



UN/CEFACT

SIMPLE, TRANSPARENT AND EFFECTIVE PROCESSES

FOR GLOBAL BUSINESS

BUSINESS REQUIREMENTS SPECIFICATION (BRS)

Fishing Activity (FA) domain

Business domain: Fisheries

Business process: Electronic data exchange for fisheries control and management

Document identification: P1000 – 3; Fishing Activity domain

Title: Fisheries Language for Universal eXchange

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Business Requirements Specification

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1 Preamble

This BRS document builds upon the general principles set out in the P1000-1; General Principles BRS document; It details the Fishing Activity business domain identified in P1000-3.

This BRS is standardizing a part of reporting data exchanges between state administrations, using the UN/CEFACT Modelling Methodology (UMM) approach and Unified Modelling Language.

The structure of this document is based on the structure of the UN/CEFACT Business Requirements Specification (BRS) document reference CEFACT/ICG/005.

2 References

UN/CEFACT Modelling Methodology User Guide (CEFACT/TMG/N093)

UN/CEFACT Business Requirement Specification (BRS) Document Template (CEFACT/ICG/005)

UN/CEFACT FLUX P1000 – 1: General Principles BRS Document (v2.x)

UN/CEFACT FLUX P1000 – 2: Vessel BRS Document (v3.x)

UN/CEFACT FLUX P1000 – 7: Vessel Position BRS Document (v2.x)

UN/CEFACT FLUX P1000 – 9: Fishing License, Authorization and Permit (FLAP) BRS Document (v1.x)

3 Objective

The objective of this document is to describe business requirements based upon business cases for exchanging information related to vessel and catch activity that occurs during a fishing trip. Different definitions of "fishing trip" and of "fishing vessel" exist. No general definition will be provided. A fishing trip and a fishing vessel need to be defined for each implementation, which is elaborated in a separate Implementation Document.

Furthermore, a data model for a fishing activity is presented. The data model is conceived as a toolbox of data elements, which can be used, according to specific implementation details. The idea of the toolbox is to have one standardized way of structuring the data when exchanging information. Everywhere the same information needs to be exchanged, the same data structure should be used. However, it is not necessary to use all data elements or attributes, which depends on the context/implementation in which the exchange takes place.

4 Scope

The scope of this document is limited to defining the data elements, data exchange and the data management related to data exchanges in the context of fishing activities performed by vessels during a fishing trip. This scope is limited to the exchange between a Fishing Monitoring Center (FMC) and any other stakeholder.

Fishing activities include all activities of vessels, related to a fishing trip. This includes catching activity, but also transshipments, relocations and landings, etc. The data exchange contains reports related to the fishing trip: departure, arrival, entry and exit from zones, etc.

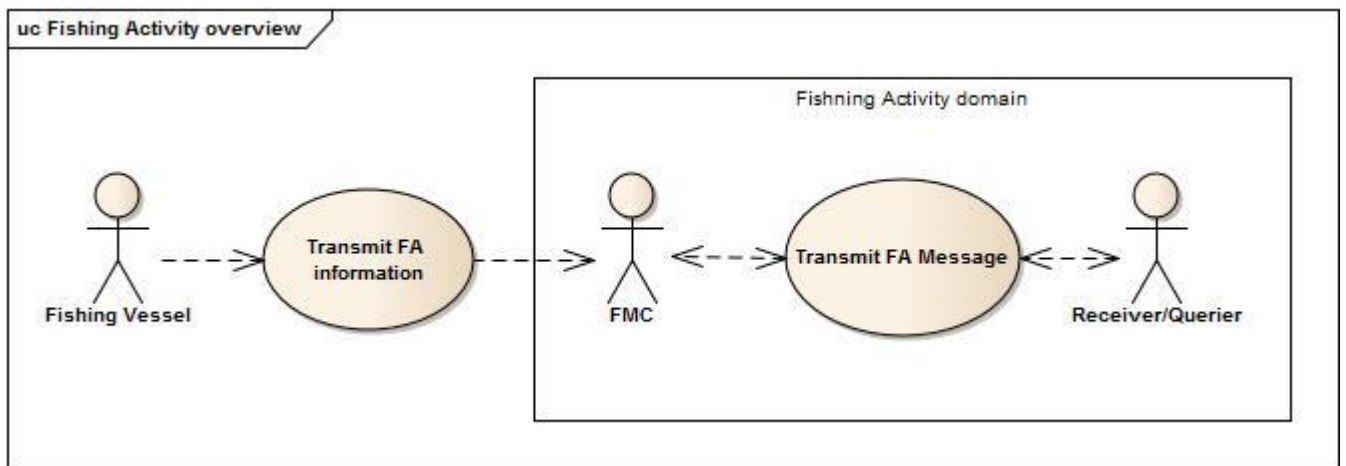


Figure 1: Fishing Activity overview diagram.

As described in Figure 1, although the data exchanged between stakeholders is provided by fishing vessel, the exchange between vessel and FMC is considered out of this scope¹.

The domain covers transmission of Fishing Activity Report document as well as Query and Response documents.

