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ANNEX 2.1.

INSTITUTIONS RESPONSIBLE FOR DCF AND FOR CR

Table 1: Institutions responsible for DCF data and Institutions in charge to collect Control Regulation data.

Country	Institution Responsible for DCF	Control Regulation Data			
		Logbook data	Sales notes data	VMS data	Fleet Register data
Belgium	Institute for Agriculture and Fisheries Resources. (ILVO)	Department of Landouw & Visserij	Department of Landouw & Visserij	Department of Landouw & Visserij	EU Fleet Register
Bulgaria	National Agency for Fisheries and Aquaculture. (NAFA)	Information Statistical System of NAFA (ISS NAFA)	Information Statistical System of NAFA (ISS NAFA)	Information Statistical System of NAFA (ISS NAFA)	Fishing Vessels Monitoring Centre of NAFA
Denmark	National Institute for Aquatic Resources. (DTU Aqua)	AgriFish Agency	AgriFish Agency	AgriFish Agency	AgriFish Agency
Germany	Federal Research Institute for Rural Areas, Forestry and Fisheries. (Thünen)	Bundesanstalt für Landwirtschaft und Ernährung (BLE)	Bundesanstalt für Landwirtschaft und Ernährung (BLE)	Bundesanstalt für Landwirtschaft und Ernährung (BLE)	Bundesanstalt für Landwirtschaft und Ernährung (BLE)
Estonia	Ministry of Environment. Fisheries Resources Department	Ministry of the Aquaculture	Ministry of the Aquaculture	Ministry of the Environment	Ministry of the Aquaculture
Ireland	The Marine Institute	Department of Agriculture, Food and Marine (DAFM)	No current access	Irish Navy	Department of Agriculture, Food and Marine (DAFM) and EU Fleet Register
Greece	General Directorate of Fisheries in Ministry of Rural Development and Food. (GDF)	Directly from fishermen	ETANAL (Fisheries Development Company)	Ministry of Mercantile Marine	Ministry of Mercantile Marine – Fleet Register
Spain	General Secretariat of Fisheries (SGP)	General Secretariat of Fisheries (SGP)	General Secretariat of Fisheries (SGP)	General Secretariat of Fisheries (SGP)	General Secretariat of Fisheries (SGP)
France	Directorate for Sea, Fisheries and Aquaculture. (DPMA)	France AgriMer	France AgriMer	France AgriMer	France AgriMer

Country	Institution Responsible for DCF	Control Regulation Data			
		Logbook data	Sales notes data	VMS data	Fleet Register data
Croatia	n.a.	n.a.	n.a.	n.a.	n.a.
Italy	Ministry of Agricultural, Food and Forestry Policies (MIPAAF)	Ministry of Agricultural, Food and Forestry Policies (MIPAAF)	Ministry of Agricultural, Food and Forestry Policies (MIPAAF)	Ministry of Agricultural, Food and Forestry Policies (MIPAAF)	Ministry of Agricultural, Food and Forestry Policies (MIPAAF)
Cyprus	n.a.	n.a.	n.a.	n.a.	n.a.
Latvia	Institute of Food Safety, Animal Health and Environment (BIOR)	Ministry of Agriculture	Ministry of Environmental Protection and Regional Development	n.a.	Latvian Ship Registry
Lithuania	Ministry of Agriculture of the Republic of Lithuania. (ZUM)	Fisheries Service. Ministry of Agriculture	Fisheries Service. Ministry of Agriculture	Fisheries Service. Ministry of Agriculture	Fisheries Service. Ministry of Agriculture
Malta	Department of Fisheries and Aquaculture. Ministry of Sustainable Development, the Environment and Climate Change. (DFA)	Department of Fisheries and Aquaculture. Ministry of Sustainable Development, the Environment and Climate Change	Department of Fisheries and Aquaculture. Ministry of Sustainable Development, the Environment and Climate Change	Department of Fisheries and Aquaculture. Ministry of Sustainable Development, the Environment and Climate Change	Department of Fisheries and Aquaculture. Ministry of Sustainable Development, the Environment and Climate Change
The Netherlands	Ministry of Economic Affairs (EZ)	Ministry of Economic Affairs	Ministry of Economic Affairs	Ministry of Economic Affairs	Ministry of Economic Affairs
Poland	National Marine Fisheries Research Institute. (NMFRI)	Fisheries Monitoring Centre (FMC). Department of Fisheries of the Ministry of Agriculture and Rural Development	Fisheries Monitoring Centre (FMC). Department of Fisheries of the Ministry of Agriculture and Rural Development	Fisheries Monitoring Centre (FMC). Department of Fisheries of the Ministry of Agriculture and Rural Development	Fisheries Monitoring Centre (FMC). Department of Fisheries of the Ministry of Agriculture and Rural Development
Portugal	Portuguese and Atmosphere Institute. (IPMA)	Ministry of Agriculture and Sea (Directorate-General for Natural Resources, Safety and Maritime Services – DGRM)	Ministry of Agriculture and Sea (Directorate-General for Natural Resources, Safety and Maritime Services – DGRM)	Ministry of Agriculture and Sea (Directorate-General for Natural Resources, Safety and Maritime Services – DGRM)	Ministry of Agriculture and Sea (Directorate-General for Natural Resources, Safety and Maritime Services – DGRM)
Romania	n.a.	n.a.	n.a.	n.a.	n.a.

Country	Institution Responsible for DCF	Control Regulation Data			
		Logbook data	Sales notes data	VMS data	Fleet Register data
Slovenia	Ministry of Agriculture and Environment. (MAE)	Ministry of Agriculture and Environment. Hunting and Fisheries Division	Ministry of Agriculture and Environment. Hunting and Fisheries Division	Ministry of Agriculture and Environment. Hunting and Fisheries Division	Ministry of Agriculture and Environment. Hunting and Fisheries Division
Finland	Finish Game and Fisheries Research Institute. (FGFRI)	Ministry of Agriculture and Forestry (MAF)	Ministry of Agriculture and Forestry (MAF)	Ministry of Agriculture and Forestry (MAF)	Ministry of Agriculture and Forestry (MAF)
Sweden	Swedish University of Agricultural Sciences. Department of Aquatic Resources. (SLU-Aqua)	Swedish Agency for Marine and Water Management (SWAM), Department for Fisheries Management	Swedish Agency for Marine and Water Management (SWAM), Department for Fisheries Management	Swedish Agency for Marine and Water Management (SWAM), Department for Fisheries Management	Swedish Agency for Marine and Water Management (SWAM), Department for Fisheries Management
United Kingdom	Marine Management Organisations (MMO)	MMO: Department of Agriculture, Northern Ireland; Marine Scotland; and Marine Management Organisation for England and the Welsh Government for Gales	MMO: Department of Agriculture, Northern Ireland; Marine Scotland; and Marine Management Organisation for England and the Welsh Government for Gales	MMO: Department of Agriculture, Northern Ireland; Marine Scotland; and Marine Management Organisation for England and the Welsh Government for Gales	Registry of Seamen and Shipping (available through MMO/CEFAS system)

n.a.: not answered at the time of this report

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ANNEX 2.2

LIST OF DATRAS DATA PRODUCTS USED FOR DISSEMINATION



Data products by survey range and quarter	Fields	Standard Species(*)	All species	Ship	Gear	Area	Sub area
Exchange data	All variables described in DATRAS data upload format.	X	X	x			
CPUE per length per haul	Survey, Year, Quarter, Ship, Gear, HaulNo, ShootLat, ShootLon, DateTime, Depth, Area, Subarea, DayNight, AphiaID, Species, Sex, LngtClas, CPUE_number_per_hour, DateofCalculation	X	x	x	x	x	
CPUE per age per haul	Survey, Year, Quarter, Ship, Gear, HaulNo, ShootLat, ShootLon, DateTime, Depth, Area, Subarea, DayNight, AphiaID, Species, Sex, Age_0, Age_1, Age_2, Age_3, Age_4, Age_5, Age_6, Age_7, Age_8, Age_9, Age_10, DateofCalculation	X	x	x	x	x	
CPUE per length per area	survey, year, quarter, area, AphiaID, Species, lngtclas, CPUE	X				x	
CPUE per length per subarea	Survey, Year, Quarter, Area, Subarea, AphiaID, Species, LngtClas, CPUE_number_per_hour, DateofCalculation	X	x				X
CPUE per age per area	Survey, Year, Quarter, Area, AphiaID, Species, Age_0, Age_1, Age_2, Age_3, Age_4, Age_5, Age_6, Age_7, Age_8, Age_9, Age_10	X				x	
CPUE per age per subarea	Survey, Year, Quarter, Area, Subarea, AphiaID, Species, Age_0, Age_1, Age_2, Age_3, Age_4, Age_5, Age_6, Age_7, Age_8, Age_9, Age_10, DateofCalculation	X					x
SMALK	Survey, Year, Quarter, Area, AphiaID, Species, LngtClasMM, PlusGr, Age, Sex, Maturity, IndividualWeight, NoAtalk, DateofCalculation	Xx					
ALK	Survey, Year, Quarter, Area, AphiaID, Species, LngtClasMM, Age_0, Age_1, Age_2, Age_3, Age_4, Age_5, Age_6, Age_7, Age_8, Age_9, Age_10, DateofCalculation	X					
Indices	Survey, Year, Quarter, AphiaID, Species, IndexArea, Sex, PlusGr, Age_0, Age_1, Age_2, Age_3, Age_4, Age_5, Age_6, Age_7, Age_8, Age_9, Age_10, Age_11, Age_12, Age_13, Age_14, Age_15, DateofCalculation	X					
Bootstrap data	Survey, Year, Quarter, AphiaID, Species, IndexArea, Sex, PlusGr, Age_0, Age_1, Age_2, Age_3, Age_4, Age_5, Age_6, Age_7, Age_8, Age_9, Age_10, Age_11, Age_12, Age_13, Age_14, Age_15, Bootnumber, DateofCalculation	X					
Range divide by median bootstrap	Survey, Year, Quarter, AphiaID, Species, IndexArea, Sex, PlusGr, Age_0, Age_1, Age_2, Age_3, Age_4, Age_5, Age_6, Age_7, Age_8, Age_9, Age_10, Age_11, Age_12, Age_13, Age_14, Age_15, DateofCalculation	X					

Source: Feasibility study

The logo for 'cofad' is written in a bold, blue, lowercase sans-serif font.The logo for 'devstat' features a stylized red 'd' with two black dots above it, and the word 'devstat' in a lowercase sans-serif font below.The logo for 'FRAMIAN' consists of a square with a diagonal line from the top-left to the bottom-right, and the word 'FRAMIAN' in a bold, uppercase sans-serif font below.The logo for 'GOPA' features the word 'GOPA' in a bold, green, uppercase sans-serif font, with 'WORLDWIDE CONSULTANTS' in a smaller, green, uppercase sans-serif font below.

(*)Aggregated data for standard species:

- gadoids: *Gadus morhua*, *Melanogrammus aeglefinus*, *Merlangius merlangus*, *Trisopterus esmarki*, *Trisopterus minutus*, *Merluccius merluccius*, *Molva molva*, *Pollachius virens*;
- flatfish: *Limanda limanda*, *Hippoglossoides platessoides*, *Microstomus kitt*, *Pleuronectes platessa*, *Glyptocephalus cynoglossus*, *Lepidorhombus whiffiagonis*;
- other demersal species: *Eutrigla gurnardus*, *Lophius piscatorius*, *Lophius budegassa*, *Echiichthys vipera*, *Amblyraja radiata*, *Raja clavata*, *Scyliorhinus canicula*;
- pelagics: *Clupea harengus*, *Scomber scombrus*, *Trachurus trachurus*, *Sprattus sprattus*.

However, the output files at an aggregated level (i.e. cpue per length per area...) may be manipulated by DATRAS on demand of the responsible survey working groups. This manipulation concerns the standardization of the taxonomy of problematic taxa, and is necessary to ensure quality of the output files.

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ANNEX 2.3

AGGREGATION LEVELS ICES DATABASES (DATRAS, INTERCATCH, RDB-FISHFRAME)

		DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB
		Biological – stock related			Biological – métier related			Catch / landings			Capacity			Effort			Environmental		
1. Domain coverage DB?	Yes	X	X	X		X	X	X	X	X				X	X	X			X
	No																		
2. Aggregation level? ¹	Primary	X						X						X					X
	Detailed	X		X				X						X					
	DCF definition						X												
	More details than DCF		X																
	Less detailed than DCF					X			X	X						X	X		
3. Geographical aggregation level? ²	Member		X	X		X	X		X	X					X	X			
	1. Area	X						X						X					
	2. Sub-area	X	X			X		X	X					X	X				
	3. Division	X	X	X		X	X	X	X	X				X	X	X			
	4. Sub-division	X	X	X		X	X	X	X	X				X	X	X			
5. Rectangle	X	X	X		X	X	X	X	X				X	X	X				
4. Time dimension	1. Month	X	X			X		X	X	X				X	X	X			
	2. Quarter	X	X			X		X	X	X				X	X	X			
	3. Year	X	X			X		X	X					X	X				
	4. Date and time stamp Real time	X		X			X	X						X					

¹ ‘detailed data’ is based on primary data in a form which does not allow natural persons or legal entities to be identified directly or indirectly; ‘primary data’ is associated with individual vessels, natural or legal persons or individual samples; (EC Reg. 199/2008)

² Geographic definitions are according to appendix 1 of the Commission Decision 93/2010.

		DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB
		Biological – stock related			Biological – métier related			Catch / landings			Capacity			Effort			Environmental		
5. Vessel size definition?	1. DCF ³																		
	2. More detailed			X															
	3. Less detailed		X			X	X		X	X					X	X			
6. Level gear definition?	1. Activity																		
	2. Gear class																		
	3. Gear group																		
	4. Gear type	X						X						X					
	5. Target species		X	X		X	X		X	X					X	X			
7. Specification of mesh size?	Yes	X	X	X		X	X	X	X	X				X	X	X			
	No																		
8. Vessel contains estimates	Yes	X	X	X		X	X	X	X	X				X					
	No														X				
9. Update frequency of data?	1. Continuously	X						X						X					
	2. Monthly																		
	3. Quarterly	X						X						X					
	4. Annually		X	X		X	X		X	X					X	X			
	5. On call basis	X						X						X					

³ See appendix IV of Commission Decisions 93/2010.

		DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB	DATRAS	InterCatch	RDB
		Biological – stock related			Biological – métier related			Catch / landings			Capacity			Effort			Environme ntal		
	6. Ad hoc		X	X		X	X		X	X					X	X			

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ANNEX 2.4.

