), *Horse mackerel (Trachurus spp.)*	GND	≥100mm	Hake (*Merlllccius* merluccius), *Horse mackerel (Trachurus spp.)* Species codes: **PLE, SOL, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ**	*none*	SWWGNS4 2016

SWW	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.9.A	Common sole (*Solea solea*),plaice (*Pleuronectes platessa*)	GNS, GN, GND, GNC, GTN, GEN, GTR	≥100mm	Common sole (*Solea solea*),plaice (*Pleuronectes platessa*) Species codes: **PLE, SOL** Only vessels not in SWWGNS4	*none*	SWWGNS5 2016
27.9	*Albacore tuna (Thunnus alalunga)*	LL	all	*Albacore tuna (Thunnus alalunga)* Species code: **ALB** From 2016 only vessels not in SWWLL3	*none*	SWWLL2 2015
27.8.C; 27.9.A	*Albacore tuna (Thunnus alalunga),* Hake (*Merlllccius* merluccius)	LL, LLS	Hook size bigger than 3,85 +/- 1,15 length and 1,6 +/- 0,4 width	*Albacore tuna (Thunnus alalunga)* Species codes: **ALB, HKE** Total hake landings in the period 2013/2014 consist of more than 10 % of all landed species and more than 10 metric tons.	*none*	SWWLL3 2016

Regional Group						
North Sea						
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.3.A	Herring (*Clupea harengus*), Mackerel (S*comber scombrus*), Sandeel (*Ammodytes spp*), Norway pout (*Trisopterus esmarkii*), Sprat (*Sprattus sprattus*)	PS	all	Herring (*Clupea harengus*), Mackerel (S*comber scombrus*), Sandeel (*Ammodytes spp*), Norway pout (*Trisopterus esmarkii*), Sprat (*Sprattus sprattus*) Species codes: **HER, MAC, SAN, NOP, SPR**	**HS exemption** Herring (**HER**), Mackerel (**MAC**): If • The gear is fitted with visible buoys marking the point of retrieval. • The extent that purse seine has been hauled is recorded for each haul by electronic recording and documenting system. Point of retrieval is <= 80% closure. (MAC) <= 80% closure. (HER & MAC) <= 90% closure. (HER)	NSPS1 2015
27.4	Herring (*Clupea harengus*), Mackerel (S*comber scombrus*), Horse mackerel (*Trachurus spp.*) , Blue whiting (*Micromesistius poutassou*), Sandeel (*Ammodytes spp*), Norway pout (*Trisopterus esmarkii*), Sprat (*Sprattus sprattus*)	PS	all	Herring (*Clupea harengus*), Mackerel (S*comber scombrus*), Horse mackerel (*Trachurus spp.*) , Blue whiting (*Micromesistius poutassou*), Sandeel (*Ammodytes spp*), Norway pout (*Trisopterus esmarkii*), Sprat (*Sprattus sprattus*) Species codes: **HER, MAC, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ, WHB, SAN, NOP, SPR**	**HS exemption** Herring (**HER**), Mackerel (**MAC**): If area is 27.6 and • The gear is fitted with visible buoys marking the point of retrieval. • The extent that purse seine has been hauled is recorded for each haul by electronic recording and documenting system. Point of retrieval is <= 80% closure. (MAC) <= 80% closure. (HER & MAC) <= 90% closure. (HER)	NSPS2 2015

North Sea	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.3.A ICE Division IIIa	Sole (Solea solea) and haddock (Melanogrammus aeglefinus),	OTB, TBN	>= 70mm and selective grid with bar spacing max 35 mm		For common sole and haddock combined, up to a maximum of 2 % of the total annual catches of Norway lobster, common sole and haddock. & **HS-exemption** Norway lobster (**NEP**)	NSSOLHADNEP1 2016 NB: must have "GRID35" entered under SPECON_TECH
27.3.A ICE Division IIIa	Norway lobster (*Nephrops norvegicus*)	OTB, TBN	>= 90mm and top panel of at least 270 mm mesh size (d iamond mesh) or at least 140 mm mesh size (square mesh).		**HS-exemption** Norway lobster (**NEP**)	NSNEP1 2016 NB: must have "P270D140S" entered under SPECON_TECH

North Sea	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.2.A EU, 27.3.A, 27.4	Haddock (*Melanogrammus aeglefinus*), Plaice (*Pleuronectes platessa*), Saithe (*Pollachius virens*), Northern prawn (*Pandalus borealis*)	OTB, OTT, OT, PTB, PT, TBN, TBS, OTM, PTM, TMS, TM, TX, SDN, SSC, SPR, TB, SX, SV	> 100mm	Haddock (*Mela/logrammus aeg!efinus*), Plaice (*Pleuronectes platessa*), Saithe (*Pollachius virens*), Northern prawn (*Pandalus borealis*) Species codes: **HAD, PLE, POK, PRA** Only vessels not in NSSOLHADNEP1 NSNEP1	See NSOTM2	NSOTB1 2016
27.3.A	Haddock (*Melanogrammus aeglefinus*), Common Sole (*Solea solea*) , Norway lobster (*Nephrops norvegicus*), Northern prawn (*Pandalus borealis*)	OTB, OTT, OT, PTB, PT, TBN, TBS, OTM, PTM, TMS, TM, TX, SDN, SSC, SPR, TB, SX, SV	70-99mm	Haddock (*Melanogrammus aeglefinus*), Common Sole (*Solea solea*) , Norway lobster (*Nephrops norvegicus*), Northern prawn (*Pandalus borealis*) Species codes: **HAD, SOL, NEP, PRA** Only vessels not in NSSOLHADNEP1 NSNEP1	none	NSOTB2 2016
27.2.A EU, 27.4	Common Sole (*Solea solea*) , Norway lobster (*Nephrops norvegicus*), Northern prawn (*Pandalus borealis*)	OTB, OTT, OT, PTB, PT, TBN, TBS, OTM, PTM, TMS, TM, TX, SDN, SSC, SPR, TB, SX, SV	80-99mm	Common Sole (*Solea solea*) , Norway lobster (*Nephrops norvegicus*), Northern prawn (*Pandalus borealis*) Species codes: **SOL, NEP, PRA**	**De-minimis** Norway lobster (**NEP**) "*for Norway lobster below minimum conservation reference size, up to a maximum of 6% of the total annual catches of this species by vessels using bottom trawls (OTB, TBN, OTT, TB) of mesh size 80-99mm in ICES Subarea IV and Union waters of ICES Division IIa*" See also NSOTM2	NSOTB3 2016

North Sea	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.2.A EU, 27.3.A, 27.4	Northern prawn (*Pandalus borealis*)	OTB, OTT, OT, PTB, PT, TBN, TBS, OTM, PTM, TMS, TM, TX, SDN, SSC, SPR, TB, SX, SV	32-69mm	Northern prawn (*Pandalus borealis*) Species codes: **PRA** IF GEAR OTB, PTB Herring (*Clupea harengus*), Mackerel (S*comber scombrus*), Sprat (*Sprattus sprattus*) Species codes: **HER, MAC, SPR**	See NSOTM2	NSOTB4 2016
27.3.A	Herring (*Clupea harengus*), Mackerel (S*comber scombrus*), Sprat (*Sprattus sprattus*)	OTB, PTB	< 70mm	Herring (*Clupea harengus*), Mackerel (S*comber scombrus*), Sprat (*Sprattus sprattus*) Species codes: **HER, MAC, SPR**	none	NSOTB5 2015 ENDS 2016 (use instead NSOTB4)
27.3.A, 27.4	Sandeel (*Ammodytes spp*), Norway pout (*Trisopterus esmarkii*), Sprat (*Sprattus sprattus*)	OTB, OTT, OT, PTB, PT, TBN, TBS, OTM, PTM, TMS, TM, TX, SDN, SSC, SPR, TB, SX, SV	< 32mm	Sandeel (*Ammodytes spp*), Norway pout (*Trisopterus esmarkii*), Sprat (*Sprattus sprattus*) Species codes: **SAN, NOP, SPR**	none	NSIND1 2015
27.3.A	Herring (*Clupea harengus*), Mackerel (S*comber scombrus*), Horse mackerel (*Trachurus spp.*), Greater slover smelt , i.e. Greater argentine (*Argentina silus*), Blue whiting (*Micromesistius poutassou*), Sprat (*Sprattus sprattus*)	OTM, PTM	all	Herring (*Clupea harengus*), Mackerel (S*comber scombrus*), Horse mackerel (*Trachurus spp.*), Greater slover smelt , i.e. Greater argentine (*Argentina silus*), Blue whiting (*Micromesistius poutassou*), Sprat (*Sprattus sprattus*) Species codes: **HER, MAC, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ, ARU, WHB, SPR**	none	NSOTM1 2015 ENDS 2016 (use instead NSIND1 or NSOTB1 or NSOTB2 or NSOTB4)

North Sea	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.2.A EU, 27.4	Herring (*Clupea harengus*), Mackerel (*Scomber scombrus*), Horse mackerel (*Trachurus spp.*), Greater slover smelt , i.e. Greater argentine (*Argentina silus*), Blue whiting (*Micromesistius poutassou*), Sprat (*Sprattus sprattus*)	OTM, PTM	all	Herring (*Clupea harengus*), Mackerel (*Scomber scombrus*), Horse mackerel (*Trachurus spp.*), Greater slover smelt , i.e. Greater argentine (*Argentina silus*), Blue whiting (*Micromesistius poutassou*), Sprat (*Sprattus sprattus*) Species codes: **HER, MAC, JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ, ARU, WHB, SPR**	**De-minimis** Herring (**HER**), Mackerel (**MAC**), Horse mackerel (**JAX, HMC, HMG, HMM, HMZ, HOM, JAA, JJM, CJM, PJM, TUZ**), Whiting (**WHG**) "*up to a maximum of 3% in 2015 and 2% for 2016 of the total annual catches of mackerel, horse mackerel, herring and whiting in the pelagic fishery with pelagic trawllers up to 25 metres in length overall, using mid-water trawl (OTM), targeting mackerel, horse mackerel and herring in ICES areas IVb and c south of 54 degrees north*"	NSOTM2 2015 FROM 2016 (use instead NSIND1 or NSOTB1 or NSOTB3 or NSOTB4 for these species and gears) except mesh range 70-79mm
27.4	Common Sole (*Solea solea*)	TBB	80-1 19 mm with increased mesh size in the extension of the beam trawl	Common Sole (*Solea solea*) Species codes: **SOL**	**De-minimis** Common sole (**SOL**) for common sole below minimum conservation reference size, up to a maximum of 7 % of the total annual catches of this species	NSSOL1 2016 NB: must have "TBB1T" entered under SPECON_TECH

North Sea	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.2.A.EU, 27.3.A, 27.4	Plaice (*Pleuronectes platessa*), Northern prawn (*Pandalus borealis*)	TBB	> 120mm	Plaice (*Pleuronectes platessa*), Northern prawn (*Pandalus borealis*) Species codes: **PLE, PRA**		NSTBB1 2016
27.2.A.EU, 27.3.A, 27.4	Common Sole (*Solea solea*), Northern prawn (*Pandalus borealis*)	TBB	80-1 19 mm	Common Sole (*Solea solea*), Northern prawn (*Pandalus borealis*) Species codes: **SOL, PRA** Only vessels not in NSSOL1	**De-minimis** Common sole (**SOL**) for common sole smaller than 19 cm, up ro a maximum of 3.7 % of the total annual catches of this species by vessels of mesh size 80-90mm and in the southern part of the North Sea (ICES Subarea IV south of 55/56 N)	NSTBB2 2016
27.3.A, 27.4	Herring (*Clupea harengus*), Mackerel (*Scomber scombrus*)	GNS, GND	50-99mm	Herring (*Clupea harengus*), Mackerel (*Scomber scombrus*) Species codes: **HER, MAC**	none	NSGNS1 2015 ENDS 2016 (use instead NSGN1)
27.4	Mackerel (*Scomber scombrus*)	GTR	50-99mm	Mackerel (*Scomber scombrus*) Species codes: **MAC**	none	NSGTR1 2015 ENDS 2016 (use instead NSGN1)

North Sea	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.2.A EU, 27.3.A, 27.4	Common Sole (*Solea solea*), Northern prawn (*Pandalus borealis*)	GN, GNS, GND, GNC, GTN, GTR, GEN, GNF	all	Common Sole (*Solea solea*), Northern prawn (*Pandalus borealis*) Species codes: **SOL, PRA**	**De-minimis** Common sole (**SOL**) "*up to a maximum of 3% of the total annual catches of this species by vessels using trammel nets and gill nets (GN, GNS, GND, GNC, GTN, GTR, GEN, GNF) in the ICES Division IIIa, Subarea IV and Union waters of ICES Division IIa*"	NSGN1 2016
27.3.A, 27.4	Herring (*Clupea harengus*), Mackerel (S*comber scombrus*)	GNS, GND	50-99mm	Herring (*Clupea harengus*), Mackerel (S*comber scombrus*) Species codes: **HER, MAC**	none	NSGN1 2016
27.4	Mackerel (S*comber scombrus*)	GTR	all	Mackerel (S*comber scombrus*) Species codes: **MAC**	none	NSGN1 2016
27.2.A.EU, 27.3.A, 27.4	Mackerel (S*comber scombrus*), Hake (*Merlllccius* merluccius), Northern prawn (*Pandalus borealis*)	LLS, LHP, LHM	n.a.	Mackerel (S*comber scombrus*) Species codes: **MAC** FROM 2016 Hake (*Merlllccius* merluccius), Northern prawn (*Pandalus borealis*) Species codes: **HKE, PRA**		NSLL1 2015
27.2.A.EU, 27.3.A, 27.4	Hake (*Merlllccius* merluccius), Northern prawn (*Pandalus borealis*)	LLD, LL, LTL, LX	n.a.	Hake (*Merlllccius* merluccius), Northern prawn (*Pandalus borealis*) Species codes: **HKE, PRA**		NSLL2 2016

North Sea	cont					
FAO area(s)	Fishery	Gear Code(s)	Mesh size	Landing Obligation	Derogation	Code
27.2.A.EU, 27.3.A, 27.4	Northern prawn (*Pandalus borealis*)	FPO, FIX, FYK, FPN	all	Northern prawn (*Pandalus borealis*) Species codes: **HER, MAC, SPR,** **FROM 2016** Northern prawn (*Pandalus borealis*) Species codes: **NEP, PRA**	**HS-exemption** Norway lobster (**NEP**) *"catches with pots (FPO)"*	FPO1 2015

Appendix 12

Species coding according to the FAO Fisheries and Aquaculture Statistics and Information Service (FIPS) Alpha 3 code

http://www.fao.org/fishery/collection/asfis/en

In addition, for landings where it is not possible to attach an FAO Alpha 3 code

Common name	Alpha-3 code	Scientific name
1. Other Species	OTH	*not applicable*

Appendix 13

Discard observer refusal rate

Definition of refusal rate is taken from SGPIDS 2013[11]

"the proportion of skippers who, having been successfully contacted ultimately failed to allow the observer to go on-board to obtain the sample. This refusal rate is calculated as the number of industry refusals divided by the number of sequential selections or approaches *where contact was successfully made*."

A successful contact is defined as a phone call to a vessel skipper being answered.

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[11] ICES CM 2013/ACOM:56

Appendix 14

Enter latitude and longitude as real number to accuracy of 0.25 degrees.

If supplying information held on ICES rectangle basis, supply latitude and longitude of the rectangle centre

e.g. rectangle 01D9

RECTANGLE_LAT: 36.25

RECTANGLE_LON: -10.50

An explanation why this is necessary is found below

Rectangle information will be converted to c-squares notation, i.e.

Type	Accuracy	Format
string	*0.5*0.5 degree*	*XXXX:XXX:X*

The following is provided for information:

C-squares notation

See http://www.cmar.csiro.au/csquares/spec1-1.htm for a description on how latitude and longitude values are converted to the c-squares notation. The following is selected text from that page.

"C-squares" (acronym for "concise spatial query and representation system") is a grid based global locator system freely available for use worldwide without royalty or licence.

*C-squares incorporates the "global quadrant" notation of WMO squares, where the initial digit **1, 3, 5** or **7** indicates the global quadrant NE, SE, SW and NW, respectively.*

C-squares takes as its starting point the ten degree global grid square notation referred to as WMO or World Meteorological Organization squares, as illustrated by the U.S. NODC (National Oceanographic Data Center). Since the c-squares notation is fully hierarchical, all smaller resolution c-squares retain these initial four digits which serve to indicate the ten degree global grid square within which they are located.

Individual c-squares take their nomenclature from the position of their two "minimum absolute" boundaries closest to the global origin (0 latitude, 0 longitude) in decimal degrees, with latitude preceding longitude, e.g. 10 in the case of a cell extending from +10 to +20 degrees, -10 in the case of a cell extending from -10 to -20 degrees.

Values representing the position of these "minimum" boundaries of latitude and longitude are then encoded within a succession of one or more "cycles", where the first cycle is four digits and comprises the (WMO squares notation) 10°×10° square identifier, and successive cycles (where present) are three digits long or (in the terminal case), optionally a single digit (an incomplete cycle). Successive cycles are separated by a colon character.

For example, for fishing conducted in ICES rectangle D901

- The rectangle is in the NW quadrant – initial integer is 7 and conversion to c-squares proceeds using the latitude and longitude of the south east corner of the rectangle
- Latitude of south east corner of the rectangle is 36° N
- Longitude of south east corner of the rectangle is 10° W :c-squares code is 7301:360:1
- Absolute values of latitude in decimal degrees (i.e., regardless of sign) are represented by the second digit in every cycle – here the 3 and the 6.
- Absolute values of longitude in decimal degrees are represented by the third and fourth digits in the first cycle (representing hundreds then tens), and the third digit of successive cycles (units, tenths, hundredths, etc.). – here 0 hundreds and 1 ten and 0 units.
- The final digit is
  - 1 if the absolute value of the decimal Latitude and Longitude are both <0.5
  - 2 If decimal latitude is < 0.5 but decimal longiture ≥ 0.5
  - 3 If decimal latitude is ≥ 0.5 but decimal longiture < 0.5
  - 4 if both decimal Latitude and Longitude are ≥ 0.5

Conversion from GFCM and ICES rectangle information.

c-squares at *0.5*0.5* degree resolution were chosen because it is directly equivalent to the square grid produced for the Mediterranien by GFCM and the nearest equivalent to the ICES rectangle grid, see

https://circabc.europa.eu/faces/jsp/extension/wai/navigation/container.jsp?FormPrincipal:_idcl=F ormPrincipal:_id1&FormPrincipal_SUBMIT=1&id=65d9a1a6-ac63-41cd-8ef6- 9d5a638a7d80&javax.faces.ViewState=x64FG6y1N%2FOqmJe0nkW0vadUp8g%2FBGkqQJisV gpdA0FJlX2RFykmy97MQPHOVVTHcHZ%2BU7ks51%2FMYmtdWPCNz44D8kgU8k8LWF0N8s U5jxWyfUkppsCCm2XyBtEszMx33sUQNN%2FwAJXf6mLJtdAVn3vxsuo%3D

and file "StatRecGrids_130703ma.doc".

Points "on the line" are normally encoded within the next "higher" square, i.e. further away from the global origin. In other words, a point at +10 latitude will be encoded within the ten degree square covering +10 to +20, not 0 to +10. This implies effort and landings will be assigned to a different c-square depending on where in the ICES rectangle (or GFCM square) the latitude and longitude are taken. Therefore, for consistency across data submissions the request is for the latitude and longitude of the centre of the rectangle/square.

Appendix 15

Days at Sea and Fishing days calculation

At a DCF Ad-Hoc workshop[12] a standardised way to calculate days at sea and fishing days was agreed. In addition a package[13], written in the 'R' programming language was written to allow countries to complete calculations in the agreed way.

To make use of the package it is necessary to have installed R version 3.3.2 or above and then to install the 'fecR' package.

Visit

https://CRAN.R-project.org/package=fecR

for details on the package. There is a reference manual and two vignettes to provide information on the package and how to use it.

To make use of the days at sea and fishing days calculation algorithm but without using the fecR package please refer to the workshop report.

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[12] Castro Ribeiro, C., Holmes, S., Scott, F., Berkenhagen, J., Demaneche, S., Prista, N., Reis, D., Reilly, T., Andriukaitiene, J., Aquilina, M., Avdič Mravlje, E., Calvo Santos, A., Charilaou, C., Dalskov, J., Davidiuk, I., Diamant, A., Egekvist, J., Elliot, M., Ioannou, M., Jakovleva, I. Kuzebski, E., Ozernaja, O., Pinnelo, D., Thasitis, I., Verlé, K., Vitarnen, J., Wójcik, I..Report of the 2nd Workshop on Transversal Variables. Nicosia, Cyprus. 22-26 February 2016. A DCF ad-hoc workshop. 109pp.EUR 27897; doi 10.2788/042271.

[13] Finlay Scott, Nuno Prista and Thomas Reilly (2016). fecR: Fishing Effort Calculator in R. R package version 0.0.1. https://CRAN.R-project.org/package=fecR

Electronically signed on 28/06/2017 17:20 (UTC+02) in accordance with article 4.2 (Validity of electronic documents) of Commission Decision 2004/563

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Annex 3. Proposed New-FDI data call 2018

This annex reflects the decisions made following the EWG and subsequent STECF plenary and represents the definition of the data call at the time of publication of this report. It must not, however, be regarded as the final data call document but rather as a draft.

If allowed, all missing values (empty data cells) must be indicated by 'NK'[11]:

This applies for both numeric and alpha-numeric fields.

A. Catch data for 2015, 2016 and 2017. Please ensure that data entries are fully consistent with coding given in the Appendixes. Data to be provided for all landings, both those from metiers selected for biological sampling and otherwise.

1. COUNTRY: to be given according to the code list provided in Appendix 1. Missing values not allowed.
2. YEAR: to be given in four digits, like 2004. Missing values not allowed.
3. QUARTER: to be given as one digit, like 1, 2, 3, or 4. Missing values not allowed.
4. VESSEL_LENGTH: to be given according to the code list provided in Appendix 2. If not known put "NK".
5. FISHING_TECH: to be given according to the code list provided in Appendix 3. Missing values not allowed.
6. GEAR_TYPE: to be given according to the code list provided in Appendix 4. If not known put "NK".
7. MESH_SIZE_RANGE: to be given according to the code list provided in Appendix 5. If not known put "NK".
8. METIER: to be given according to Appendix 6. If not known put "NK".
9. DOMAIN_DISCARDS: text in format specified in Appendix 7[12]. If not known put "NK".
10. DOMAIN_LANDINGS: text in format specified in Appendix 7. If not known put "NK".
11. SUPRA_REGION: to be given according to the code list in Appendix 8. Missing values not allowed.
12. SUB_REGION: to be given according to the code list in Appendix 8. If not known put "NK".
13. EEZ_INDICATOR: to be given according to the code list in Appendix 8. If not applicable put "NA" (see appendix 8). If not known put "NK" (assumed the case if SUB_REGION is not known).
14. GEO_INDICATOR: to be given according to the code list in Appendix 9. If not known put "NK".
15. SPECON_TECH: to be given according to Appendix 10, if SPECON is not applicable, "NA" should be given. If not known put "NK".
16. TARGET_ASSEMBLAGE: to be given according to Appendix 6. If not known put "NK".
17. DEEP: Enter "DEEP" or "NA" (i.e. all landings, discards and other biological parameters falling under the Deep Sea regulations should be indicated with "DEEP". If fishing is not falling under the Deep Sea regulations "NA" should be given.)[13]
18. SPECIES: to be given according to the FAO three alpha code, see Appendix 11. Missing values not allowed.
19. TOTWGHTLANDG: estimated landings in **tonnes** (live weight). Precision to 3 digits after the decimal (nearest kg). Missing values not allowed.
20. TOTVALLANDG: estimated total value of the landings in **Euro**. If not known put "NK".
21. UNWANTED_CATCH: estimated unwanted catch - of any type including landings below MCRS (minimum conservation reference size) - in **tonnes**. Precision to 3 digits after the decimal (nearest kg). If not known put "NK".
22. CONFIDENTIAL: If data considered subject to confidentiality enter "Y", otherwise enter "N". Missing values not allowed.

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[11] Changed to 'NK' from 'NONE' as this code familiar to those answering Fleet Economic call. NK also introduced for both alpha-numeric and numeric fields on advice of IT specialist. The code 'NA' is also introduced for cases where "Not Applicable" is meant rather than not known, e.g. specific technical condition (SPECON_TECH).

[12] Domains refer to the group of vessels used to calculate estimates (discards, numbers at age, number at length) by a country. The domain may or may not be equivalent to a metier.

[13] For data up to and including 2016: R(EC) No. 2347/2002. For data from 2017 R (EU) 2016/2336.

B. Catch at length

It is proposed for JRC to calculate age and length profiles based on the TOTWGHTLANDG and UNWANTEDCATCH values of Table A compared to Tables C-F where appropriate. The Table B of the 2017 call becomes redundant under this proposal. The header is kept here now as a place holder so that other tables can retain the same letter shorthand (Table C, Table D etc.) as in the body of the report and the 2017 call (for easier comparison).

A proposed new Table B is:

B. Refusal rate

1. COUNTRY: to be given according to the code list provided in Appendix 1. Missing values not allowed.
2. YEAR: to be given in four digits, like 2004. Missing values not allowed.
3. SAMPLE_FRAME: free text. Name of sample frame over which refusal rate calculated.
4. REFUSAL_RATE: the refusal rate for discard observers to be given according to Appendix 12. If not known put "NK".

C. Unwanted catch biological data (age based) for 2015, 2016 and 2017. Please ensure that data entries are fully consistent with coding given in the Appendixes.

