

EMSWe Message Implementation Guide - XML Schema files (XSD) and XML example files

1. Introduction

This document provides a brief description of the XSD and XML example files corresponding to the European Maritime Single Window environment's Message Implementation Guide (EMSWe MIG) version 2.0.0 (refer to <https://emsa.europa.eu/emsw-e-mig/>). The files have been produced automatically by using export functions of the data modelling tool GEFEG.FX.

2. Structure of XSD schema files

The schema files apply a hierarchical structure. Each formality schema consists of a root envelope schema, under which there are nested schemas for the formality header MAI, for the formality's content, for the codes used in the formality, for the business attributes, and for the relevant data types. The formalities are described in separated XSD files, and do not contain dependencies between each other.

Schema files are organised in folders named as a corresponding formality code, under the folder named "XSD". Each folder contains the following files (formality CWA is used as an example):

- *CWA_Envelope.xsd* – formality envelope, that imports the subsequent XSD files;
- *CWA_Envelope_MAI_MMTPluspD24A.xsd* – XSD of the formality header MAI;
- *CWA_Envelope_CWA_MMTPluspD24A.xsd* – XSD of the formality's content;
- *CWA_Envelope_QualifiedDataType_100pD24A.xsd* – definitions of qualified data types, such as codes;
- *CWA_Envelope_ReusableAggregateBusinessInformationEntity_100pD24A.xsd* – message structures of the formality;
- *CWA_Envelope_UnqualifiedDataType_100pD24A.xsd* – definitions of unqualified data types.

The schema structure is based on the XML Naming and Design Rules (NDR) of UN/CEFACT¹. The following abbreviations are used:

- *MA (Message Assembly)* – a complex schema type containing sub-elements. It corresponds to the root class in a MIG formality;
- *ASMA (Associated Message Assembly)*, *ABIE (Aggregate Business Information Entity)*, *ASBIE (Association Business Information Entity)* – a complex element that is based on MA. It corresponds to a class in a MIG formality;
- *BBIE (Basic Business Information Entity)* – it corresponds to an attribute in a MIG formality.