GFCM TASK 1 - TABLES AND FIELDS DESCRIPTION FOR DATA SUBMISSION



	DATA ITEM	TITLE	TABLE
1	HEADER	Task 1 Data submission Header Information	[Tsk1_Headers] Table
2	SEGMENT - ECONOMIC DATA	Task 1 Fleet/Economic Information at National Level	[Tsk1_FleetSegments_Economic] Table
3	GSA	Task 1 GSA Information	[Tsk1_GSAs] Table
4	GSA - SEGMENT	Fleet and area variables	[Tsk1_FleetSegments] Table
5	OPERATIONAL UNIT	Operational Units Information	[Tsk1_OperationalUnits] Table
6	BASE PORTS	Operational Units' Base Ports Information	[Tsk1_OU_BasePorts] Table
7	SPECIES GROUP (EFFORT - CATCH - DISCARDS)	Main resource and activity components variable per OU and concerning effort variables	[Tsk1_OU_FishingPeriods] Table
8	BYCATCH	Information related to the catch of unwanted species (by-catch of conservation concern) for the parent fishing period	[Tsk1_OU_FP_BycatchGroupOfSpecies Element] Table
9	FISHING AREA	Fishing activity areas information	[Tsk1_OU_FP_FishingZones] Table
10	SPECIES (CATCH - BIO PARAMETERS)	Catch and provisional biological parameters	[Tsk1_OU_FP_MainAssociatedSpecies] Table
11	COMMENTS	Comments on the data collection process followed:	[Tsk1_Comments] Table

Task 1 Fleet/Economic Information at National Level: [Tsk1_FleetSegments_Economic] Table

Order	Field Name	Description	Data type	Length	Task 1 Branch
1	Rep_Year	Specify the Reporting Year.	Integer	4	
2	id_Country	3-alpha ISO Country code	String	3	
3	id_Fleet_Segment	Fleet Segment code	String	1	1,1
4	no_of_vessels	The number of vessels belonging to the fleet segment.	Integer	4	1,1
5	id_Capacity_Measure	Select the Capacity measure: Gross Tonnage (GT) or Gross Registered Tonnage (GRT).	String	3	1,1
6	Capacity_Value	The TOTAL capacity value of the vessels belonging to the fleet segment.	Decimal	9,3	1,1
7	Engine_Power	The TOTAL engine power (kW) of fishing vessels belonging to the Fleet Segment.	Integer	4	1,3
8	Employment	The TOTAL number of people employed on fishing vessels belonging to the given Fleet Segment. The number of crew members can be estimated on a full time equivalent (FTE) basis.	Integer	4	1,3

9	SalaryShare	The PERCENTAGE of the REVENUES after discounting commercial costs, daily costs and fuel costs that pertain to the crew.	Integer	4	1,3
		It will be distributed among the crew as salary.			
10	LandingWeight	Specify the TOTAL Landings in weight.	Decimal	9,3	1,3
11	id_Currency	Monetary Values expressed in....	String	3	1,3
12	LandingValue	The VOLUME of landed fish valued against actual market prices. (It equals to quantities landed multiplied by the landing average price)	Integer	4	1,3
13	VesselValueTotalFleet	Vessel value of total Fleet.	Integer	4	1,3
14	WorkingDaysPerYear	The number of working days per year (average).	Integer	4	1,3
15	WorkingHoursPerDay	The number of working hours per year (average).	Integer	4	1,3
16	VariableCostsOfFishingPerDay	These costs include daily expenses incurred in fishing activity, such as fuel, lubricants, etc. They are variable costs that depend on the time spent in fishing.	Integer	4	1,3
17	PercOfVCFromFuelCosts	The percentage of total variable costs from fuel costs	Integer	4	1,3



Task 1 GSA Information: [Tsk1_GSAs] Table

Order	Field Name	Description	Data type	Length
1	Rep_Year	Specify the Reporting Year.	Integer	4
2	id_Country	3-alpha ISO Country code	String	3
3	id_GSA	GSA string ID code	String	2

Fleet and area variables: [Tsk1_FleetSegments] Table

Order	Field Name	Description	Data type	Length	Task 1 Branch
1	Rep_Year	Specify the Reporting Year.	Integer	4	
2	id_Country	3-alpha ISO Country code	String	3	
3	id_GSA	GSA string ID code in which this Fleet Segment operates.	String	2	
4	id_Fleet_Segment	Fleet Segment code	String	1	1,1
5	no_of_vessels	The number of vessels belonging to this Fleet Segment.	Integer	4	1,1
6	id_Capacity_Measure	The Capacity Measure ID string (GT for Gross Tonnage, GRT for Gross Registered Tonnage).	String	3	1,1
7	Capacity_Value	The total capacity value of the vessels belonging to this Fleet Segment.	Decimal	9,3	1,1



Operational Units Information: [Tsk1_OperationalUnits] Table

Order	Field Name	Description	Data type	Length	Task 1 Branch
1	Rep_Year	Specify the Reporting Year.	Integer	4	
2	id_Country	3-alpha ISO Country code	String	3	
3	id_GSA	GSA string ID code in which this Fleet Segment operates.	String	2	
4	id_Fleet_Segment	Fleet Segment code	String	1	1,1
5	id_Gear_Class	The string ID for the Gear Class identifying this Operational Unit.	String	2	1,2
6	id_Group_Target_Species	The string ID for the Group of Species identifying this Operational Unit.	String	2	1,2
7	no_of_vessels	The number of vessels which belong to the same Operational Unit.	Integer	4	1,2

Operational Units' Base Ports Information: [Tsk1_OU_BasePorts] Table

Order	Field Name	Description	Data type	Length
1	Rep_Year	Specify the Reporting Year.	Integer	4
2	id_Country	3-alpha ISO Country code	String	3
3	id_GSA	GSA string ID code identifying the parent Operational Unit.	String	2



4	id_Fleet_Segment	Fleet Segment code	String	1
5	id_Gear_Class	Gear Class Code identifying the parent Operational Unit.	String	2
6	id_Group_Target_Species	Group of Target Species code identifying the parent Operational Unit.	String	2
7	id_port_entry	A 128 bit integer (16 bytes) Globally Unique Identifier for the port. [Example: d177a746-27ca-419b-b87b-acf426858f8b]	String	50
8	port_name	Port name (free text).	String	50
9	no_of_vessels	Specify the corresponding Number of Vessels.	Integer	4

Main resource and activity components variable per OU and concerning effort variables: [Tsk1_OU_FishingPeriods] Table

Order	Field Name	Description	Data type	Length	Task 1 Branch
1	Rep_Year	Specify the Reporting Year.	Integer	4	
2	id_Country	3-alpha ISO Country code	String	3	
3	id_GSA	GSA string ID code identifying the parent Operational Unit.	String	2	
4	id_Fleet_Segment	Fleet Segment code	String	1	1,1
5	id_Gear_Class	The Fishing Gear Class which identifies the parent Operational Unit.	String	2	1,2

6	id_Group_Target_Species	The Group of Target Species which identifies the parent Operational Unit.	String	2	1,2
7	month_start	The ending month (1-12) of the Fishing Period (for the parent Operational Unit.	Integer	2	1,2
8	month_end	The ending month (1-12) of the Fishing Period (for the parent Operational Unit.	Integer	2	1,2
9	id_gear	The Fishing Gear used during this fishing period to the Target Species identified.	String	4	1,2
10	no_of_vessels	The number of vessels involved in this period.	Integer	4	1,2
11	id_Effort_TimeType	The effort TIME measure (Days or Hours).	String	1	1,4
12	Effort_TimeValue	The AVERAGE TOTAL number of fishing days PER VESSEL for this fishing period.	Integer	4	1,4
13	id_CapacityType	The effort CAPACITY measure (GT or GRT).	String	3	1,4
14	CapacityValue	SUM of the TONNAGE (GT or GRT) of the vessels operating in this period.	Decimal	9,3	1,4
15	id_ActivityType	The effort ACTIVITY measure.	String	50	1,4
16	ActivityValue	The AVERAGE effort ACTIVITY VALUE PER DAY PER VESSEL.	Integer	4	1,4
17	id_GearUnitsType	The effort Gear Units measure.	String	4	1,4
18	OtherGearUnits	Gear Units supplementary information. To be filled when OTH (other) is selected as id_GearUnitsType.	String	50	1,4

19	GearUnitsValue	The AVERAGE MEASURE of gear units PER VESSEL for this period.	Integer	4	1,4
20	TotalEffort	The Total Effort value defined as product of the effort values specified. (Time * Capacity * Gear Units * Activity)	Decimal	9,3	
21	TotalEffortUnits	The Total Effort Units codes properly separated using the " " character if more than a measure is specified. (Example: GT NHKS)	String	50	1,4
22	id_CLPrecisionLevel	Catch or Landing value precision level (A for actual, E for estimate).	String	50	1,4
23	id_CLValueType	Catch or Landing value type (C for Catch, L for Landing)	String	50	1,4
24	CatchOrLandingValue	The Catch or Landing VALUE.	Decimal	9,3	1,4
25	CPUEOrLPUEValue	The CPUE value	Decimal	9,3	1,4
26	DiscardValue	Total Discards (TONNES).	Decimal	9,3	1,4
27	ByCatchValue	Total Bycatch (in TONNES).	Decimal	9,3	1,4



Information related to the catch of unwanted species (by-catch of conservation concern) for the parent fishing period: [Tsk1_OU_FP_BycatchGroupOfSpecies Element] Table

At least one of the quantitative fields for the by-catch information (Bycatch Weight and Bycatch Number) must be specified

Order	Field Name	Description	Data type	Length	Task 1 Branch
1	Rep_Year	Specify the Reporting Year.	Integer	4	
2	id_Country	3-alpha ISO Country code	String	3	
3	id_GSA	GSA string ID code identifying the parent Operational Unit.	String	2	
4	id_Fleet_Segment	Fleet Segment code	String	1	1,1
5	id_Gear_Class	The Fishing Gear Class which identifies the parent Operational Unit.	String	2	1,2
6	id_Group_Target_Species	The Group of Target Species which identifies the parent Operational Unit.	String	2	1,2
7	month_start	The ending month (1-12) of the Fishing Period (for the parent Operational Unit.	Integer	2	1,2
8	month_end	The ending month (1-12) of the Fishing Period (for the parent Operational Unit.	Integer	2	1,2
9	id_group_bycatch_species	The code identifying the Group of Unwanted Species (by-catch species of conservation concern) for which the quantitative information is provided.	String	4	1,4

10	id_gear	The Fishing Gear used during this fishing period to the Target Species identified.	String	4	1,2
11	BycatchWeight	The WEIGHT of the by-catch (in TONNES).	Decimal	4,3	1,4
12	BycatchNumber	The NUMBER of individuals.	Integer	4	1,4

Fishing activity areas information: [Tsk1_OU_FP_FishingZones] Table

Order	Field Name	Description	Data type	Length
1	Rep_Year	Specify the Reporting Year.	Integer	4
2	id_Country	3-alpha ISO Country code	String	3
3	id_GSA	GSA string ID code	String	2
4	id_Fleet_Segment	Fleet Segment code	String	1
5	id_Gear_Class	The Fishing Gear Class which identifies the parent Operational Unit.	String	2
6	id_Group_Target_Species	The Group of Target Species which identifies the parent Operational Unit.	String	2
7	month_start	The starting month (1-12) of the parent Fishing Period.	Integer	2
8	month_end	The ending month (1-12) of the parent Fishing Period.	Integer	2
9	id_gear	The Fishing Gear used during the parent fishing period.	String	4

10	id_area	A 128 bit integer (16 bytes) Globally Unique Identifier for the activity area. [Example: d177a746-27ca-419b-b87b-acf426858f8b]	String	50	
11	zone_name	Please provide a descriptive name (free text) for the activity area.	String	50	
12	no_of_vessels	Specify the number of vessels undertaking the activity in this area.	Integer	4	

Catch and provisional biological parameters: [Tsk1_OU_FP_MainAssociatedSpecies] Table

Order	Field Name	Description	Data type	Length	Task 1 Branch
1	Rep_Year	Specify the Reporting Year.	Integer	4	
2	id_Country	GSA string ID code	String	3	
3	id_GSA	GSA string ID code	String	2	
4	id_Fleet_Segment	Fleet Segment code	String	1	1,1
5	id_Gear_Class	The Fishing Gear Class which identifies the parent Operational Unit.	String	2	1,2
6	id_Group_Target_Species	The Group of Target Species which identifies the parent Operational Unit.	String	2	1,2
7	month_start	The starting month (1-12) of the parent Fishing Period.	Integer	2	1,2

8	month_end	The ending month (1-12) of the parent Fishing Period.	Integer	2	1,2
9	id_gear	The Fishing Gear Class which identifies the parent Operational Unit.	String	4	1,2
10	id_species	3-alpha code identifying the Target Species	String	3	1,2
11	IsMainTargetSpecies	Boolean value indicating whether this entry is a Main Target Species.	Boolean	1	1,2
12	id_CLPrecisionLevel	Catch or Landing value precision level for this species (A for actual, E for estimate).	String	50	1,4
13	id_CLValueType	Catch or Landing value type for this species (C for Catch, L for Landing)	String	50	1,4
14	CatchOrLandingValue	For this target species, specify the Catch or Landing value.	Decimal	9,3	1,4
15	CPUEOrLPUEValue	For this target species, specify the CPUE value.	Decimal	9,3	1,4
16	MinLengthForCatch	Please specify the minimum length value measured (mm).	Integer	4	1,5
17	MaxLengthForCatch	Please specify the maximum length value measured (mm).	Integer	4	1,5
18	AverageLength	For this target species, specify the mean length.	Integer	4	1,5
19	Sex	Number of females expressed in percentage (%).	String	50	1,5

20	MaturityScale	Please specify the maturity scale (ex. 1 - 5).	String	50	1,5
21	AdditionalInfo	Any relevant extra information (free text) for this species.	String	255	1,5

Comments on the data collection process followed: [Tsk1_Comments] Table

Order	Field Name	Description	Data type	Length
1	Rep_Year	Specify the Reporting Year.	Integer	4
2	id_Country	GSA string ID code	String	3
3	id_DataSource1_1_First	ID code identifying the first data source for 1.1 (Fleet and area variables)	String	3
4	id_PrecisionEstimates1_1_First	ID code indicating precision estimates regarding the first data source for 1.1 (Fleet and area variables).	String	1
5	id_BiasEstimates1_1_First	ID code indicating bias estimates regarding the first data source for 1.1 (Fleet and area variables).	String	1
6	id_DataSource1_1_Second	ID code identifying the second data source (if any) for 1.1 (Fleet and area variables)	String	3
7	id_PrecisionEstimates1_1_Second	ID code indicating precision estimates regarding the second data source for 1.1 (Fleet and area variables).	String	1

8	id_BiasEstimates1_1_Second	ID code indicating bias estimates regarding the second data source for 1.1 (Fleet and area variables).	String	1
9	id_DataSource1_1_Third	ID code identifying the third data source (if any) for 1.1 (Fleet and area variables)	String	3
10	id_PrecisionEstimates1_1_Third	ID code indicating precision estimates regarding the third data source for 1.1 (Fleet and area variables).	String	1
11	id_BiasEstimates1_1_Third	ID code indicating bias estimates regarding the third data source for 1.1 (Fleet and area variables).	String	1
12	id_DataSource1_2_First	ID code identifying the first data source for 1.2 (Main resource and activity components variables per OU)	String	3
13	id_PrecisionEstimates1_2_First	ID code indicating precision estimates regarding the first data source for 1.2 (Main resource and activity components variables per OU)	String	1
14	id_BiasEstimates1_2_first	ID code indicating bias estimates regarding the first data source for 1.2 (Main resource and activity components variables per OU)	String	1
15	id_DataSource1_2_Second	ID code identifying the second data source for 1.2 (Main resource and activity components variables per OU)	String	3