1. COUNTRY: to be given according to the code list provided in Appendix 1. Missing values not allowed.
2. YEAR: to be given in four digits, like 2004. Missing values not allowed.
3. DOMAIN_DISCARDS: text in format specified in Appendix 7. Missing values not allowed.
4. SPECIES: to be given according to the FAO three alpha code list, see Appendix 11. Missing values not allowed.
5. TOTWGHTLANDG: estimated landings in **tonnes**. Precision to 3 digits after the decimal (nearest kg). Missing values not allowed.
6. UNWANTED_CATCH: estimated unwanted catch - of any type including landings below MCRS (minimum conservation reference size) - in **tonnes**. Precision to 3 digits after the decimal (nearest kg). If age based information is present, this quantity should correspond to the sum of products. Missing values not allowed.
7. NO_SAMPLES_UC: the number of TRIPS should be given that relate to unwanted catch only; a number should be given only if it relates to this domain; otherwise "NK" should be given.
8. NO_AGE_MEASUREMENTS_UC: the number of age measurements should be given that relate to unwanted catch only. If an ALK formed from a larger aggregation of vessels than the domain has been used for this domain insert the total number of age measurements used to form the ALK. If age measurements not available or number of measurements not known put "NK".
9. AGE_MEASUREMENTS_PROP: If an ALK formed from a larger aggregation of vessels than the domain has been used for this domain insert the proportion of age measurements coming from the domain. If not applicable put "NA". If not known put "NK".
10. MIN_AGE: the minimum age in the data for this SPECIES & DOMAIN combination; if minimum age and maximum age are both "NK", no age based data are given; minimum age and maximum age must either both be "NK" or both be not "NK".
11. MAX_AGE: the true maximum age in the data for this SPECIES & DOMAIN combination (no plus group is allowed); if minimum age and maximum age are both "NK", no age based data are given; minimum age and maximum age must either both be "NK" or both be not "NK".
12. AGE: integer (MIN_AGE <= AGE <= MAX_AGE). If both MIN_AGE and MAX_AGE are "NK" write "NK".
13. NO_AGE_UC: Number of fish in the unwanted catch at that age, (unit of individuals). If no age specific information available write "NK".
14. MEAN_WEIGHT_UC: mean weight of fish in the unwanted catch at that age, (**kg**, precision in gram=3 digits after the decimal). If no age specific information available write "NK".
15. MEAN_LENGTH_UC: mean length of fish in the unwanted catch at that age, (**cm**, precision in mm=1 digit after the decimal). If no age specific information available write "NK".

D. Unwanted catch biological data (length based) for 2015, 2016 and 2017. Please ensure that data entries are fully consistent with coding given in the Appendixes.

1. COUNTRY: to be given according to the code list provided in Appendix 1. Missing values not allowed.
2. YEAR: to be given in four digits, like 2004. Missing values not allowed.
3. DOMAIN_DISCARDS: text in format specified in Appendix 7. Missing values not allowed.
4. SPECIES: to be given according to the FAO three alpha code list, see Appendix 11. Missing values not allowed.
5. TOTWGHTLANDG: estimated landings in **tonnes**. Precision to 3 digits after the decimal (nearest kg). Missing values not allowed.
6. UNWANTED_CATCH: estimated unwanted catch - of any type including landings below MCRS (minimum conservation reference size) - in **tonnes**. Precision to 3 digits after the decimal (nearest kg). Missing values not allowed.
7. NO_SAMPLES_UC: the number of TRIPS should be given that relate to unwanted catch only; a number should be given only if it relates to this domain; otherwise "NK" should be given.
8. NO_LENGTH_MEASUREMENTS_UC: the number of length measurements, from within the domain, should be given that relate to unwanted catch only; a number should be given only if it relates to this domain; otherwise "NK" should be given.
9. LENGTH_UNIT: unit of length classes, "mm"=millimetre, "cm"=centimetre. If length data not available write 'NK'.
10. MIN_LENGTH: this is the minimum length in the data for this SPECIES & DOMAIN combination; if minimum length and maximum length are both "NK", no length based data are given; minimum length and maximum length must either both be "NK" or both be not "NK".
11. MAX_LENGTH: this is the maximum length in the data for this SPECIES & DOMAIN combination; if minimum length and maximum length are both "NK", no length based data are given; minimum length and maximum length must either both be "NK" or both be not "NK".
12. LENGTH: integer (MIN_LENGTH <= LENGTH <= MAX_LENGTH). If both MIN_LENGTH and MAX_LENGTH are "NK" write "NK".
13. NO_LENGTH_UC: number of fish in unwanted catch at that length, (unit of individuals). If no length specific information available write "NK".

E. Landings biological data (age based) for 2015, 2016 and 2017. Please ensure that data entries are fully consistent with coding given in the Appendixes.

1. COUNTRY: to be given according to the code list provided in Appendix 1. Missing values not allowed.
2. YEAR: to be given in four digits, like 2004. Missing values not allowed.
3. DOMAIN_LANDINGS: text in format specified in Appendix 7. Missing values not allowed.
4. SPECIES: to be given according to the FAO three alpha code list, see Appendix 11. Missing values not allowed.
5. TOTWGHTLANDG: estimated landings in **tonnes**. Precision to 3 digits after the decimal (nearest kg). Missing values not allowed.
6. NO_SAMPLES_LANDG: the number of TRIPS should be given that relate to landings only; a number should be given only if it relates to this domain; otherwise "NK" should be given.
7. NO_AGE_MEASUREMENTS_LANDG: the number of age measurements should be given that relate to landings only. If an ALK formed from a larger aggregation of vessels than the domain has been used for this domain insert the total number of age measurements used to form the ALK. If age measurements not available or number of measurements not known put "NK".
8. AGE_MEASUREMENTS_PROP: If an ALK formed from a larger aggregation of vessels than the domain has been used for this domain insert the proportion of age measurements coming from the domain. If not applicable put "NA". If not known put "NK".
9. MIN_AGE: the minimum age in the data section; if minimum age and maximum age are both "NK", no age based data are given; minimum age and maximum age must either both be "NK" or both be not "NK".
10. MAX_AGE: the true maximum age in the data section (no plus group is allowed); if minimum age and maximum age are both "NK", no age based data are given; minimum age and maximum age must either both be "NK" or both be not "NK".
11. AGE: integer (MIN_AGE <= AGE <= MAX_AGE). If both MIN_AGE and MAX_AGE are "NK" write "NK".
12. NO_AGE_LANDG: Number of fish landed at that age, (unit of individuals). If no age specific information available write "NK".
13. MEAN_WEIGHT_LANDG: mean weight of landed fish at that age, (**kg**, precision in gram=3 digits after the decimal). If no age specific information available write "NK".
14. MEAN_LENGTH_LANDG: mean length of landed fish at that age, (**cm**, precision in mm=1 digits after the decimal). If no age specific information available write "NK".

F. Landings biological data (length based) for 2015, 2016 and 2017. Please ensure that data entries are fully consistent with coding given in the Appendixes.

1. COUNTRY: to be given according to the code list provided in Appendix 1. Missing values not allowed.
2. YEAR: to be given in four digits, like 2004. Missing values not allowed.
3. DOMAIN_LANDINGS: text in format specified in Appendix 7. Missing values not allowed.
4. SPECIES: to be given according to the FAO three alpha code list, see Appendix 11. Missing values not allowed.
5. TOTWGHTLANDG: estimated landings in **tonnes**. Precision to 3 digits after the decimal (nearest kg). Missing values not allowed.
6. NO_SAMPLES_LANDG: the number of TRIPS should be given that relate to landings only; a number should be given only if it relates to this domain; otherwise "NK" should be given.
7. NO_LENGTH_MEASUREMENTS_LANDG: the number of length measurements, from within the domain, should be given that relate to landings only; a number should be given only if it relates to this domain; otherwise "NK" should be given.
8. LENGTH_UNIT: unit of length classes, "mm"=millimetre, "cm"=centimetre. If length data not available write "NK"
9. MIN_LENGTH: this is the minimum length in the data for this SPECIES-DOMAIN combination; if minimum length and maximum length are both "NK", no length based data are given; minimum length and maximum length must either both be "NK" or both be not "NK".
10. MAX_LENGTH: this is the true maximum length in the data for this SPECIES-DOMAIN combination; if minimum length and maximum length are both "NK", no length based data are given; minimum length and maximum length must either both be "NK" or both be not "NK".
11. LENGTH: integer (MIN_LENGTH <= LENGTH <= MAX_LENGTH). If both MIN_LENGTH and MAX_LENGTH are "NK" write "NK".
12. NO_LENGTH_LANDG: number of fish landed at that length, (unit of individuals). If no length specific information available write "NK".

G. Effort data for 2015, 2016 and 2017. Data to be provided for all effort, both that from metiers selected for biological sampling and otherwise.

1. COUNTRY: to be given according to the code list provided in Appendix 1. Missing values not allowed.
2. YEAR: to be given in four digits, like 2004. Missing values not allowed.
3. QUARTER: to be given as one digit, like 1, 2, 3, or 4. Missing values not allowed.
4. VESSEL_LENGTH: to be given according to the code list provided in Appendix 2. If not known put "NK".
5. FISHING_TECH: to be given according to the code list provided in Appendix 3. Missing values not allowed.
6. GEAR_TYPE: to be given according to the code list provided in Appendix 4. If not known put "NK".
7. MESH_SIZE_RANGE: to be given according to the code list provided in Appendix 5. If not known put "NK".
8. METIER: to be given according to Appendix 6. If not known put "NK".
9. SUPRA_REGION: to be given according to the code list in Appendix 8. Missing values not allowed.
10. SUB_REGION: to be given according to the code list in Appendix 8. If not known put "NK".
11. EEZ_INDICATOR: to be given according to the code list in Appendix 8. If not applicable put "NA" (see appendix 8). If not known put "NK" (assumed the case if SUB_REGION is not known).
12. GEO_INDICATOR: to be given according to the code list in Appendix 9. If not known put "NK".
13. SPECON_TECH: to be given according to Appendix 10, if SPECON is not applicable, "NA" should be given. If not known put "NK".
14. TARGET_ASSEMBLAGE: to be given according to Appendix 6. If not known put "NK".
15. DEEP: Enter "DEEP" or "NA" (i.e. all landings, discards and other biological parameters falling under the Deep Sea regulations should be indicated with "DEEP". If fishing is not falling under the Deep Sea regulations "NA" should be given.)[14]
16. TOTSEADAYS: nominal fishing activity should be given in days at sea; if nominal fishing activity is not available, "NK" should be given. For recommended calculation method of days at sea, see Appendix 14.
17. TOTKWDAYSATSEA: effort should be given in kW-days, i.e. engine power in kW times days at sea; if nominal effort is not available, "NK" should be given. For recommended calculation method of days at sea, see Appendix 14.
18. TOTGTDAYSATSEA: effort should be given in gross tonnage * days at sea; if not available, "NK" should be given. For recommended calculation method of days at sea, see Appendix 14.
19. TOTFISHDAYS: nominal fishing activity should be given in fishing days; if fishing days is not available, "NK" should be given. For recommended calculation method of fishing days, see Appendix 14.
20. TOTKWFISHDAYS: effort should be given in kW-days, i.e. engine power in kW times fishing days; if not available, "NK" should be given. For recommended calculation method of fishing days, see Appendix 14.
21. TOTGTFISHDAYS: effort should be given in gross tonnage * fishing days; if not available, "NK" should be given. For recommended calculation method of fishing days, see Appendix 14.
22. HRSEA: hours at sea (within the sub-region), if the number is not available, "NK" should be given.
23. KWHRSEA: kW* hours at sea (within the sub-region), if the number is not available, "NK" should be given.
24. GTHRSEA: gross tonnage * hours at sea (within the sub-region), if the number is not available, "NK" should be given.
25. TOTVES: simple integer value of vessels conducting activity as defined in columns 3 to 14. If vessels use > 1 gear and/or fish in > 1 sub-region etc. in a quarter the total across categories will exceed the number of vessels in the fleet segment; if the number is not known, "NK" should be given.
26. CONFIDENTIAL: If data considered subject to confidentiality enter "Y", otherwise enter "N". Missing values not allowed.

H. Landings data by rectangle for 2015, 2016 and 2017 in tonnes. Data to be provided for all landings, both those from metiers selected for biological sampling and otherwise.

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[14] For data up to and including 2016: R(EC) No. 2347/2002. For data from 2017 R (EU) 2016/2336.

Please supply data using a latitude and longitude to fix the location. Subsequent presentation of data will use the c-squares schema (0.5 by 0.5 degree); see Appendix 13. If it is not possible to submit data at a finer spatial resolution to that required for Table A please do not submit data to this table.

1. COUNTRY: to be given according to the code list provided in Appendix 1. Missing values not allowed.
2. YEAR: to be given in four digits, like 2004. Missing values not allowed.
3. QUARTER: to be given as one digit, like 1, 2, 3, or 4. Missing values not allowed.
4. VESSEL_LENGTH: to be given according to the code list provided in Appendix 2. If not known put "NK".
5. FISHING_TECH: to be given according to the code list provided in Appendix 3. Missing values not allowed.
6. GEAR_TYPE: to be given according to the code list provided in Appendix 4. If not known put "NK".
7. MESH_SIZE_RANGE: to be given according to the code list provided in Appendix 5. If not known put "NK".
8. METIER: to be given according to Appendix 6. If not known put "NK".
9. SUPRA_REGION: to be given according to the code list in Appendix 8. Missing values not allowed.
10. SUB_REGION: to be given according to the code list in Appendix 8. If not known put "NK".
11. EEZ_INDICATOR: to be given according to the code list in Appendix 8. If not applicable put "NA" (see appendix 8). If not known put "NK" (assumed the case if SUB_REGION is not known).
12. GEO_INDICATOR: to be given according to the code list in Appendix 9. If not known put "NK".
13. SPECON_TECH: to be given according to Appendix 10, if SPECON is not applicable, "NA" should be given. If not known put "NK".
14. TARGET_ASSEMBLAGE: to be given according to Appendix 6. If not known put "NK".
15. DEEP: Enter "DEEP" or "NA" (i.e. all landings, discards and other biological parameters falling under the Deep Sea regulations should be indicated with "DEEP". If fishing is not falling under the Deep Sea regulations "NA" should be given.)[15]
16. RECTANGLE_TYPE: enter "05*05" or "05*1" or "1*1" or "5*5". Enter "05*05" if entries at 0.5*0.5 degree resolution (e.g. if related to GFCM squares); enter "05*1" if entries at 0.5 degree latitude by 1.0 degree longitude (e.g. if related to ICES rectangles); enter "1*1" if entries at 1.0*1.0 degree resolution (e.g. related to fisheries governed by the IOTC); enter "5*5" if entries at 5.0*5.0 degree resolution (e.g. related to fisheries governed by the ICCAT).
17. RECTANGLE_LAT: (Latitude in decimal degrees, precision to 0.25 degrees; see Appendix 13). Missing values not allowed.
18. RECTANGLE_LON: (Longitude in decimal degrees, precision to 0.25 degrees; see Appendix 13). Missing values not allowed.
19. SPECIES: to be given according to the FAO 3 alpha code list, see Appendix 11. Missing values not allowed.
20. TOTWGHTLANDG: estimated landings in tonnes, precision to 3 digits after the decimal (nearest kg). Missing values not allowed.
21. TOTVALLANDG: estimated total value of the landings in Euro. If not available "NK" should be given.
22. CONFIDENTIAL: If data considered subject to confidentiality enter "Y", otherwise enter "N". Missing values not allowed.

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[15] For data up to and including 2016: R(EC) No. 2347/2002. For data from 2017 R (EU) 2016/2336.

I. Specific effort data by rectangle for 2015, 2016 and 2017 in units of fishing days. Data to be provided for all effort, both that from metiers selected for biological sampling and otherwise.

Please supply data using a latitude and longitude to fix the location. Subsequent presentation of data will use the c-squares schema (0.5 by 0.5 degree); see Appendix 13. If it is not possible to submit data at a finer spatial resolution to that required for Table A please do not submit data to this table.

1. COUNTRY: to be given according to the code list provided in Appendix 1. Missing values not allowed.
2. YEAR: to be given in four digits, like 2004. Missing values not allowed.
3. QUARTER: to be given as one digit, like 1, 2, 3, or 4. Missing values not allowed.
4. VESSEL_LENGTH: to be given according to the code list provided in Appendix 2. If not known put "NK".
5. FISHING_TECH: to be given according to the code list provided in Appendix 3. Missing values not allowed.
6. GEAR_TYPE: to be given according to the code list provided in Appendix 4. If not known put "NK".
7. MESH_SIZE_RANGE: to be given according to the code list provided in Appendix 5. If not known put "NK".
8. METIER: to be given according to Appendix 6. If not known put "NK".
9. SUPRA_REGION: to be given according to the code list in Appendix 8. Missing values not allowed.
10. SUB_REGION: to be given according to the code list in Appendix 8. If not known put "NK".
11. EEZ_INDICATOR: to be given according to the code list in Appendix 8. If not applicable put "NA" (see appendix 8). If not known put "NK" (assumed the case if SUB_REGION is not known).
12. GEO_INDICATOR: to be given according to the code list in Appendix 9. If not known put "NK".
13. SPECON_TECH: to be given according to Appendix 10, if SPECON is not applicable, "NA" should be given. If not known put "NK".
14. TARGET_ASSEMBLAGE: to be given according to Appendix 6. If not known put "NK".
15. DEEP: Enter "DEEP" or "NA" (i.e. all landings, discards and other biological parameters falling under the Deep Sea regulations should be indicated with "DEEP". If fishing is not falling under the Deep Sea regulations "NA" should be given.)[16]
16. RECTANGLE_TYPE: enter "05*05" or "05*1" or "1*1" or "5*5". Enter "05*05" if entries at 0.5*0.5 degree resolution (e.g. if related to GFCM squares); enter "05*1" if entries at 0.5 degree latitude by 1.0 degree longitude (e.g. if related to ICES rectangles); enter "1*1" if entries at 1.0*1.0 degree resolution (e.g. related to fisheries governed by the IOTC); enter "5*5" if entries at 5.0*5.0 degree resolution (e.g. related to fisheries governed by the ICCAT).
17. RECTANGLE_LAT: Latitude in decimal degrees, precision to 0.25 degrees; see Appendix 13. Missing values not allowed.
18. RECTANGLE_LON: Longitude in decimal degrees, precision to 0.25 degrees; see Appendix 13. Missing values not allowed.
19. EFFECTIVE_EFFORT: fishing days. For recommended calculation method see Appendix 14. Missing values not allowed.
20. CONFIDENTIAL: If data considered subject to confidentiality enter "Y", otherwise enter "N". Missing values not allowed.

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[16] For data up to and including 2016: R(EC) No. 2347/2002. For data from 2017 R (EU) 2016/2336.

J. Capacity and fleet segment specific effort data for 2015, 2016 and 2017.

1. COUNTRY: to be given according to the code list provided in Appendix 1. Missing values not allowed.
2. YEAR: to be given in four digits, like 2004. Missing values not allowed.
3. VESSEL_LENGTH: to be given according to the code list provided in Appendix 2. If not known put "NK".
4. FISHING_TECH: to be given according to the code list provided in Appendix 3. Missing values not allowed.
5. SUPRA_REGION: to be given according to the code list in Appendix 8. Missing values not allowed.
6. GEO_INDICATOR: to be given according to the code list in Appendix 9. If not known put "NK".
7. TOTTRIPS: simple integer. Total of trips by a fishing vessel from a land location to a landing place, excluding non-fishing trips. If not known put "NK".
8. TOTKW: nominal fishing capacity to be given in kW. If nominal fishing capacity in kW is not available, "NK" should be given.
9. TOTGT: nominal fishing capacity to be given in gross tonnage. If nominal fishing capacity in GT is not available, "NK" should be given.
10. TOTVES: simple integer value of vessels in the fleet segment, (fleet segment equals combination of fishing technique category and vessel length category); if the number is not available, "NK" should be given.
11. AVGAGE: average age of the vessels in the fleet segment, (fleet segment equals combination of fishing technique category and vessel length category); if the number is not available, "NK" should be given.
12. AVGLOA: Average length over all (in metres) of the vessels in the fleet segment, (fleet segment equals combination of fishing technique category and vessel length category); if the number is not available, "NK" should be given.
13. MAXSEADAYS: The average number of days at sea of the top 10 most active vessels in a fleet segment), if the number is not available, "NK" should be given.

Appendix 1

Country coding

COUNTRY	CODE
Belgium	BEL
Bulgaria	BGR
Croatia	HRV
Cyprus	CYP
Denmark	DNK
Estonia	EST
Finland	FIN
France	FRA
Germany	DEU
Greece	GRC
Ireland	IRL
Italy	ITA
Latvia	LVA
Malta	MLT
Lithuania	LTU
Netherlands	NLD
Poland	POL
Portugal	PRT
Romania	ROU
Slovenia	SVN
Spain	ESP
Sweden	SWE
United Kingdom	

Sub-national country codes

United Kingdom (England and Wales)	ENG
United Kingdom (Alderny/Sark/Herm)	GBC
United Kingdom (Guernsey)	GBG
United Kingdom (Jersey)	GBJ
United Kingdom (Isle of Man)	IOM
United Kingdom (Northern Ireland)	NIR
United Kingdom (Scotland)	SCO

Appendix 2

Vessel length coding

Member States are requested to submit data according to the following segmentation

Fishing in the Baltic Sea

Vessel length classes (length over all)	Code
Length over all shorter than 10 m.	VL0010
Length over all of 10 m. to shorter than 12 m.	VL1012
Length over all of 12 m. to shorter than 18 m.	VL1218
Length over all of 18 m. to shorter than 24 m.	VL1824
Length over all of 24 m. to shorter than 40 m	VL2440
Length over all of 40 m. or longer	VL40XX

Fishing in the Mediterranean

Vessel length classes (length over all)	Code
Length over all shorter than 6 m.	VL0006
Length over all of 6 m. to shorter than 12 m.	VL0612
Length over all of 12 m. to shorter than 18 m.	VL1218
Length over all of 18 m. to shorter than 24 m.	VL1824
Length over all of 24 m. to shorter than 40 m	VL2440
Length over all of 40 m. or longer	VL40XX

Fishing effort regimes in all other waters

Vessel length classes (length over all)	Code
Length over all shorter than 10 m.	VL0010
Length over all of 10 m. to shorter than 12 m.	VL1012
Length over all of 12 m. to shorter than 18 m.	VL1218
Length over all of 18 m. to shorter than 24 m.	VL1824
Length over all of 24 m. to shorter than 40 m	VL2440
Length over all of 40 m. or longer	VL40XX

Appendix 3

Fishing Technique coding

Description	Code to be used when answering the data call
Drift and/or fixed netters	DFN
Dredgers	DRB
Demersal trawlers and/or demersal seiners	DTS
Vessels using pots and/or traps	FPO
Vessels using hooks	HOK
Vessel using other active gears	MGO
Vessels using polyvalent active gears only	MGP
Vessels using passive gears only for vessels < 12m	PG
Vessels using other passive gears	PGO
Vessels using polyvalent passive gears only	PGP
Vessels using active and passive gears	PMP
Purse seiners	PS
Pelagic trawlers	TM
Beam trawlers	TBB
Inactive vessels[17]	INACTIVE

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[17] For use for Table J (Capacity) only.

Appendix 4

GEAR_TYPE coding

Gear classes	Description	Gear code to be used when answering the data call
DREDGES	Boat dredges	DRB
DREDGES	Mechanised dredges including suction dredges	HMD
DREDGES	Hand dredges	DRH
GILLNETS AND ENTANGLING NETS	Driftnets	GND
GILLNETS AND ENTANGLING NETS	Set gillnets (anchored)	GNS
GILLNETS AND ENTANGLING NETS	Encircling gillnets	GNC
GILLNETS AND ENTANGLING NETS	Trammel nets	GTR
GILLNETS AND ENTANGLING NETS	Combined gillnets-trammel nets	GTN
LIFT NETS	Boat-operated lift nets	LNB
LIFT NETS	Shore-operated stationary lift nets	LNS
HOOKS AND LINES	Handlines and pole-lines (mechanised)	LHM
HOOKS AND LINES	Handlines and pole-lines (hand-operated)	LHP
HOOKS AND LINES	Drifting longlines	LLD
HOOKS AND LINES	Set longlines	LLS
HOOKS AND LINES	Troll lines	LTL
SEINE NETS	Danish seines (Anchored seine)	SDN
SEINE NETS	Pair seines	SPR
SEINE NETS	Scottish seines (Fly shooting seine)	SSC
SEINE NETS	Beach seines	SB
SEINE NETS	Boat seines	SV
SURROUNDING NETS	Purse seines	PS

SURROUNDING NETS	Lampara nets	LA
TRAPS	Pots and Traps	FPO
TRAPS	Stationary uncovered pound nets	FPN
TRAPS	Fyke nets	FYK
TRAWLS	Bottom otter trawl	OTB
TRAWLS	Otter twin trawl	OTT
TRAWLS	Bottom pair trawl	PTB
TRAWLS	Midwater otter trawl	OTM
TRAWLS	Pelagic pair trawl	PTM
TRAWLS	Beam trawl	TBB
No Gear	e.g. shell fishing by hand	NO
Not Known		NK

Appendix 5   *Mesh size coding*

Specify recorded mesh size and whether cod end contains diamond mesh or square mesh.

If there is no lower limit to the mesh size range the first integer is '00'

If there is no upper limit to the mesh size range the last integer is replaced by 'XX'

Gear type	Code
Diamond mesh	<integer>D<integer>
Square mesh	<integer>S<integer>
Not applicable	NA[1]

[1] Valid for gear codes DRB, HMD, DRH, LHM, LHP, LLD, LLS, LTL, FPO.