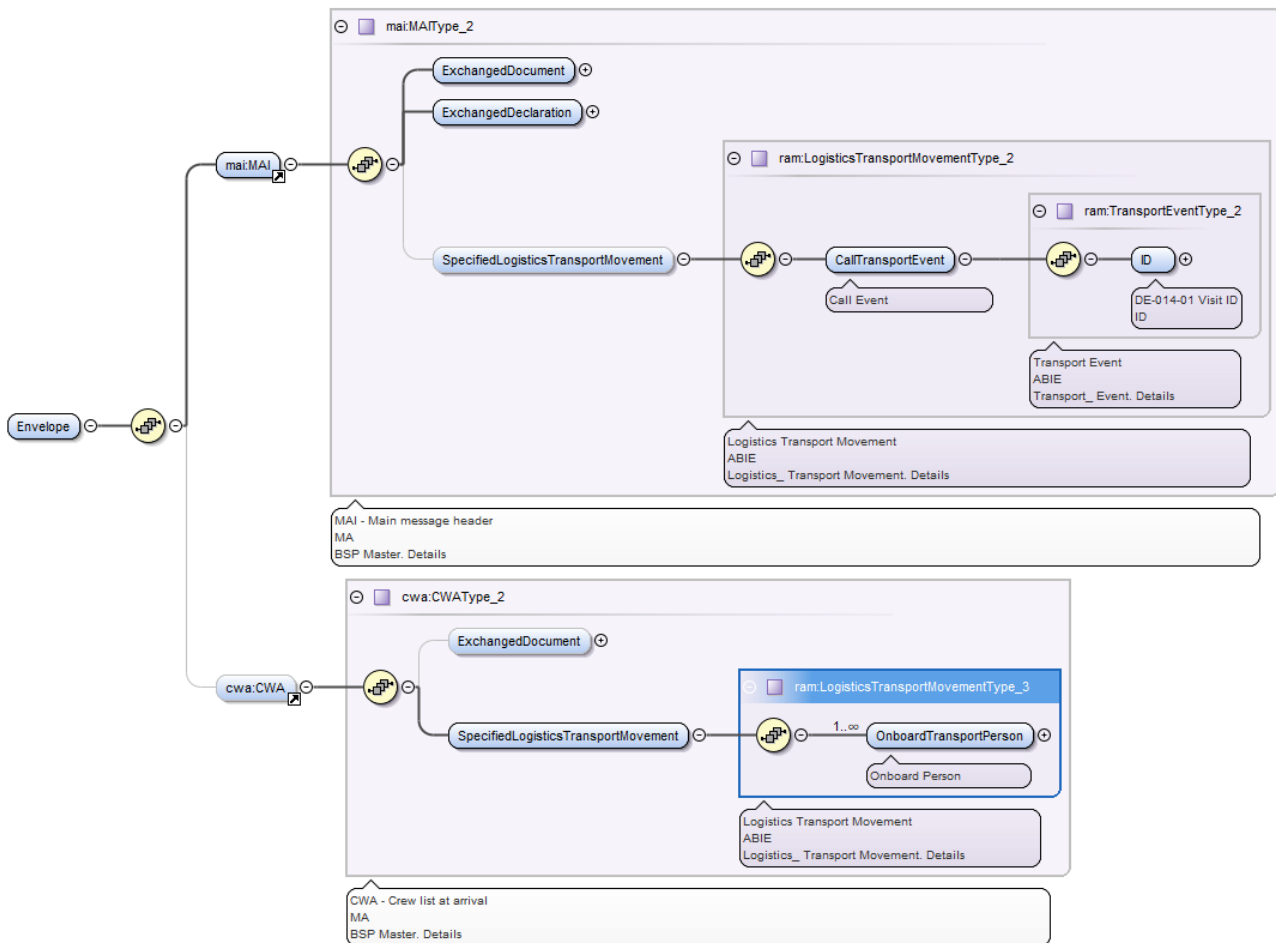
¹ Version 2.1.1 of 31.08.2021 is available at: <https://unece.org/sites/default/files/2023-10/XMLNamingAndDesignRulesV2.1.1.pdf>

The schema files are associated the following namespaces:

- Target namespace for Envelope: *xmlns:env="urn:un:unece:uncefact:data:standard:Envelope";*
- Formality header MAI: *xmlns:mai="urn:un:unece:uncefact:data:standard:MAI:MMTPlus";*
- Formality body (e.g., CWA): *xmlns:cwa="urn:un:unece:uncefact:data:standard:CWA:MMTPlus";*
- Message structures:
xmlns:ram="urn:un:unece:uncefact:data:standard:ReusableAggregateBusinessInformationEntity:100"
- Unqualified data types: *xmlns:udt="urn:un:unece:uncefact:data:standard:UnqualifiedDataType:100"*
- Qualified data types: *xmlns:qdt="urn:un:unece:uncefact:data:standard:QualifiedDataType:100"*
- Generic namespace: *xmlns:xs="http://www.w3.org/2001/XMLSchema".*

The schema files contain annotations which provide the references to the EMSWe IDs and the business names of the EMSWe data elements used in the formality.

An example of the XSD structure for the formality CWA is depicted below.



All root Envelopes of schema files contain a comment which indicates the corresponding MIG version.

A similar structure is used for the schema files corresponding to the MIG responses. The only difference is that they refer to the response header RES rather than to the formality header MAI.

