European Maritime Safety Agency

EMSWe Message Implementation Guide - XML schema files (XSD, SCH) and XML example files

1. Introduction

This document provides a brief description of the XSD, SCH and XML example files version 3.0.1 corresponding to the European Maritime Single Window environment's Message Implementation Guide (EMSWe MIG) version 3.0 (refer to https://emsa.europa.eu/emswe-mig/). The files have been produced automatically by using export functions of the data modelling tool GEFEG.FX.

Version 3.0.1 is a patch release of the schema files published with MIG v3.0.0 on 26 June 2026. It corrects the XSD, Schematron and XML example files without changing the content of the MIG, which remains at version 3.0.0. The corrections are listed in section 8.

2. Versioning policy for schema files

A common versioning policy has been adopted for the XSD and Schematron files. The policy distinguishes changes driven by updates to MIG content from changes resulting from corrective maintenance or implementation feedback, while maintaining alignment with the MIG. All XSD and Schematron files share the same version number.

The schema files versioning policy applies the following semantic versioning rule:

<**Major** version number [n..2]>.<**Medium** version number [n..2]>.<**Patch** version number [n..2]>

The **major** and **medium** version numbers of the MIG act as the structural baseline. The XSD and Schematron files share these major and medium version numbers with the MIG to which they correspond (for example, MIG v3.0 is served by schema files in the v3.0.x series). The **patch** version number is used exclusively for schema-only corrections that do not require a change to the MIG content.

A change of the MIG major or medium version drives a synchronised update of the schema files and resets the patch version number to zero (for example, the transition from MIG v3.0 to MIG v3.1 would produce schema files v3.1.0). A change of the MIG minor version (for example, from MIG v3.0.0 to v3.0.1) does not affect the schema version. Between MIG medium versions, the schema files may be published with their own patch increments (v3.0.1, v3.0.2, …) to address corrections that do not require changes to the MIG. A record of changes is provided with each release of updated schema files.

The applicable version is recorded on the version attribute of the *xs:schema* element in each XSD file and on the *schemaVersion* attribute of the <*schema*> element in each Schematron file. In addition, a comment line at the top of each XSD and Schematron file indicates the MIG medium version to which the file corresponds (3.0).

3. 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 ATA is used as an example):

- *ATA_Envelope.xsd* – formality envelope, that imports the subsequent XSD files;
- *ATA_Envelope_MAI_MMTPluspD24A.xsd* – XSD of the formality header MAI;
- *ATA_Envelope_ATA_MMTPluspD24A.xsd* – XSD of the formality's content;
- *ATA_Envelope_QualifiedDataType_100pD24A.xsd* – definitions of qualified data types, such as codes;
- *ATA_Envelope_ReusableAggregateBusinessInformationEntity_100pD24A.xsd* – message structures of the formality;
- *ATA_Envelope_UnqualifiedDataType_100pD24A.xsd* – definitions of unqualified data types.

The schema structure is based on the XML Naming and Design Rules (NDR) of UN/CEFACT[1]. 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.