Permitted mesh size ranges

Mediterranean and Black Sea **All GSA areas**	
MESH_SIZE_RANGE	**CODE**
Diamond mesh < 14 mm	00D14
Diamond mesh >=14 mm and < 16 mm	14D16
Diamond mesh >=16 mm and < 20 mm	16D20
Diamond mesh >=20 mm and < 40 mm	20D40
Diamond mesh >=40 mm and < 50 mm	40D50
Diamond mesh >=50 mm and < 100 mm	50D100
Diamond mesh >=100 mm and < 400 mm	100D400
Diamond mesh >=400 mm	400DXX
Square mesh < 40 mm	00S40
Square mesh >= 40 mm	40SXX

Baltic **SUPRA-REGION 27, SUB-REGIONS ICES subdivisions 22 to 32** **MOBILE**	
MESH_SIZE_RANGE	**CODE**
Diamond mesh < 16 mm	00D16
Diamond mesh >=16 mm and < 32 mm	16D32
Diamond mesh >=32 mm and < 90 mm	32D90
Diamond mesh >=90 mm and < 105 mm	90D105
Diamond mesh >=105 mm and < 110 mm	105D110
Diamond mesh >=110 mm	110DXX
PASSIVE	
Diamond mesh < 16 mm	00D16
Diamond mesh >=16 mm and < 32 mm	16D32
Diamond mesh >=32 mm and < 90 mm	32D90
Diamond mesh >=90 mm and < 110 mm	90D110
Diamond mesh >=110 mm and <= 156 mm	110D156
Diamond mesh >=157 mm	157DXX

North Sea	
ICES sub-area IV and divisions IIa and IIIa	
MOBILE	
MESH_SIZE_RANGE	**CODE**
Diamond mesh < 16 mm	00D16
Diamond mesh >=16 mm and < 32 mm	16D32
Diamond mesh >=32 mm and < 80 mm	32D80
Diamond mesh >=80 mm and < 100 mm	80D100
Diamond mesh >=100 mm and < 110 mm	100D110
Diamond mesh >=110 mm and < 120 mm	110D120
Diamond mesh >=120 mm	120DXX
Square mesh >=70 mm and < 90 mm	70S90
PASSIVE	
Diamond mesh < 10 mm	00D10
Diamond mesh >=10 mm and < 31 mm	10D31
Diamond mesh >=50 mm and < 71 mm	50D71
Diamond mesh >=71 mm and < 100 mm	71D100
Diamond mesh >=100 mm and < 120 mm	100D120
Diamond mesh >=120 mm and < 220 mm	120D220
Diamond mesh >=220 mm and < 250 mm	220D250
Diamond mesh >=250 mm	250DXX

North Western Waters	
ICES sub-areas I, V, VI, VII, XII and XIV	
MOBILE	
MESH_SIZE_RANGE	**CODE**
Diamond mesh < 16 mm	00D16
Diamond mesh >=16 mm and < 32 mm	16D32
Diamond mesh >=32 mm and < 70 mm	32D70
Diamond mesh >=70 mm and < 80 mm	70D80
Diamond mesh >=80 mm and < 100 mm	80D100
Diamond mesh >=100 mm and < 110 mm	100D110
Diamond mesh >=110 mm and < 120 mm	110D120
Diamond mesh >=120 mm	120DXX
PASSIVE	
Diamond mesh < 50 mm	00D50
Diamond mesh >=50 mm and < 90 mm	50D90
Diamond mesh >=90 mm and < 100 mm	90D100
Diamond mesh >=100 mm and < 120 mm	100D120
Diamond mesh >=120 mm and < 130 mm	120D130
Diamond mesh >=130 mm and < 150 mm	130D150
Diamond mesh >=150 mm and < 220 mm	150D220
Diamond mesh >=220 mm and < 250 mm	220D250
Diamond mesh >=250 mm	250DXX

South Western Waters	
ICES sub-areas VIII, IX and X and all CECAF areas	
ALL GEARS	
MESH_SIZE_RANGE	**CODE**
Diamond mesh < 16 mm	00D16
Diamond mesh >=16 mm and < 20 mm	16D20
Diamond mesh >=20 mm and < 40 mm	20D40
Diamond mesh >=40 mm and < 55 mm	40D55
Diamond mesh >=55 mm and < 60 mm	55D60
Diamond mesh >=60 mm and < 65 mm	60D65
Diamond mesh >=65 mm and < 70 mm	65D70
Diamond mesh >=70 mm and < 100 mm	70D100
Diamond mesh >=100 mm	100DXX

Outermost Regions	
All areas not covered in above tables	
ALL GEARS	
MESH_SIZE_RANGE	**CODE**
Diamond mesh < 16 mm	00D14
Diamond mesh >= 14 mm and < 20 mm	14D20
Diamond mesh >= 20 mm and < 40 mm	20D40
Diamond mesh >= 40 mm and < 45 mm	40D45
Diamond mesh >= 45 mm and < 50 mm	45D50
Diamond mesh >= 50 mm and < 65 mm	50D65
Diamond mesh >= 65mm and < 100 mm	65D100
Diamond mesh >=100 mm	100DXX

Appendix 6   Métier definitions

All regions excluding external fleet

Metier definitions to conform to those agreed by the relevant RCMs. A list of currently accepted codes is provided from the data submission web site.

The following is for reference only:

The metier definitions follow the recommendation of STECF (report JRC 49816) on definitions consistent with level 6 of the Commission Decision 2010/93.

The labels should follow the format:

Gear type_Target assemblage_Mesh size (range)_Selective device_Mesh size (range) in the selective device

Each field within the label is connected by an underscore.

Target assemblage codes:

Code	Description
ANA	Anadromous
CAT	Catadromous
CEP	Cephalopods
CRU	Crustaceans
DEF	Demersal fish
DWS	Deep-water species
FIF	Finfish
FWS	Freshwater species
GLE	Glass eel
LPF	Large pelagic fish
MCD	Mixed crustaceans and demersal fish
MCF	Mixed cephalopods and demersal fish
MDD	Mixed demersal and deepwater species
MOL	Molluscs
MPD	Mixed pelagic and demersal fish
SLP	Small and large pelagic fish
SPF	Small pelagic fish

Note: Target assemblage is used both as part of the metier definition and as a stand-alone entry in several tables. If target assemblage is not known ('NK') then the metier should be considered unknown and NK entered in the METIER field, i.e. NK is not accepted as a part of the metier definition. If metier definition is known, then the same target assemblage code must be entered in the target assemblage field.

Selective device codes:

Code	Description
0	Not mounted
1	Exit window / Selection panel
2	Grid

Appendix 7   Domain definitions

Domains refer to the group of vessels used to calculate estimates (discards, numbers at age, number at length) by a country. The domain may or may not be equivalent to a métier.

Domain definitions are likely to be very country specific but the following format for their presentation to this data call is requested in the interest of obtaining the maximum information possible (on the constitution of the domain) from the name itself.

Countrycode(s)_quarter(s)_subregion(s)_geartype(s)_targetassemblage(s)_meshsizerange_selective device(s)_meshrangeofselectivedevice_vessellength(s)_species_commercialcategory

Each field (county code(s), subregion(s) etc) within the label is connected by an underscore.

If there are multiple entries within a field e.g. multiple subregions, connect by a dash "-".

1) Country code: as in appendix 1.

2) Quarter: insert "all" if annual data. If data aggregated quarterly, indicate the quarter.

3) Sub-region: if domain covers the whole supra-region, or unknown sub-regions within a supra-region, enter the supra-region code. Otherwise enter sub-region code(s) as in appendix 8.

4) Gear type: enter gear type code(s) as in appendix 4.

5) Target assemblage: code(s) as used in metier definitions (appendix 6).

6) Mesh size range: insert "all" if all mesh sizes are included. Otherwise give minimum and maximum meshes in the form <minimum mesh><mesh type><maximum mesh>, e.g. 70D90 for diamond mesh between 70 and 90mm (see appendix 5). If not applicable (e.g. longlines) put "NA".

7) Selectivity device: code(s) as used in metier definitions (appendix 6). If not applicable put "NA".

8) Selective device mesh range: single number, e.g. 120 for 120mm device. If not applicable put "NA".

9) Vessel length: insert "all" if all vessel lengths included. Otherwise enter code(s) as in appendix 2.

10) Species: insert "all" if same domain is used for multiple species. If domain used for one or two species enter code(s) as in appendix 11.

11) Commercial category: If not known put "NK". If not applicable put "NA". Otherwise free text.

Appendix 8   *Area coding*

Note: Every attempt has been made to request area codes using the exact same notation as used in FAO 'Fishing Areas Fact Sheets' (http://www.fao.org/fishery/area/search/en).

Supra region

Supra region is used as part of a fleet segment definition. It should therefore relate to the *predominant* supra region of the vessels in the fleet segment. It is also possible to combine supra-region code with sub-region codes of a different supra-region, e.g. supra-region = 27 (most fishing took place in supra-region 27) but sub-region = GSA1 (the data entry relates to fishing in sub-region GSA1).

FAO major fishing area	*Supra Region Code*
27	AREA27
37	AREA37
All other major fishing areas	OFR

Sub region and EEZ

Baltic Sea

IBSFC areas for Baltic	*Sub Region* *Codes to be used in relation to the compulsory provisions of the Commission Decisions 2010/93/EU and 2016/1251/EU*	*Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes*	
		Sub Region	*EEZ Indicator*
III.c.22	**27.3.c.22**		**NA**
III.c.23	**27.3.b.23**		**NA**
III.c.24	**27.3.d.24**		**NA**
III.c.25	**27.3.d.25**		**NA**
III.c.26	**27.3.d.26**		**NA**
III.c.27	**27.3.d.27**		**NA**
III.c.28.1		**27.3.d.28.1**	**NA**
III.c.28.2		**27.3.d.28.2**	**NA**
III.d.29	**27.3.d.29**		**NA**
III.d.30	**27.3.d.30**		**NA**
III.d.31	**27.3.d.31**		**NA**
III.d.32	**27.3.d.32**		**NA**

North Sea, Skagerrak, Kattegat and Eastern Channel

ICES statistical areas	*Sub Region* *Codes to be used in relation to the compulsory provisions of the Commission Decisions 2010/93/EU and 2016/1251/EU*	*Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes*	
		Sub Region	*EEZ Indicator*
2a EU waters		**27.2.a**	**EU**
3.a.N (Skagerrak)		**27.3.a.20**	**NA**
3.a.S (Kattegat)		**27.3.a.21[19]**	**NA**
4a	**27.4.a**		**NA**
4b	**27.4.b**		**NA**
4c	**27.4.c**		**NA**
7.d[18]	**27.7.d**		**NA**

North Western Waters

ICES statistical areas	*Sub Region* *Codes to be used in relation to the compulsory provisions of the Commission Decisions 2010/93/EU and 2016/1251/EU*	*Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes*	
		Sub Region	*EEZ Indicator*
1 RFMO		**27.1.a**	**RFMO**
1 COAST		**27.1.b**	**COAST**
2a non EU waters		**27.2.a**	**COAST**
		27.2.a	**RFMO**
2b non EU waters		**27.2.b**	**COAST**
		27.2.b	**RFMO**
5.a	**27.5.a**		**NA**
5.b EU waters		**27.5.b**	**EU[24]**
5.b non EU waters		**27.5.b**	**COAST**
		27.5.b	**RFMO**
6.a	**27.6.a**		**NA**
6.b EU waters		**27.6.b**	**EU**
6.b non EU waters		**27.6.b**	**RFMO**
7.a	**27.7.a[20]**		**NA**

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[18] 7.d is included in both the North Sea and North Western Waters tables as it is unclear which technical regulations best apply.

[19] If the areas are defined this way they are consistent with FAO notation.

7.b	27.7.b[21]		NA
7.c EU Waters		27.7.c	EU
7.c non EU Waters		27.7.c	RFMO
7.d	27.7.d		NA
7.e	27.7.e		NA
7.f	27.7.f		NA
7.g	27.7.g[22]		NA
7.h	27.7.h[23]		NA
7.j EU waters		27.7.j	EU[25]
7.j non EU waters		27.7.j	RFMO
7.k EU waters		27.7.k	EU
7.k non EU waters		27.7.k	RFMO
12	27.12		NA
14.a	27.14.a		NA
14.b		27.14.b	COAST
		27.14.b	RFMO
Biologically Sensitive Area To be considered as covering the following ICES statistical rectangles: 35D8, 35D9, 35E0, 35E1, 34D8, 34D9, 34E0, 34E1, 33D8, 33D9, 33E0, 33E2, 32D8, 32D9, 32E0, 32E1, 32E2, 31D8, 31D9, 31E0, 31E1, 31E2, 30D9, 30E0, 30E1, 30E2, 29D9, 29E0, 29E1, 29E2, 28D9, 28E0, 28E1, 28E2.		BSA	NA

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[20] The ICES statistical rectangle of ICES division 7a west of 7degrees west and corresponding to the BSA shall be included.

[24] 5b EU to be considered as covering the following ICES statistical rectangles: 49D6, 49D7, 49D8, 49D9, 49E0, 49E1, 49E2, 49E3, 49E4, 50E5.

[21] ICES statistical rectangles of ICES division 7b and corresponding to the BSA shall be included.

[22] ICES statistical rectangles of ICES division 7g and corresponding to the BSA shall be included.

[23] ICES statistical rectangles of ICES division 7h and corresponding to the BSA shall be included.

[25] ICES statistical rectangles of ICES division 7j and corresponding to the BSA shall be included.

South Western Waters

ICES statistical areas	Sub Region Codes to be used in relation to the compulsory provisions of the Commission Decisions 2010/93/EU and 2016/1251/EU	Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes	
		Sub Region	EEZ Indicator
8.a	27.8.a		NA
8.b	27.8.b		NA
8.c	27.8.c		NA
8.d EU waters		27.8.d	EU
8.d non EU waters		27.8.d	RFMO
8.e EU waters		27.8.e	EU
8.e non EU waters		27.8.e	RFMO
9.a	27.9.a		NA
9.b EU waters		27.9.b	EU
9.b non EU waters		27.9.b	RFMO
10.a EU waters		27.10.a	EU
10.a non EU waters		27.10.a	RFMO
10.b		27.10.b	NA

GFCM

FAO statistical areas	Sub Region Codified GFCM Geographical Sub-Areas as defined in Resolution GFCM/33/2009/2[26]	EEZ Indicator
Northern Alboran Sea	**GSA1**	**NA**
Alboran Island	**GSA2**	**NA**
Southern Alboran Sea	**GSA3**	**NA**
Algeria	**GSA4**	**NA**
Balearic Island	**GSA5**	**NA**
Northern Spain	**GSA6**	**NA**
Gulf of Lion	**GSA7**	**NA**
Corsica Island	**GSA8**	**NA**
Ligurian and North Tyrrhenian Sea	**GSA9**	**NA**
South Tyrrhenian Sea	**GSA10**	**NA**
Sardinia (west)	**GSA11.1**	**NA**
Sardinia (east)	**GSA11.2**	**NA**
Sardinia	**GSA11**	**NA**
Northern Tunisia	**GSA12**	**NA**
Gulf of Hammamet	**GSA13**	**NA**
Gulf of Gabes	**GSA14**	**NA**
Malta Island	**GSA15**	**NA**
South of Sicily	**GSA16**	**NA**
Northern Adriatic	**GSA17**	**NA**
Southern Adriatic Sea	**GSA18**	**NA**
Western Ionian Sea	**GSA19**	**NA**
Eastern Ionian Sea	**GSA20**	**NA**
Southern Ionian Sea	**GSA21**	**NA**
Aegean Sea	**GSA22**	**NA**
Crete Island	**GSA23**	**NA**
North Levant	**GSA24**	**NA**
Cyprus Island	**GSA25**	**NA**
South Levant	**GSA26**	**NA**
Levant	**GSA27**	**NA**
Marmara Sea	**GSA28**	**NA**
Black Sea	**GSA29**	**NA**
Azov Sea	**GSA30**	**NA**

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[26] Resolution GFCM/33/2009/2 on the establishment of Geographical Sub-Areas in the GFCM area amending the resolution GFCM/31/2007/2 (http://www.fao.org/gfcm/data/map-geographical-subareas/en/).

CECAF

FAO statistical areas	Sub Region Codes to be used in relation to the compulsory provisions of the Commission Regulation (EC) 216/2009	Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes	
		Sub Region	EEZ Indicator
34.1.1 EU waters		**34.1.1**	**EU**
34.1.1 non EU waters		**34.1.1**	**COAST**
34.1.2 EU waters		**34.1.2**	**EU**
34.1.2 non EU waters		**34.1.2**	**COAST**
		34.1.2	**RFMO**
34.1.3		**34.1.3**	**COAST**
		34.1.3	**RFMO**
34.2.0 EU waters		**34.2.0**	**EU**
34.2.0 non EU waters		**34.2.0**	**COAST**
		34.2.0	**RFMO**
34.3.1	**34.3.1**		**NA**
34.3.2	**34.3.2**		**NA**
34.3.3	**34.3.3**		**NA**
34.3.4	**34.3.4**		**NA**
34.3.5	**34.3.5**		**NA**
34.3.6	**34.3.6**		**NA**
34.4.1	**34.4.1**		**NA**
34.4.2	**34.4.2**		**NA**

ADITIONAL AREAS.

The level of area detail to be consistent with requirements specified in 93/2010[27], appendices 1 and 2.

Areas identified above and below include seas subject to the International Convention for the Conservation of Atlantic Tunas.

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[27] Retained a reference to 93/2010 here (not 2016/1251) as the table defining sub-region spatial units is missing in 2016/1251.

NAFO (Northwest Atlantic) see also http://www.fao.org/fishery/area/Area21/en

FAO statistical areas	Sub Region Codes to be used in relation to the compulsory provisions of the Commission Regulation (EC) 216/2009	Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes	
		Sub Region	EEZ Indicator
	21.0A		NA
	21.0B		NA
	21.1A		NA
	21.1B		NA
	21.1C		NA
	21.1D		NA
	21.1E		NA
	21.1F		NA
	21.2G		NA
	21.2H		NA
	21.2J		NA
	21.3K		NA
	21.3L		NA
	21.3M		NA
	21.3N		NA
	21.3O		NA
	21.3P		NA
	21.4R		NA
	21.4S		NA
	21.4T		NA
	21.4V		NA
	21.4W		NA
	21.4X		NA
	21.5Y		NA
	21.5Z		NA
	21.6A		NA
	21.6B		NA
	21.6C		NA
	21.6D		NA
	21.6E		NA
	21.6F		NA
	21.6G		NA
	21.6H		NA

CCAMLR

FAO area 48 (Atlantic Antarctic) ; see also http://www.fao.org/fishery/area/Area48/en

FAO area 58 (Antarctic and Southern Indian Ocean) ; see also
http://www.fao.org/fishery/area/Area58/en

FAO area 88 (Antarctic) ; see also http://www.fao.org/fishery/area/Area88/en

FAO statistical areas	*Sub Region* *Codes to be used in relation to the compulsory provisions of the Commission* *Regulation (EC) 216/2009*	*Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes*	
		Sub Region	*EEZ Indicator*
Peninsular	48.1		NA
South Orkney	48.2		NA
South Georgia	48.3		NA
South Sandwich	48.4		NA
Weddel Sea	48.5		NA
Bouvet	48.6		NA
Banzare Bank	58.4		NA
McDonald & Heard	58.5		NA
Crozet	58.6		NA
Marion-Edward	58.7		NA
Eastern Ross Sea	88.1		NA
Western Ross Sea	88.2		NA
Amundsen Sea	88.3		NA

IOTC

FAO area 51 (Indian Ocean, Western); see also

http://www.fao.org/fishery/area/Area51/en

FAO area 57 (Indian Ocean, Eastern); see also http://www.fao.org/fishery/area/Area57/en

FAO statistical areas	*Sub Region* *Codes to be used in relation to the compulsory provisions of the Commission* *Regulation (EC) 216/2009*	*Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes*	
		Sub Region	*EEZ Indicator*
Red Sea sub-area	51.1		NA
Gulf sub-area	51.2		NA
Western Arabian Sea sub-area	51.3		NA
Eastern Arabian Sea, Laccadive and Sri Lanka sub-area	51.4		NA
Somalia, Kenya and Tanzania sub-area	51.5		NA
Madagascar and Mozambique Channel sub-area	51.6		NA
Oceanic sub-area	51.7		NA
Mozambique	51.8		NA
Bay of Bengal	57.1		NA
Northern	57.2		NA
Central	57.3		NA
Oceanic	57.4		NA
Western Australia	57.5		NA
Southern Australia	57.6		NA

Other Areas

FAO statistical areas	Sub Region Codes to be used in relation to the compulsory provisions of the Commission Regulation (EC) 216/2009	Codes to be used in relation to the gentlemen agreement reached between the DG Mare and the Member States about the evaluation of the fishing effort regimes	
		Sub Region	EEZ Indicator
FAO area 18 (Arctic Sea)			
See also http://www.fao.org/fishery/area/Area18/en			
Arctic Sea	18		NA
FAO area 31 (Atlantic Western Central)			
See also http://www.fao.org/fishery/area/Area31/en			
Atlantic, western central	31		NA
FAO area 41 (Atlantic Southwest)			
See also Regulation (EC) 216/2009			
Northern	41.1		NA
Central	41.2		NA
Southern	41.3		NA
FAO area 47 (Atlantic Southeast)			
See also Regulation (EC) 216/2009			
Orange river and Cape of Good Hope	47.1		NA
Agulhas			
SEAFO	47.2		NA
SEAFO	47.A		NA
SEAFO	47.B		NA
SEAFO	47.C		NA
	47.D		NA
FAO area 61 (Pacific Northwest)			
See also http://www.fao.org/fishery/area/Area61/en			
Pacific, Northwest	61		NA
FAO area 67 (Pacific Northeast)			
See also http://www.fao.org/fishery/area/Area67/en			
Pacific, Northeast	67		NA

FAO area 71 (Pacific Western Central)			
See also http://www.fao.org/fishery/area/Area71/en			
Pacific, Western Central	71		NA
FAO area 77 (Pacific Eastern Central)			
See also http://www.fao.org/fishery/area/Area77/en			
Pacific, Eastern Central	77		NA
FAO area 81 (Pacific Southwest)			
See also http://www.fao.org/fishery/area/Area81/en			
Pacific, Southwest	81		NA
FAO area 87 (Pacific Southeast)			
See also http://www.fao.org/fishery/area/Area87/en			
Northern Central Southern	87.1 87.2 87.3		NA

Appendix 9: *Geographical Indicator and sub-national codes*

Provision of this information is not compulsory.

Code to distinguish fishing fleets operating in outermost regions and fleets operating exclusively in non-EU waters (international waters + third countries including those with fishing partner agreements).

Name	*Definition*	*Code*
Non EU waters	More than 50% of activity occurs in non-EU waters	NEU
International waters exclusively	100% of activity occurs in non-EU waters	IWE
Madeira	Portuguese outermost region (autonomous region)	P2
Azores	Portuguese outermost region (autonomous region)	P3
Canaries	Spanish outermost region (autonomous region)	CN
Reunion	French outermost region (overseas department)	RE
Martinique	French outermost region (overseas department)	MQ
Mayotte	French outermost region (overseas department)	YT
Guadeloupe	French outermost region (overseas department)	GP
French Guiana	French outermost region (overseas department)	GF
Saint-Martin	French outermost region (since 2009)(overseas community)	MF
Saint-Barthélemy	French outermost region	BL
No geographical indicator	EU waters, i.e. EEZ of any EU member state	NGI

Appendix 10

Coding of specific conditions related to Technical Measures

Condition	Code
Baltic	
Gear equipped with a BACOMA	BACOMA
Gear equipped with a T90	T90
North Sea & Kattegat	
[1] OTB, TBN ≥ 35mm equipped with selective grid with 19mm max bar spacing and unblocked fish outlet	GRID19
[1] OTB, TBN ≥ 70mm equipped with selective grid with 35mm max bar spacing	GRID35
[1] TBB 80-119mm with increased mesh size in the extension of the beam trawl, 'Flemish Panel'.	TBBFP
[1] OTB, OTT, TBN 90-119mm equipped with 'Seltra Panel'.	SELTRA
[2] OTB, TBN ≥ 80mm equipped with a 'netgrid' selectivity device.	NETGRID
[3] OTB, TBN ≥ 80mm constructed to 'SepNet' specification.	SEPNEP
NWW	
[4] TBB 80-119mm with increased mesh size in the extension of the beam trawl, 'Flemish Panel'.	TBBFP
SWW	
MED & BS	

1) Technical gear measure used to define vessels receiving a de-minimis exemption under Commission Delegated Regulation (EU) 2018/45

2) Technical gear measure used to define vessels receiving a survivability exemption under Commission Delegated Regulation (EU) 2018/45

3) Technical gear measure defined in Commission Delegated Regulation (EU) 2018/45 allowing derogation from Reg 850/98.

4) Technical gear measure used to define vessels receiving a de-minimis exemption under Commission Delegated Regulation (EU) 2018/46

Note: Definitions of the 'Seltra panel', 'Netgrid selectivity device', 'Flemish panel' and 'SepNep' can all be found in Commission Delegated Regulation (EU) 2018/45.

Appendix 11

Species coding according to the FAO Fisheries and Aquaculture Statistics and Information Service (FIPS) Alpha 3 code

http://www.fao.org/fishery/collection/asfis/en

NB: edition used is edition released ####[28]. To include species with a code agreed after this release please contact JRC data submission team.

In addition, for landings where it is not possible to attach an FAO Alpha 3 code

Common name	Alpha-3 code	Scientific name
1. Other Species	OTH	*not applicable*

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[28] JRC will use latest release available before data call issued.

Appendix 12

Discard observer refusal rate

Definition of refusal rate is taken from SGPIDS 2013[29]

"the proportion of skippers who, having been successfully contacted ultimately failed to allow the observer to go on-board to obtain the sample. This refusal rate is calculated as the number of industry refusals divided by the number of sequential selections or approaches *where contact was successfully made*."

A successful contact is defined as a phone call to a vessel skipper being answered.

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[29] ICES CM 2013/ACOM:56

Appendix 13

Enter latitude and longitude as real number to accuracy of 0.25 degrees.

If supplying information held on ICES rectangle, IOTC square or ICCAT square basis, supply latitude and longitude of the rectangle centre

e.g. ICES rectangle 01D9

RECTANGLE_LAT: 36.25

RECTANGLE_LON: -10.50

An explanation why this is necessary is found below.

Rectangle information will be converted to c-squares notation, and any plotting performed using the c-squares 0.5*0.5 degree grid system.

Format of c-squares notation

Type	*Accuracy*	*Format*
string	*0.5*0.5 degree*	*XXXX:XXX:X*

The following is provided for information only (JRC will convert to c-square notation).

C-squares notation

See http://www.cmar.csiro.au/csquares/spec1-1.htm for a description on how latitude and longitude values are converted to the c-squares notation. The following is selected text from that page.