3. Code list checks

The following code list checks have been implemented in the schema files:

- ISO 3166-1 alpha-2 code (UN/EDIFACT codes 3207)
- ISO 3166-1 alpha-3 codes including user-defined codes from ISO/IEC 7501-1 (for special machine-readable passports) meant for persons without a defined nationality, such as XXA, XXB, XXC and XXX
- ISO 4217 code list
- ISO 6346 size and type code list (4-characters)
- ISO 639-1 2A (UN/EDIFACT 3453)
- Yes/no indicators (1=yes, 0=no)
- Value checks of "ADD", "UPDATE", "DELETE" (for data element DE-001-03 "Data amendment action, coded")
- Value checks of "I", "II" and "III" (for data element DE-049-06 "Dangerous goods packing group")
- Value check of "1" (for data element DE-014-03 "Mode of transport at the border")
- UN/EDIFACT codes (7075)
- UN/CEFACT codes (6411)
- UN/EDIFACT codes (3035)
- UN/EDIFACT codes (8169)
- UN/ECE Recommendation 19
- UN/ECE Recommendation 19 (1: Maritime transport, 8: Inland water transport)
- UN/ECE Recommendation 20 (UN/EDIFACT Codes 6411)
- Two-letter alphabetic code of Annex V of UNECE Recommendation 21, UN/EDIFACT codes (7065)
- UN/ECE Recommendation 21 Annex VI (UN/EDIFACT Codes 7065)
- UN/ECE Recommendation 28
- UN/EDIFACT codes (1373)
- UN/EDIFACT codes (8273)
- UN/EDIFACT codes (1001)
- UN/EDIFACT codes (3035)
- UN/EDIFACT codes (3499)
- UN/EDIFACT codes (7273)
- UN/EDIFACT codes (8025)
- UN/EDIFACT codes (8053)
- UN/EDIFACT codes (8067)
- UN/EDIFACT codes (8155)
- UN/EDIFACT codes (8169)
- UN/EDIFACT codes (8249)
- UN/EDIFACT codes (9303)
- UN/EDIFACT codes (1225)
- UN/EDIFACT codes (1001)
- UN/CEFACT codes (6145)
- UN/EDIFACT codes (4233)
- UN/EDIFACT codes (4461)
- All EMSWe-specific code lists
- All code restrictions.

4. Checks of MIG rules and conditions

The following MIG rules are implemented in the XSDs:

- All rules that are restricting the codes that are defined as enumerations in XSDs (as enlisted in Section 3): R-ABS-001, R-BKA-002, R-BKD-001, R-BLU-001, R-CAR-001, R-CGA-001, R-CGA-002, R-CLR-001, R-CRT-002, R-GENERAL-007, R-GENERAL-050, R-GENERAL-051, R-HZA-002, R-HZA-003, R-HZA-004, R-HZA-005, R-HZA-006, R-HZA-010, R-HZD-001, R-MAI-001, R-MAI-002, R-MDD-001, R-NOA-003, R-NOA-006, R-NOD-001, R-PXA-001, R-PXA-002, R-RES-001, R-SHP-001, R-SRR-001, R-SRV-001, R-STW-001, R-VIS-002.
- Rules that are restricting the units of measurement: R-GENERAL-004, R-GENERAL-008, R-GENERAL-009, R-GENERAL-010, R-GENERAL-011, R-GENERAL-012, R-GENERAL-013, R-GENERAL-014, R-GENERAL-015, R-GENERAL-016, R-GENERAL-017, R-GENERAL-018, R-GENERAL-019, R-GENERAL-020, R-GENERAL-024, R-GENERAL-025, R-GENERAL-026, R-GENERAL-027, R-GENERAL-028, R-GENERAL-029, R-GENERAL-030, R-GENERAL-031, R-GENERAL-032, R-GENERAL-036, R-GENERAL-037, R-GENERAL-041, R-GENERAL-042, R-GENERAL-043, R-GENERAL-044.
- Rules that are checking the format of of ISO 8601 Datetime and Date values: R-GENERAL-001, R-GENERAL-006.
- Rules that are checking if the provided value is positive or non-negative: R-GENERAL-002, R-GENERAL-022.

All other rules and conditions are checked by the EMSWe Rreporting Interface Module (RIM).

5. XML examples

In addition to the schema files, an XML example file is provided for each MIG formality. The file consists of the formality header MAI and the formality's content part. The file names of the XML examples begin with the code of the corresponding formality, followed by “_Envelope”, e.g. *CWA_Envelope.XML*.

XML example files are as well provided for the MIG responses.

All XML files are placed in the folder named “XML”.