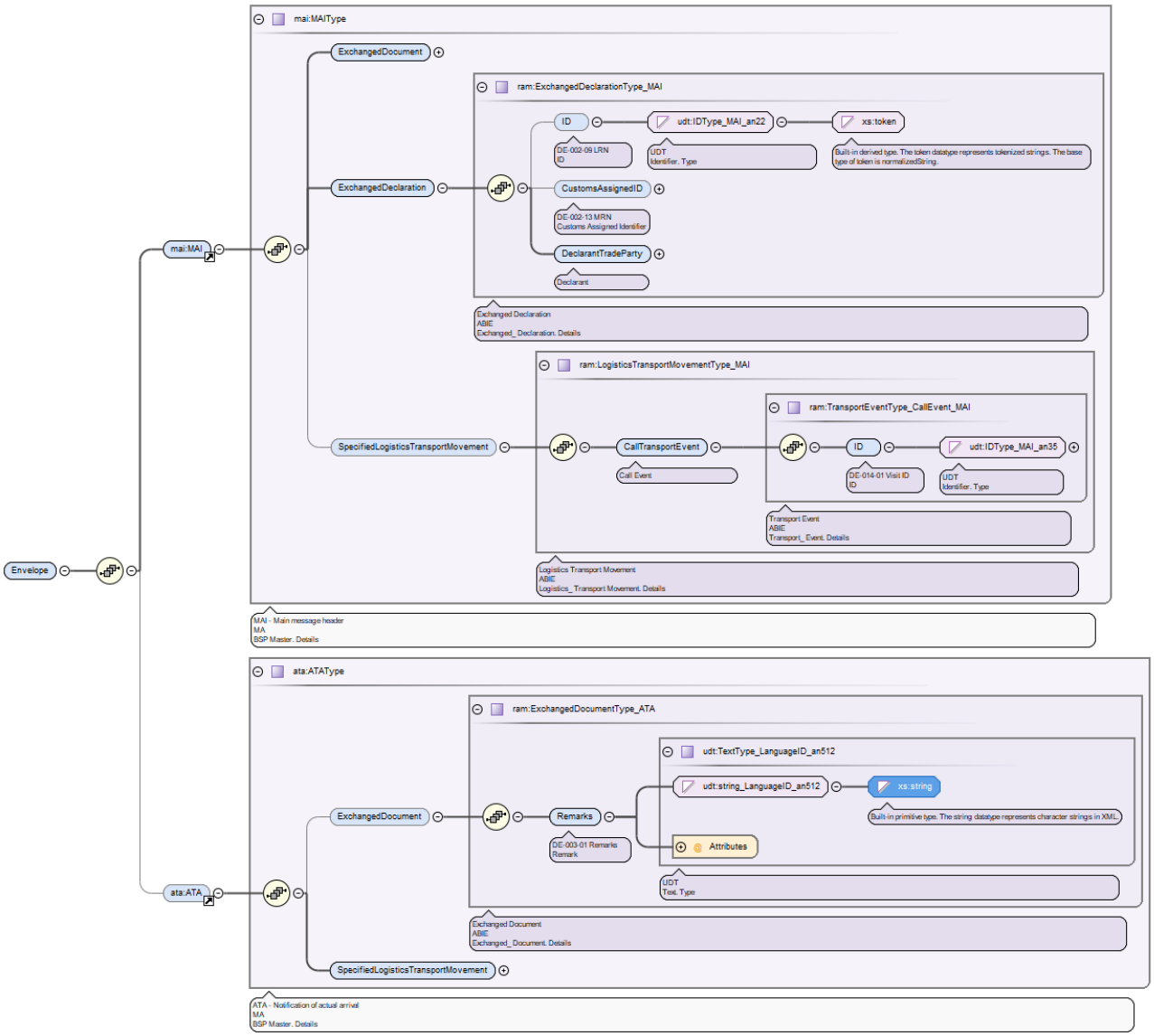
The schema files are associated the following namespaces:

- 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., ATA): *xmlns:ata="urn:un:unece:uncefact:data:standard:ATA: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 ATA is depicted below.

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



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.

4. Code list checks

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

International standards and ISO code lists

- ISO 3166-1 alpha-2 country codes (UN/EDIFACT 3207),
- ISO 3166-1 alpha-3 codes, and ISO 3166-3 alpha-4 codes for formerly used names of countries,
- ISO 3166-1 alpha-3 codes including user-defined codes from ISO/IEC 7501-1 (for special machine-readable passports) for persons without a defined nationality, such as XXA, XXB, XXC and XXX,
- ISO 639-1 2A language codes (UN/EDIFACT 3453), applied to the language elements of STW and, as from version 3.0.1, to the languageID attribute of all multilingual text elements (upper and lower case codes accepted).

UN/EDIFACT, UN/CEFACT and UN/ECE code lists

- UN/EDIFACT codes (1001, 3035, 3499, 7065, 7075, 7273, 8025, 8053, 8067, 8155, 8169, 8249, 8273, 1225, 4233, 4461),
- UN/CEFACT codes (6145),
- Two-letter alphabetic code of Annex V of UNECE Recommendation 21, UN/EDIFACT codes (7065),
- UN/ECE Recommendation 19,
- UN/ECE Recommendation 28.

IMO Compendium and EU maritime statistics code lists

- IMO Compendium codes (codes maintained by the International Maritime Organisation - IMO, including code lists IMO0043, IMO0049 and IMO0051),
- Directive 2009/42/EC on maritime transport statistics, Annexes II-V.

Value checks

- Yes/no indicator (1=yes, 0=no),
- “ADD”, “UPDATE”, “DELETE” (data element DE-001-03 “Data amendment action, coded”),
- “I”, “II” and “III” as defined in the IMDG Code (data element DE-049-06 “Dangerous goods packing group”),
- Value “1” for Maritime Transport (data element DE-014-03 “Mode of transport at the border”).