> *"C-squares" (acronym for "concise spatial query and representation system") is a grid based global locator system freely available for use worldwide without royalty or licence.*

> *C-squares incorporates the "global quadrant" notation of WMO squares, where the initial digit **1, 3, 5** or **7** indicates the global quadrant NE, SE, SW and NW, respectively.*

> *C-squares takes as its starting point the ten degree global grid square notation referred to as WMO or World Meteorological Organization squares, as illustrated by the U.S. NODC (National Oceanographic Data Center). Since the c-squares notation is fully hierarchical, all smaller resolution c-squares retain these initial four digits which serve to indicate the ten degree global grid square within which they are located.*

> *Individual c-squares take their nomenclature from the position of their two "minimum absolute" boundaries closest to the global origin (0 latitude, 0 longitude) in decimal degrees, with latitude preceding longitude, e.g. 10 in the case of a cell extending from +10 to +20 degrees, -10 in the case of a cell extending from -10 to -20 degrees.*

> *Values representing the position of these "minimum" boundaries of latitude and longitude are then encoded within a succession of one or more "cycles", where the first cycle is four digits and comprises the (WMO squares notation) 10°×10° square identifier, and successive cycles (where present) are three digits long or (in the terminal case), optionally a single digit (an incomplete cycle). Successive cycles are separated by a colon character.*

For example, for fishing conducted in ICES rectangle 01D9

- The rectangle is in the NW quadrant – initial integer is 7 and conversion to c-squares proceeds using the latitude and longitude of the south east corner of the rectangle

- Latitude of south east corner of the rectangle is 36° N

- Longitude of south east corner of the rectangle is 10° W: c-squares code is 7301:360:1

- Absolute values of latitude in decimal degrees (i.e., regardless of sign) are represented by the second digit in every cycle – here the 3 and the 6.

- Absolute values of longitude in decimal degrees are represented by the third and fourth digits in the first cycle (representing hundreds then tens), and the third digit of successive cycles (units, tenths, hundredths, etc.). – here 0 hundreds and 1 ten and 0 units.

- The final digit is

- 1 if the absolute value of the decimal Latitude and Longitude are both <0.5

- 2 If decimal latitude is < 0.5 but decimal longitude ≥ 0.5

- 3 If decimal latitude is ≥ 0.5 but decimal longitude < 0.5

- 4 if both decimal Latitude and Longitude are ≥ 0.5

Conversion from GFCM, ICES, IOTC and ICCAT rectangle information.

c-squares at *0.5*0.5* degree resolution were chosen because it is directly equivalent to the square grid produced for the Mediterranean by GFCM and the nearest equivalent to the ICES rectangle grid, see

https://circabc.europa.eu/faces/jsp/extension/wai/navigation/container.jsp?FormPrincipal:_idcl=FormPrincipal:_id1&FormPrincipal_SUBMIT=1&id=65d9a1a6-ac63-41cd-8ef6-9d5a638a7d80&javax.faces.ViewState=x64FG6y1N%2FOqmJe0nkW0vadUp8g%2FBGkqQJisVgpdA0FJIX2RFykmy97MQPHOVVTHcHZ%2BU7ks51%2FMYmtdWPCNz44D8kgU8k8LWF0N8sU5jxWyfUkppsCCm2XyBtEszMx33sUQNN%2FwAJXf6mLJtdAVn3vxsuo%3D

and file "StatRecGrids_130703ma.doc".

Points "on the line" are normally encoded within the next "higher" square, i.e. further away from the global origin. In other words, a point at +10 latitude will be encoded within the ten degree square covering +10 to +20, not 0 to +10. This implies effort and landings will be assigned to a different c-square depending on where in the ICES rectangle (or GFCM/IOTC/ICCAT square) the latitude and longitude are taken. Therefore, **for consistency across data submissions the request is for the latitude and longitude of the centre of the rectangle/square.**

Appendix 14

Days at Sea and Fishing days calculation

At a DCF Ad-Hoc workshop[30] a standardised way to calculate days at sea and fishing days was agreed. In addition a package[31], written in the 'R' programming language was written to allow countries to complete calculations in the agreed way.

To make use of the package it is necessary to have installed R version 3.3.2 or above and then to install the 'fecR' package.

Visit

https://CRAN.R-project.org/package=fecR

for details on the package. There is a reference manual and two vignettes to provide information on the package and how to use it.

To make use of the days at sea and fishing days calculation algorithm but without using the fecR package please refer to the workshop report.

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[30] Castro Ribeiro, C., Holmes, S., Scott, F., Berkenhagen, J., Demaneche, S., Prista, N., Reis, D., Reilly, T., Andriukaitiene, J., Aquilina, M., Avdič Mravlje, E., Calvo Santos, A., Charilaou, C., Dalskov, J., Davidiuk, I., Diamant, A., Egekvist, J., Elliot, M., Ioannou, M., Jakovleva, I. Kuzebski, E., Ozernaja, O., Pinnelo, D., Thasitis, I., Verlé, K., Vitarnen, J., Wójcik, I..Report of the 2nd Workshop on Transversal Variables. Nicosia, Cyprus. 22-26 February 2016. A DCF ad-hoc workshop. 109pp.EUR 27897; doi 10.2788/042271.

[31] Finlay Scott, Nuno Prista and Thomas Reilly (2016). fecR: Fishing Effort Calculator in R. R package version 0.0.1 (https://CRAN.R-project.org/package=fecR)

FDI frequently asked questions

<div align="center">(last update: 02 October 2017)</div>

Some of the answers will be "Handle as for the Annual Economic Report (AER) data call" as what is being requested has been requested by that data call previously. In fact, it is important to have a consistency of approach if the objective of compatibility between the New-FDI and AER data sets is to be achieved. If it is not already happening, we urge those who have answered to the FDI-classic data call and those who have answered to the Annual Economic Report (AER) data call to work together in answering to this call.

The relationship between Tables C and D and Tables A and B

Q: Tables A and B are linked to Tables C and D by the 'DOMAIN_DISCARDS' field but how do we link the discards?

Note: the explanation of the relationship between tables A & B and C & D below is relevant to the relationship between tables A & B and E & F. With the latter the link is through the DOMAIN_LANDINGS field. IF the aggregation of trips to estimate landings biological data are the same as those to estimate discards data then DOMAIN_LANDINGS = DOMAIN_DISCARDS.

A: A good way to consider the relationship between tables A and B on the one hand and tables C and D on the other is as follows:

- Tables A and B hold data by the groupings that are of interest to the Commission for e.g. monitoring the landings obligation. These groups are common across member states within a region allowing for aggregations (by e.g. gear type) across member state data.

- Tables C and D hold data according to the groupings that are used by member states when they raise sampled data. There is no reason why the groupings (labelled in the DOMAIN_DISCARDS field) should be the same between member states.

The FDI-classic only contained the equivalent of tables A and B. It was known that the categories in the 'CATCH' table did not match how member states grouped vessels to raise sampled data. The database was often criticized for having a 'black box' process by which member states populated the discard totals and biological fields of the catch table. Some member states refused to do so.

In the current call member states are still expected to populate the discard totals and biological fields of the catch tables (tables A and B) but there should also be a record of the data as originally raised (tables C and D). This at least gives an indication of the degree to which raised data had to be partitioned to supply tables A and B (e.g. if the DOMAIN_DISCARDS aggregates over all mesh ranges and tables A and B are filled using a pro-rata of discard amounts based on landings totals, then categories in Tables A and B differing only by mesh range will receive the same discard rate). The goal to achieve greater transparency in how discard and biological data are supplied to Tables A and B is the reason behind the requested format for the DOMAIN_DISCARDS naming.

A hypothetical example follows:

Suppose country XXX raises discards of cod in the Baltic by otter trawlers by grouping all trips:

- From any sub-region of the Baltic.

- From vessels of any length.

- Using any mesh size range.

So the DOMAIN_DISCARDS name could be "XXX_27.3_OTB_DEF_0_0"[32]. The trips used to estimate the discards will have a total landed weight associated with them. This value would go into the TOTWGHTLANDG field of Tables C and D.

Now let us assume part of the total used for the data in Tables C and D came from trips landing cod by vessels with vessel length VL1824 using otter trawls in area 27.3.C.22 with mesh size 110DXX in quarter 1, and no specon. The landings in that quarter from those trips would be entered into the TOTWGHTLANDG field of Tables A and B.

How to enter the discards for table A and B for this one category and quarter? That has been left to the member state BUT one way is to calculate (TOTWGHTLANDG-table-A / TOTWGHTLANDG-table-C) and then multiply all the discard results (numbers at age) in table C by that number to enter them into table A; multiply all the discard results (numbers at length) in table D by that number to enter them into table B.

Fleet population

Q: Should the number of vessels (population) follow the definition in Commission Decision 2010/93 (snapshot 1st January) or Commission Decision 2016/1251 (any vessel registered on 31 December or which has fished at least one day in the year up to 31 December)?

A: The data called for is from 2015 and 2016 which falls under Commission Decision 2010/93. HOWEVER, the more important consideration at this stage is to ensure compatibility between the data submitted to this call and the data submitted to this year's Annual Economic Report (AER) data call. Therefore each member state should follow the same approach to defining the fleet population as they did when answering to the AER data call.

Length measurements

Q: How to enter lengths if the length classes are between 1mm and 1cm or greater than 1cm?

A: If lengths are taken at a gap > 1cm then enter data against single values of cm but with > 1 cm gaps between entries. For example, if a species is measured every 5 cm entries in Table_D might look like

SPECIES…	…LENGTHUNIT	MIN_LENGTH	MAX_LENGTH	LENGTH	NO_LENGTH_DISCARDS
XXX	cm	5	150	5	<VALUE1>
XXX	cm	5	150	10	<VALUE2>
XXX	cm	5	150	15	<VALUE3>
XXX	cm	5	150	20	<VALUE4>
XXX	cm	5	150	25	<VALUE5>

Etc.

If a species is measured every 0.5 cm entries in Table_D might look like

SPECIES…	…LENGTHUNIT	MNI_LENGTH	MAX_LENGTH	LENGTH	NO_LENGTH_DISCARDS
XXX	mm	5	150	5	<VALUE1>
XXX	mm	5	150	10	<VALUE2>
XXX	mm	5	150	15	<VALUE3>
XXX	mm	5	150	20	<VALUE4>
XXX	mm	5	150	25	<VALUE5>

Etc.

---

[32] The proposed DOMAIN_DISCARDS name in appendix 7 did not include vessel length. This was an oversight and specifying vessel length classes included could be useful.

Following FAO convention, the values of LENGTH should represent the lower boundary of the length interval, i.e. for fish grouped to 5cm intervals LENGTH=5 represents between 5 and 9.99cm; for fish grouped to 5mm intervals LENGTH=5 represents between 5 and 9.99mm.

Note: Regulations 850/98 (consolidated version) (Annex XIII) and 1967/2006 (Annex IV) both specify the way fish and crustaceans should be measured, so it is expected length measurements would follow these regulations, (e.g. all finfish are measured as whole length). We ask that the JRC is notified if a species has length measured in a way other than specified in these regulations.

Questions related to Table dimensions

Q: TOTVALLANDG. How do we interpret 'estimated total value'? Not all the landings are traded through the auctions.

A: This is an example of "Handle as for the Annual Economic Report (AER) data call".

Q: TOTWGHTLANDG?

A: Weights should always be 'live weight'.

Q: In tables A and B, for the DISCARDS field it states "If age based information is present, this quantity should correspond to the sum of products". But each data row only relates to one age (in Table B one length) so how should we interpret this.

A: Points to note:

1. This statement should also be made against TOTWGHTLANDG in Table_A

2. The statement should not be in Table_B, (it is misleading and is probably a copy paste error).

3. The sum of products over all ages (Table_A) is what should match the total weights, i.e.
- Sum over all ages of (numbers landed at age * mean weight of landings at age) = TOTWGHTLANDG and
- Sum over all ages of (numbers discarded at age * mean weight of discards at age) = DISCARDS

Note: the TOTWGHTLANDG and DISCARDS values get repeated for each age (or length) entry (also any other non-age or length dependent information) but the current format removes the need for a fixed number of columns related to a fixed age (or length) range.

Q: MIN_AGE, MAX_AGE, MIN_LENGTH, MAX_LENGTH: What to do when the ranges differ between the landed and discarded fractions of the catch?

A: For tables A and B the range including all landed and all discarded ages/lengths should be stated. For tables C and D the range of discarded ages/lengths should be stated. For tables E and F the range of landed ages/lengths should be stated. In each case we hope to perform a cross check that the ages/lengths entered for that country; year; species; domain and (for tables A and B) quarter; vessel_length; fishing_tech; gear_type; meshsizerange; fishery; sub_region; geo_indicator; specon_tech; specon_lo; deep combination are within the min and max values for that table.

Q: TOTWGHTLANDG in tables C and D: Should it be in these tables because these tables are about discards. It looks like it has been highlighted; giving the impression that it needs some attention of the writers of the data call.

A: The highlight is the unintended result of a copy-paste action which was simply missed before release of the data call. The field is included to allow values in table C or D to be split on a pro-rata basis to categories in tables A or B, i.e. P = TOTWGHTLANDG for a

category in table A divided by TOTWGHTLANDG for corresponding category (i.e. matching DOMAIN_DISCARDS) in table C. Use e.g. P*number at age in table C to infer number at age in Table A (for corresponding category).

Q: Fish can be landed with the goal to be discarded as it is not saleable (broken, damaged). How to record this?

A: This would fall under 'DISCARDS_D'.

Q: How do we define 'DEEP' fishing effort and landings?

A: The definition is as for the FDI-classic data call. That definition was not copied into the New-FDI data call document (sorry). It is entered here:

        o Where the deep-sea species related effort is not identified by a métier-sampling exclusively for deep sea species under the DCF, the effort should be identified as follows:

(1) the gear is exclusively used in deep-sea fisheries;

(2) catch of Deep Sea species retained >100kg (as per the Regulation[1]), or

(3) catch of Deep Sea species retained <100kg but the percentage of Deep Sea species >=35%.

1. R(EC) No 2347/2002 establishing specific access requirements and associated conditions applicable to fishing for deep sea stocks.

The deep sea species are defined in annexes I and II of the regulation.

NOTE: for data from 2017 and after the applicable regulation becomes R (EU) 2016/2336. The deep sea species are defined in annex I of R (EU) 2016/2336. There are a few changes compared to annexes I and II of R(EC) No 2347/2002.

Questions related to Appendix 2

Q: Is it possible to use 'VL0010' as a vessel length category in the Baltic?

A: Yes, it is. The split at 8 meters is actually a left over from the FDI-classic which should have been removed.

Questions related to Appendix 3

Q: I am not familiar with the 'FISHING_TECH' variable.

A: The descriptions are as in Appendix III of Decision 93-2010 (which covers the years being asked for). The code to use would be the same as that used when responding to the Annual Economic Report (AER). If a vessel has operated using more than one fishing technique a dominance criteria must be applied. This is because:

    For economic data all the data for an individual vessel must be kept together. The FISHING_TECH and SUPRA_REGION fields are what allow the data for a vessel to be kept together because all the activity of the vessel must be assigned to a single FISHING_TECH code and a single SUPRA_REGION code.

    The economic call deals with fleet segments which are defined using the combination of FISHING_TECH, SUPRA_REGION and VESSEL_LENGTH.

Taking two hypothetical examples:

- A vessel records most effort as LLS (set longlines) but some as of LLD (drifting longlines). In this case for table G_EFFORT the effort would be spread over two entries. One for the effort of LLS and the second for effort of LLD - but in both cases the 'FISHING_TECH' field will be entered as 'HOK'.

- A vessel using mostly demersal trawls (OTB) but also sometimes pots (FPO). In this case the effort would be spread over two entries. One for the effort of OTB and the second for effort of FPO - but in both cases the 'FISHING_TECH' field will be entered as 'DTS'.

Questions related to Appendix 4

Q: In the case of harvesting with divers (shell fishing by hand), what fishing gear code can we use?

A: The code 'NO' (for "no gear") has been added to the list of accepted gear codes. Because of the late inclusion of this gear code any member state that has already compiled data using 'NONE' is not expected to re-compile data.

NOTE: the gear code 'NK' (for "not known") has also been added. In general the New-FDI call expects NONE entered for text fields when the value is not known but NK is a recognised code in the master data register. Entries for GEAR_TYPE of NK and NONE will all be converted to NK post upload.

Questions related to Appendix 5

ICES area I is also covered by *'North Western waters'* **mesh ranges**

Q: Appendix 5 splits mesh size ranges by regions ('Baltic' etc.). Which areas (for example ICES areas or GFCM areas) are included in each region?

A: Definition of areas as applied to gear mesh size ranges have been taken from COM-2016-134. Text in black is from the proposed regulation amendment, that in blue are our additions for further clarification.

(a) 'North Sea' means ICES divisions IIa, IIIa and IV;

(b) 'Baltic Sea' means ICES divisions IIIb, IIIc and IIId; i.e. subdivisions 22, 23, 24, 25, 26, 27, 28-1, 28-2, 29, 30, 31, 32.

(c) 'North Western waters' means ICES sub-areas V (excluding Va and non-Union waters of
    o Vb), VI and VII;

(d) 'South Western waters' means ICES sub-areas VIII, IX and X (Union waters) and CECAF zones 34.1.1, 34.1.2 and 34.2.0 (Union waters);

(e) 'Mediterranean Sea' means the maritime waters of the Mediterranean to the East of line 5° 36' West; i.e. all GSA areas other than 28-30.

(f) 'Black Sea' means waters in the General Fisheries Commission for the Mediterranean
    o (GFCM) geographical sub-area 29 as defined in Annex I to Regulation (EU) No 1343/2011
    o (Resolution GFCM/33/2009/2); i.e. GSA areas 28, 29, 30.

(g) 'Outermost Regions' means waters around the outermost regions as referred to in the first paragraph of Article 349 of the Treaty[33] divided into three sea basins: West Atlantic, East Atlantic and Indian Ocean

For areas not listed in (a) to (g) above the codes from Appendix 5 should still be used.

- Any of ICES areas 5, 12 and 14 can take North Western Waters codes – **also ICES area 1**

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[33] Article 349 of the treaty of the Functioning of the European Union (TFEU) lists Guadeloupe, French Guiana, Martinique, Réunion, Saint-Barthélemy, Saint-Martin, the Azores, Madeira and the Canary Islands.

- Any CECAF area can take South Western Waters codes
- Fishing from other areas can take Outermost Regions codes

Codes unique to the non-EU regulated areas may be introduced in 2018.

Q: The 'Swedish grid' trawl in the Skagerrak uses a square mesh cod end (70-89mm).

A: The code 70S90 will be accepted by the upload facility for the 'North Sea' region.

Q: The largest Baltic mesh range it starts at 157mm and the category before stops at 155mm. It seems odd that 156mm wouldn't be included in a category.

A: In Annex III of regulation (2187/05) categories are listed as 90 <= mesh < 156; 110 <= mesh < 156 and mesh >= 157. If necessary, please interpret "< 156" as <= 156.

Questions related to Appendix 6

Q: How should we deal with mesh size ranges for the Fishery definitions?

A: The key point is the sentence in bold

Métier definitions to conform to those agreed by the relevant RCMs

Fisheries definitions have already been agreed in the Regional Coordination Meetings (RCMs) and the FDI call will follow these definitions. A list of the accepted definitions can be found using a link from the New-FDI data upload web page. See link "Fishery code list" under "Important Notes".

Q: Is the target assemblage part of the fishery definition decided on a trip by trip basis or based on yearly catch compositions?

A: The footnote to Appendix IV of Decision 93-2010 (which covers the years being asked for) says:

> *"(a) The retained part of the catch should be classified by target assemblage (crustaceans, demersal fish, etc.) at a trip level or at a fishing operation level when possible, and sorted by weight or by total value in the case of valuable species (e.g. Nephrops, shrimps). The target assemblage that comes up at the first position should be considered as the target assemblage to be reported in the matrix."*

Questions related to Appendix 7

Q: What do I do if the sampled data is quarterly?

Q: What do I do if the sampling covers multiple sub-regions?

A: An important thing to note first is that (this year) there is no strict checking of DOMAIN name format in the upload facility, partly because we are on a learning curve and adjustments might need to be made to the format. Therefore if sampled data is by quarter then that information can be added to the DOMAIN name, e.g. use "Q1" or "Q2" etc. somewhere in the name. For large pelagics in the Mediterranean data is sampled across all the sub-regions. Therefore "ALL_GSA" can be used to denote the sub-regions. If some sub-regions (or gear types or target assemblages) are covered, these could be included using a hyphen "-" between them.

If data for Tables C to F is quarterly, then enter the data for each quarter separately.

Questions related to Appendix 8

Q: I am not familiar with the 'SUPRA_REGION' variable.

A: The code to use would be the same as that used when responding to the Annual Economic Report (AER). Every fishing vessel must only receive one SUPRA_REGION code. Therefore if a vessel has operated in more than one supra region a dominance criteria must be applied. This is because:

> For economic data all the data for an individual vessel must be kept together. The FISHING_TECH and SUPRA_REGION fields are what allow the data for a vessel to be kept together because all the activity of the vessel must be assigned to a single FISHING_TECH code and a single SUPRA_REGION code.

> The economic call deals with fleet segments which are defined using the combination of FISHING_TECH, SUPRA_REGION and VESSEL_LENGTH.

Q: Sub-region codes '27.2 EU', '27.2.A' and '27.2.B'.

A: For landings/effort outside of EU waters it is expected to enter '27.2.A' if the landings/effort are from that sub-region and '27.2.B' if the landings/effort are from that sub-region. The EU waters of area 27.2 are contained within 27.2.A so use of codes '27.2.A' and '27.2.B' for non EU waters and '27.2 EU' for EU waters has caused some confusion (sorry). However these codes still work to distinguish between EU and non-EU waters of area 27.2.

Q: Codes to use for the 'additional areas' listed in appendix 8.

A: We have followed the appendices I and II of Commission Decision 2010/93/EU. Therefore for NAFO areas we anticipate codes by division and all other areas by sub-area (if sub-areas are defined). The full list of codes is given below:

Area 51	
Red Sea sub-area	51.1
Gulf sub-area	51.2
Western Arabian Sea sub-area	51.3
Eastern Arabian Sea, Laccadive and Sri Lanka sub-area	51.4
Somalia, Kenya and Tanzania sub-area	51.5
Madagascar and Mozambique Channel sub-area	51.6
Oceanic sub-area	51.7
Mozambique	51.8
Area 57	
Bay of Bengal	57.1
Northern	57.2
Central	57.3
Oceanic	57.4
Western Australia	57.5

Southern Australia	57.6
Area 21 NAFO	
Northwest Atlantic	21.0A
Northwest Atlantic	21.0B
Northwest Atlantic	21.1A
Northwest Atlantic	21.1B
Northwest Atlantic	21.1C
Northwest Atlantic	21.1D
Northwest Atlantic	21.1E
Northwest Atlantic	21.1F
Northwest Atlantic	21.2G
Northwest Atlantic	21.2H
Northwest Atlantic	21.2J
Northwest Atlantic	21.3K
Northwest Atlantic	21.3L
Northwest Atlantic	21.3M
Northwest Atlantic	21.3N
Northwest Atlantic	21.3O
Northwest Atlantic	21.3P
Northwest Atlantic	21.4R
Northwest Atlantic	21.4S
Northwest Atlantic	21.4T
Northwest Atlantic	21.4V
Northwest Atlantic	21.4W
Northwest Atlantic	21.4X
Area 21 NAFO (cont)	
Northwest Atlantic	21.5Y
Northwest Atlantic	21.5Z

Northwest Atlantic	21.6A
Northwest Atlantic	21.6B
Northwest Atlantic	21.6C
Northwest Atlantic	21.6D
Northwest Atlantic	21.6E
Northwest Atlantic	21.6F
Northwest Atlantic	21.6G
Northwest Atlantic	21.6H
Area 48	
Peninsular	48.1
South Orkney	48.2
South Georgia	48.3
South Sandwich	48.4
Weddel Sea	48.5
Bouvet	48.6
Area 58	
BANZARE Bank	58.4
McDonald and Heard	58.5
Crozet	58.6
Marion-Edward	58.7
Area 88	
Eastern Ross Sea	88.1
Western Ross Sea	88.2
Amundsen Sea	88.3
Area 18 (only whole area code possible)	
ARCTIC SEA	18
Area 31 (only whole area code possible)	
ATLANTIC, WESTERN-CENTRAL	31

Area 41	
Northern	41.1
Central	41.2
Southern	41.3
Area 47	
Orange River & Cape of Good Hope	47.1
Agulhas	47.2
SEAFO	47.A
SEAFO	47.B
SEAFO	47.C
SEAFO	47.D
Area 61 (only whole area code possible)	
PACIFIC, NORTHWEST	61
Area 67 (only whole area code possible)	
PACIFIC, NORTHEST	67
Area 71 (only whole area code possible)	
PACIFIC, WESTERN CENTRAL	71
Area 77 (only whole area code possible)	
PACIFIC, EASTERN CENTRAL	77
Area 81 (only whole area code possible)	
PACIFIC, SOUTHWEST	81
Area 87	
Northern	87.1
Central	87.2
Southern	87.3

Questions related to Appendix 11

Q: I have a fishery falling under SPECON_LO "NSOTM2" in 2015. Appendix 11 states that NSOTM2 should only be used in 2015 and then the codes NSOTB1, NSOTB3, NSOTB4 or NSIND1 from 2016. NSOTM2 covers up to 16 species but NSOTB4 covers only one (and it

is a different species to before). How do I deal with the species that came under the landings obligation in 2015?

A: Appendix 11 is written so that – hopefully – it is possible to assign effort and landings to one and only one SPECON_LO category, (including 'NONE'). The SPECON_LO categories are specified through a combination of the 'dimensions' area, gear type and mesh range. Using these dimensions, if one (or several) more recently introduced SPECON_LO overlap with an older SPECON_LO then the more recently introduced is/are kept and the older discontinued.

HOWEVER, once a species comes under the landings obligation it stays under it. Therefore, with the example of "NSOTM2" any species subject to the landings obligation under NSOTM2 in 2015 is to be considered under the landings obligation under NSOTB4 (say) in 2016.

Q: The "SPECON_LO" should only be entered for the specific species that are under the LO in a fishery? Or should it be applied to the whole "fishery" for all species?

A: Apply to the whole fishery for all species. The SPECON_LO applies to a fishery. Appendix 11 contains information on what species would bring fishing data into a given SPECON_LO category. It also shows if those species enjoy *de minimis* or high survivability exemptions - to help for when the DISCARDS_TYPE field needs to be completed. BUT once data for the fishing activity comes under a given SPECON_LO category, it applies to all species.

