The Southern Indian Ocean Fisheries Agreement (SIOFA) 6th Meeting of the Parties
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MoP6-Prop06

# Proposal for a Conservation and Management Measure for the establishment of the Vessel Monitoring System in the SIOFA Area

*Relates to agenda item: CC3 4.2, MoP6 12*

Proposal ☒ Working Paper ☐ Information Paper ☐ Other Document ☐

## Delegation of the European Union

Abstract

During MoP5 it was agreed to develop a SIOFA VMS and some basic provisions have been adopted in Paragraphs 4 to 13 of CMM 2018/10. The purpose of this proposal is to provide a more complete framework covering all key aspects of the SIOFA VMS.

To be noted that the technical annex 5, is only indicative and it is not meant to be included in the CMM.

Recommendations *(proposals only)*

1. [The CC3 and MoP6 are invited to review, discuss and adopt this proposal.]

*EU proposal for a Conservation and Management Measure*
*for the establishment of the Vessel Monitoring System in the SIOFA Area*
*[EU proposal]*

The Meeting of the Parties to the Southern Indian Ocean Fisheries Agreement:

*RECALLING* Article 6(1)(h) of the Southern Indian Ocean Fisheries Agreement calls of the Meeting of the Parties to develop rules and procedures for the monitoring, control and surveillance of fishing activities in order to ensure compliance with conservation and management measures adopted by the Meeting of the Parties including, where appropriate, a system of verification incorporating vessel monitoring and observation;

*MINDFUL* of Article 18(3)(e) of the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNFSA) which outlines the duties of the flag State are to take measures to ensure recording and timely reporting of vessel position, catch of target and non-target species, fishing effort and other relevant fisheries data;

*RECALLING* the Article 13 of the Conservation and management measure for the Monitoring of Fisheries in the Agreement Area (CMM 2018/10) to develop specifications and propose rules and procedures for the establishment of a SIOFA Vessel Monitoring System;

*FURTHER MINDFUL* of the key principles upon which the vessel monitoring system is based, including the confidentiality and security of information handled by the system, and its efficiency, cost-effectiveness and flexibility;

*ADOPTS* the following Conservation and Management Measures (CMM) in accordance with Article 4 and 6 of the Agreement:

## Objective

1. The objective of the SIOFA VMS is to monitor in an automatic, continuous and a cost-effective manner the movements and activity of fishing vessels operating in the SIOFA Area. The SIOFA VMS shall be administered by the SIOFA Secretariat under the guidance of the MoP.

## Application and definitions

2. The SIOFA VMS shall apply to all fishing vessels that are on the SIOFA Record of Authorised Vessels and are authorised by Contracting Parties, cooperating non-Contracting Parties (CNCPs) and participating fishing entities (PFEs) when these fishing vessels are in the SIOFA area as defined in article 3 of the Agreement.
3. The following definitions apply to this conservation measure:

a) "Automatic location communicator" (ALC) means a satellite-based on-board device that is capable of continuously, automatically and independently of any intervention of the vessel, transmitting the VMS position reports;
b) "Fisheries monitoring centre" (FMC) means the government authority or agency of a Flag State responsible for managing the VMS for its flagged fishing vessels;
c) "Vessel Monitoring System" (VMS) means a satellite-based monitoring system which, at regular intervals, provides VMS position reports;
d) "Manual reporting" means the transmission via alternative means (email, facsimile, telex, telephone message or radio) of the position reporting of a fishing vessel when an ALC fails to transmit VMS data;
e) VMS position reports include:
   i. the fishing vessel's identification number as by CMM 2017/07 (IRCS and IMO if available);
   ii. Flag of the fishing vessel;
   iii. the current geographical position (latitude and longitude) of the vessel;
   iv. the date and time (UTC) of the fixing of the position of the vessel;
   v. the vessel's speed; and
   vi. the vessel's course.

## Nature and Specifications of the SIOFA VMS

4. Each Contracting Party, CNCP and PFE shall ensure that its fishing vessels, authorised in accordance with Conservation Measure 2017/07 (Vessel Authorisation) are fitted with an ALC that complies with the minimum standards described in Annex 1.

5. Each Contracting Party, CNCP and PFE shall require vessels flying its flag to report VMS data automatically to their FMC at least every two hours when they are present in the SIOFA area. Each Contracting Party, CNCP and PFE shall forward these data to the SIOFA Secretariat without delay.

6. Under normal satellite navigation operating conditions, positions derived from the data reported must be accurate to within 100 metres.

7. Each Contracting Party, CNCP and PFE shall ensure that any VMS reports and messages transmitted to the Secretariat shall be in accordance with the data exchange format described in Annex 2.

8. Each Contracting Party, CNCP and PFE shall ensure that its FMC can automatically receive and transmit VMS data from ALCs and in case of system failures, shall provide backup and recovery procedures.

9. Each Contracting Party, CNCP and PFE shall provide the Secretariat with the name, address, email, telephone and facsimile numbers of the relevant authorities of its FMC. Each Contracting Party, CNCP and PFE shall promptly notify the Secretariat of any

changes to these details and the Secretariat shall circulate this information to the other Contracting Party, CNCP and PFE.

10. Each Contracting Party, CNCP and PFE shall ensure that in vessels flying their flag:

    a) the ALC is not tampered with in any way;
    b) VMS data are not altered in any way;
    c) the antenna is connected to the ALC and is not obstructed in any way;
    d) the power supply of the ALC is not interrupted in any way; and
    e) the ALC is not removed from the vessel.

## Measures to prevent tampering with ALCs

11. It shall be prohibited to destroy, damage, switch off, render inoperative or otherwise interfere with the ALC, unless the competent authorities of the Contracting Party, CNCP and PFE have authorised its repair or replacement.