EMSWe-specific code lists and MIG code restrictions

- All EMSWe-specific code lists,
- All MIG code restrictions defined by rules (see Section 5).

5. Checks of MIG rules and conditions

All MIG rules and conditions are configured in the Reporting Interface Module (RIM), which validates incoming messages in two successive layers: first against the XSD schemas (syntax, code list enumerations and the rules that can be expressed as data type or value restrictions), then against the Schematron schemas (the remaining rules, including context-dependent and cross-element checks, together with a limited number of flat code-value restrictions, and all MIG conditions). The lists below indicate which rules are verified at each layer.

The following MIG rules are implemented in the XSDs:

- Rules that restrict the codes defined as enumerations in the XSDs (see Section 3): R-ABS-001, R-BKA-002, R-BKD-001, R-BLU-001, R-CAR-001, R-CGA-001, R-CGA-003, R-CGM-005, R-CGM-006, R-CLR-001, R-CRT-002, R-EXS-001, R-FRM-001, R-GENERAL-007, R-GENERAL-050, R-GENERAL-051, R-GPR-001, R-HAN-001, R-HZA-002, R-HZA-003, R-HZA-004, R-HZA-005, R-HZA-007, 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 check the format of ISO 8601 date-time and date values: R-GENERAL-001, R-GENERAL-006. As from version 3.0.1, both rules are enforced by patterns on the date-time and date types (ISO 8601 format with time zone designator for date-time values, YYYY-MM-DD for date values).
- Rules that check that the provided value is positive or non-negative: R-GENERAL-002, R-GENERAL-022.
- Rules that set the maximum value of numeric data elements: R-GENERAL-052, R-GENERAL-053, R-GENERAL-054, R-GENERAL-055, R-GENERAL-056, R-GENERAL-057, R-GENERAL-058.
- Rules that set the value range of geographical coordinates: R-GENERAL-059 (latitude, between -90 and 90) and R-GENERAL-060 (longitude, between -180 and 180).

The following MIG rules are implemented in the Schematron schemas:

- Flat code-value restrictions retained at the Schematron layer: R-CGM-002, R-CGM-003, R-HZA-001, R-MAI-003, R-NOA-005, R-TRA-001.
- Context-dependent and cross-element rules (conditional code restrictions, mandatory-if-present, count-based and date-based checks): R-CGM-001, R-CGM-004, R-CGM-007, R-EXS-002, R-EXS-003, R-EXS-004, R-EXS-005, R-EXS-007, R-EXS-008, R-EXS-009, R-GENERAL-003, R-GENERAL-021, R-GENERAL-038, R-GENERAL-039, R-GENERAL-040, R-GENERAL-045, R-GENERAL-046, R-GENERAL-048, R-HZA-008, R-MAI-001[2], R-MAI-004, R-MFX-001, R-MFX-002, R-NAV-001, R-NOA-002, R-NOA-004, R-REN-001, R-STA-001, R-TSD-002, R-VIS-001.
- Format and pattern checks expressed as XPath regular expressions: R-GENERAL-035 (EORI number pattern).
- All MIG conditions are implemented in the Schematron schemas.

Code lists used by the data elements but not listed in Section 4 (for example UN/LOCODE, TARIC, GEONOM, Combined Nomenclature, UCC, NST 2007, UNDG, ISO 6346 size-and-type, SMDG liner codes, IMDG Code Chapter 7.2.5.2 and UN/ECE Recommendation 21 Annex VI) are outside the validation scope of RIM and, where applicable, are verified by the MNSW systems.

6. Schematron schema files

In addition to the XSD schemas, a Schematron schema (SCH) file is provided for each EMSWe formality and response. The Schematron schemas implement the MIG rules and conditions that cannot be expressed at the XSD validation layer, as listed in Section 5.

The Schematron files are placed in the folder named “SCH”. Their file names begin with the code of the corresponding formality or response, followed by "*_Envelope*", e.g. “*ATA_Envelope.sch”*.

The Schematron schemas are written in ISO Schematron (ISO/IEC 19757-3) and use XPath expressions to validate the content of the XML messages against the rules and conditions of the MIG.

[2] Rule R-MAI-001 is verified at both layers: the XSD restricts the [Message function code] to “9” or “1”, while the Schematron additionally checks the related structural condition (a cancellation must contain only the message header). The corresponding response rule R-RES-001 is currently verified at the XSD layer only.