Categories	Description and Values
Business Process	General Message Exchange
Product Classification	None
Industry Classification	Fisheries sector
Geopolitical	Global
Official Constraints	International regulations, agreements and conventions National regulations Technical measures
Business Process Role	None
Supporting Role	None
System Capabilities	None

¹ The vessel may use any means and message to convey its information to the FMC. Of course the vessel has to satisfy all the information needs of the FMC and thus of the eventual Receiver. A FMC may specify that the vessel uses the messages in the Fishing Activity domain to transmit its activity information

5 Stakeholders

Fishing Vessel	Any vessel conducting fishing activities. The Implementation Document describes these vessels. The Master of the Fishing Vessel is responsible for the accuracy and timeliness of the messages. Fishing Vessel is in this document a synonym for the Master of the vessel.	
FMC	Fisheries Monitoring Centre. In this document it is a synonym for Flag State Administration.	
FA message Receiver/ Querier	Receiver of, or Querier for, Fishing Activity messages sent by Fishing Vessel to the FMC, such as Flag state, Coastal state, RFMO or any other organization such as:	
	Coastal State Administration	The administration of the State where a vessel is fishing. It generally requires information about the fishing activities conducted by the vessel.
	Port State Administration	The administration of the State where a vessel enters a harbor. It requires information on the vessels entering the port.
	RFBs and RFMOs	Regional Fishery Bodies (RFBs) and Regional Fishery Management Organizations (RFMOs) often require vessel information to issue authorizations, enforce control or manage the resources under their jurisdiction, and require information on vessels in their regulatory area.
	International institutions	International institutions in the fisheries domain are often given the mandate to collect data from their members and disseminate data on their behalf, and may therefore be considered both receivers and senders of the data.
	Other	Any other party that may be legally required to receive and/or send fishing activity data.

6 Business requirements

6.1 Business requirements lists

The following tables list the requirements identified for this domain.

Number	Business Requirement Statement	Business Transaction Name for this Requirement
A1	A FMC transmits a report of fishing activity received from a fishing vessel. Optionally, it can enrich the information provided.	Transmit Fishing Activity Report
A2	A FMC transmits a notification of foreseen fishing activity.	Transmit Fishing Activity Notification
A3	A FMC transmits a notification of fishing activity of a vessel in an aggregated format or by individual operation.	Transmit global or individual Fishing Operation.
A4	<p>A FLUX actor queries for receiving the fishing activity of vessels from a FMC.</p> <p>Some filters could be applied for retrieving reports, such as:</p> <ul style="list-style-type: none"> – All or consolidated version (last version of corrected report if any) of reports. – Fishing Activities reports for a certain period of time. – Reports from a particular vessel (vessel Identification and Flag State) – Reports provided by a particular Party – Reports for a specified Trip ID – Reports of activities in a particular area. 	Query for Vessel Logbook.

Figure 2: Business Requirement List

Number	Data Requirement Statement
B1	A fishing activity report must have a unique identifier, creation date & time and purpose code ² .
B2	A fishing activity report may indicate any FMC intervention in the making of the report compared to the original information transmitted by the fishing vessel.
B3	A fishing activity report should indicate when the FMC has accepted the information transmitted by the fishing vessel.
B4	A fishing activity report may specify one fishing vessel.
B5	A fishing activity report may contain the complete description of fishing vessel, as defined in FLUX Vessel domain ³ .

² FLUX General Principle rule: see FLUX P1000 – 1: General Principles BRS.

³ See FLUX P1000 – 2: Fishing Vessel BRS Document.

B6	A fishing activity report must indicate whether it is an activity or a notification of activity.
B7	A fishing vessel may have specified an authorization for fishing.
B8	The type of fishing activity must be identified. e.g.: Departure (from port); Arrival (to port); Fishing Operation; Entry into/Exit from area; Loading/Unloading operation (Landing, Transshipment, Relocation, Discard at sea, etc.)
B9	Fishing activities may be grouped under an identification of a fishing trip.
B10	A fishing activity may contain information about catch, such as the species and quantity, the catch area, the date & time when the catch occurred, the gear used.
B11	A fishing activity may contain subordinate fishing activity such as the time & place when the net has been set and retrieved.
B12	A Fishing Activity report message may contain a set of fishing activity reports. E.g.: the full logbook of a fishing vessel.
B13	ID referencing to a previous report could be used for deletion and cancellations. Partial or complete repetition of Business Data of a Fishing Activity is not required.
B14	A catch may be declared under the allowance of a specific authorization.

Figure 3: Data Requirement List

6.2 Business process elaboration

6.2.1 Fishing Activity Report message transmission

Principles

A Fishing Activity (FA) Report Submitter sends a FA report to a Receiver.

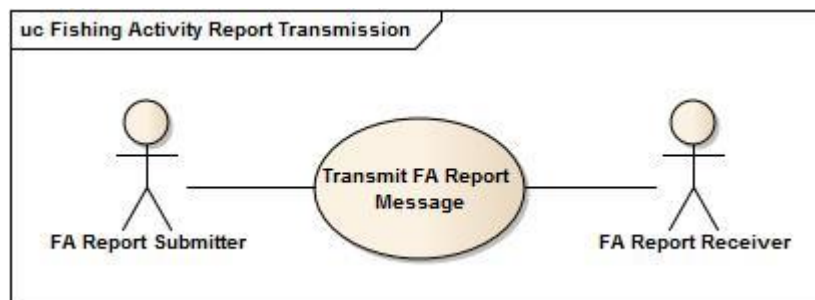


Figure 4: Fishing Activity Report Transmission use case diagram

Business process name	Transmission of Fishing Activity (FA) report transmission.
Identifier	TFAR
Actors	FA Report Submitter; FA Report Receiver

Description	A submitter transmits a message containing a Fishing Activity (FA) report to a receiver.
Pre-condition	Underlying framework to exchange FLUX business messages
Post-conditions	None
Scenarios	None
Remarks	None

6.2.2 Query for Fishing Activity (FA) Report

Principles

A FLUX Querier requests for retrieving Fishing Activity (FA) Reports. The FLUX Receiver replies back an answer containing or not the requested information.