12. In the event that a Contracting Party, CNCP and PFE obtains information that indicates an ALC does not meet the requirements of Annex 1 or there is evidence that the ALC has been tampered with, it shall immediately notify the Secretariat and the fishing vessel's Flag State.

13. A vessel whose ALC was tampered with shall be immediately called back to port by the Flag Contracting Party, CNCP or PFE.

## Procedures for technical failure or non-operation of the ALC

14. In the event of a technical failure or non-operation of the ALC fitted on board a vessel, the device shall be repaired or replaced within [30] days. If the trip is lasting more than [30] days, the repair or the replacement shall take place as soon as practicable after the vessel enters a port. If the ALC has not been repaired or replaced within [90] days, the Contracting Party, CNCP or PFE shall order the vessel to cease fishing, stow all fishing gear and return immediately to port in order to undertake repairs. The vessel shall not be authorised to begin a new trip without an ALC having been repaired or replaced.
15. If an ALC fails to transmit VMS data, the master of the fishing vessel shall manually report to its FMC at least every [four] hours in accordance with Annex 3 of this CMM. The FMC will transmit the data to the Secretariat without delay.

## Use and Release of VMS Data

16. Data collected by the SIOFA VMS shall be securely stored by the Secretariat, and shall be used by Contracting Parties, CNCPs and PFEs to monitor compliance with CMMs.
17. VMS data may also be used by the Scientific Committee for analysis to support specific scientific advice requested by the Meeting of the Parties for sound fisheries management decision-making in the SIOFA Area.

18. Upon a request from a Contracting Party, CNCP and PFE, the Secretariat shall provide VMS data of all vessels in a specific area or the exclusive purposes of active surveillance operations and/or inspections at sea undertaken by a Contracting Party, CNCP and PFE in a specified SIOFA subarea or division.
19. Contracting Parties, CNCPs and PFEs requesting the VMS data for the purposes of paragraph 17 shall provide the geographic area of the planned surveillance and/or SIOFA inspection activity. In this case, the Secretariat shall provide the most recent available VMS data for the identified geographic area at a specified point in time no more than 48 hours prior to the commencement of each surveillance and/or SIOFA inspection activity. In the event that the planned surveillance and/or SIOFA inspection activity does not proceed, the Contracting Party, CNCP and PFE will notify the Secretariat and destroy the data, and confirm the data destruction to the Secretariat in writing, without delay.
20. The Secretariat shall provide VMS data in accordance with the Security and Confidentiality Requirements in Annex 4 of this CMM and CMM 2016/03 (Data Confidentiality).

## VMS data transmission failure or lack of consistency

21. When the Secretariat has not received VMS data for [12] consecutive hours, it shall notify the Flag State of the fishing vessel. The Flag State will provide an explanation for the VMS data transmission failure within [5] working days. The Secretariat shall advise the Meeting of the Parties if the missing VMS data and the Flag State's explanation is not received from the Contracting Party, CNCP and PFE within [5] working days.
22. If VMS data received by the Secretariat indicates the presence of a fishing vessel in an area, subarea or division for which no licence details have been provided by the Flag State to the Secretariat, or in any subarea or division for which the Flag State or fishing vessel has not provided prior notification, the Secretariat shall notify the Flag State. The Flag State will provide an explanation within [5] working days to the Secretariat. The explanation shall be provided by the Secretariat to the Meeting of the Parties for consideration at its next annual meeting.

## Review

23. Before each annual Meeting of the Parties, the Secretariat shall provide the Meeting of the Parties with a report on the implementation of, and compliance with, this CMM.
24. After two years of implementation, the Commission shall conduct a review of this CMM and consider improving it as appropriate.
25. Paragraphs 4 to 13 of CMM 2018/10 are superseded and replaced by this CMM.

*Annex 1*

*Minimum standards for Automatic Location Communicators (ALCs) used in SIOFA's Vessel Monitoring System (VMS)*

1. The Automatic Location Communicator (ALC) shall automatically and independently of any intervention by the fishing vessel, communicate VMS data referred to in paragraph 3(e) of this conservation measure.

2. The data referred to in paragraph 3(e) shall be obtained from a satellite-based positioning system.

3. ALCs fitted to fishing vessels must be capable of transmitting data referred to in paragraph 3(e) at least every [fifteen minutes]/[hourly].

4. ALCs fitted to fishing vessels must be tamper-proof so as to preserve the security and integrity of data referred to in paragraph 3(e).

5. Storage of information within the ALC must be safe, secure and integrated within a single unit under normal operating conditions.

6. It must not be reasonably possible for anyone, other than the Fisheries Monitoring Centre (FMC), to alter any of the VMS data stored in the ALC, including the frequency of position reporting to the FMC.

7. Any features built into the ALC or terminal software to assist with servicing shall not allow unauthorised access to any areas of the ALC that could potentially compromise the operation of the VMS.

8. ALCs shall be installed on fishing vessels in accordance with the manufacturer's specifications and applicable standards.

9. Under normal satellite navigation operating conditions, positions derived from the data forwarded must be accurate to within 100 metres (2 × Distance Root Mean Squared; 2DRMS), i.e. 99 per cent of the positions must be within this range.

10. The ALC and/or forwarding service provider must be able to support the ability for data to be sent to multiple independent destinations.

11. The satellite navigation decoder and transmitter shall be fully integrated and housed in the same tamper-proof physical enclosure.

