



UN/CEFACT

SIMPLE, TRANSPARENT AND EFFECTIVE PROCESSES

FOR GLOBAL BUSINESS

BUSINESS REQUIREMENTS SPECIFICATION (BRS)

Vessel Position domain

Business domain: Fisheries

Business process: Electronic data exchange for fisheries control and management

Document identification: P1000 – 7; Vessel Position domain

Title: Fisheries Language for Universal eXchange

UN/CEFACT International Trade and Business Processes Group:

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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 "Vessel Position" business domain identified in P1000-1.

This BRS is standardizing a part of the electronic logbooks and reporting data exchanges between fishing vessels and their flag states, and between these flag states and other parties, using the UN/CEFACT Modeling Methodology (UMM) approach and Unified Modeling 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 Document Template (CEFACT/ICG/005)

UN/CEFACT Core Components Data Type Catalogue Version 3.1 (CCTS-DTCatalogueVersion3p1.pdf)

UN/CEFACT FLUX General Principles Business Requirement Specification Document (v2.x)

3 Objective

The objective of this document is to propose a standard for the communication of Vessel positioning information (VMS) between monitoring centers. The VMS position messages can be exchanged in a secure environment between various parties. Note that the term VMS used throughout the document identifies any system on board of a vessel delivering its position.

4 Scope

4.1 General context

The following diagram illustrates the general context of the business

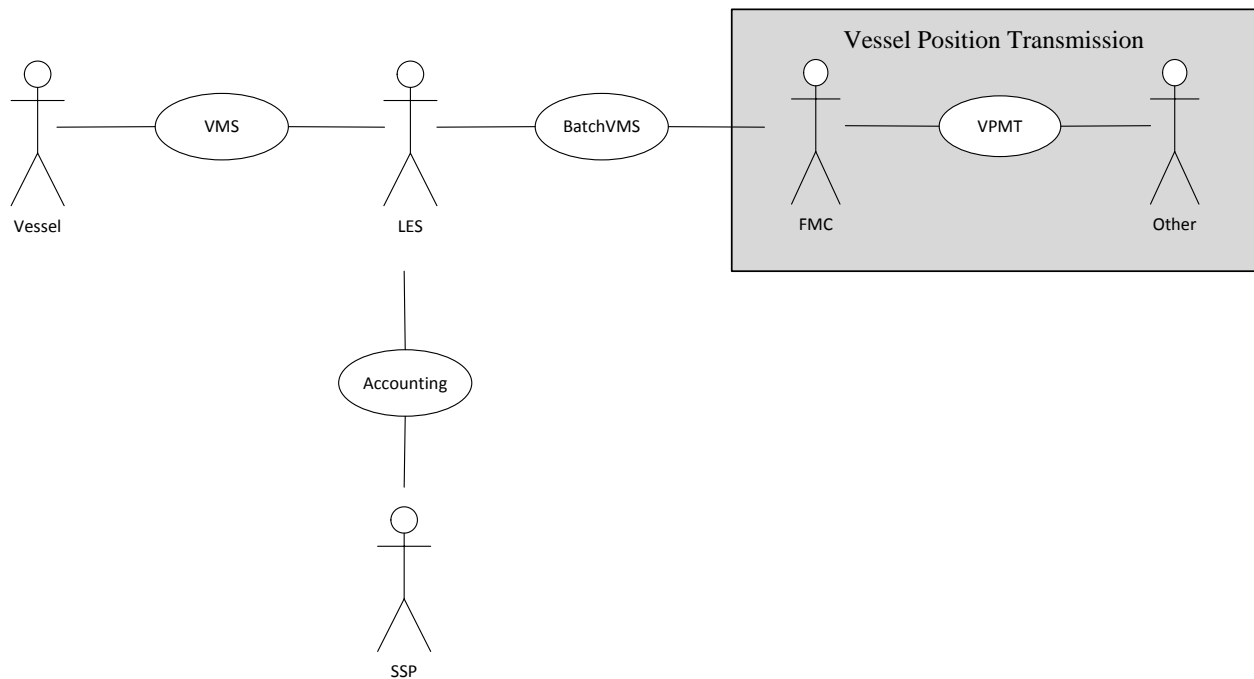


Figure 1: General context diagram

4.2 Vessel Position Scope

As shown on the General context diagram, the scope of this project is limited to the exchanges of messages between Monitoring Centers and other parties for fishing vessel monitoring (grey box on the drawing).