16	id_PrecisionEstimates1_2_Second	ID code indicating precision estimates regarding the second data source for 1.2 (Main resource and activity components variables per OU)	String	1
17	id_BiasEstimates1_2_Second	ID code indicating bias estimates regarding the second data source for 1.2 (Main resource and activity components variables per OU)	String	1
18	id_DataSource1_2_Third	ID code identifying the third data source for 1.2 (Main resource and activity components variables per OU)	String	3
19	id_PrecisionEstimates1_2_Third	ID code indicating precision estimates regarding the third data source for 1.2 (Main resource and activity components variables per OU)	String	1
20	id_BiasEstimates1_2_Third	ID code indicating bias estimates regarding the third data source for 1.2 (Main resource and activity components variables per OU)	String	1
21	id_DataSource1_3_First	ID code identifying the first data source for 1.3 (Economic components variables)	String	3
22	id_PrecisionEstimates1_3_First	ID code indicating precision estimates regarding the first data source for 1.3 (Economic components variables)	String	1



23	id_BiasEstimates1_3_First	ID code indicating bias estimates regarding the first data source for 1.3 (Economic components variables)	String	1
24	id_DataSource1_3_Second	ID code identifying the second data source for 1.3 (Economic components variables)	String	3
25	id_PrecisionEstimates1_3_Second	ID code indicating precision estimates regarding the second data source for 1.3 (Economic components variables)	String	1
26	id_BiasEstimates1_3_Second	ID code indicating bias estimates regarding the second data source for 1.3 (Economic components variables)	String	1
27	id_DataSource1_3_Third	ID code identifying the third data source for 1.3 (Economic components variables)	String	3
28	id_PrecisionEstimates1_3_Third	ID code indicating precision estimates regarding the third data source for 1.3 (Economic components variables)	String	1
29	id_BiasEstimates1_3_Third	ID code indicating bias estimates regarding the third data source for 1.3 (Economic components variables)	String	1
30	id_DataSource1_4_First	ID code identifying the first data source for 1.4 (Effort variables)	String	3
31	id_PrecisionEstimates1_4_First	ID code indicating precision estimates regarding the first data source for 1.4 (Effort variables)	String	1

32	id_BiasEstimates1_4_First	ID code indicating bias estimates regarding the first data source for 1.4 (Effort variables)	String	1
33	id_DataSource1_4_Second	ID code identifying the second data source for 1.4 (Effort variables)	String	3
34	id_PrecisionEstimates1_4_Second	ID code indicating precision estimates regarding the second data source for 1.4 (Effort variables)	String	1
35	id_BiasEstimates1_4_Second	ID code indicating bias estimates regarding the second data source for 1.4 (Effort variables)	String	1
36	id_DataSource1_4_Third	ID code identifying the third data source for 1.4 (Effort variables)	String	3
37	id_PrecisionEstimates1_4_Second	ID code indicating precision estimates regarding the second data source for 1.4 (Effort variables)	String	1
38	id_BiasEstimates1_4_Second	ID code indicating bias estimates regarding the second data source for 1.4 (Effort variables)	String	1
39	id_DataSource1_5_First	ID code identifying the first data source for 1.5 (Provisional biological parameters)	String	3
40	id_PrecisionEstimates1_5_First	ID code indicating precision estimates regarding the first data source for 1.5 (Provisional biological parameters)	String	1



41	id_BiasEstimates1_5_First	ID code indicating bias estimates regarding the first data source for 1.5 (Provisional biological parameters)	String	1
42	id_DataSource1_5_Second	ID code identifying the second data source for 1.5 (Provisional biological parameters)	String	3
43	id_PrecisionEstimates1_5_Second	ID code indicating precision estimates regarding the second data source for 1.5 (Provisional biological parameters)	String	1
44	id_BiasEstimates1_5_Second	ID code indicating bias estimates regarding the second data source for 1.5 (Provisional biological parameters)	String	1
45	id_DataSource1_5_Third	ID code identifying the third data source for 1.5 (Provisional biological parameters)	String	3
46	id_PrecisionEstimates1_5_Third	ID code indicating precision estimates regarding the third data source for 1.5 (Provisional biological parameters)	String	1
47	id_BiasEstimates1_5_Third	ID code indicating bias estimates regarding the third data source for 1.5 (Provisional biological parameters)	String	1

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ANNEX 2.5.

REGIONAL FISHERIES MANAGEMENT ORGANIZATIONS – DATA, DATABASES AND INSTITUTIONAL POSITION

Table 1. Access to data related to the Control Regulation (control data) – Other RFMOs

Access to control data from the EU or from EU MS	Logbooks	Sales notes	VMS	Fleet register	Other
CCAMLR	No	No	No	no	
CCSBT	No	No	No	no	
NAFO	V-Track: VMS (Hourly position, speed and heading); Daily catch and discard by species, subarea and vessel	n/a	X	n/a	Authorizations to fish, port state reports and fishery statistics from EU member countries
NEAFC	n/a	n/a	n/a	n/a	
IATTC	n/a	n/a	n/a	n/a	
ICCAT	Information from logbooks (BET/YFT vessels)	n/s	VMS messages (vessels >15m targeting BFT)	(X) see Others	List of authorised vessels for different fisheries, List of authorised Joint Fishing Operations for E-BFT, Bluefin tuna catch documents (BCDs)
IOTC	No	No	No	no	List of authorised vessels



Access to control data from the EU or from EU MS	Logbooks	Sales notes	VMS	Fleet register	Other
SEAFO	n/a	n/a	X	Vessel registry	Scientific Observer, VMS
SPRFMO	X Tow_by_Tow logbook data, mainly trawl (also some historic deepwater set net data)		X	(X) see Others	Vessel details data (including methods and owner/operator information)
WCPFC	n/s	n/s	n/s	(see Others)	WCPFC Record of Fishing Vessels



Table 2. Strengths and weaknesses according to RFMOs' own perception

RFMO	NAFO		IATTC		ICCAT		SPRFMO	
	Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses	Strengths	Weaknesses
Organization / management	X		X		X		X	
Dedicated staff	X		X		X		X	
Financing	X				X		X	
Hardware	X				X		X	
Software	X				X	X	X	X
Training possibilities	X					X		X
Development possibilities		X				X	X	X

Table 3. Technical database solutions

RFMO	Description of DB solution	Dedicated IT staff	Hosted internally / externally	Sharing with other organisations	Mode of data sharing with other organisat.
CCAMLR	n/s	n/s	n/s	n/s	n/s
CCSBT	Microsoft SQL server database	Yes – Part of the Data Manager’s role	Internally	Yes to Members, FIRMS, Tuna-Org	Data file Transmission via email to Tuna-Org, direct upload of information to FIRMS. Upload of information to private area of web site for CCSBT Members and an annual Data CD to CCSBT Members.
NAFO	Windows server hosting their ACCESS databases.	2 staff are in charge of database matters: an IT expert dealing with the software/hardware and a data manager in charge of the databases	Internally	No – reporting is for NAFO scientific committee and for the general public	n/a
NEAFC	n/s	n/s	n/s	n/s	n/s
IATTC	Microsoft SQL server database on dedicated database servers	- 2 staff: computer systems. - 3 staff : DB management & development of computer data entry, editing and analysis of computer programmes	Internally	National purse seine observer programs in Mexico, Venezuela, Ecuador, EU, Colombia, Panama, Nicaragua	Transmission of data file
ICCAT	Databases hosted in Microsoft SQL and Oracle (VMS only).	Statistics and IT department with 5 members: 1 supervisor, 1 DB manager developer, 2 DB programmers, 1 IT network specialist	Internally (External hosting provided for WEB, ftp, e-mail and backup services)	Partly yes with FAO	On request
IOTC	Microsoft SQL server database	Data manager			
SEAFO	MS Access MS SQL Server	Part of the Data Manager’s role	Internally	No	n/a

SPRFMO	<u>SPRFMO Database:</u> SQL 2008 <u>GeoDatabase:</u> ArcGIS <u>Monthly catch reports:</u> excel	No	Externally Internally Internally	4 Members have direct access to parts of the DB, those members also have direct summarised access to other parts	transmission of encrypted data files occurs with other organisations
WCPFC	n/s	n/s	n/s	n/s	n/s

Table 4. Database software and other applications

RFMO	Server	Applications	Access to DBs	Software for interfacing with DBs	Documentation	Inter-operability of DBs
CCAMLR	n/s	n/s	n/s	Excel	n/s	n/s
CCSBT	Microsoft SQL server	n/s	n/s	Excel, Access,	n/s	Only one DB
NAFO	Windows server	Oracle and SQL server	Lan / internet	MS Access (+ R-ODBC library)	No	DBs internally not connected
NEAFC	n/s	n/s	n/s	n/s	n/s	n/s
IATTC	Microsoft SQL server	SQL Server management console, in-house Visual Studio applications, R.	Lan	Excel, Access, SQL Server	Yes	DBs internally not connected
ICCAT	Microsoft SQL Server 2008R2 and Oracle (VMS only)	Windows OS LAN network system with 5 server HP units. Firewall, external backup and security monitory systems.	Lan	MS-Visual Studio, MS-SQL server managements studio, MS-ACCESS VBA projects, proper applications, and web page designs (asp, aspx)	No	Yes Intranet links, automatic exchange protocols, interaction SQL scripting (stored procedures, functions, triggers)
IOTC	MS SQL Server MySQL for dissemination web site	In house php website for dissemination	Lan	Excel	n/s	DBs internally not connected
SEAFO	MS SQL Server	VB.net MS Excel MS Access MS Outlook	Lan	VMS + Scientific Observer: ArcView Vessel Registry: MS Access	VMS + Vessel Registry: No Scientific Observer: Yes	Vessel Registry linked to Observer and VMS data using ODBC.

SPRFMO						
<u>SPRFMO DB:</u>	External server	SQL 2008	Internet	Internet or SQL	Yes	Yes Connection through manual upload
<u>Geo-Database</u>	Internal DB	ArcGIS	Lan	ArcGIS	No	
<u>Monthly catch reports:</u>	Internal DB	Excel	Lan	Excel	No	
WCPFC	n/s	n/s	n/s	n/s	n/s	n/s

Table 5. Data base structure

RFMO	Name of the database	Domain covered (type of data)					
		Biological – stock-related	Biological – métier-related	Catch / landings	Capacity	Effort	Environmental
CCAMLR	Catches and fishing effort (by fishing season)			X			
	Catch histories for selected species			X			
	Global landings and trades of toothfish			X			
CCSBT	Estimated Total Global Catch of Southern Bluefin Tuna			X			
	Catch and Effort Data			X			
	Catch at Size Data			X			
NAFO	STATLANT 21 A			X	X	X	
	STATLANT 21 B			X		X	
	V-Track (VTI)						
NEAFC							
IATTC	Longline data (Gridded DB)	X		X		X	
	Purse seine observer data for tuna fishery	X		X	X	X	X
	Logbook data	X		X	X	X	X
	Unloading data	X		X	X	X	X
ICCAT	Task I			X			
	Task II	X	X	X		X	
IOTC	Nominal Catches						

RFMO	Name of the database	Domain covered (type of data)					
		Biological – stock-related	Biological – métier-related	Catch / landings	Capacity	Effort	Environmental
	Catch and Effort						
	Size-Frequency						
	List of authorized vessel						
SEAFO	VMS						
	Scientific Observer	n/s		n/s			n/s
	Vessel Registry			n/s	n/s	n/s	
SPRFMO	SPRFMO DB	X	X	X	X	X	X
	GeoDatabase	n/s	n/s	n/s	n/s	n/s	n/s
	Monthly catch reports	n/s	n/s	n/s	n/s	n/s	n/s
WCPFC	n/s		X	X		X	

Table 6. Number and type of data calls

Number of data calls	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO
Biological data	5	2	1 (including in the FAO questionnaire) Receive data from Eurostat		60	4	7	n/s	5
Fleet economic data						0		n/s	
Aquaculture data						2		n/s	
Fishing effort regime					10	5		n/s	36
Processing industry					10	n/s		n/s	
Environmental data					10	0		n/s	5
TOTAL	5	2	1		90	>100	7	n/s	46
Related to DCF	0	0	0		0	0	0	0	0

Table 7. Data transmission

	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO
Transmission protocol	- E-mail	- E-mail	- E-mail	n/s	- E-mail - Download from web site	- E-mail - FTP	- E-mail	E-mail	- E-mail - Web services
Format	- Excel	Excel/ Access	- Excel/ Access	n/s	- Excel/ Access - Text	-Excel/Access -Text -xml -csv (-PDF-Form)		Excel/ Access	Excel/ Access
Changes in format in the last 2-3 years	n/s	no	No	n/s	No	Yes, minor changes (New recommendations / resolutions usually call for new data collected, plus changes in structure on data reporting requirements.)	n/s	n/s	No
Secured transmission	No	No	No	n/s	No (data received is summarised and generally considered public domain)	No	No	n/s	Yes Email (when the member chooses to encrypt files), Website via Https
Notification of changes to data providers	n/s	Separate e-mail	n/s	n/s	n/a	New e-forms available through Web page		n/s	Separate e-mail
Time frame of notification	n/s	More than 2 months	n/s	n/s	n/a	More than 2 months	n/s	n/s	Between less than 1

before submission									month to more than 2 months
Direct upload to DB by data providers	No	No	No	n/s	No	No	No	No	Yes
Data upload	n/s	Data sent to CCSBT and imported by CCSBT Staff via an automated procedure	Authorised NAFO staff put data manually in the DB	n/s	-Manually by staff -Automated procedure	-Manually by staff -Automated procedure: Special programs prepared to read standard forms, validate the data and integrate it directly in the databases.	- Manually by staff	Automated procedure (VB.net)	Automated procedure
Follow progress of data submission	n/s	Manually by own staff	Manually by own staff	n/s	Manually by own staff	Using inventories and summary catalogues (SQL programs)	Manually by own staff	n/s	Manually by own staff
Compatibility of data transmission calendar with data availability	n/s	Yes	Yes	n/s	Yes	Yes	n/s	n/s	Yes
Type of data received from DG MARE	n/s	n/s	n/s	n/s	n/s	E-forms transmitted by CPCs to EU and then forwarded to ICCAT by DG MARE	n/s	n/s	n/s

Table 8. Summary of validation processes and quality checks (M: manual check, S: software check)

RFMO	CCSBT		NAFO		NEAFC		IATTC		ICCAT		SPRFMO	
Type of data	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test
Biol. Métier	M	n/s	M	n/a	M	n/s	M	n/a	M	<u>Detailed and aggreg. data:</u> Availability, accessibility, missing val., coding, std. deviation, coeff. of var., sample size, typing errors, arithmetic checks, logic. checks, range / outliers, other <u>Detailed data:</u> Sampling rate <u>Aggreg data:</u> Duplicated records, timeliness	M	<u>Detailed data:</u> Availability, accessibility, timeliness, other sources
	S	n/s	S	n/a	S	n/s	S	n/a	S	<u>Detailed data:</u> Duplicated records, coding,	S	<u>Detailed data:</u> Missing values, duplicated records, coding,

RFMO	CCSBT		NAFO		NEAFC		IATTC		ICCAT		SPRFMO	
Type of data	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test
										sample size, typing errors, arithmetic checks, logic. checks, range / outliers, other <u>Aggreg. data:</u> Duplicated records		other, typing errors, arithmetic checks, logical checks, range/outliers (cross section, time series)
Biol. Stock	M	n/s	M	n/a	M	n/s	M	<u>Detailed data:</u> Timeliness <u>Aggreg. data:</u> Availability, accessibility, timeliness	M	<u>Detailed + aggreg. data:</u> Missing val., timeliness, coding, std. deviation, coeff. of var., sample size, typing errors, arith. checks, logic. checks, range/ outliers, other <u>Detailed data:</u> Sampling rate <u>Aggreg. data:</u> Availability,	M	<u>Detailed data:</u> Availability, accessibility, timeliness, other sources