7. 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. *ATA_Envelope.XML*.

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

All XML files are placed in the folder named "XML". The examples contain the data elements used in a typical message rather than all data elements of the formality. The example files contain arbitrary data provided solely for illustration; it does not represent factual information.

8. Record of changes

Changes in version 3.0.1 compared with version 3.0.0

Version 3.0.1 corrects the schema files published with MIG v3.0.0 on 26 June 2026. The corrections align the XSD and Schematron files with MIG v3.0.0 and do not change the content of the MIG. Most corrections narrow the validation: messages that were accepted by version 3.0.0 but are not compliant with the MIG are rejected by version 3.0.1. Where a check was stricter than the MIG, it has been relaxed.

Version identification

- The version attribute of the XSD files and the schemaVersion attribute of the Schematron files are set to "3.0.1". The comment line at the top of each XSD and Schematron file indicates the corresponding MIG medium version (3.0).

XSD files – formats and code lists aligned with the MIG

- DE-064-49 "Customs goods manifest number": maximum length 18 instead of 22 (CAR, PPA, SDA).
- DE-093-01 "Additional information code": fixed length 5 instead of maximum length 5 (TRA, TRD).
- DE-007-01 "IMO company number": fixed length 7 instead of maximum length 7 (NOA, NOD, NOS).
- DE-007-09 "Registered owner IMO number": fixed length 7 instead of maximum length 7 (SHP).
- Minimum length of one character added for DE-071-01 "Waste type, coded" (WAR, WAS), DE-064-23 "Person presenting the goods, identification number" and DE-051-01 "Transport equipment identification number" (PNO).
- DE-006-06 "Certificate issuer type, coded": code list enumeration aligned with C-CRT-004 (codes 01 to 06 and 99) (CRT).
- DE-047-42 "Cargo operation, coded": enumeration restricted as per R-HZA-005 (HZA).
- DE-001-03 "Data amendment action, coded": value restricted to "UPDATE" for the containerisation indicator, as per R-CAR-001 (CAR).
- DE-051-17 "Container size and type, coded": maximum length 4 instead of fixed length 4, as in CGA and CGD (HZA, HZD, HZS).
- DE-038-08 "Passenger seat or cabin number": maximum length 5 instead of fixed length 5 (PBK).
- DE-055-03 "Previous document: type of packages": code list enumeration removed (the UCC code list is outside the validation scope of RIM, see section 5) and maximum length 2, as in REN (TRA, TRD).
- DE-055-06 "Previous document: quantity": the unit code is restricted to the UN/ECE Recommendation 20 code list, as for the other measures (MFX, REN, TRA, TRD).
- RE-012-02 "Service request status description": maximum length 256 instead of 512 (SRR).
- The *languageID* attribute of the multilingual text elements is restricted to the ISO 639-1 code list, in upper or lower case (all formalities and responses). In version 3.0.0 the attribute was not restricted.

XSD files – rules

- R-GENERAL-001: the date-time data elements are restricted by a pattern enforcing the ISO 8601 format with time zone designator (YYYY-MM-DDThh:mm:ss followed by “Z” or by an offset ±hh:mm), including the authentication date time of the message header. In version 3.0.0 the unrestricted *xs:dateTime* type was used. Date-time values without time zone designator, or with fractional seconds, are rejected.
- R-GENERAL-006: the date data elements are restricted by the pattern YYYY-MM-DD. A time zone suffix is no longer accepted.
- R-GENERAL-022: the item gross weight (DE-048-03) accepts the value zero (*minInclusive* instead of *minExclusive*) (CGM, MFX, TSD).
- R-GENERAL-002: the lower bound (value greater than zero) is added on 33 numerical data elements (BKD, BLR, EXT, HAN, HZA, SRV, STA, STD, WAS).
- DE-001-02 “Sequence number”: the lower bound is added on the sequence numbers of the carrier agent and of the cruise itinerary stops (NOA), of the itinerary stops (NOD) and of the ship-to-ship events (SEC). The itinerary stop sequence numbers of NOA and SEC remain unrestricted, as negative values identify the last port of call (R-NOA-004) and the previous calls at port facilities (G-SEC-003).