*Annex 2*

*Transmission of VMS messages to the SIOFA secretariat*

Mandatory and optional data elements to be recorded in the position reports in UN/FLUX format are listed below. The data transmitted in UN/FLUX format is structured as explained in the Vessel Position Implementation Document [Annex 5].

| Data elements | Mandatory/ Optional | Observations |
|---|---|---|
| Addressee | M | Detail of the message – 3-alpha code of the country (ISO-3166).<br>NB: it is part of the FLUX TL envelope. |
| Sender | M | Detail of the message – 3-alpha code of the Sender (ISO-3166) |
| Unique message identifier | M | UUID as defined by IETF in the RFC 4122 |
| Message creation date and time | M | Detail of the message – Date and time of the creation of the message (UTC) in conformity with ISO 8601 standard and by using the format YYYY-MM-DDThh:mm:ssZ |
| Flag State | M | Detail of the vessel – 3-alpha code of the flag state (ISO-3166) |
| Type of position report | M | Detail of the position of the vessel – Type of position report (ENTRY, POS, EXIT, MANUAL) |
| Radio call sign | M | Detail of the vessel– International radio call sign (IRCS) |
| Internal vessel registration number | O | Detail of the vessel – unique number of the CCP (3-alpha code of the country (ISO-3166) followed by a number. |
| External Marking | O | Detail of the vessel – hull number (using ISO 8859.1 character set) |
| IMO number | M (if available) | Detail of the vessel – IMO number allocated by IHS Maritime and Trade |
| Latitude | M | Detail of the position of the vessel – position in decimal degrees DD.dddd (WGS-84).<br>Positive coordinates for the positions North of the Equator; Negative coordinates for the positions South of the equator. |

| | | |
|---|---|---|
| Longitude | M | Detail of the position of the vessel – position in decimal degrees DDD.dddd (WGS-84). Positive coordinates East of Greenwich meridian; Negative coordinates West of Greenwich meridian. |
| Course | M | Detail of the position of the vessel – Heading of the vessel using a scale of 360 degrees at the time of recording the position |
| Speed | M | Detail of the position of the vessel – Speed over ground of the vessel in knots at the time of recording the position |
| Date and time of the position | M | Detail of the position of the vessel – Date and time of recording of the position in UTC in conformity with ISO 8601 standard and using the format YYYY-MM-DDThh:mm:ssZ |

*Annex 3*

*SIOFA Rules on the manual reporting in the SIOFA Area*

1. In the event of non-reception of four consecutive, expected programmed VMS positions, and where the Secretariat has exhausted all reasonable steps to re-establish normal automatic reception of VMS positions, the Secretariat shall notify the Contracting Parties, CNCPs and PFEs whose flag the vessel is flying. That Contracting Parties, CNCPs, and PFEs shall immediately direct the vessel Master to begin manual reporting.

2. The manual report shall be sent by the vessel to the Secretariat via their FMC.

3. Following the receipt of a direction from a Contracting Party, CNCP, and PFE to a vessel to begin manually reporting in accordance with paragraph 1 of this Annex, the Contracting Party, CNCP, and PFE of the vessel shall ensure that the vessel Master manually reports its position every [four] hours. If automatic reporting to the SIOFA VMS has not been re-established within 60 days of the commencement of manual reporting that Contracting Party, CNCP, and PFE shall order the vessel to cease fishing, stow all fishing gear and return immediately to port in order to undertake repairs.

4. The vessel may recommence fishing in the SIOFA area only when the ALC has been confirmed as operational by the Secretariat. Four consecutive, programmed VMS positions must have been received by the Secretariat to confirm that the ALC is fully operational.

5. The format for manual reports to be used is as below. Vessels are encouraged to use email as the primary means of communication and shall send these messages to xxxx@siofa.org.

6. The standard format for manual position reporting in the event of ALC malfunction or failure shall be as follows:

    a) IMO number (if applicable),

    b) International Radio Call Sign,

    c) Vessel Name,

    d) Position Date (UTC),

    e) Position Time (UTC)

    f) Latitude (with at least the level of accuracy specified at paragraph 6 of this CMM),

    g) Longitude (with at least the level of accuracy specified at paragraph 6 of this CMM), and

    h) Activity (Fishing/Transit/Transhipping).

7. Contracting Parties, CNCPs, and PFEs are encouraged to carry more than one ALC when operating in the SIOFA area in order to avoid the need to manually report if the primary ALC fails.

8. The Secretariat shall publicise vessels that are reporting in accordance with this Annex on the SIOFA Website.

## *Annex 4*
## *Security and Confidentiality Requirements*

1. The provisions of this Annex shall apply to all VMS data received pursuant to this CMM.

2. All VMS data received by the Commission VMS shall be treated as confidential information.

3. All Contracting Parties, CNCPs, PFEs, the Secretariat and the SIOFA's VMS provider shall ensure the secure treatment of VMS data in their respective electronic data processing facilities, in particular where the processing involves transmission over a network.

4. All Contracting Parties, CNCPs, PFEs and the Secretariat shall implement appropriate technical and organisational measures to protect reports and messages against accidental or unlawful destruction or accidental loss, alteration, unauthorised disclosure or access, and against all inappropriate forms of processing. The following features shall be mandatory:

    a) System access control: the system has to withstand a break-in attempt from unauthorised persons;

    b) Authenticity and data access control: the system has to be able to limit the access of authorised parties to only the data necessary for their task, via a flexible user identification and password mechanism;

    c) VMS data must be securely communicated: communication between Contracting Parties, CNCPs, PFEs and the Secretariat or the VMS provider for the purpose of this CMM shall use secure Internet protocols SSL, DES or verified certificates obtained from the Secretariat;

    d) Data security: all VMS data that enter the system must be securely stored for the required time, and shall not be tampered with;

    e) The Secretariat shall design security procedures to address access to the system (both hardware and software), system administration and maintenance, backup and general usage of the system for consideration by the Meeting of the Parties.