RFMO	CCSBT		NAFO		NEAFC		IATTC		ICCAT		SPRFMO	
Type of data	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test
										accessibility, dupl. records,		
	S	n/s	S	n/a	S	n/s	S	Detailed + aggreg. data: Missing values, duplicated records, coding, typing errors, arithmetic checks, logical checks, range/outliers	S	Detailed data: Dupl. records, coding, sample size, arith. checks, logic. checks, range/outliers, other Aggreg. data: Duplicated records	S	Detailed data: Missing values, duplicated records, coding, other, typing errors, arithmetic checks, logical checks, range/outliers (cross section, time series)
Environmental	M	n/s	M	n/a	M	n/s	M	Detailed data: Timeliness	M	n/a	M	Not relevant
	S	n/s	S	n/a	S	n/s	S	Detailed + aggreg. data: Missing values, duplicated records,	S	n/a	S	Not relevant

RFMO	CCSBT		NAFO		NEAFC		IATTC		ICCAT		SPRFMO	
Type of data	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test
								coding, typing errors, arithmetic checks, logical checks, range/outliers				
Catch/landings	M	n/s	M	Aggreg. data: Availability, accessibility, timeliness, range/outliers, other sources	M	n/s	M	Not relevant	M	n/s	M	Aggreg. data: Availability, accessibility, timeliness, other sources
	S	n/s	S	Aggreg. data: Missing values, duplicated records, coding, typing errors, arithmetic checks,	S	n/s	S	Not relevant	S	n/s	S	Aggreg. data: Missing values, duplicated records, coding, other, typing errors, arithmetic checks, logical checks, range/outliers (cross section, time series)

RFMO	CCSBT		NAFO		NEAFC		IATTC		ICCAT		SPRFMO	
Type of data	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test	Type of check	Type of test
Capacity	M	n/s	M	n/s	M	n/s	M	Not relevant	M	n/s	M	Not relevant
	S	n/s	S	n/s	S	n/s	S	Not relevant	S	n/s	S	Not relevant
	M	n/s	M		M	n/s	M	Not relevant	M	n/s	M	Not relevant
Effort	S	n/s	S	Aggreg. data: Availability, accessibility, Missing values, duplicated records, timeliness, coding,	S	n/s	S	Not relevant	S	n/s	S	Not relevant

Note: Type of check: (M: Manual - S: Software)

Table 9. Storage of quality indicators

	NAFO	IATTC	ICCAT	SEAFO	SPRFMO
Quality indicators regarding the following primary data:					
- biological stock related data?	No	All	Some	n/s	Some
- biological metier related data?	No	n/a	Some		Some
- catch / landings data	No	All		n/s	Some
- capacity data	No	Some		n/s	Some
- effort data	No	Some		n/s	Some
- economic data of fleet	No				
- economic data on processing	No				
- economic data on aquaculture	No				
- environmental data	No	Some			Some
Quality indicators regarding the following aggregated data?					
- biological stock related data?	No	All	Some	n/s	
- biological metier related data?	No	n/a	Some		
- catch / landings data	No	All	Some	n/s	Some
- capacity data	No	Some	Some	n/s	
- effort data	No	Some	Some	n/s	
- economic data of fleet	No				
- economic data on processing	No				
- economic data on aquaculture	No				
- environmental data	No	Some			

Table 10. Dissemination

Dissemination DBs	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
Name	CCAMLR data	CSSBT data	STATLANT 21A & B		n/a	Task I Task II	IOTC database	n/a	SPRFMO Database	Driftnet Longline Pole-and-line Purse seine
Software	Excel via web site	Excel via web site	Access, SQL, Windows server, developed internally		n/a	Web-based application, Excel, Fish-stat, Access CSV (ASCII)	Excel via web site	n/a	A SQL 2008 Database via an ASP.Net application hosted externally on an Internet Information Server	PDF CSV
Accessibility			While the database is directly accessed by internal only the Secretariat has developed a web tool where anyone can use the tool to get data from the DB. As well csv files of data in the database are placed on the web for use by those interested.		n/a	Yes www.iccat.int/en/accesingdb.htm		n/a	Yes https://www.sprfmo.org/	http://www.wcpfc.int/folder/public-domain-data
Configuration:										

Dissemination DBs	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
Use of web services	no	no	No		n/a	No	no	n/a	Yes: ability to remote upload datasets, view data and download information	n/k (not known)
Use of catalogues of data			No		n/a	No		n/a	No	n/k
Updating frequency	<u>At least annually</u>	<u>Internal staff:</u> annually, ad-hoc	<u>Internal staff:</u> annually, ad-hoc <u>General public:</u> ad-hoc		n/a	<u>Internal staff:</u> Ad-hoc <u>Special user groups:</u> 3-monthly <u>General public:</u> 3- and 6-monthly	<u>At least annually</u>	n/a	<u>Internal staff:</u> monthly, ad-hoc <u>Special user groups:</u> annually	n/k
Active dissemination policy			No		n/a	Yes	No	n/a	Yes	n/k
Mode of notification			No		n/a	Newsletter / email	No	n/a	<u>Internal staff:</u> others <u>Special user groups + general public:</u> Newsletter / e-mail	n/k
Confidential data		Yes	No		n/a	No	Yes	n/a	<u>Internal staff:</u> no <u>Special user groups + general</u>	n/k

Dissemination DBs	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
									public: yes	
Service for ad-hoc extraction of data			By web-services / ad hoc request to DB manager		n/a	Task I: Extraction of XML files and pivot tables (Excel) Task II: DB is fully accessible		n/a	DB is fully accessible. Also: Web services, request to DB manager by mail	n/k (possibly through intranet)
Main users:										
ICES WGs	n/s				n/a	X	n/s	n/a	X	n/k
STECF WGs	n/s				n/a		n/s	n/a	X	n/k
RFMO WGs	n/s		NAFO Scientific Council, General Council		n/a	X (Task II only)	n/s	n/a	SPRFMO Scientific Committee	n/k
DG MARE	n/s				n/a	X	n/s	n/a	X	n/k
Other	n/s	CCSBT members	General public		n/a		n/s	n/a	General public, SPRFMO members	n/k

Table 11. Confidentiality of data

Data Access of Users	CCAMLR	CCSBT	NAFO	IATTC	ICCAT	IOTC	SEAFO	SPRFMO
Users		<p>Catch data: - Internal staff - Special user groups</p>		<p>Internal staff</p>	<p>Internal staff, special user groups and general public</p>		<p>VMS + Vessel Registry: - Internal staff Scientific Observer: - Internal staff - Special user groups</p>	<p>SPRFMO DB: - Internal staff - Special user groups - General public GeoDatabase: - Internal staff Monthly catch rep.: - Internal staff - Special user groups - General public</p>
Access rights				<p>Access to specifically defined data</p>	<p><u>Task I + Task II:</u> -Internal staff: full access. -Special user groups: access to aggreg. and specific. defined data. <u>Task I (dissem.):</u> -General public: Access to specific. defined data <u>Task II (dissem.):</u> -General public: Access to aggregated data</p>		<p>VMS + Vessel Registry: Full access Scientific Observer: From full access to access to specifically defined data</p>	<p>SPRFMO DB: - Internal staff: full access - Special user groups: aggregated data / specifically defined d. - General public: specifically defined d. GeoDatabase: - Internal staff: full access Monthly catch rep.: - Internal staff, special user groups, general public: full access</p>

Data Access of Users	CCAMLR	CCSBT	NAFO	IATTC	ICCAT	IOTC	SEAFO	SPRFMO
Access requirements	Login/password	Login/password		Login/password	<p><u>Task I + Task II:</u> -Internal staff + special user groups: Login / password <u>Task II:</u> -General public: open access</p>	Login/password	<p>VMS + Vessel Registry: Open access + other access requirements Scientific Observer: Other access requirements</p>	- Internal staff, special user groups: Login/password - General public: Open access
Available queries	- Statistic tables	- Statistic tables		- Statistic tables - Dynamic tables / filters	<p><u>Task I:</u> - Internal staff: Static tables, dynamic tables/filters - Special user groups: Dynamic tables/filters only <u>Task II:</u> - Internal staff + special user groups: Static tables + dynamic tables/filters - General public: Static tables only</p>	- Statistic tables	- Statistic tables - Dynamic tables / filters	- Dynamic tables / filters
Formats in which data is exported	Excel	Excel		- Excel/CSV/TXT - Access dbf	<p><u>Task I + Task II:</u> - Internal staff + special user groups: Excel/CSV/TXT, various</p>	Excel	- Excel/CSV/TXT	<p>SPRFMO DB: - Excel/CSV/TXT - XML GeoDatabase: - Excel/CSV/TXT</p>



Data Access of Users	CCAMLR	CCSBT	NAFO	IATTC	ICCAT	IOTC	SEAFO	SPRFMO
					DB engines (SQLite 3, MS-Access) - General public: Excel/CSV/TXT only <u>Task I only:</u> - Internal staff + special user groups: XML			- Shapefiles Monthly catch rep.: - Excel/CSV/TXT
Different levels of access				Yes	Internal staff + special user groups: Yes		VMS: No	SPRFMO DB: - Yes GeoDatabase: Monthly catch rep.: - No
Limits to the amount of data to be exported				No	No		No	No

Table 12. Institutional considerations

RFMO	Legal basis	Relationship to EU
CCAMLR	The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) was established by international convention in 1982 with the objective of conserving Antarctic marine life. (http://www.ccamlr.org/en/organisation/camlr-convention)	EU is a contracting party
CCSBT	Convention for the Conservation of Southern Bluefin Tuna (http://www.ccsbt.org/userfiles/file/docs_english/basic_documents/convention.pdf)	The EU has signed up as a Cooperating Non-Member of the CCSBT (http://www.ccsbt.org/userfiles/file/docs_english/basic_documents/Resolution_To_Establish_CooperatingNonMember_Status.pdf)
NAFO	Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, signed on 24 October 1978 in Ottawa, in force on 1 January 1979 http://www.nafo.int/about/overview/governance/convention.pdf	EU is a contracting party
NEAFC	Convention on the Future Multilateral Cooperation in North-East Atlantic Fisheries http://www.neafc.org/system/files/london-declaration_and_new_convention.pdf	EU is a contracting party
IATTC	The 2003 Antigua Convention (short for the Convention for the Strengthening of the Inter-American Tropical Tuna Commission established by the 1949 Convention between the United States of America and the Republic of Costa Rica http://www.iattc.org/PDFFiles2/Antigua_Convention_Jun_2003.pdf	EU is a contracting party
ICCAT	International Convention for the Conservation of Atlantic Tunas signed in Rio de Janeiro in 1966 (entered in force in 1969) http://www.iccat.int/Documents/Commission/BasicTexts.pdf	EU is a contracting party
IOTC	Is a Commission set up under Article XIV of the Constitution of the Food and Agriculture Organization of the United Nations http://www.iotc.org/files/proceedings/misc/ComReportsTexts/IOTC%20Agreement.pdf	EU is a contracting party
SEAFO	Convention on the Conservation and Management of Fishery Resources in the South East Atlantic Ocean (2001) http://www.seafo.org/pdf/SEAFO%20Convention.pdf	EU is a contracting party

RFMO	Legal basis	Relationship to EU
SPRFMO	The Convention on the Conservation and Management of High Seas Fishery Resources in the South Pacific Ocean http://www.southpacificrfmo.org/assets/Convention-and-Final-Act/2353205-v2-SPRFMOConvention-textascorrectedApril2010aftersignatureinFebruary2010forcertificationApril2010.pdf	EU is a contracting party
WCPFC	Convention on the Conservation and Management of High Migratory Fish Stocks in the Western and Central Pacific Ocean http://www.wcpfc.int/convention-text	EU is a contracting party

Table 13. Provisions for confidentiality

RFMO	Statutes include provisions for confidentiality	Provisions/constraints for access, transmission, storage and dissemination of data
CCAMLR	n/s	n/s
CCSBT	Yes	Refer to CCSBT's confidentiality rules (http://www.ccsbt.org/userfiles/file/docs_english/operational_resolutions/CCSBT_Confidentiality_Rules.pdf)
NAFO	Yes	Submission of STATLANT data by EU Member states via EUROSTAT is covered by Regulation (EC) No 217/2009 Requires states to submit data to Eurostat by May 31st (provisional, annual) and August 31st (final, monthly), to be forwarded by Eurostat to the NAFO Secretariat within 24 hours . The NAFO Conservation and Enforcement Measures (NCEM)
NEAFC	n/s	n/s
IATTC	Yes	Provisions for secure data access and storage. General provisions on confidentiality in the Antigua Convention: articles XIII (i), XVI.2, XVIII. 4 (a), and Part 5 Confidentiality" Resolutions C-51-01 on confidentiality; C-13-05-Procedures-for-confidential-data

RFMO	Statutes include provisions for confidentiality	Provisions/constraints for access, transmission, storage and dissemination of data
ICCAT	Yes	n/s
IOTC	n/s	n/s
SEAFO	Yes	n/a (Data confidentiality and availability is handled by a request for data procedure. A request is sent to the SEAFO Secretariat and data owners approve the request for data.)
SPRFMO	Yes	Refer CMM1.03 Standards for collection, reporting verification and exchange of data (para 8)
WCPFC	Yes	General provisions in the WCPFC Convention as well as specific rules and procedures for the protection, access to, and dissemination of data compiled by the Commission (http://www.wcpfc.int/doc/commission-01/rules-procedure)

Table 14. Origin of fundings

Origin of funding	Member States' contributions	Budget at supra-national organization
CCAMLR	X	
CCSBT	X	
NAFO	X	
NEAFC		

Origin of funding	Member States' contributions	Budget at supra-national organization
IATTC	X	X
ICCAT	X	
IOTC	X	
SEAFO	X	
SPRFMO	X	
WCPFC	X	

Table 15. Budget for IT concepts

DB development	NAFO	IATTC	ICCAT	SEAFO	SPRFMO
Own staff / external	Own staff + external	Own staff	Own staff + external	Own staff	External
Dedicated budget for DB development	Yes	No	Yes	No	No
Average budget last 3 years	US\$ 35,000 ⁽¹⁾	n/s	€ 30,000	n/s	n/s
Cost in 2012 for:					
Hosting infrastructure	US\$ 5,000 ⁽²⁾	n/s	€ 40,000	n/s	€ 12,000
Software license fees	US\$ 15,000 ⁽³⁾	n/s	€ 20,000	n/s	€ 7,500
IT maintenance	US\$ 15,000 ⁽³⁾	n/s	€ 15,000	n/s	€ 10,000 (upgrades)
Staff training	n/s	n/s	€ 5,000	n/s	