Note: species not affected by the LO would get the DISCARDS_TYPE 'NOLO' if they had discards data.

Questions related to Appendix 14

Q: Most of our data is ICES rectangle based, so we have to supply the centroid which will be converted into a c-square. How do you know that we have supplied the centroid instead of the c-square as this table does not include a column for ICES rectangle?

A: To convert from 0.5*1.0 degree ICES rectangles to 0.5*0.5 degree c-squares we will assign half of the value (effort or landings) to each of the two c-squares that correspond to one ICES rectangle, (otherwise the maps would take on a chess board pattern of alternate filled and empty c-squares). If the data is already being supplied by 0.5*0.5 degree cells then our code can be written such that if

> o the latitudes and longitudes relate to the c-square but
>
> o they are not equivalent to the centroid of an ICES rectangle,

then the whole value is assigned to the one c-square.

Note: It is therefore important – if supplying one data entry per ICES rectangle – to follow the guideline in appendix 14 and supply the latitudes and longitudes of the ICES rectangle centres.

Note: Table_H and Table_I: the text should say "precision to **0.25** degrees".

Questions related to Appendix 15

Q: For the Economic data call Days at Sea (TOTSEADAYS) are provided aggregated by VESSEL_LENGTH and FISHING_TECH. If also GEAR_TYPE and MESHSIZERANGE are added, the number of the Days at Sea could be higher and these results could not be used for the economic analysis.

A: There is a distinction to be made between days at sea (as measured by TOTSEADAYS and as associated with measures TOTKWDAYSATSEA and TOTGTDAYSATSEA) and fishing days (as measured by TOTFISDAYS and as associated with measures TOTKWFISHDAYS and TOTGTFISHDAYS).

For days at sea recording over different gears does not inflate the total days at sea - at least not if the member state sticks to the principles established in the second transversal variables workshop (the 'Nicosia' meeting). Appendix 15 of the New-FDI data call directs member states to use the methodology agreed in Nicosia.

Borrowing text from the Vignette help file of the fecR package (written to allow member states to calculate both days at sea and fishing days in the agreed way).

> "Each fishing trip is made up of different fishing activities. A fishing activity is the use of a particular gear in a particular area on a particular date. Gear is a combination of the gear type and the gear mesh size. Gears of the same type but of different mesh size are considered to be different gears. Area is a combination of the economic zone, the fishing area and the fishing rectangle."

> "The total days at sea is calculated as the number of commenced 24 hour periods of the trip. Only the total duration of trip is considered, i.e. the difference between departing and returning."

> "The total days at sea are split equally across each day on the trip on which fishing occurs, i.e. the number of unique fishing dates on the trip."

> "Within each fishing date, the days at sea attributed to that day is split equally across the fishing activities on that day."

i.e. fishing effort is calculated for each fishing trip and, once the days at sea have been established for the trip, considering different gears and mesh sizes simply leads to a partitioning of that total into constituent parts.

For fishing days the situation is different.

A distinction is made between active and passive gears.

> "In essence, fishing with passive gears happens in parallel while fishing with active gears happens in series."

> "Considering the active gears, each date which has a fishing activity using an active gear is allocated 1 fishing day. This is split equally among the active gear activities on that date."

> "Considering the passive gears, each fishing activity using a passive gear is allocated 1 fishing day. If there are multiple fishing activities with passive gears on the same fishing date, they each get allocated 1 fishing day."

and crucially

> "There may be more fishing days on a trip than days at sea."

The Nicosia workshop was working on the principle (report page 8)

> "As stated in the FAO handbook of fisheries statistical standards "For biologists, a good measure of fishing effort should be proportional to fishing mortality. For economists it should be proportional to the cost of fishing." Fishing Days is the measure related to fishing mortality, Days at Sea is the measure related to the cost of fishing. The measure of Fishing Days should be related to the amount of time a fishing gear or gears are in the sea (best fishing time proxy that is EU-wide available, currently). When gears are used in parallel this measure will not equal the number of days on which fishing occurs for the vessel."

Q: The fecR package will not accept trips with different trip IDs if they start and finish with the same date & time combination.

A: The fecR package has been updated to allow trips with different IDs to start and finish with the same date & time combination. The new version (version 0.0.2) can be found on the CRAN web site https://CRAN.R-project.org/package=fecR

An important note on the fecR package:

The package expects ICES rectangle codes as part of its input. This therefore currently restricts the package to use on data from areas with ICES rectangles.

Notes related to the upload facility

N: Duplicate row error messages.

ISSUE: If codes entered for an individual column are rejected by the upload facility, the rows affected may also receive an error message related to duplicate rows. This is because the upload facility regards the 'failed' code as if it were a NULL. This can lead to more than one row the same except for say, different mesh size ranges, being treated as having the same mesh range (NULL) and being tagged as duplicates.

TIP: Ignore duplicate row error messages unless there are no error messages connected with individual codes.

N: Trailing rows and columns.

ISSUE: If data is deleted from cells in an EXCEL table but the row (or column) is not deleted, on export to csv format the file will receive NULLS. The problem usually arises when data in the last row(s) or column(s) are deleted because there is nothing visible to show the row/column still exists in EXCEL.

TIP: If a csv file has been created by exporting from an EXCEL file, open the file in a text editor and check for commas in a row or rows after the data. Also check for extra commas at the end of rows.

Annex 5. Member State submissions in relation to ToR1

Belgium

Contents of 'BEL_new FDI_remarks'

*In table A catch at age data for 2015 and 2016 should be provided. It is not clear whether this implies all landings data or only the data for which age information can be provided?

*The data call asks to provide biological data according to the groupings that are used by member states when they raise sampled data (tables C and D) and to split those raised data across vessel length, sub_region, etc… to populate table A and B. The aggregation level of table A and B doesn't match with the sampling design and is therefore not representative.

*The refusal rate is requested at the level of the domain (raising) but we only have this information at the level of the sampling design.

*The permitted mesh size ranges presented in appendix 5 are not in accordance with the wide range of accepted fishery/métier codes e.g. TBB_DEF_100-119 in the North Western waters can be directed to 100D110 or 110D119. As we don't have knowledge of the exact mesh size, we have to make an assumption in order to be able to assign a mesh size code from the table. The example written in appendix 5: "if data is collected according to a mesh size range specify the range, e.g. if data collected for vessels using gear with mesh sizes between 70 and 99 mm and using diamond mesh use code "70D99"', is very misleading as the code 70D99 is not a permitted code.

*The mesh sizes presented in appendix 11 are not always in accordance with the suggested mesh size coding in appendix 5 e.g. SPECON_LO code NSOTB4 for area 27.4, gear OTB and mesh size 32-69 mm; mesh size range for mobile gears in the North Sea is 32D80.

*It is not clear how the coding of specific conditions related to the landing obligation has to be assigned. In appendix 11 it is stated that total landings per vessel of all species in 2013 and 2014 have to be considered to determine the type of fishery. Does this imply the sum of the 2013 and 2014 landings or the average of the 2013 and 2014 landings? The use of 2013 and 2014 as reference years creates a mismatch as some vessels active in the period 2013-2014 with a specific gear and area combination may not be active with the same gear-area combination in the period 2015-2016 and vice versa.

*Crucial information that is needed to understand what is being asked in the data call is spread over 3 documents: the official data call document, the list with F.A.Q and the important notes on the website. Moreover, the answers to the frequently asked questions are not always clear e.g. the use of the dominance criteria to fill in the fishing_tech and sub_region variables. The code to use would be the same as that used when responding to the Annual Economic Report (AER). The description provided in the AER data call is not straightforward and should be available in the FDI data call.

Bulgaria

Contents of 'BGR_Presentation for FDI data call'

Inconsistencies between the segments in the effort and landing tables

- For this year`s data call Bulgaria is providing the data for effort and landings for the whole year, not by quarters. After we make draft tables with the data by quarters, we realize that there is a possibility to have differences for the segments in the effort tables and the landings tables:

Example:

In 2016 we have 13 segments with less than 10 vessels (3 of them with 1 vessel). Only one vessel from a small segment was active on March 30, but there is no catch – the kilograms in the landing declaration are 0, this segment will have activity on the effort table for the 1st quarter, but there will be no catch in the landing table. Is this going to be a problem when we are submitting the data by quarters next year?

Question related to providing the landings and effort data by rectangle.

Bulgaria will try to insure the provision of data by rectangle during the next data call for the segments over 12m. Unfortunately, we have doubts whether we will be able to provide these data on the small-scale fleet. Should we provide the data for all segments, including the SSF?

If it is necessary, will it be acceptable if we estimate in which rectangle the catch was made on the basis of the port of landing?

Partitioning of biological data into the detailed catch tables (tables A and B)

In Bulgaria the biological monitoring of the landings of turbot covers a measurement of about 500 turbots, all caught with gillnets, but falling into different segments, because some of the vessels are using more than one gear during the year(from 1118 vessels under 12 m, 329 are using more than 1 fishing gear and from 88 vessels over 12m, 69 are using more than 1 fishing gear). The institute which is doing the monitoring made a detailed technical report, so we know from the catch of which vessel is every turbot. When in some of the segments there are not enough samples (for example only 10 turbots) is it correct to include this data in the tables?

Problems with the combination of species, fishery and domain-landings:

- Red mullet is a demersal fish, but it was caught with PS, since there is no combination between PS and DEF, which is the most relevant combination in this case?

- We have declarations with *Rapana venosa* caught with handlines and pole-lines (hand-operated), after the inspection of our inspectors, the fishermen confirmed that it is not a mistake. In this case, we combined rapana with LHP and since there is no combination with LHP and MOL, we inserted in the Target assemblage – demersal fish (DEF).

- We have 801 kilograms rapana, caught with GNS, should the code be DEF?

Problems with the combination of species, fishery and domain-landings:

- In the landing declaration Mediterranean horse mackerel was caught with Handlines and pole-lines (hand-operated)-LHP. Since there is no combination of LHP and small pelagic fish in the code list, we wrote in the tables LHM Handlines and pole-lines (mechanised) as gear type in the fishery and domain-landings columns.

- When the catch is Mediterranean horse mackerel, which is pelagic species, but can be also found on the bottom, is it correct to once qualify it as SPF and on the other hand as DEF. Also during 2015 and 2016, we had 625 kilograms of HMM caught with beam trawls. Since the beam trawls are mainly used for the catch of Rapana venosa, is it correct to use the fishery code TBB_MOL_0_0_0 also for the HMM?

- Is there a possibility to include more fishery codes in the list?

Differences in the values of TOTKWDAYSATSEA and TOTGTDAYSATSEA in the Fleet-economic data call and FDI

- For the Fleet-economic data call we calculated only the totGTdaysatsea and totKWDaysatsea for the trawls and for the FDI we calculated the variables for all segments.

Croatia

Contents of 'Croatia_FDI(1)'

Croatia – difficulties in processing and submitting data files

Specific comments:

• MIS and HAR gear codes are not accepted by the upload facility.

MIS and HAR gear codes used in Croatia, that are included in FAO list of fishing gears (ISSCFG Revision 1 (Annex M II) are not included in Appendix 4. In comparison, the Fleet economic data call allows to enter NK (unknown gear), so we apply a mapping procedure from MIS and HAR to NK gear code. In Table H (spatial landings): Invalid fishery code and Invalid gear type code errors were generated, while in Table I (spatial effort): Invalid fishery code was generated. We tried to upload both NK and NONE codes instead of MIS and HAR codes, however the upload failed due to the same errors. This situation creates a necessity of manual handling of the data-set, as the rows with MIS and HAR (and NK/NONE) gear codes were removed, and raises the possibility of errors.

• Fishery code PS_LPF_>=14_0 for large pelagic fish (bluefin tuna)

In Croatia there is no landing of bluefin tuna per se as the entire catch is transfered to bluefin tuna farms. Both in A-B tables (catch) and C-D tables (landing) the total landing weight is requested. However in this case the total landing weight is zero and the biological parameters cannot be estimated.

General comments:

• No data validation tool.

Having a data validation tool for the FDI data-call would be very beneficial in order to check the tables prior to the upload.

• Limited data upload facility interface.

An interface of uploaded data within the data upload facility with a visualisation of data after upload would allow insight for MS to what is the final data accepted by the JRC data-base. Currently, the data upload facility accepts more than one upload of tables with the same name, however it is unclear if the second upload is added to the first or if it overwrites the first.

• No common data-base format for extraction of data.

Linking biological, economic and transversal data would be easier if there was a standard basic data format, used at national level for all MS. This would also facilitate development of national data-bases. The current situation constantly demands adaptations of the national data-bases and development of new data extraction and validation procedures for each data-call.

Denmark

Contents of 'DNK_Feedback from Denmark on the FDI New datacall 2017 3'

Feedback from Denmark on the FDI New datacall 2017

General comments

For transversal data, Denmark use a database (DFAD), based on sales notes (census for all landings) merged with logbooks (only vessels >= 10 m, 8 m in the Baltic) and fleet register. This mean that there is information on all landings and value of the landings, but for vessels without logbooks, there is no information in gear, mesh size and ICES rectangle. In most cases, sales notes with missing logbooks is coming from small vessels, but in some cases, it can be a larger vessel where there is a sales note without matching logbook.

For effort calculations for the vessels without logbooks, one sales note is considered one trip, and one day at sea and one fishing day is assigned to each trip.

The FAQ vas very useful, often answers to questions could be found there.

Below feedback on methods chosen by Denmark to answer the datacall is provided. Comments are given to the coding in general as well as some comments on how the specific tables have been constructed.

Coding issues

FISHING_TECH

A list of FISHING_TECH codes for each vessel by year, was provided by Statistics Denmark, that answers the Economic datacall. All classifications are based on the accounting unit. The accounting units for 2016 are still preliminary. This list was merged to the vessels.

In 2015, 12 vessels don't have a FISHING_TECH, in 2016 it is 14 vessels. For some of these it is because they have stopped during the year, and Statistics Denmark takes the information from the Fleet register on 31/12. For other of the vessels, it is because there are too few vessels in that segment, so they are kept out due to confidentiality reasons. These vessels have a FISHING_TECH = NONE.

GEAR_TYPE

Some of the gear codes registered in the logbooks needed to be grouped:

- BMS: BMS, DRB, DRC, DRO
- DRH: DRH
- FPN: FPN, FIX
- FPO: FPO
- GNS: GNS, GN, GNC
- GND: GND
- GTN: GTN
- GTR: GTR
- HMD: HMD
- LA: LA
- LHP: LHP, LH
- LHM: LHM
- LLS: LLS, LL, LX

- LLD: LLD
- LTS: LTL
- OTB: OTB, TB, TBN, TBS
- OTM: OTM
- OTT: OTT
- PS: PS
- PTB: PTB
- PTM: PTM, TM
- SB: SB
- SDN: SDN
- SPR: SPR
- SSC: SSC
- TBB: TBB
- NONE: LNB, LNS, MIS, NK, NO, OFG, UNK

If no logbook is available, GEAR_TYPE is set to NONE.

MESHSIZERANGE

In some cases, it was unclear to which mesh size range groups some SUB_REGIONs belonged to (e.g. 1 and 2).

FISHERY

The metier level 6 as used, but validated against the list provided in relation to the datacall. This meant that some metiers had to be modified (mostly removing codes on selection devices, and some minor coding issues).

DOMAIN_DISCARDS

The domain code for the discards sampling is a combination of area, an aggregation of several metiers (FISHERY) and quarter, so quarter have been added to the code. Further FDF (fully documented fishery) have been added to some of the metiers, since this is an important stratum in both Danish sampling design and estimation.

DOMAIN_LANDINGS

The domain code for the landings reflect the sampling design, where part of it is sampled at sea, and follow the same structure as the DOMAIN_DISCARDS, and part of it is sampled on shore by commercial size categories and is a combination of area, species and quarters.

The on shore sampling and following estimation is not stratified by metiers, but the differences in size sorting distributions reflect the selectivity of the different metiers. Since the same samples on shore covers all the metiers, the metier is not included in the domains. It would probably make sense to include the actual size sorting in the domains, since it then would be easy to spot the differences in age and length distribution per metier. The latter is not the case with the 'sizeCatogries'-domains submitted in this test datacall.

Present: DNK_27.3.A N_sizeCategories_COD_q1

Future: DNK_27.3.A N_sizeCategori_1_COD_q1, DNK_27.3.A N_sizeCategori_2_COD_q1

SUB_REGION

For areas 1, 2 and 10 it was unclear how to code it, as e.g. 27.2.A and 27.2.B exists as FAO codes, but here it referred to the economic zones. It was solved through correspondence with JRC.

It would have been more transparent and easier to use the naming conventions used for the other areas (e.g. EU, COAST, RFMO)

- 1 international waters -> 27.1.A
- 1 coastal waters -> 27.1.B
- 2 EU waters -> 27.2 EU
- 2.A non EU waters -> 27.2.A
- 2.B non EU waters -> 27.2.B
- The same with areas 27.10:
  - 10 EU waters -> 27.10.A
  - 10 non EU waters -> 27.10.B

The coding of Skagerrak and Kattegat – it would be much easier to use the normal FAO codes '27.3.a.21', '27.3.a.20' – otherwise we need to maintain a separate code list for answering this data call

SUPRA_REGION

One SUPRA_REGION was assigned to each vessel, based on days at sea.

GEO_INDICATOR

The most dominant geographical indicator was found for each vessel, based on days at sea.

SPECON_TECH

The SPECON_TECH is based on registrations of selection devices in the logbooks in Kattegat and Skagerrak.

SPECON_LO

It landing obligations were coded as a lookup table including year, SUB_REGION, GEAR_TYPE, SPECIES, MESH_MIN, MESH_MAX and SPECON_LO. If a trip falls within several landing obligations, the guidelines in Appendix 11 was followed. Due to time constraints, the derogations have not been coded.

Some trips fishing under a DTU AQUA project (MINIDISC) where different gears were used during the same trip, resulted in different landing obligation rules. These trips were split into two sub-trips and given different codes.

DEEP

Species:

DK code	ENG code	EN name	Scientific
RIH	SHO	Blackmouth catshark	Galeus melastomus
BYL	BLI	Blue ling	Molva dypterygia
GUK	ARU	Greater argentine	Argentina silus
HAM	CMO	Rabbit fish	Chimaera monstrosa

HEL	GHL	Greenland halibut	Reinhardtius hippoglossoides
OSB	ORY	Orange roughy	Hoplostethus atlanticus
RIH	SHO	Blackmouth catshark	Galeus melastomus
SBS	SBR	Blackspot(=red) seabream	Pagellus bogaraveo
SFS	SFS	Silver scabbardfish	Lepidopus caudatus
SKO	RNG	Roundnose grenadier	Coryphaenoides rupestris
SSF	BSF	Black scabbardfish	Aphanopus carbo
TKA	EPI	Black cardinal fish	Epigonus telescopus

If the landings of deep-sea species is higher than 100 kg, then the trip get the code DEEP.

RECTANGLE_LAT, RECTANGLE_LON

It was not clear why there is a reference to c-squares, and it would be easier if the ICES rectangle code could be provided directly. Landings trips with no logbooks, but having sales notes, doesn't have spatial information.

For checking if an ICES rectangle corresponds to a SUB_REGION, a table was provided by JRC. If a mismatch was found between ICES rectangle and SUB_REGION, the VMS data for the trip by vessel and date was found. If the SUB_REGION in both logbooks and VMS data were the same, then the ICES rectangle was corrected to what was reported from the VMS data. If the ICES rectangle was the same in both the logbooks and the VMS data, the SUB_REGION was corrected. If both the SUB_REGION and the ICES rectangle were different in logbooks and VMS, the information was taken from the VMS data.

The midpoints of ICES rectangle were found through a lookup table, based on a shape-file.

The midpoints outside the ICES region was found with a script that assigns each position to a c-square and then calculates the midpoint of that c-square.

Biological data

As proposed during ICES WGCATCH 2016, the biological data on discards, age and length are submitted by the domains used in the estimation. In table A and B, the biological data are disaggregated to a level that is not supported by the sampling design. Therefore it was chosen to provide the biological data as missing values in table A and B after column 22, but providing the domains for landings and discard sampling in these tables, that can then be coupled with the domains and biological data given in tables C-F.

The methods used for estimating discard amount and age and length distribution are the same as the ones used for answering ICES's stock assessment data call. The results from answering ICES are stored in common data sets and these are used when answering the FDI data call. Most of the work done for this test data call has been on introducing the DOMAINS in the results.

For a couple of stocks e.g. sprat, herring and sand eel the estimation of e.g. catch at age is done with very different methods and the results are presently not stored in the common data sets. These stocks are not included in this test data call.

REFUSAL_RATE

A new sampling system was introduced for the Danish at sea observer program in 2011, where vessels were selected on a stratified random basis, based on last year's fishing data. Vessels have been grouped according their main fisheries conducted and the home harbour; it is only possible for a vessel to be grouped in one frame. Presently Denmark is operating with 6 unique sampling frames for the observer sampling program at sea. The six frames are split between the geography of Denmark to logistic reasons and three of the sampling frames are conducted from the North-western part of Denmark and the other three in the eastern part of Denmark (Table 1). An observer calling a fisherman within a given frame needs to ask for participation on the next conducted trip and if the fisherman is going fishing with a gear not included in the frame, but still as a part of the total program, the observer will still need to conduct the trip.

Refusal rates are collected according to the recommendations in the SGPIDS III report and the answers are divided in 6 categories; No contact, no contact information, not available, observer decline, industry decline and sampled.

The fishermen answers are registered in a log. If a skipper decisively refuses to have an observer on board he is not contacted again within that year even though the ship is selected again by the system.

However, the ship is registered with the same answer. If the skipper says "no" but is given a more vague answer (try again later or it is not fitting very good right now) he will be called again the next time the vessel is being selected by the system.

Sampling Frame	Area	Refusal rate 2016
TBB – brown shrimp	IV	0.13
SDN+OTB	IV	0.16
SDN+OTB	IIIAN	0.13
CRU- shrimp	IIIAN	0.44
SDN+OTB	SD 21-24	0.26
OTB	SD 25-32	0.22

One of the main quality improvement with a sampling schemes based on statistical principles is that it enables us to calculate unbiased estimators e.g. catch at age and discard amount. The sampling program may still be biased due to refusal, but refusals are now tracked and it is therefore possible to check for biases by comparing the VMS tracks and logbook information between vessels were observers are welcome and vessels that refuses to bring observers (figure 1). In the former program although bias was anticipated it was not possible to quantify the level.

This indicates that presently refusal rates are calculated for the design (sampling frames) and not at the domain level. To give the refusal rate on a domain level, we would need to know the metier of all the trips who refused at the time of phoning. And the information would then be repeated by species and age or length. This is the main reason why Denmark is not able to deliver refusal rates on the level asked for in the FDI data call, although the information is sampled according to our program.
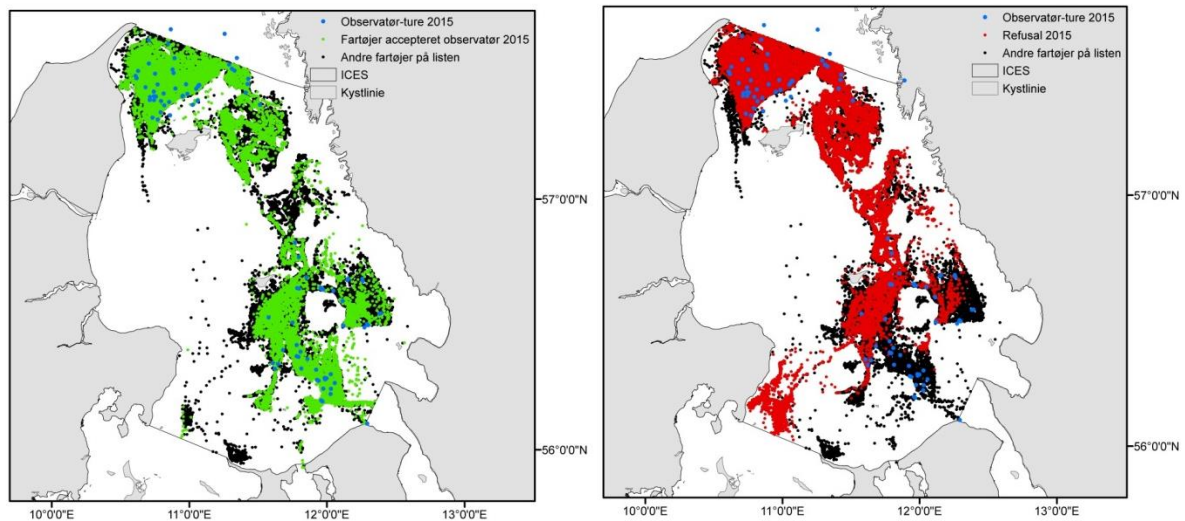
Figure 1. Comparison in VMS tracks between vessels agreeing to bring observers on board (green dots), with vessels refusing to bring overserves on-board (red dots) and the total fleet (black dots). Blue dots indicate hauls sampled by observers.

General comments to the tables

Tables A and B

TOTWGHTLANDG_ABOVE_MCRS

Is found from landed weight from sales notes.

TOTWGHTLANDG_BELOW_MCRS

Are found from official registrations from landing declarations or sales notes.

TOTWGHTLANDG

TOTWGHTLANDG is the sum of TOTWGHTLANDG_ABOVE_MCRS and TOTWGHTLANDG_BELOW_MCRS.

TOTVALLANDG

Is found from value of landings from sales notes.

Tables C and D

Amount of discard are given for all species observed in the Danish at-sea programs.

The method used for estimation depends on stock, but in general ratio estimators are used - weight of same species, weight of all species and trips.

When estimating amount of discard and length distribution the stratification follows the DOMAIN_DISCARDS.

Often age length and weight length keys (ALKL's and WLK'S) are used and these are constructed in a range of different way – different models – and therefore these do not always follow the stratification used when calculating the amount and length distribution. Since the stratification does not follow the DOMAIN_DISCARDS, then it is not straight forward to fill in NO_AGE_MEASUREMENTS_DISCARDS.

DISCARDS, DISCARDS_DEMINIMIS, DISCARDS_HS, DISCARDS_D, DISCARDS_NOLO

All columns interpreted as estimated tonnes from observer programs – not discard from other sources e.g. registered in logbooks. It would be beneficial to have very clear guidelines for the population of these fields to insure consistency across countries.