5. Contracting Parties, CNCPs and PFEs as applicable shall submit a written confirmation of the deletion of the VMS data in accordance with this CMM. The Secretariat shall take all the necessary steps to ensure that the requirements pertaining to the deletion of VMS data handled by the Secretariat are complied with.

6. Each Contracting Party, CNCP and PFE shall designate a Point of Contact for the purposes of any communication regarding the VMS system ("VMS Point of Contact"). Any subsequent changes to the contact information shall be notified to the Secretariat within [21] days after such changes take effect. The Secretariat shall promptly notify Contracting Parties, CNCPs and PFEs of any such changes.

7. The Secretariat shall establish and maintain a register of Points of Contact based on the information submitted by the Contracting Parties, CNCPs and PFEs. The register and any subsequent changes shall be published promptly on the “Members” area of the SIOFA website.

8. The Secretariat shall inform all Contracting Parties, CNCPs and PFEs of the measures taken by the Secretariat to comply with these security and confidentiality requirement provisions at the annual meeting following the establishment of the SIOFA VMS. Such measures shall ensure a level of security appropriate to the risks represented by the processing of VMS data.

9. Submission of VMS data for the purpose of this CMM shall use cryptographic protocols to ensure secure communications.

10. The Security System Administrator of the Secretariat shall review the log files generated by the software, properly maintain the system security, and restrict access to the system as deemed necessary. The Security System Administrator shall also act as a liaison between the VMS Point of Contact and the Secretariat in order to resolve security matters.

EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR MARITIME AFFAIRS AND FISHERIES

MEDITERRANEAN AND BLACK SEA
**Integrated Fisheries Data Management**

THE INTEGRATED FISHERIES DATA MANAGEMENT PROGRAMME

**Subject: FLUX Vessel Position Implementation Document v2.1**

# 1. INTRODUCTION

This document aims to describe the implementation of Vessel Position XSD in the context of **European Union usage**.

Submissions of reports will be done through the FLUX Transportation Layer. The technical and functional documentation is published on the Master Data Register (MDR) page of the European Commission Fisheries website[1].

[1] See CIRCABC Website for documents details (Path: /CircaBC/MARE/IFDM DEL/Library/Transportation Layer).

## 2. REFERENCES

UN/CEFACT P1000 FLUX Standard v1.0 [2]:

- FLUX BRS: P1000 – 1; General principles (version 2.1).
- FLUX BRS: P1000 – 7; Vessel Position domain (version 2.0).

UN/CEFACT FLUXVesselPositionMessage_4p0.xsd[3]

The documents Code Lists which are specific to Vessel Position domain are published on Master Data Register page of the European Commission Fisheries website[4].

## 3. LEGAL BASIS

The implementation of the standard within EU-context applies within the scope of the Control Regulation, as defined in art. 2 and 3 of EC No 1224/2009 (CR). Only electronic exchanges of Vessel Monitoring System (VMS) messages between countries are covered by the present document. For sake of clarity the document mentions sometimes the exchanges between the master of the fishing vessel and the flag state authorities.

The definition of mandatory and optional data elements are based on requirements defined in the following regulations:

- Control Regulation (EC) No 1224/2009(a), as amended by regulation (EU) No 1380/2013(b). In particular, but not limited to article 9.
- Commission Implementing Regulation (EU) No 404/2011, as amended by "Omnibus" Regulation (EU) 2015/812 and (EU) 2015/1962;

[2] http://www.unece.org/cefact/brs/brs_index.html

[3] http://www.unece.org/fileadmin/DAM/cefact/xml_schemas/D15B.zip

[4] http://ec.europa.eu/fisheries/cfp/control/codes/index_en.htm

# 4. SCOPE

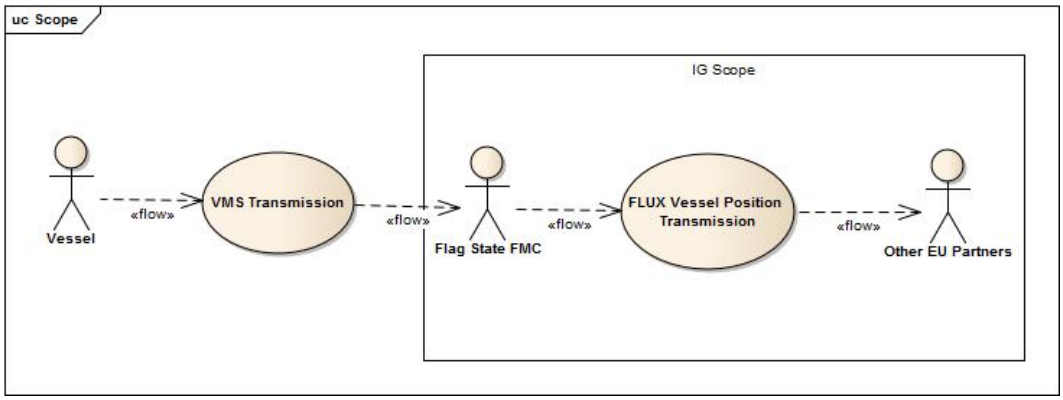


**Figure 1: Implementing Guide Scope diagram**

As shown on Figure 1, even if the message is provided by a Vessel, the scope of this document is limited to the transmission from a Flag State FMC, which has received the Vessel Position message, coming in most cases from a VMS device[5], to any other European Union partners who can handle a FLUX Vessel Position message.

[5] In theory, a FMC can use by any other kind of devices for providing Geographical Position of a vessel, such as AIS device or a manual input based on a GPS, for filling-up Vessel Position message.