(1): about 26 000 €

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(2): about 3 700 €

(3): about 11 000 €

Table 16. Specifications of calls for data on landings and effort

Variable	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
Catch area	Area 48 (Atlantic Ocean sector), Area 58 (Indian Ocean sector) and Area 88 (Pacific Ocean sector). Integrated study regions ⁴	CCSBT Convention Area	NAFO Convention Area: the waters of the Northwest Atlantic Ocean north of 35°00' north latitude and west of a line extending due north from 35°00' north latitude and 42°00' west longitude to 59°00' north latitude, thence due west to 44°00' west longitude, and thence due north to the coast of Greenland, and the waters of the Gulf of St. Lawrence, Davis Strait	NEAFC Convention Area: (1) within those parts of the Atlantic and Arctic Oceans and their dependent seas which lie north of 36° north latitude and between 42° west longitude and 51° east longitude, but excluding: (i) the Baltic Sea and the Belts lying to the south and east of lines drawn from Hasenøre Head to Griben Point, from	IATTC Convention Area (Length frequency: latitude and longitude)	ICCAT Convention Area (31 defined area codes in Atlantic and Med.) (7 sampling areas / 78 sampling codes)	IOTC Convention Area: Indian Ocean (defined for the purpose of this Agreement as being FAO statistical areas 51 and 57) and adjacent seas, north of the Antarctic Convergence, insofar as it is necessary to cover such seas for the purpose of conserving and managing stocks that migrate into or out of the Indian Ocean.	SEAFO Convention Area	-SPRFMO Convention Area (FAO57, FAO71, FAO77, FAO81 and FAO87) -Areas under National Jurisdiction (monthly return)	WCPFC Statistical Area: -Longline (areas of 5° longitude and 5° latitude) -Purse-seine and ringnet (areas of 1° longitude and 1° latitude) -size composition (areas of 20° longit. and 10° latitude)

⁴ More in <http://www.ccamlr.org/en/organisation/convention-area-technical-description>



Variable	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
			and Baffin Bay south of 78°10' north latitude.	Korshage to Spodsbjerg and from Gilbjerg Head to the Kullen. and (ii) the Mediterranean Sea and its dependent seas as . far as the point of intersection of the parallel of 36° latitude and the meridian of 5°36' west longitude (2) within that part of the Atlantic Ocean north of 59° north latitude and between 44° west longitude and 42° west longitude.						
Harbour of landing									Port of unloading Port/ Point of Landing	Port of unloading

Variable	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
									Country of Landing (ISO 3-alpha country code)	
Time	- Year (landings) - Month (Effort)	- Year (Catch) - Month (Catch and effort for surface and longline fisheries / catch at size data)	Yearly and monthly catches Yearly effort		-Year -Month (cumulative catch by species and by fishing gear: purse seine and pole-and-line; length frequency)	-Year (Task I, Task II, catch estimates by size, catch from sport & recreational fisheries) -Trimester (southern ALB) -Month (BFT) -Week (BFT East Atl. + Med.)	-Year (annual catches) - Month (catch and effort)	Month (Special provisions: Patagonian toothfish, Deep-Sea Red Crab, Alfonsino, Orange Roughy: Catch report Every Five days of the Fishing Trip)	-Year (annual catch) -Month (monthly return)	-Year (annual catch estimates), -Month (catch & effort) -Quarter (size composit.: length &/or weight)
Vessel size				GT classes: 1,0-24.9 (Canada only) 2,25-49.9 (Canada only) 0,Not known 2,0-49.9 3,50-149.9					GT (gross tonnage)	GRT (gross registered tonnage): -Longline: 0-50, 51-200, 201-500, 500+ -Pole-and-line: 0-50, 51-150, 150+ - Purse

Variable	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
				4,150-499.9 5,500-999.9 6,1000- 1999.9 7,2000 & over						seine: 0– 500, 501– 1000, 1001– 1500, 1500+
Gear	Lines: LLS:Set longlines Bottom trawls OTB:Otter trawls OTB1:Side otter trawls OTB2:Stern otter trawls Midwater trawls OTM:Otter trawls OTM1:Side otter trawls OTM2:Stern otter trawls TMB:Midwater Beam Trawl Others: FPO:Pots SX:Seine nets JIG:Squid Jigger Type of longline AU:Autoline	Longline, Purse Seine, Pole and Line, Trol, Handline, Gill Net	43 gears		1 – Pole-and- line 2 – Purse seine sets on tuna associated floating objects 3 – purse seine sets on un- associated tunas 4 – purse seine sets on schools associated with marine mammals	52 gear codes / 15 gear groups			Alpha or numeric code (ISSCFG)	Driftnet Pole-and-line Troller Longline Purse Seine

Variable	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
	(single) SP:Spanish (double) TR:Trotline (vertical droppers/trot s attached to a mainline) VL:Vertical dropline (a single line) OT:Other									
Target species	FAO 3-alpha code	Only SBT (Southern Bluefin tuna)	FAO 3-alpha code		Various tropical tuna species: FAO 3-alpha code (1 – YFT 2 – SKJ 4 – BET) Besides sharks, etc.	FAO 3-alpha code (BFT, ALB, SWO, ...)	Tuna and tuna-like species (FAO 3-alpha code: ALB,ALV,BET ,BILL,BLM,B LT,...)	Various species, besides sharks, etc.	FAO 3-alpha code	Various tuna species
Mesh size										
Catch / Landings variables	Landing: Product Weight in Tonne Estimated Live Weight in Tonne	Catch in tonnes			Total catch: -numbers (-weight) -length/ weight of individual fish Estimated total	Atlantic bluefin tuna catches (BFT) Provisional accumul. southern albacore catches	Nominal catch: -tonnes Catch and effort: -tonnes		Annual catch: -tonnes Monthly return: -kg Fishing activity: -retained live	Catch in: - number - metric tonnes Size composition -length a/o -weight Length size

Variable	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
					retained catch (metric tonnes) Length frequency -number of fish -cm (1 cm length interval)	(southern ALB)			weight (kg) -discarded live weight (kg) Landings: -Total net/content weight for containers by Species (landed state/product type) (kg) -Landed ('live') Weight by Species (kg)	class intervals: *Skipjack +Albacore tuna – 1cm *Yellowfin + Bigeye tuna – ideally 1cm, but not more than 2 cm *Billfish – ideally 1cm, but not more than 5 cm
Effort variables	Effort in fishing hours and fishing days with the following variables: Hook count, pot count, number of fishing trip, number of hauls, ship HP etc...	Effort in hours				17 categories (-Number of fishing days -Number of (successful) sets -Number of trips -Number of hooks -Number of lines -Number of fishing hours	Effort in Fishing hours		-Number or duration of sets -Number of hooks (bottom longline, drop/dahn line) -Number of jigs per line (squid jiggling) -Number of	-Individual days fishing (driftnet, pole-and-line, trollers) -Number of Individual sets / duration (longliners, purse seiners) -Number of hooks per

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Variable	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT Etc...)	IOTC	SEAFO	SPRFMO	WCPFC
									pots set (potting)	set + Number of branch lines between floats (longliners)
Data source										

Table 17. Linking gears of the various data calls.

Gear categories	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
Number of gears										
Bottom beam trawls (TBB), Beam trawl, Beam										
Bottom otter trawls (OTB)										
Bottom pair trawls (PTB)										
Bottom Nephrops trawls (TBN)										
Bottom shrimp trawls (TBS)										
Bottom trawls (not specified) (TB)	OTB:Otter trawls									
Otter twin trawls (OTT)	OTB1:Side otter trawls								Bottom trawl: -Single -Double -Triple	
Otter trawls (not specified) (OT)	OTB2:Stern otter trawls									
Dem. trawl										
Boat or vessel seines (SV)										
Danish seines (SDN)										
Scottish seines (SSC)										
Fly shooting seine (SSC)										
Pair seines (SPR)										
Seine nets (not specified) (SX)										
Dem. seines										

Gear categories	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
Midwater otter trawls (OTM) Midwater pair trawls (PTM) Pelagic trawl (OTM, PTM) Midwater shrimp trawls (TMS) Midwater trawls (not specified) (TM)	OTM:Otter trawls OTM1:Side otter trawls OTM2:Stem otter trawls TMB:Midwater Beam Trawl				Trawl (TX)	Trawl (TRAW) Trawl: Mid-water pelagic trawl (MWT) Trawl: Mid-water paired trawl (MWTD)			Mid trawl: -Single -Double -Triple	
Purse seine, Surrounding net with purse lines (PS) Pelagic seine (PS)					Purse seine (PS)	Purse seine: Large scale (over 200 MT capacity – PSG) Purse seine (PS) Purse seine: Small scale (less than 50 MT capacity – PSS) Purse seine: Double-	Purse seine (PS)			Purse seiner

Gear categories	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
						boats (PSD) Purse seine: Medium scale (between 50 and 200 MT capacity – PSM) Purse seine: Using live bait (PSLB) Purse seine: Catching large fish (PSFB) Purse seine: Catching small fish (PSFS)				
Boat dredge (DRB) Hand dredge (DRH) Mechanized dredges (HMD)										
Lampara seine, Surrounding net						Haul seine (HS)				

Gear categories	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
without purse lines (LA) Beach seines (SB) Boat seine (SV) Pair trawls (not specified) (PT) Other trawls (not specified) (TX) Other active gears										
Polyvalent active gears										
Handlines and pole-lines (hand-operated) (LHP) Handlines and pole-lines (mechanized) (LHM) Set longlines (LLS) Drifting longlines (LLD) Longlines (not specified) (LL) Trolling lines (LTL) Hooks and lines (not specified) (LX)	AU:Autoline (single) SP:Spanish (double) TR:Trotline (vertical droppers/trots attached to a mainline) VL:Vertical dropline (a single line) OT:Other (please specify)				Longline (LL) Pole-and-line (LP) Troll (LTL) Hooks and lines (not specified -- LX)	Handline (HAND) Sport: Hand line (SPHL) Tended line (TL) Tended line: DISCARDS (TLD) Longline (LL) Longline: With mother boat (LLMB) Longline: Foreign-based	Longline (LL)		Bottom Lonline (BLL)	Longliner Pole and line Troller



Gear categories	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
						(LLFB) Longline: Home- based (LLHB) Longline: Bottom or Deep longliners (BLL) Longline: targeting ALB (Spain – LLALB) Longline: japanese (Spain - LLJAP) Longline:"S tone-ball" (Spain – LLPB) Longline: Targetting BFT (used by Italy - LLBFT) Longline: Targetting SWO (used by Italy -				

Gear categories	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
						LLSWO) Longline: Derivante (used by Italy – LL-deri) Longline: Surface (used by Italy – LL-surf) Longline: DISCARDS (LLD) Troll (TROL)				
Set gillnets (anchored) (GNS) Driftnets (GND) Encircling gillnets (GNC) Fixed gillnets (on stakes) (GNF) Trammel nets (GTR) Combined gillnets- trammel nets (GTN) Gillnets and entangling nets (not specified) (GEN) Gillnets (not specified) (GN)					Gillnet (GN)	Gillnet: Drift net (GILL) Gillnet: Drift nets - misto (used by Italy - GILLM) Gillnet: Targetting ALB (GILLALB) Gillnet: Targetting				Driftnet

Gear categories	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
						SWO (GILLSWO) Gillnet: DISCARDS (GILD) Trammel net (TN)				
Pots (FPO) Fyke nets (FYK) Stownets (FSN) Barriers, fences, weirs, etc (FWR) Aerial traps (FAR) Traps (not specified) (FIX)	FPO:Pots SX:Seine nets JIG:Squid Jigger				Tuna Trap/ <i>almadraba</i> (FPN)	Trap (TRAP) Trap: non- fixed trap (TRAPM)			Potting	
Stationary uncovered pound nets (FPN) Harpoons (HAR) Pumps (HMP) Portable lift nets (LNP) Boat-operated lift nets (LNB) Shore-operated stationary lift nets (LNS) Lift nets (not specified) (LN) Cast nets (FCN) Falling gear (not specified) (FG) Harvesting machines					Harpoon (HAR) Multi- purpose (MO) Other (OTR) Unknown (NK) Recreation al (RG)	Surface fisheries unclassified (SURF) Sport: Recreation al fisheries (mostly rod and reel – SPOR) Sport: Rod- and-reel DISCARDS (RRD) Sport: Rod- and-reel			Squid jigging Drop/Dahn Line	

Gear categories	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
(not specified) (HMX) Miscellaneous gear (MIS) Recreational fishing gear (RG) Glass eel fishing (GEF) Other passive gears						DISCARDS (small vessels – RRSD) Harpoon (HARP) Rod-and-reel (RR) Rod-and-reel catching large fish (RRFB) Rod-and-reel catching small fish (RRFS) Baitboat: Ice-well (BBI) Baitboat: Freezer (BBF) Baitboat (BB) Baitboat: Targetting ALB (BBALB) Unclassified				

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Gear categories	CCAMLR	CCSBT	NAFO	NEAFC	IATTC	ICCAT	IOTC	SEAFO	SPRFMO	WCPFC
						d: Gears not reported (UNCL) Unclassified: DISCARDS (UNCD)				
Polyvalent passive g.										
Active and passive g.										

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ANNEX 2.6.

INTEGRATION OF BIOLOGICAL AND ECONOMIC DATA

In order to integrate biological and economic data, it is necessary to assure consistency in definitions and aggregation levels of the central variables on landings and effort. In this connection, a distinction must be made between Atlantic and MBS areas, because the data is compiled from the MS in different ways. The following table presents all the required elements.

Below we discuss options for and implications of integration of biological and economic data. The three central / common variables are capacity, effort and landings. However, capacity is contained in effort and consequently is not discussed here.

There are four DCF-related data calls, requesting information on effort and landings:

- a. RDB - Fishframe – call for metier related data, Atlantic areas
- b. JRC – Effort regimes call, Atlantic areas
- c. JRC – MBS call
- d. JRC – fleet economic call, all areas

The details of the data requested under these calls are presented in the table below.

The specifications of the data collected in the MBS call is comparable to the two calls related to the Atlantic areas (RDB-Fishframe and Effort regimes). It is important to stress that all four calls have their own specific logic and purpose, which is the origin of the differences of the required specifications of effort and landings data. Consequently, adaptations to the data specifications may have (far reaching) consequences for the subsequent analysis.

The data is specified in every dimension in different levels of detail. Integration is feasible if the definitions are such that the data can be aggregated from lower to higher levels. This aggregation applies on one hand to call a, b and d and on the other hand to calls c and d.

This feasibility of aggregation among the four data calls can be assessed as follows.

- Catch area – ICES rectangles and GSAs can be aggregated to FAO level 3 and 4.
- Time – Aggregation from month to quarter and year does not present any problems.
- Vessel length – two problems exist, which cannot be easily resolved:
 - Effort regime call requests different vessel size than those defined in the Regulation 93/2010, for reasons of continuity of time series. This is particularly serious for the Atlantic area. Integrating effort regime call on one hand with RDB-Fishframe and economic call on the other is not possible. Economic and RDB-Fishframe are consistent.
 - Some MS have used ‘their own’ length definitions, e.g. 0-12 or 12-24, etc. The definitions also changed in course of time. This inconsistency could be resolved by estimating the required length groups from the available data.

In this way it would be possible to complete at least the time series since 2008.

- Gears – Economic call uses higher aggregation of gears than the other calls. Aggregation from the economic to other calls is not possible due to the difference in allocation of vessels to segments (see below – data source). In addition, the economic data call has several ‘polyvalent segments’, which cannot be retraced to specific individual gears.
- Target species – are not distinguished in economic call, but this does not affect the feasibility of aggregation.
- Mesh size – not distinguished in economic call (see below - data source).
- Landings and effort variables – the main variables are identical.

