Recommendation on introducing the ERS Implementation document in Annex IX of the Scheme (FLUX Vessel Position)

As proposed by PECMAC, the Commission hereby adopts the following recommendation pursuant to Article 8 of the Convention:

NEAFC FLUX Vessel Position Implementation Document

1 Contents

2 Introduction........................................................................................................................................... 2

3 References............................................................................................................................................... 2

4 Legal Basis................................................................................................................................................ 2

5 Scope....................................................................................................................................................... 3

5.1 Implementing Guide Scope.................................................................................................................. 3

6 Procedures.............................................................................................................................................. 4

6.1 General Principles............................................................................................................................... 4

6.2 Business Continuity Plan.................................................................................................................... 5

7 Data Model (XSD) Implementation........................................................................................................ 5

7.1 Data Model Diagram............................................................................................................................ 5

7.2 Data Model Fields.................................................................................................................................. 7

8 XML Examples ......................................................................................................................................... 10

9 Code Lists ............................................................................................................................................... 11

10 FLUX TL Envelope Parameters............................................................................................................ 11

11 Contact.................................................................................................................................................... 11
2 Introduction

This document aims to describe the implementation of Vessel Position XSD in the context of NEAFC.

Based on EU Implementation version 2.1

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 NEAFC website¹.

3 References

- UN/CEFACT P1000 FLUX Standard v1.0²:
  - FLUX BRS: P1000 – 1; General principles (version 2.1).
  - FLUX BRS: P1000 – 7; Vessel Position domain (version 2.0).
- UN/CEFACT FLUXVesselPositionMessage_4p0.xsd³

The documents Code Lists which are specific to Vessel Position domain are published on Master Data Register page of NEAFC.

4 Legal Basis

NEAFC Scheme of Control and Enforcement⁴ and current NEAFC Management Measures and Recommendations⁵

---

¹ https://www.neafc.org/mdr
² http://www.unece.org/cefact/brs/brs_index.html
⁴ https://www.neafc.org/scheme/contents
⁵ https://www.neafc.org/managing_fisheries/measures/current
5 Scope

5.1 Implementing Guide Scope

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\(^6\), to NEAFC according to the NEAFC scheme.

---

\(^6\) In theory, a FMC can use various methods 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.
6 Procedures

6.1 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 NEAFC:

Figure 2 Message Transmission activity diagram

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

- **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.\(^7\)
- **Business Rules Validation level**: A Business Rules Engine validates the content of XML according to the General Principles Business Rules definition.\(^8\)

\(^7\) In general, only XSD element are defined as mandatory. Element attributes and facets remain optional.

\(^8\) Some specific business rules of this domain can withdraw or overwrite the definition of FLUX General
6.2 Business Continuity Plan
Business continuity provision for this system is provided for in Article 14.2 of NEAFC Information Security Management System (ISMS) which is available at https://www.neafc.org/isms

7 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 Data Type: listID or schemeID attribute must be provided if it is not specifically defined in the definition of the element;
2. For DateTime Data Type: 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]Z9;

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

---

9 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)
Figure 3: Vessel Position Message Data Model

9 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)
### 7.2 Data Model Fields