# 5. PROCEDURES

## 5.1. General principles

The following activity diagram describes the normal procedure defined for the submission of every Vessel Position Messages sent between a Flag State FMC and other EU partner receiving the message:

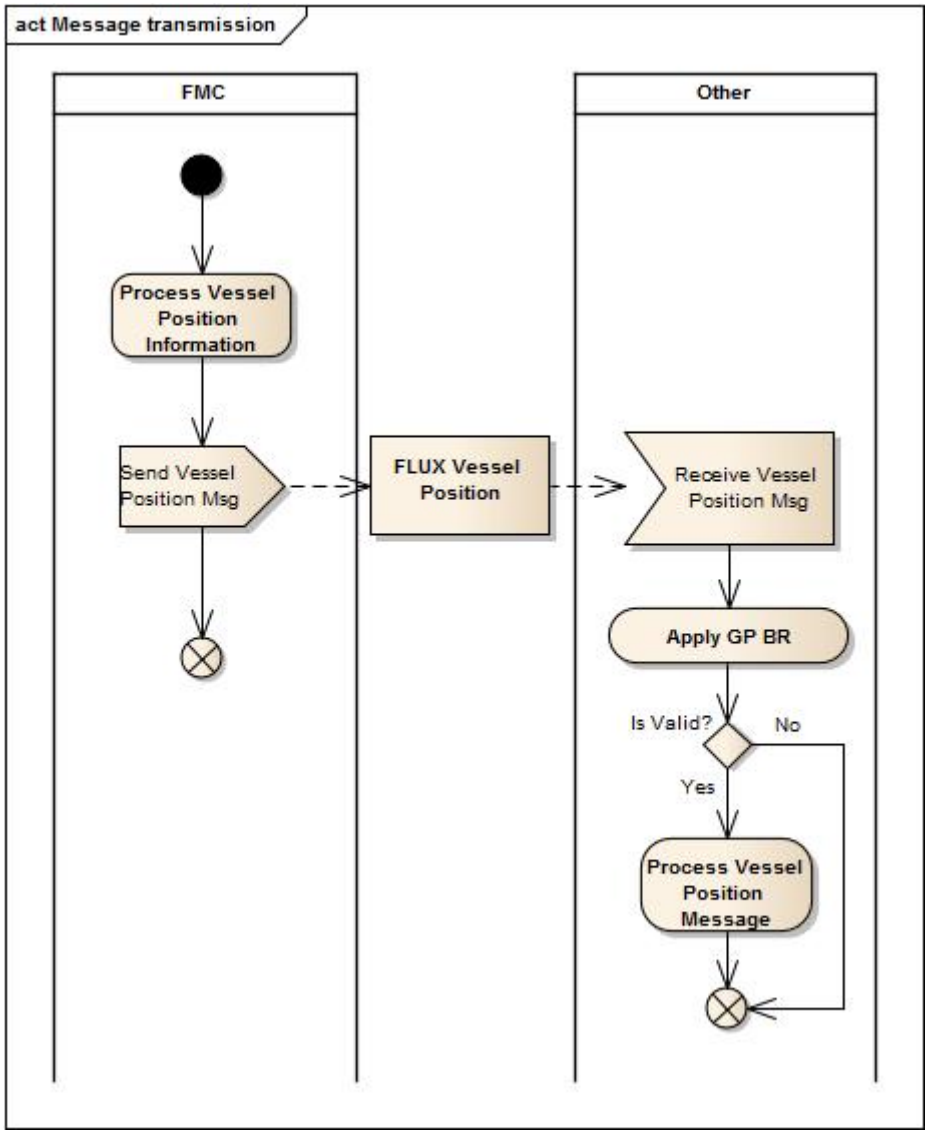


**Figure 2: Message Transmission activity diagram**

As shown in the diagram, Apply General Principles (GP) Business Rules (BR) is a validation process which does:

(1) XML Validation level: Based on the definition in the XSD, the parser validates the structure and cardinality as well as compliance for mandatory elements of the XML provided[6].

Note: Comparing XML vs. XSD defined by the namespace can make the parser generating error having technical information when the basic information requested by General Principles is not correct.

(2) Business Rules Validation level: a Business Rules Engine validates the content of XML according to the General Principles Business Rules definition[7].

### 5.2. Business Continuity Plan

The document "FLUX Business Continuity Plan.docx" for the Vessel Position domain is available on the on the Master Data Register page of the European Commission Fisheries website.

In that document, in the paragraph related to the communication with the DG MARE FIDES helpdesk, the examples given for the title for an issue should be read "BEL:PROD: Vessel Position: Error Message XYZ" and for the unique identifier, ""20150216-01 BEL:PROD:Vessel Position: Error Message XYZ".

[6] In general, only XSD element are defined as mandatory. Element attributes and facets remain optional.

[7] Some specific business rules of this domain can withdraw or overwrite the definition of FLUX General Principles.

## 6. DATA MODEL (XSD) IMPLEMENTATION

The implementation of the Vessel Position Data Model applies the following general constraints at the level of XSD Element attributes:

(1) For Code & Identifier DataType: *listID* or *schemeID* attribute must be provided if it is not specifically defined in the definition of the element;

(2) For DateTime DataType: only udt:DateTime (of type xsd:dateTime) choice is used. The date and time must be in line with ISO8601 and expressed in UTC, unless explicitly mentioned otherwise. The format shall be YYYY-MM-DDThh:mm:ss[.000000]Z[8];

The following diagram describes the Vessel Position Data Model used for the implementation of transmission of VesselPositionMessage:

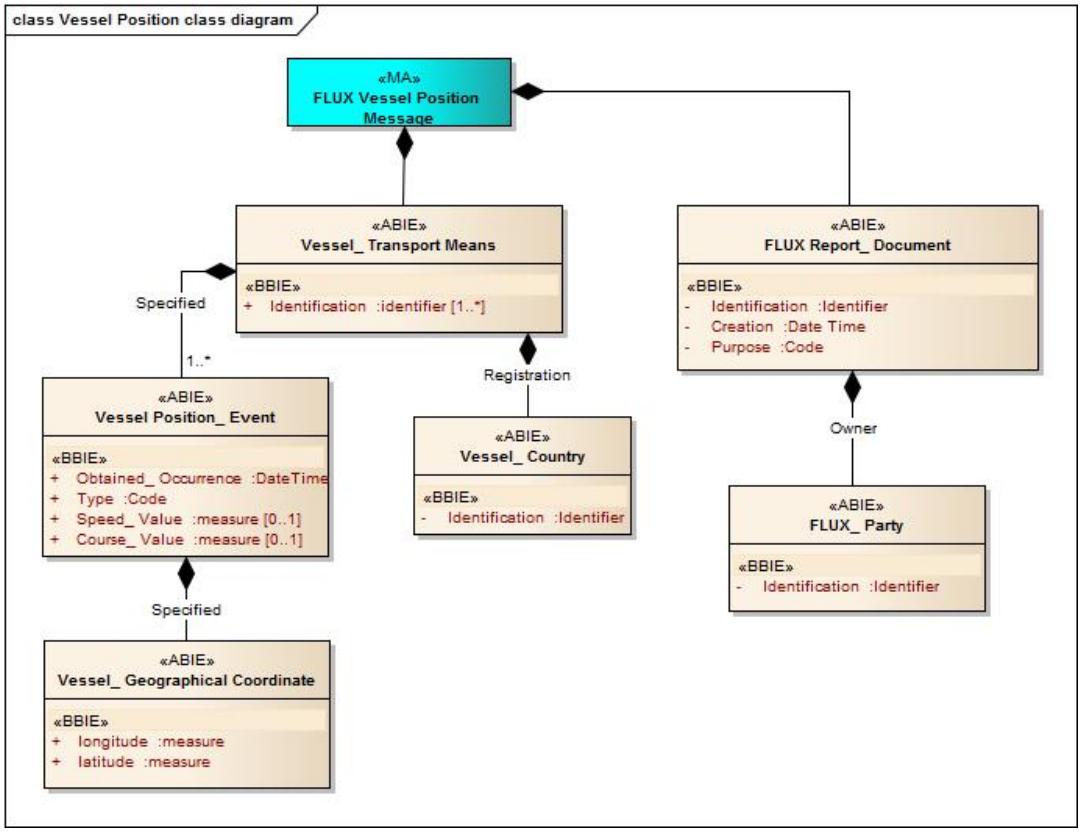


**Figure 3: Vessel Position Message Data Model**

[8] YYYY= year; MM= month, including leading 0 where month number is less than 10; DD= day of the month including leading 0 where day number is less than 10; T= the letter T to indicate the part of the time section; H24= hours of the day expressed with 2 digits using the 24-hour notation; MI=minutes expressed as 2 digits; SS=seconds expressed as 2 digits; [.000000]= optionally fractions of seconds may be included up to 6 digits, not including the brackets; Z= time zone, which must be Z (ie. UTC)

The table below describes for each fields defined in the Data Model (XSD) the values that can be used:

| Entity/Field Name | DataType | Cardinality | | Description | Remarks |
|---|---|---|---|---|---|
| | | Min | Max | | |
| FLUX Report_ Document | | 1 | 1 | The document details for this FLUX vessel position message. | FLUX General Principles Entity |
| Identification | Identifier | 1 | 1 | The unique identification of the FLUX vessel position message | A UUID as defined in the RFC 4122 |
| Creation | DateTime | 1 | 1 | The date, time, date time of the creation of the FLUX vessel position message. | A UTC date time.<br>Must be according to the definition provided in 6(2) |
| Purpose | Code | 1 | 1 | The code specifying the purpose of this FLUX report document, such as original, cancellation or replace. | Attribute *listID*= FLUX_GP_PURPOSE<br>Reference: EDIFACT Code List 1225 (qDT UN02000125 - Message Function_ Code).<br>Restriction: only value 9 is used in this context. |
| Owner. FLUX_ Party | Assoc. | 1 | 1 | Entity used to provide information on an individual, a group, or a body having a role in a Fisheries Language for Universal eXchange (FLUX) business function. Party has a legal connotation in a business transaction. | FLUX General Principles Entity |
| Identification | Identifier | 1 | 1 | An identifier of this FLUX party. | Attribute *listID*= TERITTORY<br>ISO 3166-1 alpha-3 code of the country owning this report.<br>e.g.: SWE |

| Entity/Field Name | DataType | Cardinality | | Description | Remarks |
|---|---|---|---|---|---|
| | | Min | Max | | |
| Vessel_ Transport Means | | 1 | 1 | Entity used to provide the identification and characteristic information of a ship or boat. | |
| Identification | Identifier | 1 | * | An identifier for this transport means vessel, such as an identifier defined by the Food and Agriculture Organisation (FAO), the radio call sign, or an external marking. | Attribute *schemeID must be provided with a value from list* = **FLUX_VESSEL_ID_TYPE**<br>**For EU vessels:**<br>schemeID=CFR & Value= CFR number<br>**For non-EU vessels:**<br>schemeID=IRCS & Value= IRCS number and schemeID=EXT_MARK & Value= side (hull) number<br>**For any vessels:** (in addition to the identifiers mentioned above and if available)<br>schemeID=UVI & Value=IMO number<br>Under BFT rules: (in addition to the other identifiers, if available)<br>schemeID=ICCAT & Value=ICCAT register number<br>Under GFCM rules: (in addition to other identifiers, if available)<br>schemeID=GFCM & Value=GFCM register number |
| Registration. Vessel_ Country | Assoc. | 1 | 1 | The country of registration of this transport means vessel. | |
| Identification | Identifier | 1 | 1 | The identifier for this vessel country. | *Use Code Countries code list in MDR.*<br>*listID* = TERRITORY<br>ISO 3166-1 alpha-3 code of the country where the vessel is registered (flag state). |
| Specified. Vessel | Assoc. | 1 | * | The general information of the VMS message. | More than one position can be provided. |