Data sources

The main problem in aggregating catch and effort data from calls a, b and d to the economic call (b) lies in the way in which vessels are allocated to segments.

In the a, b, d calls the effort and catches are allocated métiers, with very precise definition, at the level of gear and mesh size. Consequently, fishing effort of vessels which carry out a certain métier during one season and another métier during another season is allocated precisely to those two métiers.

However, the economic analysis is based on annual totals and vessels are assigned to a segment according to their ‘dominant gear’. At this moment it is not clear how the transversal variables are calculated for each segment.

AER gives data on fishing effort (e.g. kW-days or fishing days). Considering that vessels are allocated to a segment on the basis of their dominant gear, there are a few options:

- Data is based on sample of vessels used for economic data collection OR data is based on census (logbooks)⁵. Both cases should be mutually consistent, so that extrapolation of the sample data should give approximately the census total. This leads to correct data as long as the vessels use one gear only during the whole year.

BUT

If the vessels use several gears during the year, than they are allocated to a segment on the basis of the dominant gear, total effort is allocated to segments on the basis the dominant gear of vessels belonging to that segment (e.g. effort and landings of PT are allocated to DTS, if DTS>PT). In this case effort of other gears may be underestimated. In addition, we

⁵ In many MS, the transversal data is based on census (CR data).

The logo for 'cofad' is written in a bold, blue, sans-serif font.The logo for 'GOPA' features the word 'GOPA' in a bold, blue, uppercase, sans-serif font, with the words 'WORLDWIDE CONSULTANTS' in a smaller, blue, uppercase, sans-serif font directly below it.

may find catch which cannot be done with the dominant gear. The consequences have been discussed with DCR WGs already in 2006⁶.

⁶ Training Workshop on Fleet-based Approach, Nantes, 13-17 March 2006, Annex 1. Contribution to the terms of reference of the Workshop on fleet-fishery based approach. Classification of fishing activities combined to a new fleet segmentation: proposition to build an operational dataframe for the collection of fisheries data, Joël Vigneau, Fabienne Daures et.al

Specifications of calls for data on landings and effort

	RDBs – métier related (call 2013)	Economic data – JRC call	Effort regimes – JRC call (2013)** Atlantic areas	MBS call - JRC (effort and landings)	Eurostat	Control regulation** (submission to DG MARE – D4)	Control regulation (national data – eRS) Reg. 404/2011	GFCM
Catch area	ICES rectangle	FAO Level 4 (Baltic) FAO level 3 (other areas)	FAO and ICES rectangle	GSA	FAO Level 4 (Baltic) FAO level 3 (other areas)	FAO Level 4 (Baltic) FAO level 3 (other areas)	Geographic position	GSA
Harbour of landing	Harbour of landing*	Not applicable	Not applicable	Not applicable	Not applicable	Harbour of landing	Harbour of landing	
Time	Month	Year	Quarter	Quarter	Year	Month (quota sp.) Quarter (non-quota sp.)	Day / hour	Year
Vessel size	6 length classes (m) 0-10 10-12 12-18 18-24 24-40 40+ (App. III)	6 length classes (m) 0-10 (0-6) 10-12 (6-12) 12-18 18-24 24-40 40+ (App. III) Italics/brackets =MBS	length classes (m) according to area: Atlantic areas : -10m 10-15 15+ Baltic Sea : -8 8-10 10-12 12-18 18-24 24-40 40+	8 length classes (m) 0-6 0-12 6-12 12-18 12-24 18-24 24-40 40+	Total all Tonnage Classes (GT) 0-24.9 25-49.9 50-99.9 100-149.9 150-249.9 250-499.9 500-999.9 1000-1999.9 Tonnage unknown Total all length Classes (m) 0-5.9 6-11.9 12-17.9	Not applicable	Individual vessel	4 length classes (m) 0-6 6-12 12-24 24+

	RDBs – métier related (call 2013)	Economic data – JRC call	Effort regimes – JRC call (2013)*** Atlantic areas	MBS call - JRC (effort and landings)	Eurostat	Control regulation** (submission to DG MARE – D4)	Control regulation (national data – eRS) Reg. 404/2011	GFCM
					18-23.9 24-29.9 30-35.9 36-41.9 42+metres 0-8.9 9-11.9 30-32.9 33-41.9 Length unknown			
Gear (see details in table below)	58 gears (CRR 296, p.35-36) More detailed than the required DCF level 4.	12 gears (App. III)	9 gears	26 gears	Not applicable	Not applicable	Annex XI of 1224/2009	9 gears
Target species	DCF level 5 (App. IV)	Not applicable	Description of fishery – 40 characters	17 fisheries	Not applicable	Not applicable		
Mesh size	DCF level 6 (App. IV) – mesh sizes according to mgt regime	Not applicable	21 mesh sizes, according to mgt regime	10 mesh sizes	Not applicable	Not applicable	In mm	
Landings	Unallocated	Live weight in	Landings at age	Landings at age				

	RDBs – métier related (call 2013)	Economic data – JRC call	Effort regimes – JRC call (2013)*** Atlantic areas	MBS call - JRC (effort and landings)	Eurostat	Control regulation** (submission to DG MARE – D4)	Control regulation (national data – eRS) Reg. 404/2011	GFCM
variables	catch weight Area misreported catch weight Official landings weight	kg Value in euro	Discards at age	Discards at age				
Effort variables	Number of trips Number of sets / hauls Fishing time / soaking time kW-days GT-days Days at sea	Days at sea Energy consumption Fishing days GT fishing days kW fishing days Length of nets Maximum Days at Sea Number of fishing operations Number of fishing trips Number of hooks Number of nets Number of traps, pots Soaking time	Days at sea Fishing days GT per fishing days kW per fishing days	Nominal effort (kW-day-at-sea) GT-days-at-sea Number of vessels				
Data source	Census (due to ranking)	Census in most MS, except FR,	Effort and total landings by	Effort and total landings by				

	RDBs – métier related (call 2013)	Economic data – JRC call	Effort regimes – JRC call (2013)*** Atlantic areas	MBS call - JRC (effort and landings)	Eurostat	Control regulation** (submission to DG MARE – D4)	Control regulation (national data – eRS) Reg. 404/2011	GFCM
	system)	ES, IT and MT Energy cons. based on sample	Census (due to ranking system) Landings / discards at age by sampling	Census (due to ranking system) Landings / discards at age by sampling				

*Harbour of landing is not in the regulation, but asked in order to determine which ports are most important for certain species and consequently focus survey effort in those ports in order to save on travel costs.

**Reporting on non-EU waters may be different, see ACDR structure INTREP STAT_v25 p.8

*** Several MS are split into separate ‘countries’ (GBR to 6, PRT to 3); <http://datacollection.jrc.ec.europa.eu/web/dcf/dc/effort>

Source: Fishframe format CRR-296 – p.6

Linking gears of the four data calls.

RDBs – métier related (call 2013) - ICES	Economic data – JRC call	Effort regimes – JRC call (2013)*** Atlantic areas	MBS call (effort and landings)	GFCM
58 gears	12 gears (App. III)	9 gears:	26 gears:	9 gears
Bottom beam trawls (TBB)	Beam (TBB)	Beam (TBB)	Beam trawl (TBB)	Trawls
Bottom otter trawls (OTB) Bottom pair trawls (PTB) Bottom Nephrops trawls (TBN) Bottom shrimp trawls (TBS) Bottom trawls (not specified) (TB) Otter twin trawls (OTT) Otter trawls (not specified) (OT) Boat or vessel seines (SV) Danish seines (SDN) Scottish seines (SSC) Pair seines (SPR) Seine nets (not specified) (SX)	Dem. trawl / seine (OTB, OTT, PTB, SSC, SDN, SPR)	Otter (OTB, OTT, PTB) Dem_seine (SSC, SDN, SPR)	Bottom otter trawl (OTB) Bottom pair trawl (PTB) Multi-rig otter trawl (OTT) Anchored seine (SDN) Pair seine (SPR) Fly shooting seine (SSC)	Tuna seines
Midwater otter trawls (OTM) Midwater pair trawls (PTM) Midwater shrimp trawls (TMS) Midwater trawls (not specified) (TM)	Pelagic trawl (OTM, PTM)	Pelagic_trawl (OTM, PTM)	Midwater otter trawl (OTM) Midwater pair trawl (PTM)	Pelagic trawl
Purse seine, Surrounding net with purse lines (PS)	Purse seine (PS)	Pelagic_seine (PS)	Purse seine (PS)	Purse seine
Boat dredge (DRB) Hand dredge (DRH) Mechanized dredges (HMD)	Dredge	Dredge (DRB, HMD)	Boat dredge (DRB)	Dredge
Lampara seine, Surrounding net without purse lines (LA) Beach seines (SB) Pair trawls (not specified) (PT) Other trawls (not specified) (TX)	Other active gears		Beach seine (SB) Boat seine (SV)	

RDBs – métier related (call 2013) - ICES	Economic data – JRC call	Effort regimes – JRC call (2013)** Atlantic areas	MBS call (effort and landings)	GFCM
	Polyvalent active gears			Polyvalent Small-scale vessels without engine Polyvalent Small-scale vessels with engine Polyvalent vessels
Handlines and pole-lines (hand-operated) (LHP) Handlines and pole-lines (mechanized) (LHM) Set longlines (LLS) Drifting longlines (LLD) Longlines (not specified) (LL) Trolling lines (LTL) Hooks and lines (not specified) (LX)	Hooks	Hooks ⁷ (LHP,LHM, LTL,LLD,LLS)	Pole lines (LHP) Hand lines (LHM) Trolling lines (LTL) Drifting longlines (LLD) Set longlines (LLS)	Long lines
Set gillnets (anchored) (GNS) Driftnets (GND) Encircling gillnets (GNC) Fixed gillnets (on stakes) (GNF) Trammel nets (GTR) Combined gillnets-trammel nets (GTN) Gillnets and entangling nets (not specified) (GEN) Gillnets (not specified) (GN)	Drift and fixed nets	Gillnets (GNS, GND) Trammel (GTR)	Driftnet (GND) Set gillnet (GNS) Trammel net (GTR)	
Pots (FPO) Fyke nets (FYK) Stownets (FSN) Barriers, fences, weirs, etc (FWR)	Pots and traps	Pots (FPO)	Pots and Traps (FPO) Fyke nets (FYK)	

⁷ Called 'Longline'

RDBs – métier related (call 2013) - ICES	Economic data – JRC call	Effort regimes – JRC call (2013)*** Atlantic areas	MBS call (effort and landings)	GFCM
Aerial traps (FAR) Traps (not specified) (FIX)				
Stationary uncovered pound nets (FPN) Harpoons (HAR) Pumps (HMP) Portable lift nets (LNP) Boat-operated lift nets (LNB) Shore-operated stationary lift nets (LNS) Lift nets (not specified) (LN) Cast nets (FCN) Falling gear (not specified) (FG) Harvesting machines (not specified) (HMX) Miscellaneous gear (MIS) Recreational fishing gear (RG)	Other passive g.		Stationary uncovered pound nets (FPN) Lampara nets (LA) Glass eel fishing (GEF)	
	Polyvalent passive g.			
	Active and passive g.			

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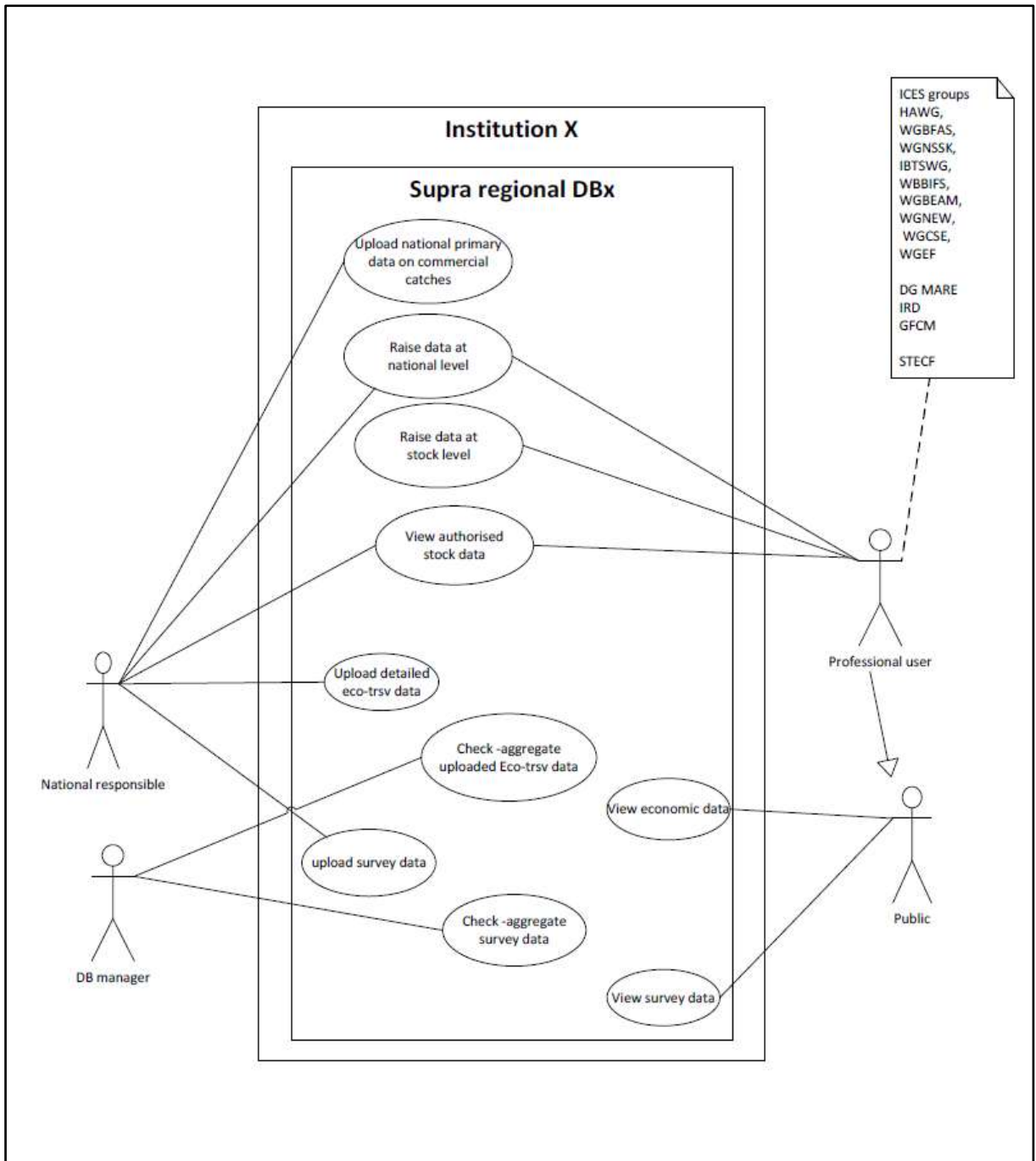