Use Case

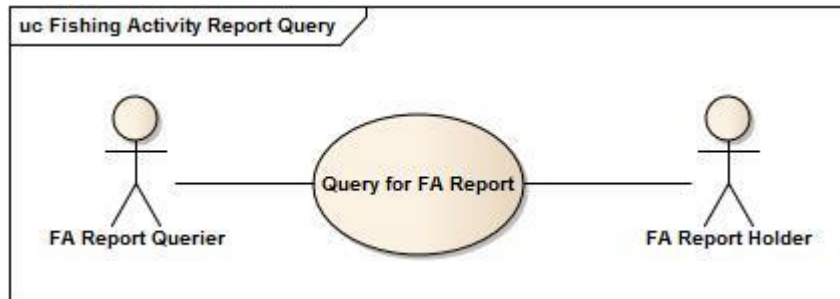


Figure 5: Query for Fishing Activity Report use case diagram

Business process name	Query for Fishing Activity Reports
Identifier	QFAR
Actors	FA Report Querier; FA Report Holder
Description	A querier asks for receiving Fishing Activity (FA) reports
Pre-condition	Underlying framework to exchange FLUX business messages
Post-conditions	None
Scenarios	Parameters can be specified for filtering information provided. 1) One step FA Query: A FA Report Holder responds

	<p>immediately to the FA Report Querier, optionally with FA Reports in the response.</p> <p><u>2) Two steps FA Query:</u> A FA Report Holder acknowledges first to the FA Report Querier with a FLUX General Principle Response message⁴. Then, the FA Report Holder transmits a FA Reports message which contains the list of reports requested. This second step is identical to use case 6.2.1 Fishing Activity Report message transmission</p>
Remarks	None

⁴ See GP Response in GP BRS

6.3 Information flow definition (activity diagram, description)

6.3.1 Service message exchange

In accordance with the FLUX general principles, all transmissions will end in a response from message receiver to message sender, indicating whether the message has been processed successfully or otherwise.

Activity Diagram

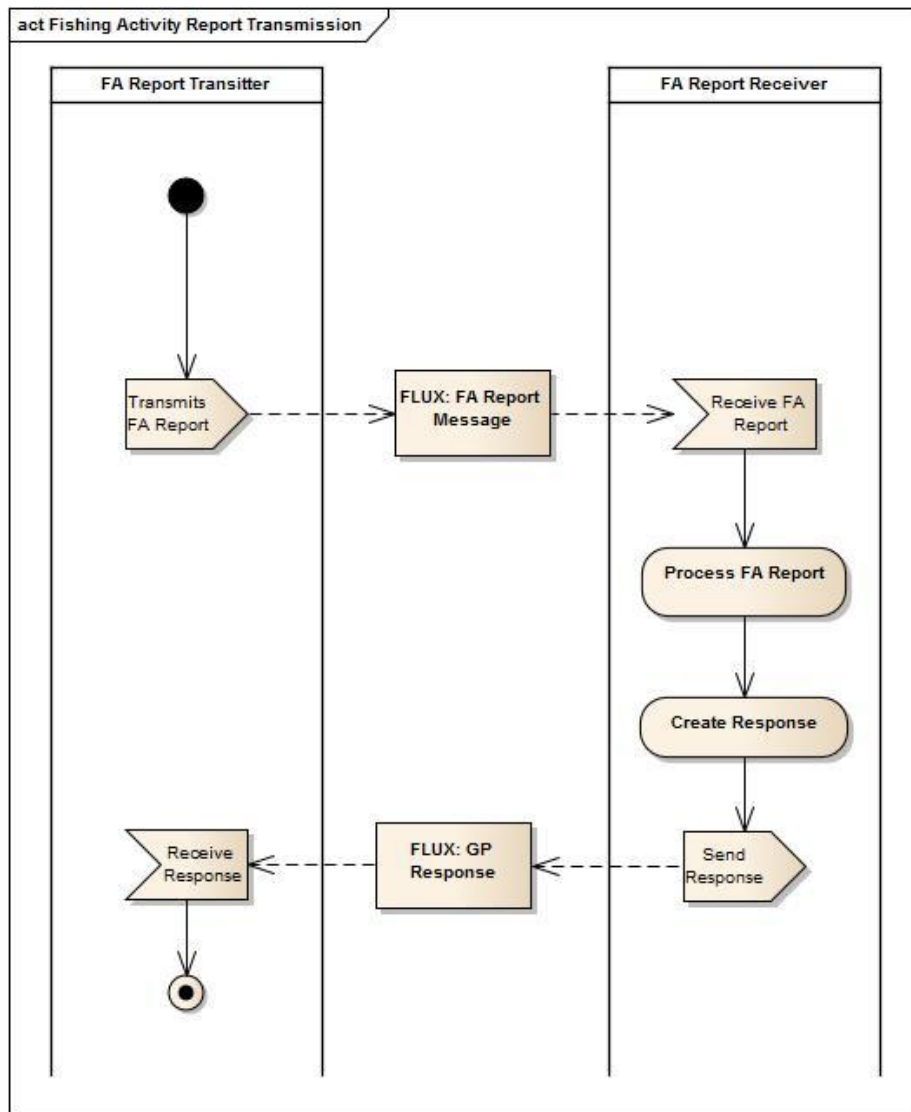


Figure 6 Activity Diagram for the Transmission of Fishing Activity Report

6.3.2 Query for Fishing Activity Report

Any FLUX actor may query for Fishing Activity (FA) Report from any FA Report Holder. The diagrams show the two scenarios of having a one step or two steps query, as described in use case Query for Fishing Activity (FA) Report in paragraph 6.2.2.