Categories	Description and Values
Business Process	General Message Exchange Vehicle location information
Product Classification	
Industry Classification	Fisheries sector
Geopolitical	Global
Official Constraints	European Regulations National regulations Locally applicable regulations International agreements
Business Process Role	User of the VMS system
Supporting Role	None
System Capabilities	Agreed level of security to protect data integrity

5 Stakeholders

FMC	In most configurations the FMC is the entity of the Flag State that is receiving VMS data from the vessel, and is responsible for further dispatching the data to other stakeholders.	
Other	Receiver of the VMS message sent by the FMC, such as Flag state, Coastal state, RFMO or any other organization for example:	
	Coastal state	Under certain legislations the coastal state is entitled to receive VMS data from a vessel from another flag state, as soon as this vessel enters its coastal waters.
	RFMO/ International Organization secretariat	Under certain legislation the RFMO or other International Organization secretariat are entitled to receive VMS data from a vessel active within its regulatory area.

6 Business requirements

6.1 Business requirements view

In the context of control and surveillance of fishing vessels movements and effort calculation of vessels, parties need to have data on the vessel-id, geographical position, date, time, course and speed. This data is transmitted by satellite-tracking devices installed on board of the vessel via a land earth station to the monitoring center. FMC processes this data, along with the corresponding vessel details, and forwards it to other parties as required.

6.2 Business process elaboration

6.2.1 Vessel Position message exchange

Principles

A Fishing Vessel has to send to its Flag State FMC its geographical position coming from the on-board VMS. Under legislation or international agreements, the FMC is required to send this information to other parties such as the Coastal State of the area where the Fishing Vessel is operating or to the RFMO managing the area.

Use case: Vessel Position message exchange

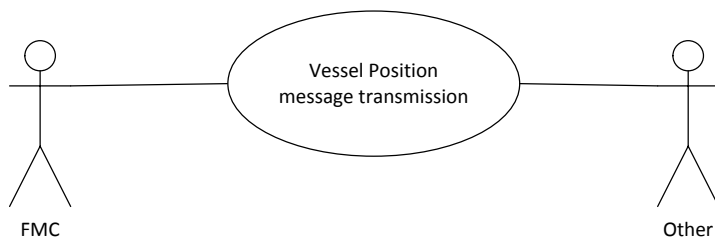


Figure 2: Use case diagram

Use case description

Business process name	Vessel Position message transmission
Identifier	VPMT

Actors	FMC, Other parties
Description	The FMC transmits a vessel position to another party.
Pre-condition	None
Post-conditions	None
Scenarios	None
Remarks	None

6.3 Information flow definition (activity diagram, description)

6.3.1 Vessel Position message exchange

The activity diagram allows identifying all the significant information flows between the FMC where the vessel position is stored and other parties.