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

<table>
<thead>
<tr>
<th>Entity/Field Name</th>
<th>Data Type</th>
<th>Min</th>
<th>Max</th>
<th>Description</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLUX Report Document</td>
<td>Assoc.</td>
<td>1</td>
<td>1</td>
<td>The document details for this FLUX vessel position message.</td>
<td>FLUX General Principles Entity</td>
</tr>
<tr>
<td>Identification</td>
<td>Identifier</td>
<td>1</td>
<td>1</td>
<td>The unique identification of the FLUX vessel position message</td>
<td>A UUID as defined in the RFC 4122</td>
</tr>
<tr>
<td>Creation</td>
<td>DateTime</td>
<td>1</td>
<td>1</td>
<td>The date, time, date time of the creation of the FLUX vessel position message.</td>
<td>A UTC date time. Must be according to the definition provided in 6(2)</td>
</tr>
<tr>
<td>Purpose</td>
<td>Code</td>
<td>1</td>
<td>1</td>
<td>The code specifying the purpose of this FLUX report document, such as original, cancellation or replace.</td>
<td>Attribute listID=FLUX_GP_PURPOSE Reference: EDIFACT Code List 1225 (qDT UN02000125 - Message Function_Code). Restriction: only value 9 is used in this context.</td>
</tr>
<tr>
<td>Owner FLUX Party</td>
<td>Assoc.</td>
<td>1</td>
<td>1</td>
<td>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.</td>
<td>FLUX General Principles Entity</td>
</tr>
<tr>
<td>Identification</td>
<td>Identifier</td>
<td>1</td>
<td>1</td>
<td>An identifier of this FLUX party.</td>
<td>Attribute schemeID=TERITTORY ISO 3166-1 alpha-3 code of the country owning this report. e.g.: SWE</td>
</tr>
<tr>
<td>Vessel Transport Means</td>
<td>Assoc.</td>
<td>1</td>
<td>1</td>
<td>Entity used to provide the identification and characteristic information of a ship or boat.</td>
<td></td>
</tr>
<tr>
<td>Entity/Field Name</td>
<td>Data Type</td>
<td>Min</td>
<td>Max</td>
<td>Description</td>
<td>Remarks</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------</td>
<td>-----</td>
<td>-----</td>
<td>------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Identification</td>
<td>Identifier</td>
<td>2</td>
<td>*</td>
<td>An identifier for this vessel</td>
<td>At least 2 vessel IDs of which one is schemeID=IRCS &amp; Value= IRCS number must be provided. The other shall be schemeID=UVI where IMO is applicable to the vessel; alternatively the contracting party reference number (REG_NBR) as flag state 3-alpha country code followed by alphanumeric characters.</td>
</tr>
<tr>
<td>Registration Vessel Country</td>
<td>Assoc.</td>
<td>1</td>
<td>1</td>
<td>The country of registration of this transport means vessel.</td>
<td></td>
</tr>
<tr>
<td>Identification</td>
<td>Identifier</td>
<td>1</td>
<td>1</td>
<td>The identifier for this vessel country.</td>
<td>Use Code Countries code list in MDR. schemeID = TERRITORY ISO 3166-1 alpha-3 code of the country where the vessel is registered (flag state).</td>
</tr>
<tr>
<td>Specified Vessel Position Event</td>
<td>Assoc.</td>
<td>1</td>
<td>*</td>
<td>The general information of the VMS message.</td>
<td>More than one position can be provided.</td>
</tr>
<tr>
<td>Obtained Occurrence</td>
<td>DateTime</td>
<td>1</td>
<td>1</td>
<td>The date and time when the position of the vessel was taken by the vessel's navigation equipment.</td>
<td>The UTC date time when the position was obtained by the vessel navigation equipment, transmitted by the VMS system on-board of the vessel. Must be according to the definition provided in 6(2)</td>
</tr>
<tr>
<td>Type</td>
<td>Code</td>
<td>1</td>
<td>1</td>
<td>The code specifying the type of vessel position event.</td>
<td>Attribute listID must be provided with a value from list = FLUX_VESSEL_POSITION_TY PE Example of values are: ENTRY, EXIT, POS, or MANUAL.</td>
</tr>
</tbody>
</table>