Activity Diagrams

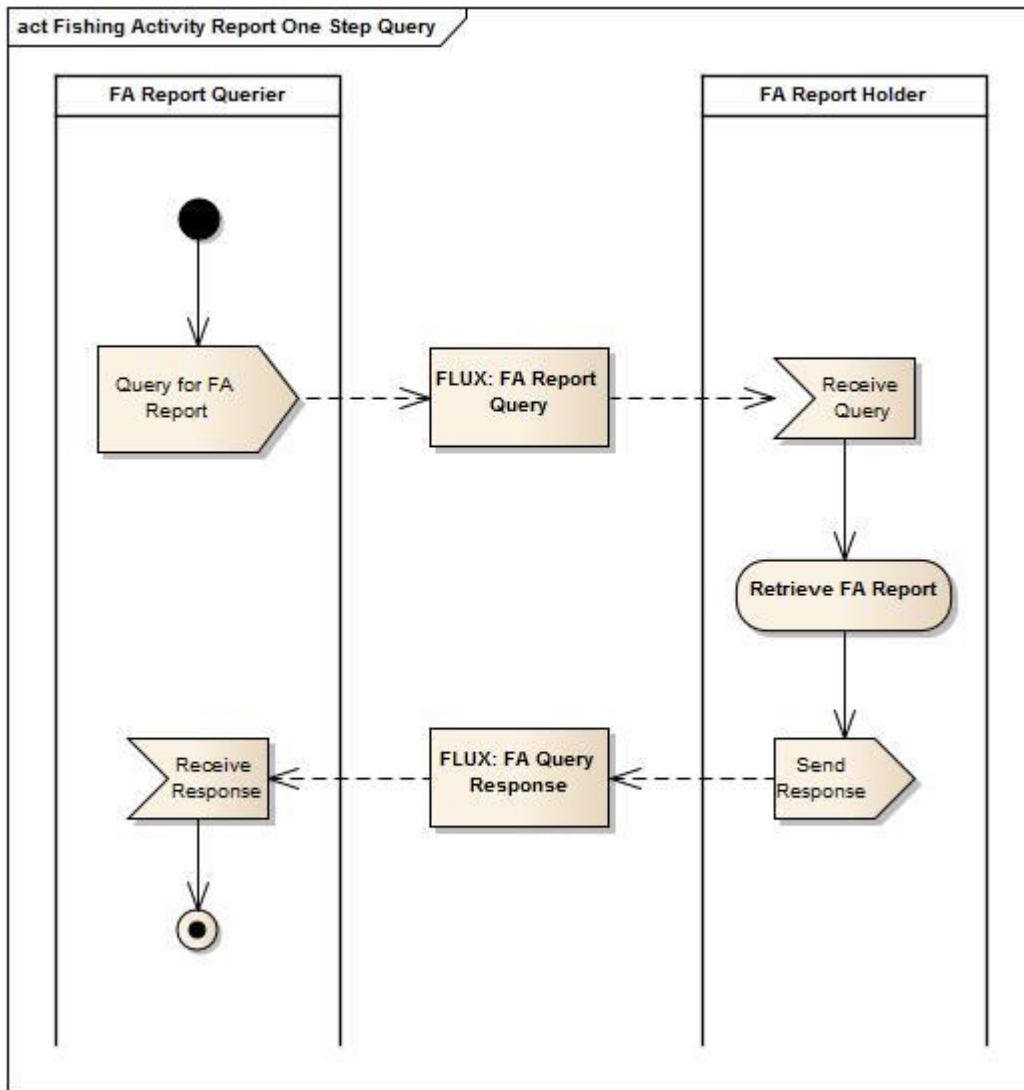


Figure 7: Activity Diagram for a One Step Query for Fishing Activity Report

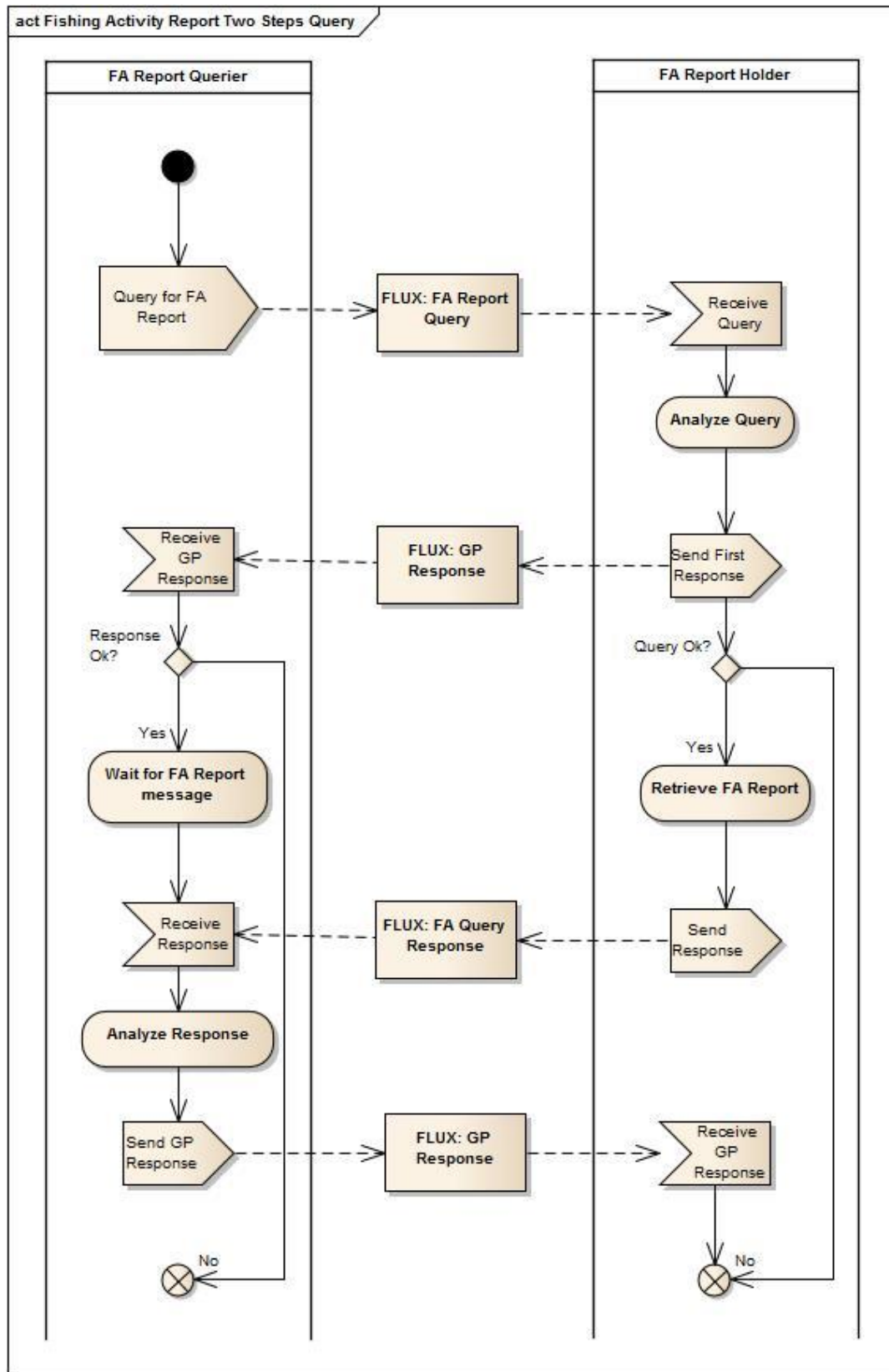


Figure 8: Activity Diagram for a Two Steps Query for Fishing Activity Report

6.4 Information model definition (class diagram)

The Class diagram describes all the necessary classes of information for a flow of information exchange for the Fishing Activity Report message transmission case.

Note that only specific entities for Fishing Activity domain are described in the tables. Description of other entities referenced in this domain which are already defined in any other FLUX sub-domains can be found in the appropriate BRS document.

The definition of base entities such as *FLUX Report_Document*, *FLUX_Party* are defined in *FLUX P1000-1; general principles* BRS document. The definition of entities such as *Vessel_Transport Means*, *Vessel Storage_Characteristic*, *Fishing_Gear*, *Contact_Party*, *Structured_Address* are defined in *FLUX P1000-2; Vessel BRS* document.

FA Report Document Entity

Description: A document that provides information for a Fishing Activity (FA) report.

Mult.	Business term	Rel.	Type	Description
0..1	Type	Att	Code	The code specifying a type of FA report document, such as a declaration or notification.
0..1	FMC_Marker	Att	Code	The code specifying a marker set by a Fishing Monitoring Centre (FMC) in this FA report document, such as original or modified by FMC.
0..n	Related_Report	Att	Identifier	An identifier of a report related to this FA report document.
0..1	Accepted	Att	Date Time	The date, time, date time, or other date time value, of the acceptance of this FA report document.
1	Related	Ass	FLUX Report_Document	The Fisheries Language for Universal eXchange (FLUX) report document related to this FA report document.
0..n	Specified	Ass	Fishing_Activity	A fishing activity specified for this FA report document.
0..1	Specified	Ass	Vessel_Transport Means ⁶	The vessel transport means specified for this FA report document.

Fishing Trip Entity

Description: A journey or a trip having some fishing activity.

Mult.	Business term	Rel.	Type	Description
1..n	Identification	Att	Identifier	An identifier, such as an RFC 4122 Universally Unique Identifier (UUID), for this fishing trip.
0..1	Type	Att	Code	The code specifying a type of fishing trip.
0..n	Specified	Ass	Delimited_Period	A delimited period specified for this fishing trip.

⁶ See *FLUX P1000-2; Vessel BRS* document for definition.

Fishing Activity Entity

Description: An action taken by a person or group during a fishing trip.