Activity Diagram

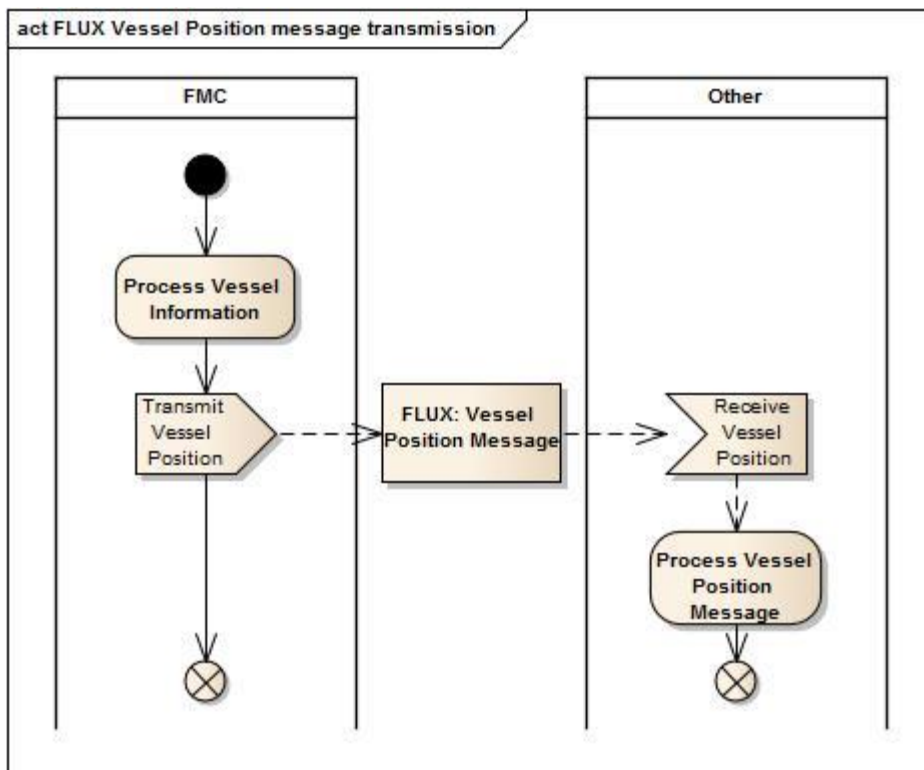


Figure 3 Vessel Position message transmission diagram

Activity diagram description:

The FMC sends the information about Vessel Position to Other receiver. Note that this domain does not return a message back to a sender as described in the principles for exchanging FLUX messages defined in *General Principles* document¹.

¹ Cf. P1000 – 1; General Principles BRS document.

6.4 Information model definition (class diagram)

The VPMT Class diagram describes all the necessary classes of information for a flow of information exchange for the VMS message transmission case.

6.4.1 Vessel Position Declaration:

Description: The *Vessel Position* declaration is the main declaration used to transfer the information about the vessel position as well as the identification of this vessel. FLUX *Report_Document* and *Report_Party* entities are defined in the *General Principles* document.