In the Danish observer program we do not record the reasoning behind the discard, so all discard are grouped into a single group no matter of e.g. exemptions, so only DISCARDS fill in, rest set to -1.

NO_AGE_MEASUREMENTS_DISCARDS

Often age length and weight length keys (ALKL's and WLK'S) are used and these are constructed in a range of different way – different models – and therefore these do not always follow the stratification used when calculating the amount and length distribution. Since the stratification does not follow the DOMAIN_DISCARDS, then it is not straight forward to fill in NO_AGE_MEASUREMENTS_DISCARDS.

When populating this field the stratification used in the estimation has been used, so figures are repeated over groups of DOMAIN_DISCARDS. Another approach could be to only count the number of age measurements taken under the specified DOMAIN_DISCARDS, but then some cells will have an age distribution without having any age measurements or a very low number – and the number will not reflect the number actually going into the calculations.

Table E and F

NO_SAMPLES_LANDINGS

Denmark do not sample fishing trips in the onshore program for size sorting, so numbers of sampled auction days are given instead.

Table G Effort

The effort in days at sea and fishing days were calculated following the guidelines from WKTRANSVERSAL2. As this data call is coded in SAS, the R-script could not be used.

For trips with sales notes, but no logbook (typically vessels below 10 m (8 in the Baltic), one sales note is considered one trip, and one day at sea, one fishing day and 24 hours is assigned to each trip.

Table H Landings by rectangle

Only landings from vessels with logbooks.

Table I Effort by rectangle

Only effort from vessels with logbooks.

Table J Capacity and fleet segment specific effort data

Year of constriction is taken from the fleet register. The MAXSEADAYS are found from the 10 most active vessels in a fleet segment, by SEADAYS.

France

Contents of 'FDInew datacall - France set of notes of technical problems encountered to answer it_2017-10-23'

Call for data for the Fisheries Dependent Information (FDI); New-FDI

France set of notes on: 1) technical problems encountered by Member States in answering the data call and 2) review and document approaches taken by Member States in answering the data call.

Email 2017-10-03: Steven Holms
New-FDI EWG: request for contributions documenting data supply issues and approaches

Dear all

For those who have not found them already, terms of reference for the New-FDI EWG can be found here https://stecf.jrc.ec.europa.eu/ewg1712

Two of the items in these ToRs are:

"Compile in a concise manner a list of technical problems encountered by Member States in answering the data call and produce a table of any agreed modifications required in the data call for future years."

"In the interests of establishing common best practices, review and document approaches taken by Member States in answering the data call."

In the interests of improving the data call and the quality, consistency and utility of the data supplied, it would help greatly if those involved in the data supply can prepare something on the above subjects in advance of the meeting.

This could be in the form of a presentation (if an expert is present from the country to present it) or a set of notes or a working document.

An example subject area would be a description of how partitioning of biological data into the detailed catch tables (tables A and B) was performed - or - an illustration of why such partitioning is considered something that should or could not be done.

There is the obvious problem that experts will not be present from all member states (there were no registrations from some countries); this would require anything submitted from countries without an expert present at the EWG to be clearly explained and understandable without the need for an expert from that country to explain the contents.

While I realise that responding to the data call itself is already very demanding, we will need to address these aspects during the EWG meeting and I feel sure that if the issues that you encounter are documented as they occur, we will have a more comprehensive report of such issues.

Invitations will be issued very shortly. We had to choose 23 people from 39 registrations, so you can imagine it was not an easy process.

Best regards

Steven

The FDI-new datacall compiled 76 pages of instructions including the twelve Appendix. Specific instructions are asked for all Appendix and each data fields. Hard work was required to answer the datacall and follow all the instructions/formats and coding asked to be able to upload the data within the deadlines.

All of this ends up a strong need, in the future, to stabilize the method/format and coding asked to limit the work required to answer the different datacall and be able to respect the deadlines.

Nevertheless, for the fishing activity variables (capacity, fishing effort and landings), the objective to have an unique JRC datacall to meet the data needs from the different STECF working groups, now underway by the three routine JRC datacall (FleetEco, FDI and Mediterranean), has to be enhanced.

Was not the new FDI test datacall the right opportunity to focus on fishing activity variables and agreed on an unique datacall to answer the different STECF working group data needs? Was not counterproductive to add a large demand on biological data *(length and age composition of landings and discards estimates per species, discard rate estimates)* in this test datacall?

More generally, a proposal could be to have, in the future, three different datacall:

1) Fishing activity variables datacall *(ex. transversal variables; capacity, fishing effort and landings by species)*
2) Biological variables estimates datacall *(length and age composition of landings and discards estimates per species, discard rate estimates)*
3) Economic variables estimates datacall
This will allow to separate more clearly the different type of variables asked and the different way these variables have been collect and then could be estimate/calculate.

Furthermore, for the biological variables estimates *(length and age composition of landings and discards estimates per species, discard rate estimates)* and in response to the datacall, France do not have fill the very disaggregated tables A and B, as these estimates will then have no statistical sense. These estimates are already included in the tables C, D, E and F and in these tables they are in compliance with the sampling plan used to collect these data. France support the conclusions of the ICES WGCATCH 2016 meaning that the format of the tables A and B is not suitable for the transmission of the biological variables estimates.

Concerning the fleet population definition, a final decision should be ruled for the future datacall in order to ensure the compatibility between the datacall. The definition of Commission decision 2016/1251 *(any vessel registered on 31 December or which has fished at least one day in the year up to 31 December)* allow to have a comprehensive view of all the fishing effort implemented during the year and should be, in our view, preferred.

Concerning the variable TOTVALLANDG, it would seem preferable that this variable deal not only with the fraction of the landings traded through the auctions but be an estimate of the total value of the landings (traded or not through the auctions).

Moreover, some "technical" or "methodological" problems have been encountered in answering the datacall. Main problems are listed below for the different Tables and Appendix.

Table I - Specific effort data by rectangle for 2015 and 2016 in units of fishing days

The field "EFFECTIVE_EFFORT" is asked as an integer which seem not to be completely in line with the methodology developed during the 2nd Transversal variables workshop.
Indeed, "considering the active gears, each date which has a fishing activity using an active gear is allocated 1 fishing day. This is split equally among the active gear activities

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on that date". This means that less than one fishing day could be assigned for active gears for one date.

Furthermore, what is the way to calculate fishing day by rectangle for a fishing date where fishing activity appear in more than one rectangle? Do-we calculate one fishing day by rectangle? Seem to be what is done in FecR, but not sure it is completely in line with the 2nd Transversal variables methodology. If, contrary, fishing days have to be split between the different rectangles then less than one fishing day should be assigned contradicting also the use of integer for "EFFECTIVE_EFFORT" field.

Appendix 4 - GEAR_TYPE coding

Missing some gears coding for, in particular, Diving (DIV) or Foot fishing (FOO) "métiers". For these "métiers" the code "NO" have been used as gear type. Missing also the gear code for Barriers, fences, weirs, etc. (FWR) "métiers".

Appendix 5 - Mesh size coding

No consistencies between the mesh size range asking in the mesh size ranges coding and the different mesh size ranges used for the fishery definitions.

Additional difficulty was to have to calculate specific mesh size ranges according to the different type of gear or area.

Appendix 6 - Fishery definitions

No consistencies between the mesh size range asking in the mesh size ranges coding and the different mesh size ranges used for the fishery definitions.

Missing some fisheries in the recommendation of STECF (report JRC 49816) on definitions consistent with level 6 of the Commission Decision 2010/93. In particular no fishery coding accepted for Diving (DIV) or Foot fishing (FOO) "métiers". In these cases, it was not possible to give the fishery information, which then was missing although it was available.

Additional difficulty in the different mesh-size ranges agreed for the list of fisheries accepted. Some intersections appear and the range (min to max) of possible mesh size have not all a related mesh size range. Furthermore, difficulty arise also in the use of specific mesh size ranges by "métier" *(seem to have no general rules to define the mesh size ranges agreed by "métier")*.

The fisheries coding as follow *"METIER_0_0_0"* should be always accepted (for all code of fishery available) in order to be able to give this information even if the mesh size information is missing.

Appendix 8 - Area coding

Codification specific to the FDInew datacall for FAO area 27. No particular difficulty to fill the information but does not have to be in line with other datacall to be able to make some comparisons? A specific coding is then required to comply with the instructions.

Some example: 1) no distinction of ICES divisions IVa, IVb or IVc in the data compiled (only IV), 2) used of the coding EU, COAST and RFMO to distinguish EU waters, Other countries coastal waters and International waters.

At the moment, no upload possibility for data with area information missing. That means that data with, for example, only FAO area information are not integrated in the response of the datacall up to now.

Appendix 11 - Coding of specific conditions related to the Landings Obligation

Difficulty to apply the rules described in the Appendix 11. Codification is depending on year, vessel-gear-area combination and species with many exceptions which have to be taken into account. Within the deadline of the datacall, we do not have the time to answer this particular issue.

As the rules could possibly changes every years (depending on the current regulation) and as all the information needed to specify the coding to be use are already available in the other fields of the datacall, is-it not to possible to develop this characterization directly on the data send by the MS rather than it has to be done by each MS?

Appendix 14 - Enter latitude and longitude as real number to accuracy of 0.25 degrees (C-squares):

What are the reasons behind the used of C-square coding instead of ICES rectangle for FAO area 27?

Indeed, ICES rectangle is the standard level of geographical area available for all vessels in the FAO area 27. Used of C-square coding could be interesting only for geolocalized vessels (in particular for vessels with VMS).

Which type of area are to be used for the other FAO zones 37, 41, 31, 51, 57, ...? With no answer on this issue, France do not provide information for tables H&I for the other FAO zones than 27 (Atlantic, Northeast).

At the moment, no upload possibility for data with ICES rectangle information missing. That means that data with ICES rectangle information missing are not integrated in the response of the datacall up to now. In consequence, no consistencies with the data provided in the tables A to G (some data are missing).

Appendix 15 - Days at Sea and Fishing calculation

The methodology developed during the 2nd Transversal variables workshop was used to answer the datacall. No possibility to use package FecR as it is not suitable for vessels without logbooks and for vessels outside FAO area 27 (need to have ICES rectangle). Work is necessary to be able to apply FecR package on all French data. Some future work to compare the FecR package results and the French coding develop to answer the datacall are considered (for vessels from FAO area 27 with logbooks).
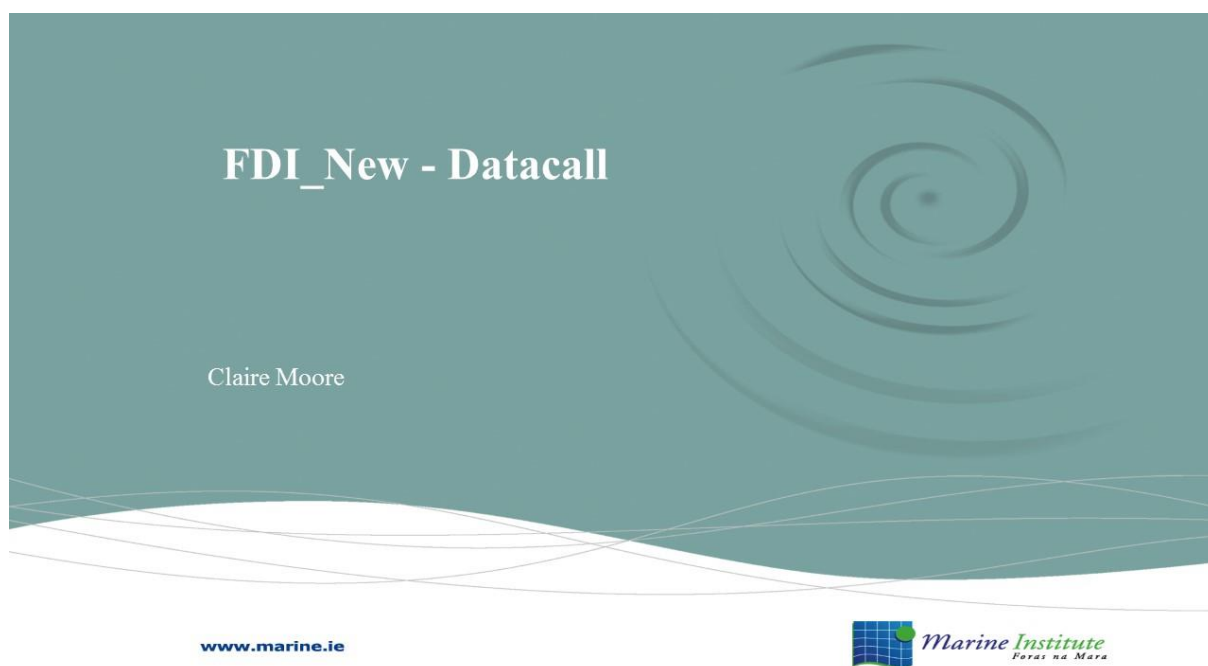
Germany

Contents of 'DEU_Problems with data call Germany'
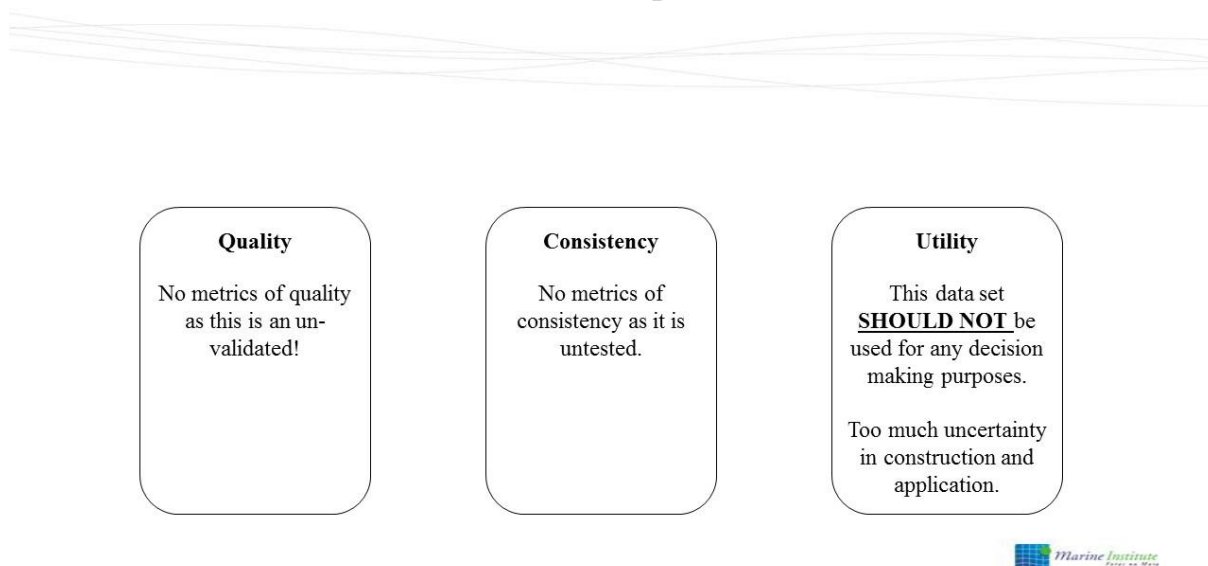
Problems with data call:

1. It is unclear what should be reported under discards. Logbook or estimated discards from observer programs? The discard information from both sources may differ substantially as long as the landing obligation is not fully implemented. Under the landing obligation discards have to be provided for exemptions in logbooks or discarding becomes illegal. De-minimis exemptions also have legal thresholds that cannot be overshoot. Using uncertain estimates from sampling programs may therefore no longer be appropriate for gear – mesh size – species combinations that are under the landing obligation. Legal consequences may otherwise arise based on uncertain discard estimates and a mix between science and control has to be avoided as much as possible. Therefore, a gentleman's agreement how the data will be used is needed and a clear decision what should be reported under this data call.

2. The fishery field is ineffective in its current format. Too many codes are possible and the codes often overlap. Therefore, more than one code is possible for a given gear and mesh size combination. This makes it impossible to compare across member states. The only real new information is target assemblage. But e.g., the target assemblage DEF includes many fisheries that cannot always be distinguished by gear and mesh size. Therefore, new codes for more detailed target assemblages would be beneficial.

3. It is unclear why the field Specon_LO is needed. The annex is extremely difficult to handle and the new information it can provide is very limited. In 2019 the annex will become obsolete if the landing obligation gets fully implemented and discard plans are outdated. To our opinion it would be enough to ask for de-minimis and high survival exemptions. This is already covered in the field discard type.

4. Table C-F are good for transparency reasons. However, they are not needed as intermediate result in our routines to raise discards and length/age distributions. Therefore; from our side all columns after Number Age/Length measurements can go. The number of samples is the only new information compared to tables A and B. Because the domain discards and landings field is more or less free text, the tables cannot be used across MS anyhow. Another problem is that the domains for length frequencies differ from the domains used for age length keys. We used the more detailed domain for the length frequencies also in the tables asking for age information. This leads to the situation that the same number of age measurements is provided for more than one domain and therefore the tbale needs to be interpreted with care.

FDI_New - Datacall

Claire Moore

www.marine.ie

Marine Institute
Foras na Mara

FDI-New – Final product

Quality	Consistency	Utility
No metrics of quality as this is an un-validated!	No metrics of consistency as it is untested.	This data set **SHOULD NOT** be used for any decision making purposes. Too much uncertainty in construction and application.

Marine Institute
Foras na Mara

FDI-New – National data challenges

Irish specific issues

- Level of disaggregation of age data does not match the sampling programme
- No landings data <10m vessel in 2016, inferred from sales notes
- No biological information incorporated for nephrops.
- Values for many species not inferred from sales notes
- Mismatch between effort and catch
- The whiting issue – no available SPECON LO to define the whiting directed fishery in 7.g.j
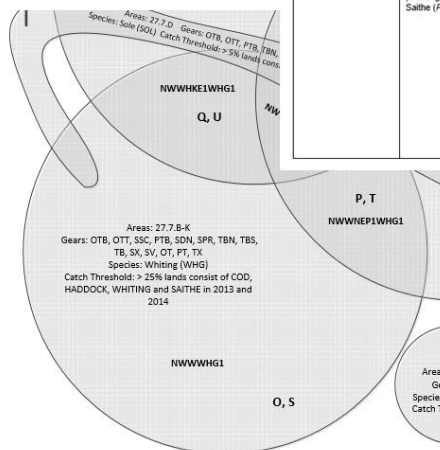
Marine Institute

FDI-New – Whiting directed fishery

Marine Institute

FDI-New – Whiting directed fishery
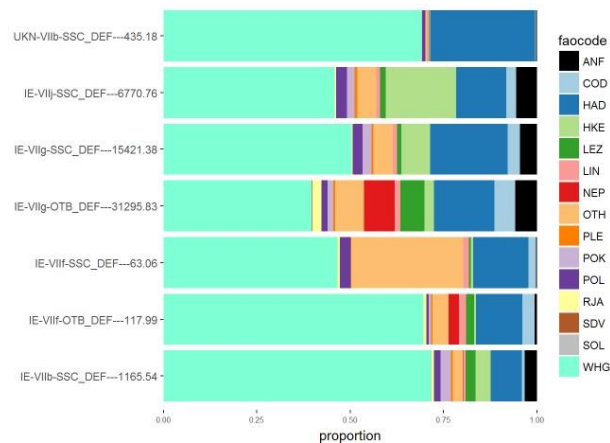
i) Fisheries in ICES divisions VIIb, VIIc, VIIe and VIIf-VIIk

Fishery	Gear Code	Fishing gear	Mesh Size	Species to be landed
Cod (*Gadus morhua*), Haddock (*Melanogrammus aeglefinus*), Whiting (*Merlangius merlangus*) and Saithe (*Pollachius virens*)	OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, OTM, PTM, TB, SX, SV, OT, PT, TX	Trawls & Seines	All	All catches of whiting where total landings per vessel of all species in 2014 and 2015 (*) consisted of more than 20 % of the following gadoids: cod, haddock, whiting and saithe combined

(*) Vessels listed as subject to the landing obligation in this fishery in accordance with Delegated Regulation (EU) 2015/2438 remain on the list indicated in Article 4 of this Regulation despite the change in the reference period and continue being subject to the landing obligation in this fishery.

| 27.7.D; 27.7.E | Cod (*Gas/us mor/iIla*), Haddock (*Melanogrammus aeglefinus*), Whiting (*Merlangius merlangus*) and Saithe (*Pollachius virens*). | OTB, SSC, OTT, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX | <100mm | Whiting (*Merlangius merlangus*) species code: WHG

Where total landings per vessel of all species in 2013 and 2014 consist of more than 25 % of the following gadoids: cod, haddock, whiting and saithe combined, the landing obligation shall apply to whiting.

Only vessels not in
NWWHKE1NEP1SOL1WHG1
NWWHKE1NEP1WHG1
NWWHKE1SOL1WHG1
NWWHKE1WHG1
NWWNEP1WHG1
NWWSOL1WHG1 | De-minimis
Whiting (WHG)

"for whiting (*Merlangius merlangus*), up to a maximum of 7% in 2016 and 2017 and up to a maximum of 6 % in 2018 of the total annual catches of this species by vessels using bottom trawls of less than 100 mm to catch whiting in ICES divisions VIId and VIIe" | NWWWHG1

2016 |

Species: Sole (SOL) Catch Threshold: >5% lands cons...

Areas: 27.7.D Gears: OTB, OTT, PTB, TBN...

NWWHKE1WHG1

Q, U

Areas: 27.7.B-K
Gears: OTB, OTT, SSC, PTB, SDN, SPR, TBN, TBS, TB, SX, SV, OT, PT, TX
Species: Whiting (WHG)
Catch Threshold: > 25% lands consist of COD, HADDOCK, WHITING and SAITHE in 2013 and 2014

P, T

NWWNEP1WHG1

NWWWHG1

O, S

Italy

Contents of 'ITA comments on FDI data call'

Common document on FDI data call

List of technical problems encountered in answering the data

Data format as described in Annex I of the data call letter were misleading in some points (i.e. Appendix 5 Mesh size coding: OFR not present, Appendix 6 Fishery definitions: no direct and unique reference to RCM lists, Appendix 11 Coding of specific conditions related to the Landings Obligation, etc.).

All these problems have been addressed and solved by JRC in a prompt way after receiving our requests. However, for the future data calls a more careful compilation of guidelines for data format would be beneficial.

The absence of a tool to check for correct file formats before submission is also considered necessary for the future. The "dvt tool" already used for the economic and MED data calls is considered very useful.

List of technical problems encountered in producing the tables

Regarding large pelagic, we encountered problems concerning the requested aggregation level: for those species, in fact, the spatial reference for the sampling is the entire area in the DCF sampling and it is not divided in GSAs. In addition, biological parameters (age, sex and maturity) are estimated every 3 years with the exception of BFT (but only starting from the 2017). Therefore, it was not possible to fill the table "catch at age" for each of the 2 years requested (2015, 2016). Also, the time period interval is 1 entire year and not divided quarterly as asked in the call.

Regarding Other Regions (OFR), list of fisheries (appendix 6) from RCM LDF is missing and no mesh size coding (appendix V) is reported.

Partitioning of biological data into the detailed catch tables (tables A and B)

For this year data call, we considered not appropriate to split biological data in the aggregation levels of tables A and B because:
- we don't exactly know what will be the use of such data (stock assessment, impact assessment, descriptive statistics?)
- so far, we haven't test any method to produce this partitioning. Therefore, we were not able to evaluate the reliability of the final calculation.

We also consider that a methodological approach should be regionally assessed to guarantee a homogenous approach among fisheries in the same sea basin.

Spatial resolution

Landings and effort data by rectangle is only available for vessels> 15 lft for which the electronic logbook is mandatory and for which it is possible to associate VMS data (they represent approximately 13% of the fleet). Availability of spatial data is subordinated to the completeness of the submitted data (both LB and VMS).

Therefore, for future data calls, it will be not feasible to send effort and landings data by rectangle for:
- the group of vessels > 10 <15 (vessels that send Lb data in paper format where there is currently no spatial data)
- <10 lft vessels for which the logbook is not mandatory.

Outstanding issues

There is no coincidence between Gear Type and Fishery for gears LHM and SV (for example, in the Gear type column there is LHM and SV, while in the corresponding

Fishery we have LHP-LHM and SB-SV). The combination of the SB-SV and LHP-LHM gears are not present in Gear-type coding (Appendix 4).

Comments to help in data analysis

Value of landing for OFR area 51 is not present for confidentiality reasons.

Regarding GSA 17:

- the domains indicated for the same species and métier combination may differ from A to B, depending on how they were delivered in the previous data calls for age and length (per quarter or year), anyway they correspond to the data in tables C-F for age and length

- despite the data are referred to quarters, in tables A and E the following domain codes were used:

2016 ITA_GSA17_PS_SPF_14D16_0   PIL

      instead of ITA_GSA17_PS_SPF_14D16_0_Q3

2016 ITA_GSA17_GTR_DEF_50D100_0   SOL

      instead of ITA_GSA17_GTR_DEF_50D100_0_Q4

- many domain codes contain the "NONE" indication referred to the mesh size, or a different mesh seize than that indicated in tables A e B: the codes used are coherent with those of previous data calls

Malta
Contents of a table supplied by email from Maltese national correspondent

Table A – Catch at age & Table B- Catch at length	Variable	Problems	Comments
24-30		The biological data is collected by métier, with the sampling unit being the fishing trip whereas the fishing technique is attributed to the activity of the vessel. It could therefore happen that several métiers are related to the same fishing technique or that one métier is associated to different fishing techniques.	For the purpose of this data call, the biological data requested in these two tables was proportioned as suggested by the JRC.
Table C- Discards at age & Table D- Discards at length			
11	NO_SAMPLES_DISCARDS	Incorrect definition.	The current definition asks for the number of trips that are related to discards only. The values provided by Malta refer to trips that relate to both landings and discard data.
Table G – Effort Data			
13	SPECON_LO	Malta requests further clarifications	To date the de-minimis exemption is applicable to the Lampara fishery which expires by end of 2017.
15	TOTSEADAYS	For vessels using logbooks this was calculated by using the fecR script as indicated in Appendix 15. For vessels less than 10m LOA, without logbooks and sampled by monthly questionnaires, this was calculated on the same lines of the fecR script. i.e.	Malta is of the opinion that the calculation of the nominal fishing effort TOTSEADAYS (when more than one gear is used per trip) is misleading and should be kept separate from the gears used, since this variable is more directly related to the activity of the vessels and to the fleet

		vessels found using more than one gear during their fishing trips, the number of TOTSEADAYS was proportionally divided between the gears used	segment rather than to the gear. A more appropriate measure would be to calculate separately the TOTSEADAYSBYGEAR, that is if a vessel uses more than one gear in a trip both gears are given the same number of sea days since when using two different gears in reality the fishing effort is doubled other than divided between the two.
Tables H&I Landings data by rectangle Specific effort data by rectangle			
15	RECTANGLE_LAT	Only available for vessels >12m; Time consuming when data is already available by GSAs.	Can only be obtained from vessels installed with VMS. **N.B – we are requesting clarifications as to What the New FDI call is requesting at appendix 14. Therefore we require a step by step procedure**
16	RECTANGLE _LON	Only available for vessels >12m; Time consuming when data is already available by GSAs.	Can only be obtained from vessels installed with VMS **N.B – we are requesting clarifications as to What the New FDI call is requesting at appendix 14. Therefore we require a step by step procedure**

Poland

Contents of 'POL_NMFRI_New_FDI_data_call_summary'

Problems encountered in answering the New-FDI data call by National Marine Fisheries Research Institute in Poland. Summary of the presentation shown during the New-FDI EWG.