Mult.	Business term	Rel.	Type	Description
0..n	Identification	Att	Identifier	An identifier for this fishing activity.
1	Type	Att	Code	The code specifying a type of fishing activity, such as depart from port, return to port, fishing operation.
0..1	Occurrence	Ass	Date Time	The date, time, date time, or other date time value, of the occurrence of this fishing activity.
0..1	Reason	Att	Code	The code specifying a reason for this fishing activity, such as returning to port with the intention of unloading catches.
0..1	Vessel Related_ Activity	Att	Code	The code specifying a related activity of a vessel, such as searching for fish or trawling, for this fishing activity.
0..1	Fishery_ Type	Att	Code	The code specifying a type of fishery for this fishing activity, such as pelagic fisheries.
0..1	Species_ Target	Att	Code	The code specifying a species targeted for this fishing activity, such as the Food and Agriculture Organization (FAO) species code.
0..1	Operations	Att	Quantity	The number of operations for this fishing activity.
0..1	Fishing_ Duration	Att	Measure	The measure of a duration for this fishing activity.
0..n	Specified	Ass	FA_ Catch	A Fishing Activity (FA) catch specified for this fishing activity.
0..n	Related	Ass	FLUX_ Location	A Fisheries Language for Universal eXchange (FLUX) location related to this fishing activity.
0..n	Specified	Ass	Gear_ Problem	A gear problem specified for this fishing activity.
0..n	Specified	Ass	FLUX_ Characteristic	A Fisheries Language for Universal eXchange (FLUX) characteristic specified for this fishing activity.
0..n	Specified	Ass	Fishing_ Gear	A fishing gear specified for this fishing activity.
0..1	Source	Ass	Vessel Characteristic Storage_	The characteristic of a vessel storage, such as a cage, used as a source for this fishing activity.
0..1	Destination	Ass	Vessel Characteristic Storage_	The characteristic of a vessel storage used as a destination for this fishing activity.
0..n	Related	Ass	Fishing_ Activity	A fishing activity related to this fishing activity.
0..n	Specified	Ass	FLAP_ Document	A Fishing Licence, Authorization or Permit (FLAP) document specified for this fishing activity.
0..n	Specified	Ass	Delimited_ Period	A delimited period specified for this fishing activity.

0..1	Specified	Ass	Fishing_Trip	The fishing trip specified for this fishing activity.
0..n	Related	Ass	Vessel_Transport Means	A vessel transport means related to this fishing activity.

Size Distribution Entity

Description: A way based on the size of something which is shared out among a group, spread over an area or arranged in a box.

Mult.	Business term	Rel.	Type	Description
0..1	Category	Att	Code	The code specifying a category for this size distribution, such as a range of sizes.
0..n	Class	Att	Code	A code specifying a class for this size distribution, such as below minimum size.

AAP Stock Entity

Description: A quantity of Aquatic Animal or Plant (APP), such as a stock of fish, available for being up-taken.

Mult.	Business term	Rel.	Type	Description
1	Identification	Att	Identifier	The identifier for this AAP stock.

FA Catch Entity

Description: Fishing Activity (FA) information about the species and quantity of an aquatic animal or plant.

Mult.	Business term	Rel.	Type	Description
1	Species	Att	Code	The code specifying the species of this FA catch, such as the Food and Agriculture Organization (FAO) code.
0..1	Unit	Att	Quantity	The quantity of fish units for this FA catch.
0..1	Weight	Att	Measure	The measure of the weight of this FA catch.

0..1	Weighing Means	Att	Code	The code specifying the means of weighing for this FA catch.
0..1	Usage	Att	Code	The code specifying a usage for this FA catch, such as commercial or discard.
0..1	Type	Att	Code	The code specifying a type for this FA catch, such as retained on board or discarded.
0..n	Related	Ass	Fishing_ Trip	A fishing trip related to this FA catch.
0..1	Specified	Ass	Size_ Distribution	The size distribution specified for this FA catch.
0..n	Related	Ass	AAP_ Stock	An Aquatic Animal or Plant (APP) stock related to this FA catch.
0..n	Applied	Ass	AAP_ Process ⁷	An Aquatic Animal or Plant (APP) process applied to this FA catch.
0..n	Related	Ass	Sales_ Batch ⁷	A sales batch related to this FA catch.
0..n	Specified	Ass	FLUX_ Location	A Fisheries Language for Universal eXchange (FLUX) location specified for this FA catch.
0..n	Destination	Ass	FLUX_ Location	A Fisheries Language for Universal eXchange (FLUX) destination location for this FA catch.
0..n	Used	Ass	Fishing_ Gear	A fishing gear used for this FA catch.
0..n	Applicable	Ass	FLUX_ Characteristic	A Fisheries Language for Universal eXchange (FLUX) characteristic applicable to this FA catch.

AAP Process Entity⁸

Description: Entity used to provide information of a designed sequence of operations applied on Aquatic Animal or Plants (AAP).

Mult.	Business term	Rel	Type	Description
0..n	Result	Ass	AAP_ Product	An Aquatic Animal or Plant (AAP) product resulting from this process.

⁷ The definition of entities such as *AAP_ Process*, *AAP_ Product*, *Sales_ Batch* are defined in *FLUX P1000-5*; *Sales BRS* document.