---

10 Annex IV(a) of the Scheme: Radio Call sign and IMO number is required, where IMO is not applicable (for Vessels under IMO resolution A.1078 (28)), use of either CP Internal reference number or Vessel external registration is required.
<table>
<thead>
<tr>
<th>Entity/Field Name</th>
<th>Data Type</th>
<th>Min</th>
<th>Max</th>
<th>Description</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed Value</td>
<td>Measure</td>
<td>0</td>
<td>1</td>
<td>The measure of speed of the vessel for this vessel position event.</td>
<td>In knots. Maximum 2 significant decimals. Mandatory unless the following conditions are all met: TypeCode=EXIT, Message addressed to Third party or RFMO, The element is defined as optional in the agreement with the Third Party or RFMO.</td>
</tr>
<tr>
<td>Course Value</td>
<td>Measure</td>
<td>0</td>
<td>1</td>
<td>The measure of course of the vessel for this vessel position event.</td>
<td>In degrees and decimal degrees. Maximum 2 significant decimals. Mandatory unless all the following conditions are all met: TypeCode=EXIT, Message addressed to Third party or RFMO, The element is defined as optional in the agreement with the Third Party or RFMO.</td>
</tr>
<tr>
<td>Specified Vessel Geographical Coordinate</td>
<td>Assoc.</td>
<td>1</td>
<td>1</td>
<td>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.</td>
<td>Geographical Coordinates Position of the vessel transmitted by the VMS system at Obtained DateTime. Altitude and System information are not used in context of this implementation.</td>
</tr>
<tr>
<td>Latitude</td>
<td>Measure</td>
<td>1</td>
<td>1</td>
<td>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.</td>
<td>Reference ISO 6709. Coordinate expressed in WGS84, decimal degree notation, using a precision of at least 3 and maximum 6 decimal positions. Positive coordinate refers to North of equator. Negative coordinate refers to South.</td>
</tr>
<tr>
<td>Longitude</td>
<td>Measure</td>
<td>1</td>
<td>1</td>
<td>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.</td>
<td>Reference ISO 6709. Coordinate expressed in WGS84, decimal degree notation, using a precision of at least 3 and maximum 6 decimal positions. Positive coordinate refers to East of Greenwich meridian. Negative coordinate refers to West.</td>
</tr>
</tbody>
</table>
8 XML Examples

<?xml version="1.0" encoding="utf-8"?>
<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: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-7af85437bd61</ram:ID>
    <rsm:CreationDateTime>
      <udt:DateTime>2001-12-17T09:30:47.0Z</udt:DateTime>
    </rsm: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:ID schemeID="UVI">1234567</ram:ID>
    <ram:RegistrationVesselCountry>
      <ram:ID>SWE</ram:ID>
    </ram:RegistrationVesselCountry>
    <ram:SpecifiedVesselPositionEvent>
      <rsm:ObtainedOccurrenceDateTime>
        <udt:DateTime>2001-12-17T09:30:47.0Z</udt:DateTime>
      </rsm: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>

---

Note that a single Position in each message reflects a real time reporting implementation. It is possible to send more than one position in each position message which could be used for example when pulling data from another system.
9 Code Lists

All XSDs and code lists are listed in the NEAFC Master Data Register.

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.

<table>
<thead>
<tr>
<th>Code list alias</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLUX_GP_PURPOSE</td>
</tr>
<tr>
<td>FLUX_VESSEL_POSITION_TYPE</td>
</tr>
<tr>
<td>TERRITORY</td>
</tr>
<tr>
<td>FLUX_VESSEL_ID_TYPE</td>
</tr>
</tbody>
</table>

10 FLUX TL Envelope Parameters

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

<table>
<thead>
<tr>
<th>Common name</th>
<th>FLUX TL Envelope Tag name</th>
<th>Value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dataflow name</td>
<td>DF</td>
<td>urn:un:unece:unecfact:data:standard:FLUXVesselPositionMessage:4</td>
<td></td>
</tr>
<tr>
<td>Timeout DateTime</td>
<td>TODT</td>
<td>DateTime (in UTC) of creation of the envelope + 72 hours.</td>
<td>Value expressed as XSD DateTime in UTC. Must be according to the definition provided in 6(2) The FLUX TL will retry an undelivered envelope in a given schedule until the TODT is reached.</td>
</tr>
<tr>
<td>Acknowledge Receipt</td>
<td>AR</td>
<td>False</td>
<td>Note: a non-delivery message is always sent when the recipient cannot be reached and timeout (TODT) time has expired.</td>
</tr>
</tbody>
</table>

11 Contact

Please address enquiries to info@neafc.org so the query can be routed as appropriate.

---

12 FLUX BRS: P1000 – 10; MDM domain