1. Disaggregation of the data format in tables A and B vs. national sampling program.
   - Disaggregated catch table in the Classic FDI data call became even more disaggregated in the New FDI data call,
   - Support the view of WGCATCH on the New FDI data format,
   - The level of data aggregation in tables A and B does not correspond to the national sampling design:
     - sampling stratification does not include special conditions, vessel length categories or fleet segments,
     - the results of sampling data partitioning in order to fill in tables A and B could be misleading,
     - discards estimates are often calculated in a more complex way than proportion of discards / landings of the given species from sampled trips.
   - Example:
     - COD and FLE are caught with the same metier OTB_DEF_>=105_1_120 in the Baltic Sea.
     - There are samples where FLE occurs only as discards.
     - Discard rate is calculated as a proportion of FLE discards to the landings of all demersal species caught in a sample.
     - Problem: how to split estimated FLE discards into stratums determined by vessel length and fishing technique? Example:

DOMAIN_DISCARDS	VESSEL_LENGTH	FISHING_TECH	SPECIES	TOTWGHTLANDG	DISCARDS
POL_27.3.d.26_OTB_DEF_>=105_1_120_Q2	VL1824	DTS	FLE	x	?
POL_27.3.d.26_OTB_DEF_>=105_1_120_Q2	VL1218	DTS	FLE	x	?
POL_27.3.d.26_OTB_DEF_>=105_1_120_Q2	VL1824	TM	FLE	x	?
POL_27.3.d.26_OTB_DEF_>=105_1_120_Q2	VL1012	DTS	FLE	x	?

2. Discards biological data in tables C and D. Refusal rate.
   - Difficulties in refusal rates reporting in the New-FDI data format are foreseen.
     - Refusal rates in the national program can be calculated for: Year, Quarter, Group of target species or a target stock, Gear class (level 2), e.g. Baltic gillnetters targeting flatfish Q1.
     - Domain discards include: Year, Quarter, ICES subdivision, Metier (level 6), e.g. POL_27.3.d.25_GNS_DEF_110-156_0_0_Q1.
     - In most cases it is impossible to link refusal rates data with discards data.

3. Transversal variables. Suggestion.
   - Recommended calculation method of TOTKWFISHDAYS and TOTGTFISHDAYS should also include the information that according to Commission Decision 93-2010 kW*Fishing Days and GT*Fishing Days are to be calculated for Dredges and Trawls. This applies only to the data from before 2017.

Romania

Contents of 'RECOMANDARI-FDI'

RECOMMENDATIONS FOR FDI REUNION

1. In table G (effort) we consider that a column should be also be added to specify the number of vessel that have been activated in quarters.

2. The FDI Data Completion Guide must provide the appropriate code for other fishing techniques as well as for the situations of dredging mollusks with divers. (so far there have been 3 variants: NONE, NO and NK).

3. Also, in the Guide, let's say if we have situations where we do not have data, what will we use -1, NA, NONE, …. Etc? For example, in vessels with lengths 0-6 m and 6-12 m we do not have coordinates, in this case what will we insert into the columns of tables H and I.

4. In tables A and B, the columns about age and length, the instructions said AGE: integer (MIN_AGE <= AGE <= MAX_AGE), LENGTH: integer (MIN_LENGTH <= AGE <= MAX_LENGTH), our question is what does it means: AGE – AVERAGE age, the dominant age class or something else? LENGTH – AVERAGE length, the dominant length class or something else?

Contents of 'RECOMANDARI-FDI'

Spain

Contents of 'new FDI DC - Spanish comments_2017-10-23'

Spanish comments about Call for data for the Fisheries Dependent Information (FDI); New-FDI

González Herraiz, I.[1]; Gómez, F.[1], Castro, J.[2], González, M[3]. SPANISH INSTITUTE OF OCEANOGRAPHY (IEO), [1]Oceanographic Center of A Coruña, [2]Oceanographic Center of Vigo, [3]Oceanographic Center of Fuengirola

& MINISTRY OF AGRICULTURE, FISHING, FOOD AND ENVIRONMENTAL team

October 23th 2017

GENERAL COMMENT

The "Note file new FDI" file states "We expect to establish a unique database of catches (landings and discards) and efforts for all fleets and for all species covered in the EU MAP as well species for which data is collected under international obligations (from all EU fleets in EU and non EU waters)." Does this mean than in the future do we have to provide data of CCMALR or Malvinas?

TECHNICAL PROBLEMS ENCOUTERED IN ANSWERING THE DATA CALL

The main difficulty is to meet several institutional requests of the same data but under different formats (Intercatch, Regional DataBases/Fishframe, different RFMO formats, new FDI, etc.). This is a waste of time in the laboratories, which must be solved by seeking consensus among institutions (STECF with RFMOs, DCR Regional Coordination Groups, etc).

FDI requires that the biological data be subdivided by fleet segment and other administrative and economic criteria. The ICES WGMIXFISH has solved this problem by requesting simple tables of effort disaggregated by fleet segment and metier which can then be easily matched with the biological information supplied to IC by metier.

The time for doing the data was wide but in a period (summer/autumn) that people is on holydays or in surveys at sea, this made very difficult to answer to this data call.

Provide tools as FecR and FAQs documents time after the data call launching prevents to use them correctly because the data process has already started. FecR package was not used to prepare the data. Answer some questions in the FAQ document with "Handle as for the Annual Economic Report (AER) data call" (i.e. FAQ 17/08/2017) is not realistic. It is true that the different teams should work together to answer the data call but it is not always possible due to the different obligations of the different teams.

Landings

- Landings weigth comes from official data (made with logbooks + sales notes + results of inspections). Sometimes corrections can be made with scientific information (species and metier identification, etc.) i.e. the gear comes from the official license/permission that each vessel has. Metier is identified by trip through scientific information and sometimes does not correspond to the official gear. We do not know if we must correct the official data or not (the same information is already sent to FIDES).

- Unallocated catch can not be included within this scheme.

How partitioning of biological data into the detailed catch tables (tables A and B) was performed. Why such partitioning is considered something that should or could not be done.

Discards

Total discard weight is allocated to all the landings rows of the same metier proporcionally to each landings row weight. (By quarter if we have the discard by quarter).

This should not be done because in that way total weights of landings and discards are kept but discard rate could be wrong. (The same if we would have done it by discard rate, total quantities could by not correct by row/stratum/…)

Length/ages distributions

They are raised by weight to each stratum (length by metier and ages by stock)

This is correct but does it worth to increase the data base like that? We could provide one length distribution by metier (species, quarter, …) and this to be raised to the stratum required when the end user requires (same for ages/stock).

Other technical problems

Despite of having made reference to the Commission Decision 2010/93 there were some doubts about of which species we have to provide biological data.

In Spain we do not have discards information in logbooks. We do not register refusal rates.

The concepts of Domain and TOTWGHTLANDG ABOVE MCRS are not clear.

Knowing the objective of the introduction of new fields (geographical indicator, etc.) would have been useful for a better preparation of the data.

Subregion for some areas had to be uploaded with the format FAOarea.x (i.e. 41.1)

MODIFICATIONS REQUIRED IN THE DATA CALL FOR FUTURE YEARS - SUGGESTIONS

Why not the STECF/JRC contacts with the different RFMOs and DCF Regional Coordination Groups (where the best information is) and creates tools to convert those formats in a common European format? Maybe it is better to do it once for all areas and not every year every Member State for all the areas.

Why do we have to fill redundant tables? Can we provide the data once and after the JRC produce the required tables?

Can we provide the discard and length information by metier and the ages by stock and be the JRC who matches data?

To avoid the split of biological data by administrative/economical strata: Tables A and B without biological information (since field 16) or make aggregation possible (-1 in length overall segments and fishing technique)

Keep the previous horizontal structure for the sum of products of ages (and now also for lengths). Do not repeat the métier weight row by row, this prevents quick data checks.

Member State's name shall be given as ISO 3166-1 alpha-3 code e.g. 'DEU' as in the Data Collection documents, tables and information.

Why there are special codes for the Portuguese, Spanish and French islands abroad for the geographical indicator? Their waters are EU waters.

Some species (NDF, POT, BLZ and MAU) and some CECAF metiers were not accepted in the data upload.

The duplication of the data (because of BSA) could generate confusions and mistakes in the interpretation of the data, as happened in the previous FDI data calls with DEEP and BSA information.

Tuna fisheries

Georeferred information in tropical tuna purse seine fisheries (ICCAT) should be by 5°x 5° since this is the level of aggregation provided by the internationally standar T3 tool that corrects species misidentification and provides catch-at-size data of these species.

Free school and FAD should be included as categories for the tropical tuna purse seine fisheries

Georeferred information for IOTC fisheries (ICCAT) should be by 1°x 1°.

COMMENTS ABOUT SPANISH DATA:

- Data call asks for control, economic and biological data: in our case each of one are made by different teams and it is difficult to integrate the information.

- As Spain has fisheries all around the world we tried to provided some biological data from each of them (ICES, Mediterranean, CECAF, Tuna fisheries and Long distance fisheries) overall of the fisheries that were not treated in old FDI (i.e. tuna, NAFO, etc). This objective was fulfilled but due to the great complexity of this new data call the biological data upload are a very small part of the total Spanish biological data. After the learning of this first time, we hope to upload them totally in the following new FDI data call.

- Estimated discards: logbooks/observer? In Spain there are not discard information in the logbooks, so we only can provide discards data from observers on board. We expect this will be solved with the new logbooks software DEA4. If we had both sources of data we would compare them and choose the best one for each case. Also we have to take into account the segment of the fleet that does not have logbooks (LOA >10m).

- Like in the old FDI the Spain code is not correct (appears as Spain (mainland) SPN and Spain (Canaries islands) SPC). All the Spanish data should be as ESP. Member State's name shall be given as ISO 3166-1 alpha-3 code e.g. 'DEU' as in data collection reports and tables.

- SPECON_LO: see following table.

- There are economical values of landings only for the Mediterranean.

- DISCARDS_TYPE: depends n SPECON_LO

- REFUSAL_RATE: It is not registered in our fisheries.

- It is possible that data of some species that have discards but no landings could miss.

INFORMATION BY AREAS/FISHERIES:

- ICES: biological data were provided for two species: hake and anchovy. Hake biological information was based in the 2015 and 2016 Intercatch files carried out for ICES. There are length distributions and discard data for hake. There are not hake age data because nowadays there is not a standard method that allows identifying the hake age (2017 ICES WGBIE). Length distribution and age data were provided for anchovy. Discard is zero in anchovy.

- MED: The DCF National Correspondent presented in the DCF Regional Coordination Group of the Mediterranean sent in September 2017 a letter about the new FDI data call. There is not vessel length in data because it was not necessary in the previous data call for Mediterranean and we used that file as base. We were not obliged to collect discard lengths in 2015 and 2016 in the Mediterranean because discard there in those years was

less than 10% in weight and 15% in number (Commission Decision 2010/93). GNS_DEF_>=16_0_0, GNS_SLP_>=16_0_0, GTR_DEF_>=16_0_0, LA_SLP_14_0_0, OTB_DWS_>=40_0_0, OTB_MDD_>=40_0_0 and PS_SPF_>=14_0_0 Mediterranean codes did not appear in the data call.

- CECAF: In this area is not mandatory to collect ages. Biological data for Morocco area (purse seine, hake fishery and crustacean fishery) were provided. PS_SPF_10_0_0 CECAF code did not appear in the data call.

- TUNA fisheries: Biological data of all around the world drifting longlines (LLD_LPF) were provided.

- Long distance fisheries: Biological data for cod were provided.

Description of criteria for producing the data for Data Call new FDI

FIELD	DESCRIPTION	TABLES
COUNTRY	"ESP" code is chosen, is the one used in previous data calls.	ALL
YEAR	Year of the catch in logbooks. If there is no catch, is the year of the landings date.	TODOS
QUARTER	Quarter of the catch. If there is no catch, is the quarter of the landings date.	A, B, G, H, I

VESSEL_LENGTH	Codified according 3 sections:
	   o Mar Báltico
	   o Mediterráneo
	   o Resto de zonas
	
	When define vessel-length codes by fishing area is necessary that all the catch data have geographical information, if do not have that vessel-length code is NONE. Vessel length of the catch date.
		A, B, G, H, I, J

FISHING_TECH	Gears grouping according to appendix 3: SI CODE is 'GN%','GT%' or equal to 'GEN' -> 'DFN' IF CODE is 'DRB%','HM%' or equal to 'DRH' -> 'DRB' IF CODE is equal to 'TBB' -> 'TBB' IF CODE is 'OTB%','TM%','SV%','TB%' or is some of 'OT','OTT','PT','PTB','SB','SDN','SPR','SSC','SX','TX' -> 'DTS' IF CODE is 'FIX%','FP%' or is some of 'FAR','FSN','FWR','FYK' -> 'FPO' IF CODE is 'LH%','LL%' or is some of 'BB','LTL','LX','RR','TR' -> 'HOK' IF CODE is 'LN%','HAR%' -> 'MGO' IF CODE is 'RG%' or is some of 'MIS','FCN','FG','NK','SF' -> 'PMP' IF CODE is 'LA%','PS%' -> 'PS' IF CODE is 'OTM%' or CODE is equal to 'PTM' -> 'TM' % means anything: PS% -> PS1, PS2...	A, B, G, H, I, J
GEAR_TYPE	In general EU codes are used, in some cases they are grouped according Appendix 4	A, B, G, H, I

MESHSIZERANGE	The first step was classified gears in active and passive according to Appendix 5. Only diamond mesh codes were used, this is the kind of mesh used in all areas.	A, B, G, H, I
	As codes depend on the area, catch and landings data must have area for being allocated. If there is no area or mesh size in the catch, the codification is NONE.	
	For Baltic passive gears last range was change to 156DXX, since the range between 156 and 157 was absent.	
	For North Sea, passive gears, the range between 31 and 50 was no encoded because has not code in the data call.	
FISHERY	IEO metier classification was used for the logbooks rows of the trips allocated. In the rest of the cases NONE was the code.	A,B,G,H,I
DOMAIN_DISCARDS	If there is metier, country and sub region code is before metier code, and if there is not metier code, the code is NONE.	A,B
DOMAIN_LANDINGS	If there is metier, country and sub region code is before metier code, and if there is not metier code, the code is NONE.	A,B,E,F

SUPRA_REGION	3 zones were defined:
	
	  o Zone FAO 27: AREA27
	
	  o Zone FAO 37 (Mediterranean sea): AREA37
	
	  o Rest of the zones: OFR
		A,B,G,H,I,J

SUB_REGION	Zones were defined according to the appendix 8:
	
	  o In division 27.3.A is not possible distinguish between North and South (subdivisions 27.3.A.20 and 27.3.A.21 respectively), because they are not defined in our database. That is the reason why 27.3.A N and 27.3.A S codes could not be assigned.
	
	  o BSA area was defined, data assigned to that zone are a duplication of the data assigned to the divisions 27.7.a,b,g,h,j as it is explained in the data call, and ONLY is applied to the A, B and G tables. For the rest of the tables, is necessary to filter data deleting those with SUB_REGION = 'BSA'.
	
	  o GSA divisions have been calculated like:
	
	  o In the temporary table #SUB_REGION for Mediterranean sea the divisions corresponding to GSA are uploaded and not FAO (37.*) divisions.
	
	  o A new temporary table #GSAxLINEA is created that relates catch rows with
		A,B,G,H,I

	previous table GSAs. Therefore field IDDIVISION will be not taken into account for the Mediterranean catches and new field IDGSA defined in the new temporary table will be taken into account. o We try to allocate GSA divisions to the rows that have coordinates. o In those with errors in the coordinates (therefore GSAs cannot be assigned) the sign of the longitude, since most of them make reference to land and with this change make reference to Mediterranean Sea. We tried to assign GSA to those again. o Once did that, the rows that remains are assigned according to the landings port: o Ports from Tarifa to Cartagena both included (GSA 1). o Ports of Ceuta and Melilla when fishes in Spanish or EU waters, GSA 1, on the contrary, GSA 3. o Baleares ports, GSA 5. o Ports from Cartagena (excluded) to Port Bou, GSA 6. o Vessels that have fished in the division 37.1.2, GSA 7. o In CECAF divisions, two codes that are not in the Data Call were added: o 34.1.1 RFMO, since there are International Waters in the division 34.1.1 o 34.1.3 EU, since there are Canarias (EU) waters in division 34.1.3 o In the rest of the sub regions OFR, is not clear if the code to send is the code of the division of the field SGPM.GEN_DIVISIONES.DIVISION	
GEO_INDICATOR	Only NEU, IWE and NGI codes were used: o IWE when all the activity is outside the EU waters. o NGI when most of the activity is inside EU waters. o NEU most activity outside EU waters, but there is also activity in EU waters.	A,B,G,H,I,J
SPECON_TECH	Both fields are NONE, since the criteria for their assignment be defined	A,B,G,H,I

SPECON_LO		
DEEP	Trips with Deep catches are search and they are marked as DEEP the trips that have caught more than 100 kg of deep species or have more than 35% of deep catch.	A,B,G,H,I
SPECIES	FAO AL3 codes were used except for indeterminate species (OTH).	A,B,E,F,H

TOTWGHTLANDG	For Catch tables (A y B) the caught weight of the Catch table was used. For Landings Live weight was used.
	
	Two cases where distinguish in order to assign Landings weight to transversal variables:
	
	    o Landings with catches: Ladings were allocated proportionally to the catches by the transversal variables since there are data, like metiers, catch date and other geographical data, joined to the catch rows and no to landings, therefore is impossible to assigned them to those directly.
	
	    o Landings without catches: Some of the transversal variables were allocated and the rest were like NONE.
		A,B,E,F,H

TOTSEADAYS	It is considered that days at sea are the periods of 24 hours in which the vessel is in the sea. In the case that there were decimals a complete day is considered (example: in a trip with 26 hours in the sea, two "days at sea" would be considered). The minutes than have passed between port departure and arrival date, or report generation date in the case of not ended trips have been taken into account (in order to avoid SQL Server unwanted rounding) in the case of doing in hours, dividing by 60 to pass them to hours. These hours pass to days dividing by 24 and rounding to the superior integer, so a fraction of day is considered a complete day. The total of days at sea is equally distributed among the fishing days.	G
TOTKWDAYSATSEA	Catch data KW are selected. If this does not exist, trip departure date KW are selected and after is multiplied by days at sea.	G
TOTGTDAYSATSEA	Catch data GT are selected. If this does not exist, trip departure date GT are selected and after is multiplied by days at sea.	G
TOTFISHDAYS	One day has been counted for each date with catches in the trip. Only one gear is used in each date, is not necessary to distribute the fishing day between several gears, passive or active. If for the same day and gear there are more than one area, ZEE or rectangle, a day for each one of these combinations is counted.	G
TOTKWFISHDAYS	As in the days at sea, fishing days are multiplied by the KW of the vessel in the catch date (if the catch date	G

	does not exist in the trip departure date).	
TOTGTFISHDAYS	As in the days at sea, fishing days are multiplied by the GT of the vessel in the catch date (if the catch date does not exist in the trip departure date).	G
HRSEA, KWHRSEA & GTHRSEA	These fields have not been calculated because they seem redundant with the days at sea.	G
RECTANGLE_LAT & RECTANGLE_LON	Statistical rectangles centroid coordinates were used. Statistical rectangles dimensions are 0.5° x 1°. When there is no rectangle coordinates are -1. We have not rectangles defined for Mediterranean Sea, so coordinates were -1. NOTE: -1 corresponds to a valid fishing position in the Gulf of Guinea, but this could not create problems because Guinea is out of the area where the rectangles are defined.	H, I
EFFECTIVE_EFFORT	It is calculated as the field TOTSEADAYS of table G, but is not distributed between the fishing days.	I
TOTTRIPS	Is the number of trips with catches, or with landings without catches. A trip was counted for each combination of FISHING_TECH, SUPRA_REGION and GEO_INDICATOR in which the trip were.	J
TOTKW	Total KW of the vessels that have fished in each combination of FISHING_TECH, SUPRA_REGION and GEO_INDICATOR.	J
TOTGT	Total GT of the vessels that have fished in each combination of FISHING_TECH, SUPRA_REGION and GEO_INDICATOR.	J
TOTVES	Number of vessels that have fished in each combination of FISHING_TECH, SUPRA_REGION and GEO_INDICATOR.	J
AVGAGE	Average age in years, between the date when the vessel started to work and the last day of the year of the vessels that have fished in each combination of FISHING_TECH, SUPRA_REGION and GEO_INDICATOR.	J
AVGLOA	LOA average at catch date or trip departure date if there is no catch date of the vessels that have fished in each combination of FISHING_TECH, SUPRA_REGION and GEO_INDICATOR.	J
MAXSEADAYS	Average of the days at sea of the 10 vessel more active, taking into account the number of trips carried out, inside each combination of FISHING_TECH, SUPRA_REGION and GEO_INDICATOR.	J

UK (England)

Contents of 'STECF New FDI - UK-ENG feedback'

Data call for Fisheries Dependent Information (FDI) – New-FDI

Ana Ribeiro Santos, Cefas

Concerns with the new data call – Discards and biological data

1. Level of disaggregation

It was well received the inclusion of Tables C to F for the sampling data (biological and discards estimations), with level of aggregation used in the domain for estimation. However, the STECF new FDI data call insists to request sampling data (i.e. discards estimates and biological data) in Tables A and B at the same level as the census data, i.e. at métier level 6, by quarter, vessel length and special conditions. However, sampling programmes are primarily designed to provide information to stock assessments and are carried out at disaggregation levels that vastly differ from those requested in the STECF FDI data call. As recommended at WGCATCH (2016), I agree that is not realistic for JRC to request highly disaggregated sampling data, then subject these data to simple imputation methods and aggregate them at arbitrary levels without considering the sampling design involved in data collection and expect a realistic answer. Sampled data (discards and catch-at-age distributions) requires an estimation procedure that respects the sampling design. In the latter case, the estimates obtained may already be at the desired resolution level or still require further statistical calculations to yield estimates at the desired level (e.g., using domain estimation).

2. Missing data and imputation

Due the nature of the sampling designs, coverage limitation and the level of disaggregation levels, countries will supply discards and biological data with gaps, in gear types, mesh sizes, quarters, etc. Although is the responsibility of Member States to provide the best data possible, it is necessary for the sampling data providers to understand how the data will be processed at JRC and posteriorly available to the public domain. The Classic FDI data calls required sampling data at highly disaggregated level (e.g. by small mesh size ranges and quarter), which unavoidably results in data gaps. These data are then aggregated by JRC more coarsely and the gaps are filled using estimation of discard rates by fisheries and raising of discard for non-sampled fisheries. The available landings and discards are aggregated (summed) over fisheries (by species, year, quarter, effort regulated area, effort regulated gear, special condition) and mean discard rates DR are calculated. The imputation methods often result in unrealistic discards estimates for some species, fisheries and countries, and the automated aggregation methods (simple sum) could result in yearly discards estimates when missing quarters for some species and fisheries, for example. Additionally, sampled data generally requires expert input to deal with unsampled strata (imputation) and potential bias in the sampled data. With sampled data different end-uses and different sampling designs each require their own imputation and estimation procedures. Many person-hours are required to achieve the required estimation, imputation and bias analyses during the ICES stock assessment process and this cannot be done by relatively simple algorithms. A transparent and open source methodology should be easily accessible and traceable to the data providers to be able to submit the best sampling data, based on information available.

3. Objectives of the database and manage expectations.

I think is vital to be clear about objectives of the new FDI database and manage expectations of the end-users. According with the cover letter from the data call, the new/revised database will replace "The STECF Fisheries Dependent Independent (FDI) database, which was developed to support management of fishing effort management regimes. With new area-based multi-annual plans (MAPs) leading to the repeal of the

existing effort management regimes, there is an opportunity to both rationalise the data base and move to the collection of an EU wide data set of fishing capacity, effort, landings, and discards". What was a database created and used for the specific objective to evaluate the effort management regimes, in the last 5 years landings and discards data became widely used, particularly by policy makers and the fishing industry. More importantly, in the last two years, landings and discards data have been used to calculate the TAC top-up for the stocks subject to the Landing Obligation. Although the absolute values are not used to compute the TAC top-ups, the overall discard rates for each gear group across Member States might be affected with the fill-in process. Although the data dissemination website has disclaimers and links to explanatory reports about the data and its coverage index, I think that they are not easy to read and/or understand to the public. Of course, the perception of having a common database with census data (landings and effort), with discards and biological data for all stocks covered in the EU-MAP might seem highly desirable for the users of these data (e.g. general public, policy makers, NGOs, etc). However, I would like to stress the need to manage expectations of end-users. Providing an open source database with census and sampling data at the same level of aggregation gives an erroneous information on the sampling programmes, jeopardises the quality of the sampling data and misleads the users of these data.