⁸ Entities such as *AAP_ Process*, *AAP_ Product* and *Sales_ Batch* are defined in *FLUX P1000-5*; *Sales BRS* document. The table contains only elements of *AAP_ Process* entity used in this sub-domain which are extending the basic definition.

FLUX Location Entity

Description: Entity providing information of a physical location or place defined for Fisheries Language for Universal eXchange (FLUX), such as a port or a region at sea.

Mult.	Business term	Rel	Type	Description
0..1	Type	Att	Code	The code specifying the type of FLUX location.
0..1	Country	Att	Identifier	The identifier of a country for this FLUX location.
0..1	Identification	Att	Identifier	The identifier for this FLUX location, such as a United Nations Location Code (UNLOCODE).
0..1	Geopolitical Region	Att	Code	The code specifying the geopolitical region for this FLUX location.
0..n	Name	Att	Text	A name, expressed as text, for this FLUX location.
0..1	Sovereign Rights_ Country	Att	Code	The identifier of the country exercising sovereign rights over this FLUX location.
0..1	Jurisdiction_ Country	Att	Code	The identifier of the country having jurisdiction over this FLUX location.
0..1	Regional Fisheries_ Management Organization	Att	Code	The code specifying the organization managing the regional fisheries at this FLUX location.
0..1	Specified_ Physical	Ass	FLUX_ Geographical Coordinate	Geographical coordinate information specified for this FLUX location.
0..n	Postal	Ass	Structured_ Address	Structured postal address information for this FLUX location.
0..1	Physical	Ass	Structured_ Address	The structured physical address information for this FLUX location.
0..n	Boundary	Ass	Specified_ Polygon	A specified polygon of the boundary for this FLUX location.
0..n	Applicable	Ass	FLUX_ Characteristic	A characteristic applicable to this FLUX location.

FLUX Geographical Coordinate Entity

Description: Entity providing information of the latitude, longitude and altitude of a specified place, by which a Fisheries Language for Universal eXchange (FLUX) relative situation on the globe is known.

Mult.	Business term	Rel	Type	Description
1	Longitude	Att	Measure	The measure of the longitude of this FLUX geographical coordinate.
1	Latitude	Att	Measure	The measure of the latitude of this FLUX

				geographical coordinate.
0..1	Altitude	Att	Measure	The measure of the altitude of this FLUX geographical coordinate.
0..1	System	Att	Identifier	The identifier of the system used for measuring this specified FLUX geographical coordinate.

Specified Polygon Entity

Description: Entity providing information of a specified figure that is bounded by a finite chain of straight line segments closing in a loop to form a closed chain or circuit and which may contain holes which are similarly defined.

Mult.	Business term	Rel	Type	Description
0..n	Interior	Ass	Specified_ Linear Ring	An interior linear ring specified for this polygon.
1	Exterior	Ass	Specified_ Linear Ring	The exterior linear specified ring for this polygon.

Specified Linear Ring Entity

Description: Entity providing information of a specified array of points which define a closed loop which is not self-intersecting.

Mult.	Business term	Rel	Type	Description
0..n	Coordinate	Att	Text	A coordinate, expressed as text, for this specified linear ring.
0..n	Specified	Ass	FLUX_ Geographical Coordinate	Geographical coordinate information specified for this linear ring.

Gear Problem Entity

Description: Entity providing information of a matter or situation regarded as unwelcome or harmful which occurred on a gear, such as a lost fishing gear.

Mult.	Business term	Rel	Type	Description
0..1	Type	Att	Code	The code specifying a type of gear problem.
0..1	Affected	Att	Quantity	The number of gears affected by this gear problem.
0..n	Recovery Measure	Att	Code	A code specifying a measure for recovering this gear problem.

0..n	Specified	Ass	FLUX_ Location	A Fisheries Language for Universal eXchange (FLUX) location specified for this gear problem.
0..n	Related	Ass	Fishing_ Gear ⁹	A fishing gear related to this gear problem.

Vessel Transport Means Entity¹⁰

Description: Entity containing the identification and characteristic information of a ship or boat.

Mult.	Business term	Rel.	Type	Description
0..n	Grant	Ass.	FLAP_ Document	A Fishing Licence, Authorization, Permit (FLAP) document granted to this vessel transport means.

FLUX Characteristic Entity

Description: Entity used to provide information of a prominent attribute or aspect of a Fisheries Language for Universal eXchange (FLUX) element.

Mult.	Business term	Rel.	Type	Description
0..1	Type	Att	Code	The code specifying a type of FLUX characteristic.
0..n	Description	Att	Text	A textual description of this FLUX characteristic.
0..1	Value	Att	Measure	The value, expressed as a measure, for this FLUX characteristic.
0..1	Value	Att	Date Time	The value, expressed as a date, time, date time, or other date time value, of this FLUX characteristic.
0..1	Value	Att	Indicator	The value, expressed as an indicator, for this FLUX characteristic.
0..1	Value	Att	Code	The code specifying a value of this FLUX characteristic.
0..n	Value	Att	Text	A value, expressed as text, of this FLUX characteristic.
0..1	Value	Att	Quantity	The value, expressed as a quantity, for this FLUX characteristic.
0..n	Specified	Ass	FLUX_ Location	A FLUX location specified for this FLUX characteristic.

⁹ The definition of entities such as *Fishing_ Gear*, *Gear_ Characteristic* are defined in *FLUX P1000-2; Vessel BRS* document.