| Entity/Field Name | DataType | Cardinality | | Description | Remarks |
|---|---|---|---|---|---|
| | | Min | Max | | |
| Position_ Event | | | | | |
| Obtained_ Occurrence | DateTime | 1 | 1 | The date and time when the position of the vessel was taken by the vessel's navigation equipment. | The UTC date time when the position was obtained by the vessel navigation equipment, transmitted by the VMS system on-board of the vessel.<br><br>Must be according to the definition provided in 6(2) |
| Type | Code | 1 | 1 | The code specifying the type of vessel position event. | Attribute *listID must be provided with a value from list* = FLUX_VESSEL_POSITION_TYPE<br><br>Example of values are: "ENTRY,"EXIT","POS","MANUAL". |
| Speed_ Value | Measure | 0 | 1 | The measure of speed of the vessel for this vessel position event. | Mandatory.<br><br>In knots. Maximum 2 significant decimals.<br><br>Optional in case the following conditions are all met:<br><br>- TypeCode= EXIT<br><br>- Message addressed to Third party or RFMO<br><br>- The element is defined as optional in the agreement with the Third Party or RFMO |
| Course_ Value | Measure | 0 | 1 | The measure of course of the vessel for this vessel position event. | Mandatory.<br><br>In degrees and decimal degrees. Maximum 2 significant decimals.<br><br>Optional in case the following conditions are all met:<br><br>- TypeCode= EXIT<br><br>- Message addressed to |

| Entity/Field Name | DataType | Cardinality | | Description | Remarks |
|---|---|---|---|---|---|
| | | Min | Max | | |
| | | | | | Third party or RFMO<br>- The element is defined as optional in the agreement with the Third Party or RFMO |
| Specified. Vessel_ Geographical Coordinate | Assoc. | 1 | 1 | The latitude and longitude of a specified place, by which a vessel's relative situation on the globe is known. The height above the sea level constitutes a third coordinate. | Geographical Coordinates Position of the vessel transmitted by the VMS system at Obtained DateTime.<br>Altitude and System information are not used in context of this implementation. |
| Latitude | Measure | 1 | 1 | The measure of the latitude as an angular distance north or south from the Equator meridian to the meridian of a specific place for this vessel geographical coordinate. | Reference ISO 6709.<br>Coordinate expressed in WGS84, decimal degree notation, using a precision of at least 3 and maximum 6 decimal positions.<br>Positive coordinate refers to North of equator. Negative coordinate refers to South. |
| Longitude | Measure | 1 | 1 | The measure of the longitude as an angular distance east or west from the Greenwich meridian to the meridian of a specific place for this vessel geographical coordinate. | Reference ISO 6709.<br>Coordinate expressed in WGS84, decimal degree notation, using a precision of at least 3 and maximum 6 decimal positions.<br>Positive coordinate refers to East of Greenwich meridian. Negative coordinate refers to West. |