It is clear to me, and following the discussions at previous FDI working groups, that the new database should not provide "fills-ins" discards or biological data, for those vessel/gear groups for which estimates were not provided by other Member States. And if there are missing quarters, no yearly estimates should be provided. The exclusion of fill-ins will provide a true picture of the level of low coverage of the National of sampling programmes

Problems encountered during the data call (For sampling data only)

- UK-ENG did not submit Discards or length or Age data in Tables A and B, following WGCATCH recommendations.

- UK England did not have any issues in completing Tables C- F, except for fields: DISCARDS_DEMINIMIS, DISCARDS_HS, DISCARDS_D, DISCARDS_NOLO, in tables C and D because at this point the information was not available in the logbooks for 2015 and 2016. Only 6. DISCARDS (total discards) was provided.

- Refusal rates. Not completed. The refusal rates are calculated for the sampling design, but it ought to be possible to calculate them for the domain. However, we would need to know the domain of each vessel immediately after any selection and phoning and what it is the response. What's important is to understand the usefulness of the refusal rates for the end users. What's the use of having refusal rates repeated for each domain, species, age and length? The refusal rate is an important and informative to judge quality of the scheme as whole.

Recommendations/ Conclusions

1. Manage expectations and have census and discards/biological data separately, with different aggregation levels. With a common field (e.g., DOMAIN). WGCATCH recommended to JRC that the current catch table in the FDI data call is split into a table for census data (control regulation) and tables for sampled data since the latter can only be provided at a much broader level of aggregation (e.g., broad gear types: large meshed trawl gears, smaller meshed beam trawls etc.; ICES divisions; annual data).

2. It is clear to me, and following the discussions at previous FDI working groups, that the new database should not provide "fills-ins" discards or biological data. However, care should be taken during the JRC aggregation method, to avoid summed discards and biological, when there are data gaps in some strata (e.g., missing quarters, for certain species and fisheries).

UK (Scotland)

Contents of 'STECF FDI Working Document'

1)   "Compile in a concise manner a list of technical problems encountered by Member States in answering the data call and produce a table of any agreed modifications required in the data call for future years."

Direct problems with requested fields

-   MESHSIZERANGE - When setting the mesh size ranges there needs to be more clarity on the sub-regions that encompass each area. There are also sub-regions that are not covered by the described areas.
-   COUNTRY - There is the question of how to deal with data that are defined at different time periods. The fleet register for the economic data call is defined at the start of the year, but vessels can change nationality through the year. Consistency in application of this approach is necessary.
-   REFUSAL RATE – This is a means of assessing sampling design and as such I believe, if required, it is more appropriate in the DCF report. Applying this rate to a domain would not be appropriate. There is also a lot of subjectivity over what constitutes a refusal. If applied every MS would interpret the application differently and as such provide meaningless results.
-   TABLES A and B – Applying sampling data to landings data at such a disaggregated level has never been the desired method of providing the sampling estimates. I do not understand why it is being requested as such again. If you wanted to link the sampling estimates to the landings you already have the domain_discards and domain_landings acting as the key. It is also a duplication of both data and effort.
-   DOMAIN in TABLES C to F – Neither the tables themselves nor the domain definition allow entry of estimates for each quarter. The domain definitions should include quarter, either as ALL or as numeric. The table could have a field AGGREGATION_LEVEL as either annual or quarter and then another field for QUARTER either as ALL or numeric.
-   DISCARDS_DEMINIMIS and DISCARDS_HS – These are supposed to be recorded, but I don't think they are. There is difficulty in general in supplying this.
-   DISCARDS_D and DISCARDS_NOLO – The amount of work required to estimate these is not feasible. There is also the likelihood that the domain contains vessels both in and out of the LO.
-   SPECON_LO – This is an unfeasible task given the complexity of what is being asked.
-   SPECON_TECH – This information is not recorded, as such it is impossible to report whether a grid or panel was used.
-   The fecR effort calculation program needs work doing to it if it is to be used for this data call. If we want consistency in effort calculation between MS we should use it. However, a large number of the definitions in fecR differ from that of the data call, meaning both input and output has to be tailored to get it to work. One example being providing output relating to BSA areas.

Other considerations for requested fields

-   SUB_REGION – What is the particular reasoning to still using the fishing effort regime sub-region codes? Would the use of FAO codes in combination with the economic zone allow for easier comparison with other data sources?
-   MESHSIZERANGE - Where does the set of mesh size ranges come from? Do they match the purpose of the data? There is also the confusion that they do not match with the accepted metiers. Greater clarity over the regions covered would also be beneficial in the data call.
-   RECTANGLE - As it is I see no point in changing from reporting rectangle to using c squares/lat and lon as we do not have positional information for those voyages occurring outside of the ICES region. When presenting the data publically it is important that it is stated that the by-rectangle tables do not include those non-ICES areas, whilst the other tables do.
-   ABOVE/BELOW_MCRS – How accurate do we think this information really is? To me I'd be dubious as to the data quality.
-   What are we going to do with the number of trips data?
-   The age and length data, are these going to be used now? What's the purpose?

Data call considerations

- With the links to the economic data call, there will be a need to time the data calls appropriately, such that overlapping variables are already defined, e.g. fishing tech, geo indicator.

2) "In the interests of establishing common best practices, review and document approaches taken by Member States in answering the data call."

Tables A and B

- How are we defining vessel nationality? Is it fleet register at start of year or is it nationality at point of voyage?
- Year and quarter have been defined by the landing date. Do other MSs do the same?
- Vessel length is defined by overall length rather than registered length.
- Fishing tech is assigned using dominance criteria.
- The gear type list does not match the master data register. This was a problem when running the data through the R effort calculation program. There should be greater clarity on how to code various gear categories. One example is that of hand fishing, which has no defined gear code in Appendix 4.
- Mesh size range – where a region wasn't covered we used the region coding as suggested by JRC.
- The setting of metiers needs work.
- The domain definitions do not allow for quarterly estimates. Quarter has been added to the definition after the country code, either as numeric or "ALL".
- Supra-region has been defined as with the economic data call. This means the supra-region is defined on the vessel level rather than the voyage level, so the sub-region may not match the supra-region.
- Sub-regions defined on an activity level as per Appendix 8.
- Geo-indicator as with fishing tech is defined in the economic data call.
- Specon tech, we don't have that information recorded?
- The specon lo field is not reasonable/feasible to fulfil.
- The deep field has been adjusted to follow the updated deep sea reg. This is assessed at the voyage level.
- Species code as the FAO 3-alpha code.
- Total landed weight has been defined as live weight equivalent. Have the Norwegian conversion factors been used where appropriate?
- Total landed value – an annual average conversion rate has been used to convert Pounds Sterling to Euros. This was taken from Eurostat. Daily conversion rates are not available for every day on Eurostat. Some values have been estimated as a result of non-receipt of sales note.
- BMS taken from ….

Tables C to F

- Country, year, domain discards, species, total landed weight as before.
- We do not have information on which discard category our estimates would come under. It is also likely that our estimates would contain a combination of vessels coming under different categories.

Table G

- Columns 1-14 as above.
- Effort calculated using the fecR script.
- Hours at sea fields unfilled as we do not have that information.

Annex 6. Table of specific Member State approaches to completing fields in the New-FDI data call for circulation to Member States

Table(s)	Field	Approach	Countries
A, B, G, H & I	QUARTER	To define the reference date and therefore the quarter, France allocated each trip to its return date/time when the different fishdates of a trip could belong to different quarter.	BEL, FRA, POL
A & B	TOTVALLANDG	The total value of the landings (traded or not through the auctions).	
A & B	TOTVALLANDG	Calculated exclusively from sales notes.	BEL, DNK
		Sales notes not compulsory for all fish sales. Calculated from sales notes when available. Otherwise price is estimated from available sales note data.	FRA
		Calculated using average annual price per kg by species	POL
A & B	TOTVALLANDG	**Currency conversion to Euro**	
		Annual average conversion rate used to convert national currency to Euros. This was taken from Eurostat.	POL, SCO
		Not applicable	Euro zone MSs
		Not known	BGR, HRV, ROU, SWE, GBR(not SCO)
A & B	UNWANTEDCATCH (previously DISCARDS)	Total discard weight is allocated to all the landings rows of the same metier proportionally to each landings row weight, (by quarter if we have discard data by quarter).	BEL, ESP
E & F	NO_SAMPLES_LANDINGS	Belgium has only an at sea sampling program. Therefore the NO_samples_landings equals trips sampled.	BEL
		Denmark do not sample fishing trips in the onshore program for size sorting, so numbers of sampled auction days are given instead.	DNK
G	TOTSEADAYS, TOTFISHDAYS & HRSEA	For trips with sales notes, but no logbook (typically vessels below 10 m (8 in the Baltic), one sales note is considered one trip, and one day at sea, one fishing day and 24 hours is assigned to each trip.	DNK
H & I	SUB_REGION & RECTANGLE_LAT OR RECTANGLE_LON	ICES rectangle and SUB_REGION information is taken from the logbooks. No cross-check with the VMS data is performed.	BEL
		For checking if an ICES rectangle corresponds to a SUB_REGION, a table was provided by JRC. If a mis-match was found between ICES rectangle and SUB_REGION, the VMS data for the trip by vessel and date was found. If the SUB_REGION in both logbooks and VMS data were the same, then the ICES rectangle was corrected to what was reported from the VMS data. If the ICES rectangle was the same in both the logbooks and the VMS data, the SUB_REGION was corrected. If both the SUB_REGION and the ICES rectangle were different in logbooks and VMS, the information was taken from the VMS data .	DNK, POL

Annex 7 : Comparing Fleet Segments in the new FDI and Economic data calls

Finlay Scott, JRC

Introduction

In this document we compare the Fleet Segments in the new FDI data call to those in the Economic data call. The Fleet Segment provides the linkage between the economic variables in the Economic data call and the data in the new FDI, through the transversal variables.

Not all the Segments in the new FDI data call will be in Economic data call. This may be because there is no requirement to collect economic data (for example, if the fishing technique is excluded from the Economic data call). Additionally, Segments in the new FDI data call may be clustered together in the Economic data, for example when there are only a small number of vessels in a segment.

To link the two data sets it is necessary for the Segments in the Economic data call to be a subset of those in the new FDI data call.

There are five tables of data to explore:

- New FDI effort
- New FDI landings
- Economic data effort gear (fishing days)
- Economic data effort fao (days at sea)
- Economic data landings

Only data from 2015 is considered.

Loading and cleaning data

In this section we load and clean the data from the five tables.

First we load the data:

```
# Econ data - effort landings table
econlan <- read.csv("../data/econ/landings_fao.csv", sep=";", stringsAsFactors=FALSE)
# Econ effort gear - data
econeffgear <- read.csv("../data/econ/effort_gear.csv", sep=";", stringsAsFactors=FALSE)
# Econ effort
econefffao <- read.csv("../data/econ/effort_fao.csv", sep=";", stringsAsFactors=FALSE)
# FDI landings
fdilan <- read.csv("../data/fdi/catch_at_age-2015.csv", sep=";", stringsAsFactors=FALSE)
fdilan <- filter(fdilan, year==2015)
# FDI effort
fdieff <- read.csv("../data/fdi/effort.csv", sep=";", stringsAsFactors=FALSE)
fdieff <- filter(fdieff, year==2015)
```

We rename the columns so that they are the same between tables:

```r
colnames(econlan)[colnames(econlan) == "country_code"] <- "country"
colnames(econeffgear)[colnames(econeffgear) == "country_code"] <- "country"
colnames(econefffao)[colnames(econefffao) == "country_code"] <- "country"
colnames(fdilan)[colnames(fdilan) == "supraregion"] <- "supra_reg"
colnames(fdilan)[colnames(fdilan) == "vessel_lenght"] <- "vessel_length"
colnames(fdilan)[colnames(fdilan) == "fishing_technique"] <- "fishing_tech"
colnames(fdieff)[colnames(fdieff) == "country.code"] <- "country"
colnames(fdieff)[colnames(fdieff) == "supra.region"] <- "supra_reg"
colnames(fdieff)[colnames(fdieff) == "vessel.length"] <- "vessel_length"
colnames(fdieff)[colnames(fdieff) == "fishing.technique"] <- "fishing_tech"
```

We clean up the required columns by removing turning to upper case and removing whitespace.

```r
clean_cols <- c("country", "fishing_tech", "supra_reg", "vessel_length")
for (col in clean_cols){
    fdilan[,col] <- toupper(gsub("\\s", "", fdilan[,col]))
    fdieff[,col] <- toupper(gsub("\\s", "", fdieff[,col]))
    econlan[,col] <- toupper(gsub("\\s", "", econlan[,col]))
    econeffgear[,col] <- toupper(gsub("\\s", "", econeffgear[,col]))
    econefffao[,col] <- toupper(gsub("\\s", "", econefffao[,col]))
}
```

We make a single table of all the data:

```r
# Only keep certain columns
cols <- c("country", "supra_reg", "fishing_tech", "vessel_length")
fdilan <- unique(fdilan[,cols])
fdieff <- unique(fdieff[,cols])
econlan <- unique(econlan[,cols])
econeffgear <- unique(econeffgear[,cols])
econefffao <- unique(econefffao[,cols])
# Make a massive data set
seg <- rbind(cbind(data = "fdilan", fdilan),
             cbind(data = "fdieff", fdieff),
             cbind(data = "econlan", econlan),
             cbind(data = "econeffgear", econeffgear),
             cbind(data = "econefffao", econefffao))
seg$data <- as.character(seg$data)
```

There are some differences in the way the country codes are recorded between the data sets. For example, the Economic data has a single code for the United Kingdom (GBR) whereas the new FDI has multiple codes (SCO, ENG, etc). There is a similar issue with Portugal.

We make the country codes common in the data. The original information will be retained in the *geoindicator* column of the new FDI data.

```r
# GBR (econ), SCO, ENG, IOM, GBJ, GBG, NIR
seg[seg$country %in% c("GBR", "SCO", "ENG", "IOM", "GBJ", "GBG", "NIR"),"country"] <-
    "GBR"
# Same for Portgual
# PRT (econ) POR, PTA, PTM
seg[seg$country %in% c("PRT", "POR", "PTA", "PTM"),"country"] <- "PRT"
```

A Fleet Segment is a combination of the country, supra-region, fishing technique and vessel length. We make a column to reflect this:

```
# Make a segment column
# Segment = country_code, supra_reg, fishing_tech, vessel_length
seg$seg <- paste(seg$country, seg$supra_reg, seg$fishing_tech, seg$vessel_length, sep="_")
```

Analysis

As a first analysis we look at the number of unique fleet segments by supra-region and data set:

```
seg %>% group_by(supra_reg, data) %>% summarise(length(unique(seg)))
```

Table 1: Number of unique Fleet Segments by supra-region and data set

Supra-region	Data set	No. unique Fleet Segments
AREA27	Economic effort FAO	299
AREA27	Economic effort gear	298
AREA27	Economic landings	304
AREA27	New FDI effort	385
AREA27	New FDI landings	386
AREA37	Economic effort FAO	185
AREA37	Economic effort gear	185
AREA37	Economic landings	186
AREA37	New FDI effort	178
AREA37	New FDI landings	121
NONE	New FDI landings	11
OFR	Economic effort FAO	53
OFR	Economic effort gear	51
OFR	Economic landings	53
OFR	New FDI effort	48
OFR	New FDI landings	47

In supra-region Area 27 the number of Segments in the new FDI tables are similar within the different supra-regions. This does not necessarily mean that the Segments are the same. If they are not it is a data quality issue.

The number of common unique Segments is:

```
length(intersect(
    unique(filter(seg, data=="fdilan" & supra_reg=="AREA27")$seg),
    unique(filter(seg, data=="fdieff" & supra_reg=="AREA27")$seg)))
```

```
## [1] 374
```

For Area 37 there is a large difference in the number of Segments within the new FDI tables suggesting data quality issues with this supra-region.

For the Economic data the numbers of Segments in the tables are similar between the supra-regions.

In the supra-region Area 27 there are more new FDI Segments than Economic data Segments. This is not the case with the supra-regions OFR and Area 37.

As noted in the Introduction having more Segments in the new FDI data is to be expected given the clustering and other factors (e.g. fishing technique is *NONE*). However, it is important that the Economic Segments are a subset of the new FDI segments.

As there are differences between the number of Segments within the new FDI tables and within the Economic tables, we take the unique Segments that appear in the new FDI and Economic data.

```
# Get all unique segments in FDI and Econ
seg$data2 <- NA
seg[seg$data %in% c("fdilan", "fdieff"),"data2"] <- "fdi"
seg[seg$data %in% c("econlan", "econeffgear", "econefffao"),"data2"] <- "econ"
```

```
seg %>% filter(supra_reg %in% c("AREA27", "AREA37", "OFR")) %>%
    group_by(supra_reg, data2) %>% summarise(length(unique(seg)))
```

Table 2: Number of unique Fleet Segments by supra-region and combined data set

Supra-region	Data set	No. unique Fleet Segments
AREA27	Economic	305
AREA27	New FDI	397
AREA37	Economic	186
AREA37	New FDI	194
OFR	Economic	53
OFR	New FDI	49

We can see that the in Area 27 there are more unique Segments in the new FDI data than in the Economic data. This number is roughly the same as the number in each of the individual FDI landings and FDI effort tables.

For Area 37 there are more unique Segments in the combined new FDI data than in the seperate new FDI data tables. Again, this points at quality issues in the data.

Area 27

Here we only consider supra-region Area 27. We want to understand if the Economic Segments are a subset of the new FDI Segments.

```
fdiseg27 <- unique(filter(seg, supra_reg %in% c("AREA27") & data2=="fdi")$seg)
econseg27 <- unique(filter(seg, supra_reg %in% c("AREA27") & data2=="econ")$seg)
```

The Segments in the Economic data that do not feature in the new FDI data are:

```
sort(econseg27[!(econseg27 %in% fdiseg27)])
```

```
##  [1] "BEL_AREA27_PMP_VL1824" "ESP_AREA27_PGO_VL1218"
##  [3] "ESP_AREA27_PGO_VL1824" "ESP_AREA27_PGO_VL2440"
##  [5] "ESP_AREA27_PGP_VL1824" "ESP_AREA27_PGP_VL2440"
```

```
##  [7] "ESP_AREA27_PMP_VL1824" "ESP_AREA27_PMP_VL2440"
##  [9] "EST_AREA27_PG_VL0010"  "IRL_AREA27_DFN_VL0010"
## [11] "IRL_AREA27_PMP_VL1012" "IRL_AREA27_TBB_VL0010"
## [13] "LTU_AREA27_PG_VL0010"  "NLD_AREA27_PG_VL1012"
## [15] "POL_AREA27_DTS_VL40XX"
```

The Segments in the new FDI data that do not feature in the Economic data are:

```
sort(fdiseg27[!(fdiseg27 %in% econseg27)])
```

```
##   [1] "BEL_AREA27_DFN_VL1824"  "BEL_AREA27_DRB_VL2440"
##   [3] "BEL_AREA27_DTS_VL1218"  "BEL_AREA27_DTS_VL1824"
##   [5] "BEL_AREA27_TBB_VL1218"  "DEU_AREA27_DFN_VL0810"
##   [7] "DEU_AREA27_DFN_VL1012"  "DEU_AREA27_DRB_VL1218"
##   [9] "DEU_AREA27_DRB_VL2440"  "DEU_AREA27_DRB_VL40XX"
##  [11] "DEU_AREA27_DTS_VL0810"  "DEU_AREA27_FPO_VL1012"
##  [13] "DEU_AREA27_FPO_VL2440"  "DEU_AREA27_HOK_VL0810"
##  [15] "DEU_AREA27_PG_VL0008"   "DEU_AREA27_PG_VL0810"
##  [17] "DEU_AREA27_TBB_VL0010"  "DEU_AREA27_TBB_VL40XX"
##  [19] "DEU_AREA27_TM_VL1218"   "DEU_AREA27_TM_VL1824"
##  [21] "DEU_AREA27_TM_VL2440"   "DNK_AREA27_DRB_VL0010"
##  [23] "DNK_AREA27_DRB_VL40XX"  "DNK_AREA27_DTS_VL0008"
##  [25] "DNK_AREA27_DTS_VL0810"  "DNK_AREA27_NONE_VL0008"
##  [27] "DNK_AREA27_NONE_VL0010" "DNK_AREA27_NONE_VL0810"
##  [29] "DNK_AREA27_NONE_VL40XX" "DNK_AREA27_PGP_VL0008"
##  [31] "DNK_AREA27_PGP_VL0810"  "DNK_AREA27_PMP_VL0008"
##  [33] "DNK_AREA27_PMP_VL0810"  "DNK_AREA27_PMP_VL2440"
##  [35] "DNK_AREA27_TBB_VL0008"  "DNK_AREA27_TBB_VL0010"
##  [37] "DNK_AREA27_TBB_VL1012"  "DNK_AREA27_TM_VL0008"
##  [39] "DNK_AREA27_TM_VL0010"   "ESP_AREA27_DRB_VL1824"
##  [41] "ESP_AREA27_DRB_VL2440"  "ESP_AREA27_DTS_VL0010"
##  [43] "ESP_AREA27_FPO_VL0010"  "ESP_AREA27_FPO_VL1824"
##  [45] "ESP_AREA27_TBB_VL1012"  "ESP_AREA27_TBB_VL1218"
##  [47] "ESP_AREA27_TBB_VL1824"  "ESP_AREA27_TM_VL1824"
##  [49] "ESP_AREA27_TM_VL2440"   "ESP_AREA27_TM_VL40XX"
##  [51] "EST_AREA27_DTS_VL0008"  "EST_AREA27_DTS_VL0810"
##  [53] "EST_AREA27_DTS_VL1012"  "EST_AREA27_DTS_VL40XX"
##  [55] "EST_AREA27_PG_VL0008"   "EST_AREA27_PG_VL0810"
##  [57] "EST_AREA27_PG_VL1218"   "FIN_AREA27_PG_NONE"
##  [59] "GBR_AREA27_NONE_NONE"   "IRL_AREA27_DRB_VL40XX"
##  [61] "IRL_AREA27_NONE_VL0010" "IRL_AREA27_NONE_VL1012"
##  [63] "IRL_AREA27_NONE_VL1218" "IRL_AREA27_NONE_VL1824"
##  [65] "IRL_AREA27_NONE_VL2440" "IRL_AREA27_NONE_VL40XX"
##  [67] "LTU_AREA27_FPO_VL40XX"  "LTU_AREA27_PG_VL0008"
##  [69] "NLD_AREA27_DFN_VL0010"  "NLD_AREA27_DFN_VL1012"
##  [71] "NLD_AREA27_DFN_VL2440"  "NLD_AREA27_DRB_VL40XX"
##  [73] "NLD_AREA27_DTS_VL1012"  "NLD_AREA27_DTS_VL1218"
##  [75] "NLD_AREA27_FPO_VL0010"  "NLD_AREA27_FPO_VL1012"
##  [77] "NLD_AREA27_FPO_VL1218"  "NLD_AREA27_FPO_VL1824"
##  [79] "NLD_AREA27_HOK_VL0010"  "NLD_AREA27_HOK_VL1012"
##  [81] "NLD_AREA27_MGP_VL1218"  "NLD_AREA27_MGP_VL1824"
##  [83] "NLD_AREA27_MGP_VL2440"  "NLD_AREA27_MGP_VL40XX"
##  [85] "NLD_AREA27_PGP_VL0010"  "NLD_AREA27_PGP_VL1012"
```

```
##   [87] "NLD_AREA27_PGP_VL1218"   "NLD_AREA27_PMP_VL0010"
##   [89] "NLD_AREA27_PMP_VL1012"   "NLD_AREA27_PMP_VL1218"
##   [91] "NLD_AREA27_PMP_VL1824"   "NLD_AREA27_PMP_VL2440"
##   [93] "NLD_AREA27_PS_VL0010"    "NLD_AREA27_PS_VL2440"
##   [95] "NLD_AREA27_TBB_VL1012"   "NLD_AREA27_TM_VL1218"
##   [97] "NLD_AREA27_TM_VL1824"    "SWE_AREA27_DFN_VL0008"
##   [99] "SWE_AREA27_DFN_VL0810"   "SWE_AREA27_DTS_VL0810"
## [101] "SWE_AREA27_FPO_VL0008"    "SWE_AREA27_FPO_VL0810"
## [103] "SWE_AREA27_HOK_VL0008"    "SWE_AREA27_HOK_VL0810"
## [105] "SWE_AREA27_PGP_VL0008"    "SWE_AREA27_PGP_VL0810"
## [107] "SWE_AREA27_PMP_VL0810"
```

Belgium

We look at Belgium in Area 27 in more detail:

```
fdiseg27bel <- unique(filter(seg, country=="BEL" &
    supra_reg %in% c("AREA27") & data2=="fdi")$seg)
econseg27bel <- unique(filter(seg, country=="BEL" &
    supra_reg %in% c("AREA27") & data2=="econ")$seg)
```

The Segments in the Economic data that do not feature in the new FDI data are:

```
sort(econseg27bel[!(econseg27bel %in% fdiseg27bel)])
```

```
## [1] "BEL_AREA27_PMP_VL1824"
```

The Segments in the new FDI data that do not feature in the Economic data are:

```
sort(fdiseg27bel[!(fdiseg27bel %in% econseg27bel)])
```

```
## [1] "BEL_AREA27_DFN_VL1824" "BEL_AREA27_DRB_VL2440" "BEL_AREA27_DTS_VL1218"
## [4] "BEL_AREA27_DTS_VL1824" "BEL_AREA27_TBB_VL1218"
```

This is a result of clustering (this can be seen by checking the cluster map).

In the Economic data a new Segment has been created *PMP 1824*. This Segment does not therefore feature in the new FDI data. This new Segment contains DFN 1825 and DRB 2449.

The Segments DTS 1218 and DTS 1824 are clustered into DTS 2440.

The Segment TBB 1218 has been clustered into TBB 1824.

Conclusion

From the difference in the number of unique Segments in the new FDI tables in Area 37 there are clear data quality issues with this supra-region. These issues are not explored further. Similarly, supra-region OFR has not been considered in detail.

A preliminary exploration of Area 27 suggests that it may be possible to link the Segments in the new FDI with the Economic data if the cluster maps for each member state are available.
A fuller exploration would require the cluster maps for each of the member states.

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