¹⁰ *Vessel_ Transport Means* entity is completely defined in *FLUX P1000-2; Vessel BRS* document. The table contains only entity elements used in this sub-domain which are extending the basic definition.

0..n	Related	Ass	FLAP_ Document	A Fishing Licence, Authorization or Permit (FLAP) document related to this FLUX characteristic.
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6.4.2 Query for Fishing Activity Reports Declaration:

Description: A Fisheries Language for Universal eXchange (FLUX) message for querying for Fishing Activity (FA) report document.

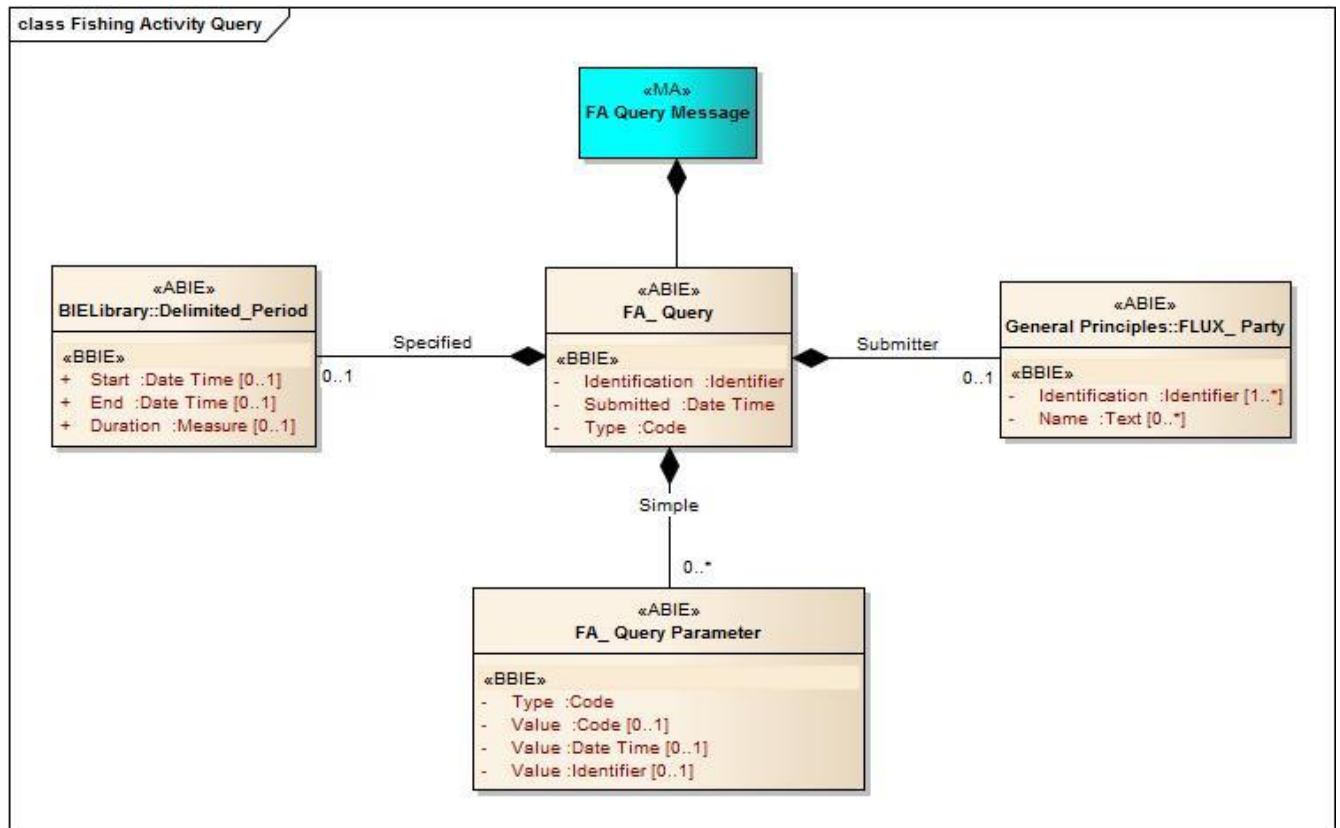


Figure 10: Class Diagram for FLUX Fishing Activity (FA) Query message.

FA Query Entity

Description: Entity containing a formally raised question or request for information for a Fishing Activity (FA) report document.

Mult.	Business term	Rel.	Type	Description
1	Identification	Att	Identifier	The identifier for this FA query.
1	Submitted	Att	Date Time	The date, time, date time, or other date time value when this FA query was submitted.

1	Type	Att	Code	The code specifying the type of FA query.
0..1	Submitter	Ass	FLUX_Party	The Fisheries Language for Universal eXchange (FLUX) party that submitted this FA query.
0..1	Specified	Ass	Delimited_Period	The delimited period specified for this FA query.
0..*	Simple	Ass	FA_Query Parameter	A simple query parameter for this FA query.

FA Query Parameter Entity

Description: Entity containing information that limits or restricts the scope of a Fishing Activity (FA) query.

Mult.	Business term	Rel.	Type	Description
1	Type	Att	Code	The code specifying the type of FA query parameter.
0..1	Value	Att	Code	The value, expressed as a code, for this FA query parameter.
0..1	Value	Att	Date Time	The value, expressed as a date, time, date time, or other date time value, for this FA query parameter.
0..1	Value	Att	Identifier	The value, expressed as an identifier, for this FA query parameter.