# 7. XML EXAMPLES

```
<rsm:FLUXVesselPositionMessage
xsi:schemaLocation="urn:un:unece:uncefact:data:standard:FLUXVesselPositionMessage:4
FLUXVesselPositionMessage_4p0.xsd" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:rsm="urn:un:unece:uncefact:data:standard:FLUXVesselPositionMessage:4"
xmlns:ram="urn:un:unece:uncefact:data:standard:ReusableAggregateBusinessInformationEntity:18"
xmlns:udt="urn:un:unece:uncefact:data:standard:UnqualifiedDataType:18">
        <rsm:FLUXReportDocument>
                <ram:ID> c133b211-0b0e-4358-893c-7afb5437bd61</ram:ID>
                <ram:CreationDateTime>
                        <udt:DateTime>2001-12-17T09:30:47.0Z</udt:DateTime>
                </ram:CreationDateTime >
                <ram:PurposeCode >9</ram:PurposeCode>
                <ram:OwnerFLUXParty>
                        <ram:ID >SWE</ram:ID>
                </ram:OwnerFLUXParty>
        </rsm:FLUXReportDocument>

        <rsm:VesselTransportMeans>
                <ram:ID schemeID=" CFR ">SWE000007880</ram:ID>
                <ram:ID schemeID=" EXT_MARKING">S-381</ram:ID>
                <ram:ID schemeID=" IRCS ">EI6207</ram:ID>
                <ram:RegistrationVesselCountry>
                        <ram:ID>SWE</ram:ID>
                </ram:RegistrationVesselCountry>

                <ram:SpecifiedVesselPositionEvent>
                        <ram:ObtainedOccurrenceDateTime>
                                <udt:DateTime>2001-12-17T09:30:47.0Z </udt:DateTime>
                        </ram:ObtainedOccurrenceDateTime>
                        <ram:TypeCode >POS</ram:TypeCode>
                        <ram:SpeedValueMeasure>8.3</ram:SpeedValueMeasure>
                        <ram:CourseValueMeasure>50</ram:CourseValueMeasure>
                        <ram:SpecifiedVesselGeographicalCoordinate>
                                <ram:LatitudeMeasure >50.563</ram:LatitudeMeasure>
                                <ram:LongitudeMeasure>009.252</ram:LongitudeMeasure>
                        </ram:SpecifiedVesselGeographicalCoordinate>
                </ram:SpecifiedVesselPositionEvent>
        </rsm:VesselTransportMeans>
</rsm:FLUXVesselPositionMessage>
```

```
<rsm:FLUXVesselPositionMessage
xsi:schemaLocation="urn:un:unece:uncefact:data:standard:FLUXVesselPositionMessage:4
FLUXVesselPositionMessage_4p0.xsd" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:rsm="urn:un:unece:uncefact:data:standard:FLUXVesselPositionMessage:4"
xmlns:ram="urn:un:unece:uncefact:data:standard:ReusableAggregateBusinessInformationEntity:18"
xmlns:udt="urn:un:unece:uncefact:data:standard:UnqualifiedDataType:18">
        <rsm:FLUXReportDocument>
                <ram:ID> c133b211-0b0e-4358-893c-7afb5437bd61</ram:ID>
                <ram:CreationDateTime>
                        <udt:DateTime>2018-12-17T11:31:47.0Z</udt:DateTime>
                </ram:CreationDateTime >
                <ram:PurposeCode >9</ram:PurposeCode>
                <ram:OwnerFLUXParty>
                        <ram:ID >SWE</ram:ID>
                </ram:OwnerFLUXParty>
        </rsm:FLUXReportDocument>

        <rsm:VesselTransportMeans>
                <ram:ID schemeID=" CFR "> SWE000007880</ram:ID>
                <ram:ID schemeID=" EXT_MARKING">S-381</ram:ID>
                <ram:ID schemeID=" IRCS ">EI6207</ram:ID>
                <ram:RegistrationVesselCountry>
                        <ram:ID>SWE</ram:ID>
                </ram:RegistrationVesselCountry>

                <ram:SpecifiedVesselPositionEvent>
                        <ram:ObtainedOccurrenceDateTime>
                                <udt:DateTime>2018-12-17T09:30:47.0Z </udt:DateTime>
                        </ram:ObtainedOccurrenceDateTime>
                        <ram:TypeCode >POS</ram:TypeCode>
                        <ram:SpeedValueMeasure>8.3</ram:SpeedValueMeasure>
                        <ram:CourseValueMeasure>50</ram:CourseValueMeasure>
                        <ram:SpecifiedVesselGeographicalCoordinate>
                                <ram:LatitudeMeasure >50.563</ram:LatitudeMeasure>
                                <ram:LongitudeMeasure>009.252</ram:LongitudeMeasure>
                        </ram:SpecifiedVesselGeographicalCoordinate>
                </ram:SpecifiedVesselPositionEvent>

                <ram:SpecifiedVesselPositionEvent>
                        <ram:ObtainedOccurrenceDateTime>
                                <udt:DateTime>2018-12-17T11:30:47.0Z </udt:DateTime>
                        </ram:ObtainedOccurrenceDateTime>
                        <ram:TypeCode >POS</ram:TypeCode>
                        <ram:SpeedValueMeasure>8.3</ram:SpeedValueMeasure>
                        <ram:CourseValueMeasure>50</ram:CourseValueMeasure>
                        <ram:SpecifiedVesselGeographicalCoordinate>
                                <ram:LatitudeMeasure >50.123456</ram:LatitudeMeasure>
                                <ram:LongitudeMeasure>009.132</ram:LongitudeMeasure>
                        </ram:SpecifiedVesselGeographicalCoordinate>
                </ram:SpecifiedVesselPositionEvent>
        </rsm:VesselTransportMeans>
</rsm:FLUXVesselPositionMessage>
```

## 8. CODE LISTS

- **All XSDs and code lists are listed in the Master Data Register of DG MARE of European Commission**: http://ec.europa.eu/fisheries/cfp/control/codes/index_en.htm

The values mentioned in above tables for the *listID* attribute refer to index of this MDR. This listID value can be used to retrieve the code values using the FLUX Master Data Management specifications[9].

| Code list alias |
|---|
| FLUX_GP_PURPOSE |
| FLUX_VESSEL_POSITION_TYPE |
| TERRITORY |
| FLUX_VESSEL_ID_TYPE |

## 9. FLUX TL ENVELOPE PARAMETERS

The following FLUX TL parameters must be used for transmission of Vessel Position Messages.

| Common name | FLUX TL Envelope Tag name | Value | Remark |
|---|---|---|---|
| Dataflow name | DF | urn:un:unece:uncefact:data:standard:FLUXVesselPositionMessage:4 | |
| Timeout DateTime | TODT | DateTime (in UTC) of creation of the envelope + 60 minutes. | Value expressed as XSD DateTime in UTC. Must be according to the definition provided in 6(2). |
| Acknowledge Receipt | AR | False | Note: a non-delivery message is always sent when the recipient cannot be reached and timeout (TODT) time has expired. |

## 10. CONTACT

MARE-DATA-MANAGEMENT@ec.europa.eu

[9] FLUX BRS: P1000 – 10; MDM domain

## 11. VERSIONING

| Version | Comment | Date |
|---|---|---|
| 2.0 | First draft –based on v1.0.1 | 19/02/2016 |
| 2.0.1 | Second draft – including remarks from ERS WG held on April 19-2. | 02/05/2016 |
| 2.0.2 | Final version– approved ERS WG during May 26 meeting. | 27/05/2016 |
| 2.1 | -Correction: Speed and course are mandatory for all position reports for EU vessels, except for type EXIT when messages are transmitted to RFMO/3rd party where these elements are defined as optional in the agreement.<br>-Clarified and aligned with FA domain the descriptions of required vessel IDs.<br>-Clarified date/time format, aligning with FA domain.<br>-Included example with multiple position events in one message.<br>-Included reference to FLUX TL parameters.<br>-Updated contact information.<br>-Some editorial changes.<br><br>Final version approved by Recommendation 60 of 8/3/2019. | 14/02/2019 |