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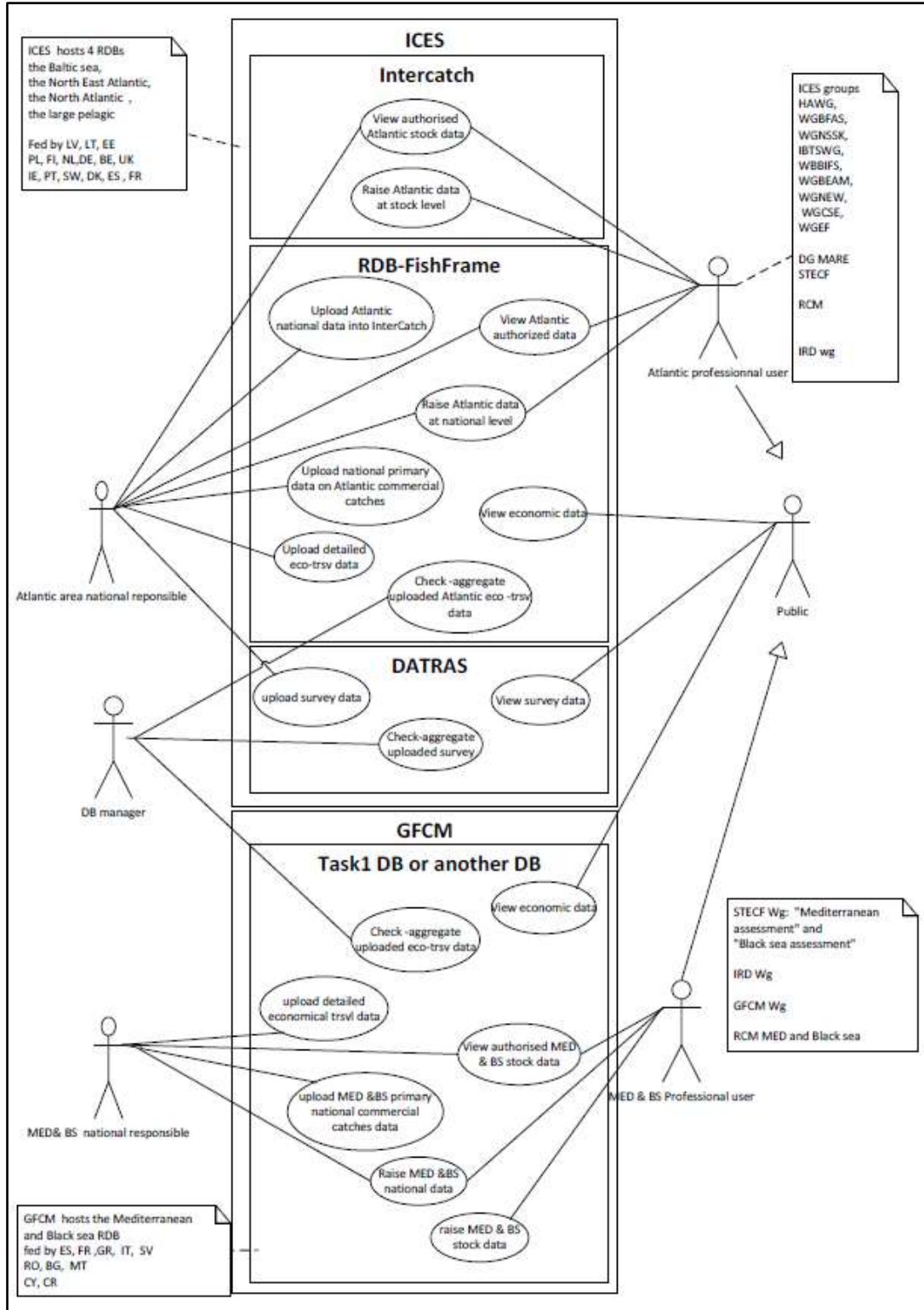
ANNEX 2.7.

UMLs

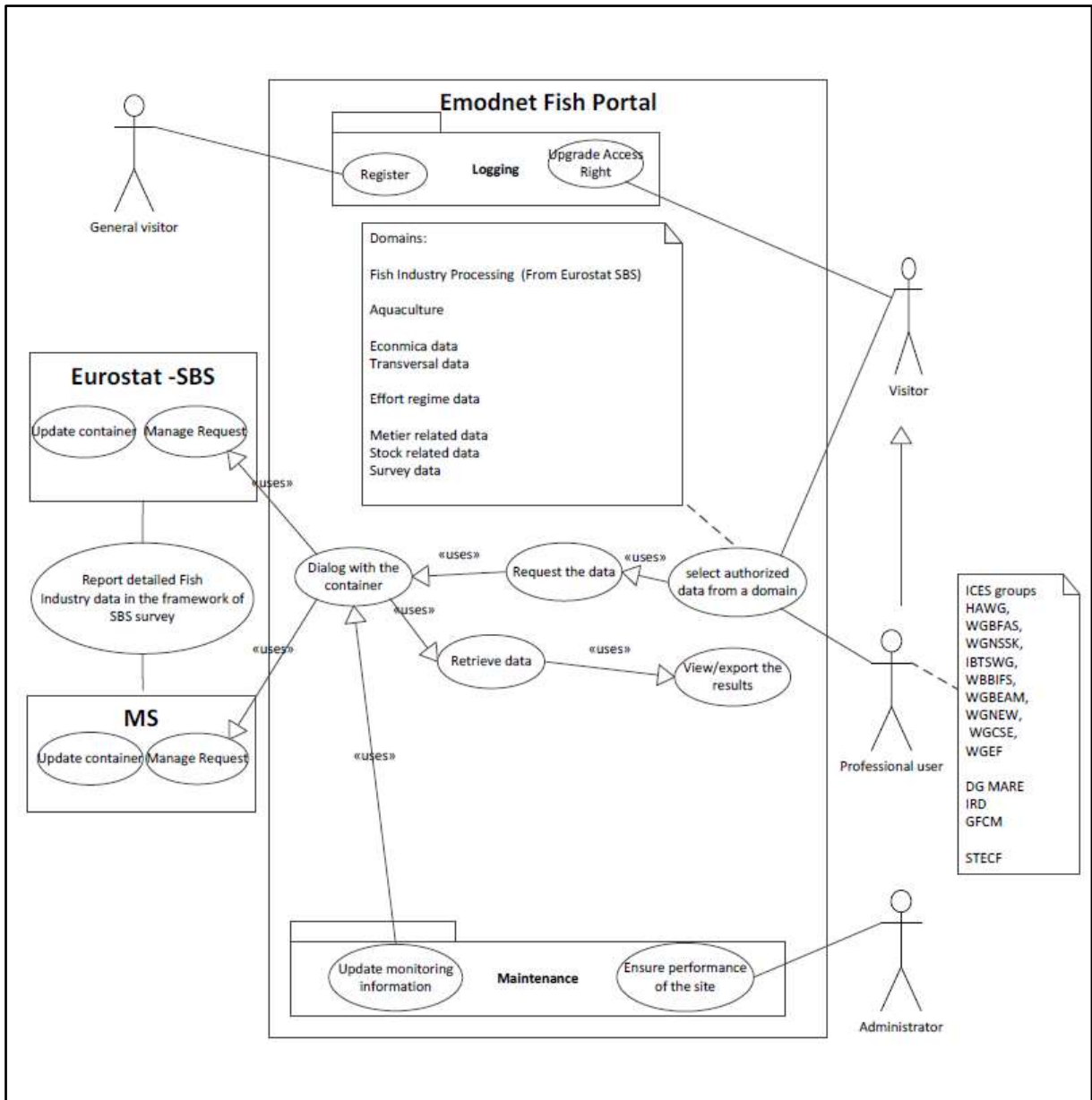
Scenario 1. Supra-regional database



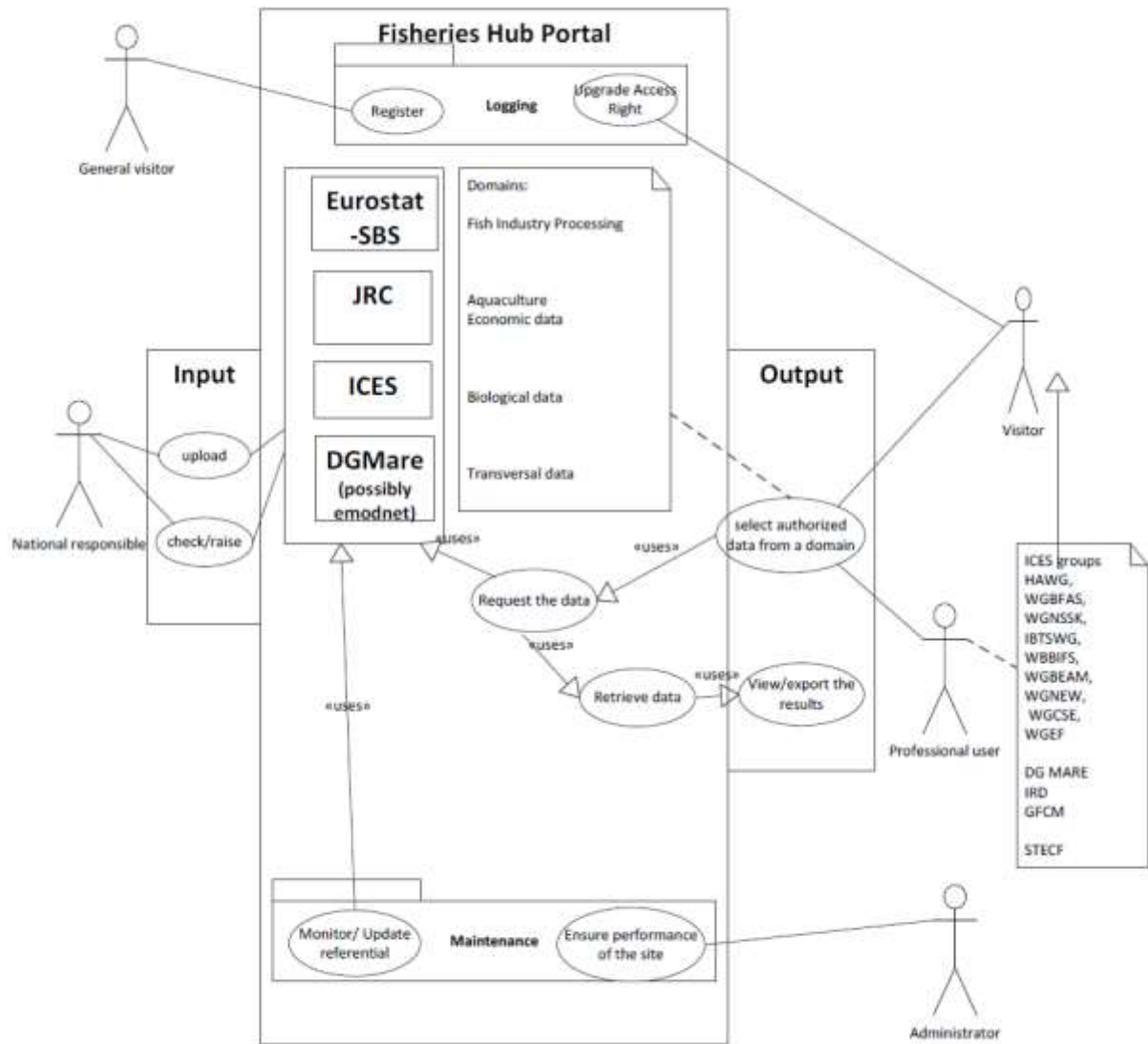
Scenario 2. Regional nodes



Scenario 3. Network



Scenario 4. Fisheries data hub



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ANNEX 2.8.

COMPARISON OF DATA CALLS

Table 1: Transversal Data

	RDBs – métier related (call 2013)	Economic data – JRC call	Effort regimes – JRC call (2013)*** Atlantic areas	MBS call - JRC (effort and landings)	Eurostat	GFCM
Formats	TXT or XML files uploaded through a Web interface	Excel files uploaded through a Web interface	Excel files uploaded through a Web interface	Excel files uploaded through a Web interface	SDMX-ML and semi-automated upload	CSV/XML
Protocols	https/ASP .NET	https	https	In LAN	eDAMIS	e-mail
Catch area	ICES rectangle	FAO Level 4 (Baltic) FAO level 3 (other areas)	FAO and ICES rectangle	GSA	FAO Level 4 (Baltic) FAO level 3 (other areas)	GSA
Harbour of landing	Harbour of landing*	Not applicable	Not applicable	Not applicable	Not applicable	
Time	Month	Year	Quarter	Quarter	Year	Year
Vessel size	6 length classes (m) 0-10 10-12 12-18 18-24 24-40 40+ (App. III)	6 length classes (m) 0-10 (0-6) 10-12 (6-12) 12-18 18-24 24-40 40+ (App. III) Italics/brackets=MB S	length classes (m) according to area: Atlantic areas : -10m 10-15 15+ Baltic Sea : -8 8-10 10-12 12-18 18-24 24-40 40+	8 length classes (m) 0-6 0-12 6-12 12-18 12-24 18-24 24-40 40+	Total all Tonnage Classes (GT) 0-24.9 25-49.9 50-99.9 100-149.9 150-249.9 250-499.9 500-999.9 1000-1999.9 Tonnage unknown	4 length classes (m) 0-6 6-12 12-24 24+
					Total all length Classes (m) 0-5.9 6-11.9 12-17.9 18-23.9 24-29.9	

	RDBs – métier related (call 2013)	Economic data – JRC call	Effort regimes – JRC call (2013)*** Atlantic areas	MBS call - JRC (effort and landings)	Eurostat	GFCM
					30-35.9 36-41.9 42+metres 0-8.9 9-11.9 30-32.9 33-41.9 Length unknown	
Gear (see details in table below)	58 gears (CRR 296, p.35-36) More detailed than the required DCF level 4.	12 gears (App. III)	9 gears	26 gears	Not applicable	9 gears
Target species	DCF level 5 (App. IV)	Not applicable	Description of fishery – 40 characters	17 fisheries	Not applicable	
Mesh size	DCF level 6 (App. IV) – mesh sizes according to mgt regime	Not applicable	21 mesh sizes, according to mgt regime	10 mesh sizes	Not applicable	
Landings variables	Unallocated catch weight Area misreported catch weight Official landings weight	Live weight in kg Value in euro	Landings at age Discards at age	Landings at age Discards at age		

	RDBs – métier related (call 2013)	Economic data – JRC call	Effort regimes – JRC call (2013)*** Atlantic areas	MBS call - JRC (effort and landings)	Eurostat	GFCM
Effort variab les	Number of trips Number of sets / hauls Fishing time / soaking time kW-days GT-days Days at sea	Days at sea Energy consumpt ion Fishing days GT fishing days kW fishing days Length of nets Maximum Days at Sea Number of fishing operation s Number of fishing trips Number of hooks Number of nets Number of traps, pots Soaking time	Days at sea Fishing days GT per fishing days kW per fishing days	Nominal effort (kW- day-at-sea GT-days-at- sea Number of vessels		
Data source	Census (due to ranking system)	Census in most MS, except FR, ES, IT and MT Energy cons. based on sample	Effort and total landings by Census (due to ranking system) Landings / discards at age by sampling	Effort and total landings by Census (due to ranking system) Landings / discards at age by sampling		