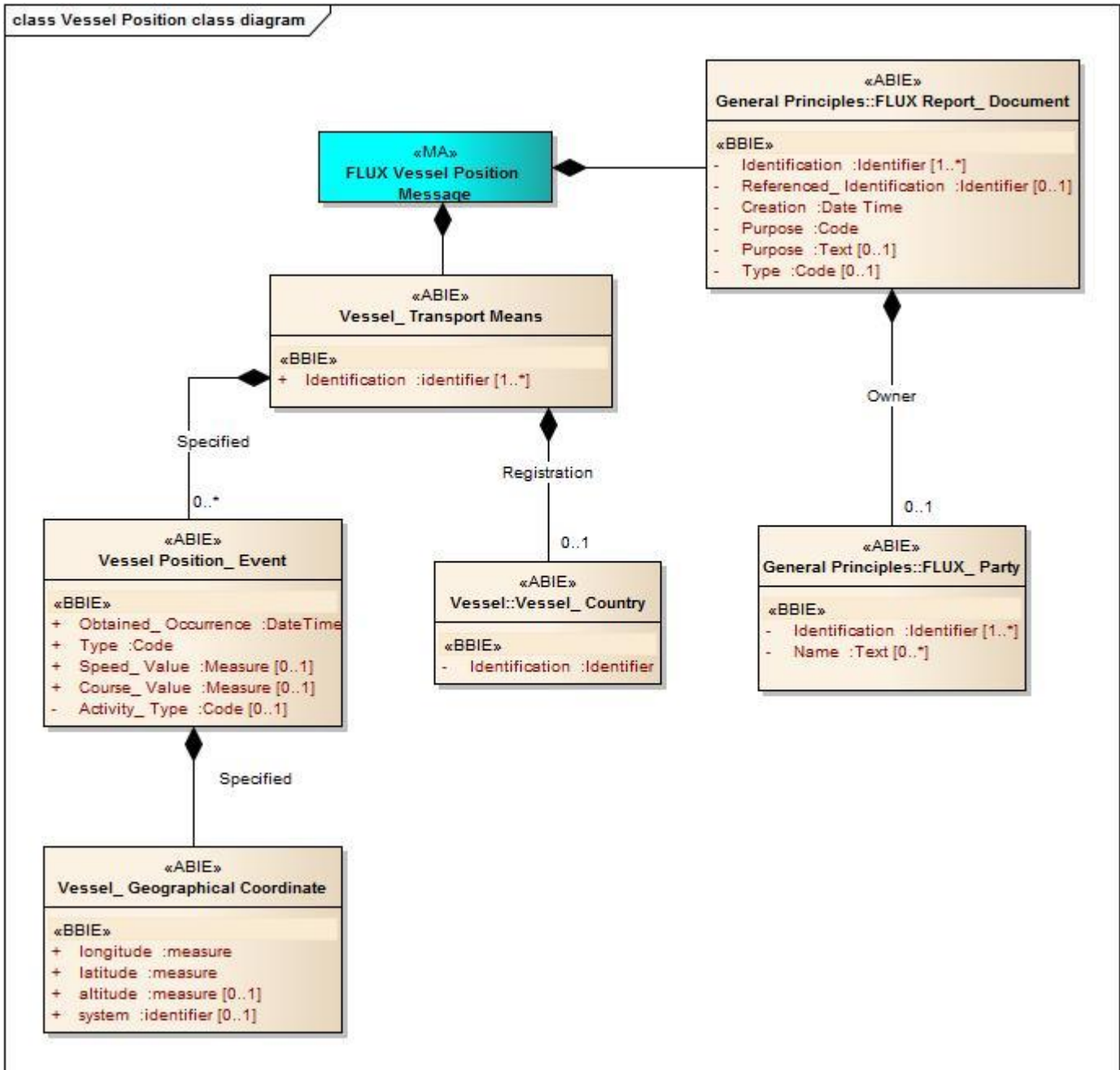


Figure 4: class diagram Vessel Position declaration

Vessel Transport Means²

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

Mult.	Business term	Rel.	Type	Description
0..n	Identification	Att	Identifier	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.
0..1	Registration	Ass	Vessel_ Country Entity	The country of registration of this transport means vessel.
0..n	Specified	Ass	Vessel Position_ Event Entity	A position event specified for this vessel transport means.

Vessel Country²

Description: the entity containing the details of a country associated to a vessel.

Mult.	Business term	Rel.	Type	Description
1	Identification	Att	Identifier	The identifier for this vessel country.

Vessel Position Event

Description: The entity containing information obtained related to the position of a vessel.

Mult.	Business term	Rel.	Type	Description
1	Obtained_ Occurrence	Att	DateTime	The date and time when the position of the vessel was taken by the vessel's navigation equipment.
1	Type	Att	Code	The code specifying the type of vessel position event.
0..1	Speed	Att	Measure	The measure of speed of the vessel for this vessel position event.

² For sake of clarity, the description of *Vessel_ Transport Means*; *Vessel Country* entities contains only the part that is necessary for this domain. The complete definition of such entities can be found in the *Vessel* document.

0..1	Course	Att	Measure	The measure of course of the vessel for this vessel position event.
0..1	Activity_Type	Att	Code	The code specifying the type of activity, such as of the vessel or the crew, at this vessel position event.
1	Specified	Ass	Vessel_ Geographical Coordinates Entity	The set of geographical coordinates specified for this vessel position event.

Vessel Geographical Coordinates

Description: The latitude and longitude of a specified place, by which its relative situation on the globe is known. The height above the sea level constitutes a third coordinate.

Mult.	Business term	Rel.	Type	Description
1	Latitude	Att	Measure	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.
1	Longitude	Att	Measure	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.
0..1	Altitude	Att	Measure	The measure of the altitude that reflects the vertical elevation of an object above a surface for this vessel geographical coordinate.
0..1	System	Att	Identifier	The identifier of the system used for measuring this specified geographical coordinate.