Fish processing data		
	Eurostat (SBS)	JRC (DCF)
Data transmission modalities		
Format	Appropriate technical format, depending on the MS	Excel files uploaded through a web interface
Protocol	eDAMIS	https
Groups of variables		
Structure of the processing sector	Number of enterprises (11 11 0)	Number of enterprises (by size)
	Number of local units (11 21 0)	
	Number of kind of activity units (11 31 0)	
Employment	Number of persons employed (16 11 0)	Number of persons employed (by gender)
	Number of employees in FTE units (16 14 0)	
	Number of employees (16 13 0)	
	Number of hours worked by employees (16 15 0)	
Turnover / Income	Turnover (12 11 0)	Turnover (12 11 0) Other income Subsidies
	Turnover from principal activity (18 11 0)	
Operational costs	Personnel costs (13 31 0)	Wages and salaries of staff (13 31 0) Imputed value of unpaid labour
	Wages and salaries (13 32 0)	
	Purchases of energy products (in value) (20 11 0)	Energy costs (20 11 0)
	Total purchases of goods and services (13 11 0)	Raw material costs Other operational costs Financial costs, net Extraordinary costs, net
	Purchase of goods and services purchased for resale in the same condition as received (13 12 0)	
	Social security costs (13 33 0)	
	Payments for agency workers (13 13 1)	
Capital costs		Depreciation of capital
Capital value		Total value of assets (43 30 0) Debt
Performance	Gross margin on goods for resale (12 13 0)	
	Value added at factor cost (12 15 0)	
	Gross operating surplus (12 17 0)	
	Change in stocks of finished products and work in progress manufactured by the unit (13 21 3)	
Investments	Gross investments in tangible goods (15 11 0)	Net investments (15 11 0 / 15 21 0)
	Sales of tangible investment goods (15 21 0)	
	Payments for long-term rental and operational leasing of goods (13 41 1)	
	Gross investment in land (15 12 0)	
	Gross investment in existing buildings and structures (15 13 0)	
	Gross investments in construction and alteration of buildings (15 14 0)	
Gross investment in machinery and equipment (15 10 0)		
Environmental investments	Investment in equipment and plant for pollution control and special anti-pollution accessories (21 11 0)	
	Investment in equipment and plant linked to cleaner technology (21 12 0)	

Tables 2A and 2B: Processing and aquaculture (JRC - Eurostat)

Aquaculture Data		
	Eurostat	JRC
Transmission modalities		
Format	SDMX-ML and semi-automated upload	Excel files uploaded through web interface
Protocol	eDAMIS	https
Variables requested		
Number of variables	3 variables on aquaculture sector production (not collected through SBS): 1. Production of aquaculture (<i>by species and farming technique in unit and unit value</i>) 2. Input to capture-based aquaculture (<i>by species in volume and unit value</i>) 3. Production of hatcheries and nurseries (<i>by species in millions of eggs and juveniles</i>)	22 economic variables on aquaculture sector (similar to SBS requirements): 1. Turnover 2. Subsidies 3. Other income 4. Wages and salaries 5. Imputed value of unpaid labour 6. Energy costs 7. Livestock costs 8. Feed costs 9. Repair and maintenance 10. Other operational costs 11. Depreciation of capital 12. Financial costs, net 13. Extraordinary costs, net 14. Total value of assets 15. Net investments 16. Debt 17. Livestock 18. Fish feed 19. Volume of sales 20. Number of persons employed 21. FTE National 22. Number of enterprises
	1 variable on aquaculture sector structure: 4. Size of facilities (<i>in thousand m³ and hectares</i>)	
Sector segmentation		
By species groups	A. Fish B. Crustaceans C. Molluscs D. Seaweeds	Salmon Trout Sea bass & Sea bream Carp Other fresh water fish Other marine fish Mussel Oyster Clam Other shellfish
By farming techniques	1. Ponds (A+B) 2. Tanks and raceways (A+B) 3. Enclosures and pens (A+B) 4. Cages (A) 5. Recirculation systems (A) 6. On bottom (C) 7. Off bottom (C) 8. Other methods (A+B+C+D)	1. Fish farming techniques <i>Hatcheries and nurseries</i> <i>On growing</i> <i>Combined</i> <i>Cages</i> 2. Shellfish farming techniques <i>Rafts</i> <i>Long line</i> <i>Bottom</i>

		Other
By type of water	Freshwater Saltwater Total	

Table 3: RFMOs and Eurostat

	Eurostat	RFMOs
Transmission Modalities		
Format	SDMX-ML and semi-automated upload	Excel/Access
Protocol	eDAMIS	E-mail
Data Collected		
Transversal	Yes	Yes (IATTC, ICCAT, SPRFMO, WCPFC)
Biological	No	Yes
Economic	Yes	No
Aggregations levels for transversal data (where overlap might exist)		
Catch area	FAO Level 4 (Baltic) FAO Level 3 (other areas)	Mostly rectangle (30'x1°, 1°x1°) FAO Level 3
Time	Year	Mostly year

Table 4. Effort needed by MS to respond to data calls

TOTAL OF AVAILABLE INFORMATION																								
Name	Effort needed to respond to calls (man-days)																				TOTAL PER CALL			
	BE	BG	DE	DK	ES	EST	FI	FR Ifremer	FR IRD	FR FARM	GR	IE	IT	LT	LV	MT	NL	PO	PT	RO		SI	SE	UK
Call for data concerning the EU fish processing industry 2008-2011	22	20	5	10	30		5		2	2	30	5	1 to 14	30	2			20				15	15	185 to 229
Call for data concerning the EU fish processing industry 2008-2010															30									30
Call for data concerning the EU fish processing industry 2006-2009						20	5		3			5												33
Call for data concerning the EU aquaculture sector 2008-2011	15	26	2	10	30		10				30	5		30	6			4				13		160 to 190
Call for data concerning the EU aquaculture sector 2008-2010															30									30
Call for data concerning the EU aquaculture sector - 2007-2010						8	10																	18
Call for data concerning the EU aquaculture sector - 2006-2009							10					5												15
Official call for data on landings, discards, length and age compositions, fishing effort, trawl and hydro surveys in the MBS	-				20	30	-	6 (transversal)+50 (biological+survey)				15			50				1 month		5			128 to 158
TOTAL OF AVAILABLE INFORMATION																								

Name	Effort needed to respond to calls (man-days)																				TOTAL PER CALL			
	BE	BG	DE	DK	ES	EST	FI	FR Ifremer	FR IRD	FR FAM	GR	IE	IT	LT	LV	MT	NL	PO	PT	RO		SI	SE	UK
Fishing effort management schemes related to recovery and management plans in the Baltic Sea, the North Sea, to the Western waters, to the deep sea fisheries and review of fisheries located in the Celtic Sea	20		15	20	5060	1000	7 (catch and effort), 7 (biological), 3 (correspondence with JRC and unknown end users)	7						7 to 20	50		10	20	15				100015	296 to 391
Call for fleet economic scientific data concerning 2008-2013	20	30	20	20	5030	20	15	145				30	7	4 to 20	60	10		20			3 months		24	430 to 480
Call for fleet economic scientific data concerning 2008-2012														4 to 20										4 to 20
Call for fleet economic scientific data concerning 2008-2011															60									60
Call for fleet economic scientific data concerning 2002-2011														4 to 20										4 to 20
Call for catch, effort, biological sampling data to the Regional Data Base for the use of RCM's 2011				5																				5
Call for catch, effort, biological sampling data to the Regional Data Base for the use of RCM's 2009 -2012				5																				5
RCM 2013 DataCall:	20																	10						30

Data call for commercial fisheries landing and sample data for the 2013 Regional Coordination Meetings							1 0 0	5															6 to 20						2 0						131 to 151		
TOTAL OF AVAILABLE INFORMATION																																					
Name	Effort needed to respond to calls (man-days)																												TO TAL PE R CAL L								
	B E	B G	D E	D K	E S	E S T	FI	FR lfrem er	FR IR D	FR FA M	G R	I E	I T	LT	L V	M T	N L	P O	P T	R O	S I	S E	U K														
Data call for commercial fisheries landing and sample data for the 2012 Regional Coordination Meeting.							5							6 to 20																							11 to 31
ICES data call Baltic flounder and dab							5																														5
VMS data call (ICES cancelled this soon after launching)							2																														2
ICES data request – Baltic salmon and trout							4																														4
ICES data call on Eel							2																														2
Data call: Cephalopods fisheries and biological DCF data in support of ICES work of the Cephalopods Working Group (WGCEPH)																																			1 0		10
Eel data																																		5		5	
RCM 2012 Data call				5																															2 5		30
SWWRAC data call for scientific survey data, to support analysis required to review the recovery plan of southern hake and Nephrops stocks (2011)																																			3		3
Official scientific Plan call for aggregated data to assist a Research Project on Provision of advice for the																																		1 5		15	

																									30		
ICES datacall WGCSE and WGMIXFISH-METH																									1	1	
ICES Cephalopods species and fisheries																									2	2	
ICES WGWIDE (Norwegian spring spawn herring, Mackerel, Horse M, Sardine and Anchovy WG																									1	1	
Data call for RCM Baltic, RCM North Sea & Eastern Arctic and RCM North Atlantic																									25-30	25 to 30	
TOTAL OF AVAILABLE INFORMATION																											
Name	Effort needed to respond to calls (man-days)																							TOTAL PER CALL			
	B E	B G	D E	D K	E S	E S T	F I	F R ifremer	F R I R D	F R F A M	G R	I E	I T	L T	L V	M T	N L	P O	P T	R O	S I	S E	U K				
DG MARE - Data related to fishing effort regimes - "SGMOS" EWG 12-06 EWG 12-12																									15	15	
GEPETO Atlas (SWWRAC)			4														5									9	
ICES WGCSE	20		0.5																							20,5	
Official call for aggregated data on catches and discards in the NAFO Area						20								4 to 15												24 to 39	
Call for data concerning the Information request on Capacity, Effort and TAC uptake						10									10											20	
Datacall "balance between fleet capacity and fishing opportunities".						1																				1	
Data request concerning Deep-Sea Species fisheries														2 to 15												2 to 15	

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ANNEX 2.10.

DIGIR- DISTRIBUTED GENERIC INFORMATION RETRIEVAL⁸

(Extract of Initial Specification and Implementation - Requirements and Assumptions -
Revision 0.92)

⁸ http://digir.sourceforge.net/gen/requirements_o_92.html



Project Purpose & Goals

The initial purpose and scope of this project is to support distributed data retrieval across a loosely coupled federation(s) of biological collection databases. Many such databases exist (perhaps > 1,000) and a growing subset (> 100) have been made publicly available via the Web. Several client-server systems exist that allow a user to query several databases at once, but the protocols, semantics and software are all tightly coupled in each of these systems. There is no standard and/or unified method to do distributed queries. This project hopes to establish an open standard and lay the groundwork for a generic protocol, capable supporting many communities, without regard to discipline or domain (data semantics).

Our design goals include:

- to use open protocols and standards, such as HTTP, XML, and UDDI to leverage existing and emerging IT infrastructure;
- to de-couple the protocol, software and semantics; [Portal and provider software can be developed independently. We expect each portal to cater toward different (sub) communities and data integration functions (e.g., collection data with geographic layers). Different implementations of providers and portals may be targeted for different operating systems]
- to automate the establishment of a new provider as much as possible, automatable tasks include installation of provider software, testing, and registration of the provider in a centralized, global registry.

Protocol and Components:

- Assumes each community will provide both a federation schema and summary (metadata) schema specified using XML-Schema.
- Assumes the federation schema defines a core set of columns that must be supported by providers. (The core subset for a collection object record is currently: ProviderIP, InstitutionCode, CollectionCode, CatalogNumber, LastEditedTimeStamp?)
- Must define format of message to obtain metadata information.
- Must define format of message to return metadata information.
- Must define the core set of query operations (current required operation: exact match) and should define the set of optional query operations.
- Must define syntax to represent query (as in collections db query).
- Must define the core set of result set option types (i.e. count?, brief, full, etc.).
- May allow for the ability to support a variety of federation schemas (i.e. by taxonomic discipline).

- Must define format of message that encapsulates an entire request for a search (including the target, query options and query).
- Must define format of query results.
- Must define format of error messages and return codes. This is expected to be an enumerated list of error codes/responses.
- Must define format of message that encapsulates an entire response from a search (including the result set, error messages, and return codes).
- May define format of messages to perform heartbeat checks (i.e. status) on providers.

Portal:

- Must always communicate with providers via complete messages formatted according to the protocol.
- Must issue identical request to each provider being queried.
- Should gracefully handle incomplete response messages as a result of catastrophic failure at the provider level.
- Must be able to handle error conditions returned from providers.
- May timeout requests to providers.
- May request provider metadata information.
- May communicate with registry to discover providers.
- May limit which providers are queried according to metadata.
- May perform heartbeat/status checks on providers.
- Should provide a user interface of some form or another.

Provider:

- Must always communicate with portal via complete messages formatted according to the protocol.
- Must accept N number of requests at any given time.
- May support N number of collections databases, each of varying type with different offerings.
- Must support the core subset of federation schema columns, and optionally may support additional columns.
- Must support the core subset of operations, and optionally may support additional operations.
- Must maintain metadata information for retrieval and must timestamp that data in order to provide changes/updates to portal.
- Must be able to return metadata information in the appropriate response format.
- Must be able to translate query into appropriate form to select results from a federation schema compliant database.
- Must be able to return results from an operation in the appropriate response format.



- Must treat a result set as an indexed array, such that consecutive requests will pan through results. May issue re-indexed data as a result of an insert or delete.
- Must communicate error conditions back to caller in appropriate form.
- Recommended to be registered as a provider in the registry (may be automated or manual).
- May respond to heartbeat/status checks.
- May timeout requests from portals and issue the appropriate error response.

Registry:

- Must be able to store name, access, and services information on providers.
- Must respond to requests for provider information.
- Must be available to anyone to find providers.
- May restrict who can register as a provider (for security)?
- May also allow for registration of portals for universal discovery.

Assumptions:

- The Protocol will make use of XML over HTTP for at least portal <-> provider communication.
- A federation schema(s) will exist that providers will conform to (at least a core subset of) for the purposes of standardized queries.
- Federation schema(s) will define data types and units of measure for each column.
- Federation schema(s) will be represented as XML Schema as well as one or more relations (tables and/or views).
- Federation schemas will be versioned and may exhibit attributes of inheritance (where additional attributes beyond a generic set can be added for particular disciplines. For example, the attribute "Depth" isn't used in bird databases, but is commonly used in fish databases).
- Possible enhancements to the protocol imply that the protocol will be versioned. Likely, the protocol will be versioned in conjunction with the federation schema.
- Collections data will likely reside in tables/views on relational databases and will be communicated with via DBI/ODBC/JDBC.
- The registry will likely be an existing UDDI registry, such as those offered freely by IBM and/or Microsoft.
- Interfacing with a UDDI registry is already well defined.
- Collections will be able to be typed (i.e. will be classifiable) with 1 - N defined types.
- It is not required for providers to maintain any notion of state.
- A provider will be further divided into service-based components, suggested ones for design are the "Query Translation Component" and the "Metadata Component". Ideally, all of such components will have well defined APIs such that each component could exist under several implementations and will be pluggable.
- A portal will be further divided into service-based components, such as the "Query Engine Component". Ideally, all of such components will have well defined APIs



such that each component could exist under several implementations and will be pluggable.

Exclusions:

- Access control will not be specified in this version.
- UI requirements are purposely excluded to allow for flexibility and diverse portal offerings.

Questions/Issues/Open Items:

- What is the defined metadata schema?
- What will we call this thing?
- What are the logging requirements?
- What are the monitoring requirements?
- What are the configuration requirements?
- What are all the error codes to be enumerated?