XSD files – type definitions

- Types renamed to carry the restricting rule in their name, in line with the naming principles of version 3.0.0:
  - *qdt:FormattedDateTimeType_an35* becomes *qdt:FormattedDateTimeType_R-GENERAL-001_an35* (all formalities and responses);
  - *qdt:FormattedDateType_an35* becomes *qdt:FormattedDateType_R-GENERAL-006_an35*;
  - *qdt:WeightUnitMeasureType_R-GENERAL-008_n166* becomes *qdt:WeightUnitMeasureType_R-GENERAL-022_n166* (CGM, MFX, TSD);
  - *qdt:DataAmendmentActionCodeType_an17* becomes *qdt:DataAmendmentActionCodeType_R-CAR-001_an17* (CAR);
  - *qdt:CustomsDeclarationTypeCodeType_an5* becomes *qdt:CustomsDeclarationTypeCodeType_R-TRA-001_an5* (TRA, TRD);
  - *udt:NumericType_n5* becomes *udt:NumericType_R-NOA-004_n5* and *udt:NumericType_R-NOA-005_n5* (NOA) and *udt:NumericType_R-GENERAL-002_n5* (NOD, SEC).
- Text types without *languageID* attribute renamed:
  - *udt:TextType_MAI_LanguageID_an35* becomes *udt:TextType_MAI_an35* (message header, all formalities);
  - *udt:TextType_LanguageID_an70* and *udt:TextType_LanguageID_an35* become *udt:TextType_an70* and *udt:TextType_an35* (PNO).
- A single content type, *udt:TextTypeLanguageIDContentType_a2*, is used for the *languageID* attribute in all formalities and responses.
- The content types of the *unitCode* attribute are renamed consistently (rule identifiers and format suffixes of the measure removed from the names where incorrectly concatenated), and the *unitCode* attributes that were not length-restricted are restricted to a maximum length of 4 (EFF, HAN, HZA, HZD, HZS, MFX, REN, SRV, STA, STD, TRA, TRD).
- Shared types split where they covered data elements of different formats:
  - *udt:CodeType_an4* becomes *udt:CodeType_MaritimeContainerSizeTypeCode_an4* and *udt:CodeType_UNDGID_an4* (HZA, HZD, HZS);
  - *udt:IDType_an5* becomes *udt:IDType_SeatOrCabinIdentifierType_an5* (PBK);
  - *qdt:PackageTypeCodeType_an2* becomes *udt:CodeType_PreviousDocumentPackageType_an2* (TRA, TRD) and *udt:CodeType_an2* (REN).
- Country code types with a double suffix corrected (*qdt:CountryIDType_MAI_a2* in DUE and PBK).

- WAS: EMSWe identifiers corrected in the annotations of DE-068-05 “Waste next delivery date” and DE-071-09 “Remaining waste delivery plan, coded”.
- VID: the optional [Logistics Transport Movement] block of the message header, which carries the Visit ID, is removed from the VID schema. The Visit ID is not available when the VID formality is submitted.

Schematron files

- Missing assertions added: C-CAR-010 (CAR), R-GENERAL-048 (PNO), C-SEC-008 (SEC), and in TSD the four R-GENERAL-021 checks of the sequence numbers under the consignment item and the R-GENERAL-046 check of the transport equipment under the consignment.
- Assertions removed: the duplicate assertion of C-EXS-017 (EXS) and the assertion of R-CGM-005, already checked by the XSD enumeration (CGM).
- Assertions corrected: second assertion of C-EXS-030 (context path), C-CAR-010 and C-CAR-012 (existence test instead of a comparison with an empty string), C-EXS-001 (context) and R-GENERAL-046 (context). R-HZA-001: the EmS fire schedules F-A to F-J are accepted (instead of F-A to F-Z), in line with the rule (HAN, HZA, HZD, HZS).
- Equivalent assertions harmonised across formalities: C-GENERAL-005 (MFX, TSD), C-CGM-009 (CAR, PPA, CGM), C-EXS-004 (EXS, REN) and C-TSD-014 (TSD, TSR).
- Error messages aligned with the text of the rules and conditions of the MIG: C-MAI-004 (all formalities), C-SRV-004, R-HZA-001, C-CGM-016, R-NOA-004, C-RES-001, R-NOA-002 and R-NAV-001. Editorial corrections to the messages of C-TSD-001, R-VIS-001, C-MTS-001, C-MTS-002, C-MTS-003, C-MTS-005, C-HZA-009, C-CGM-014 and C-EXS-032.
- The validation logic of the other assertions is unchanged. The structure of the Schematron files is unchanged.

XML example files

- VID: the Visit ID of the message header is removed from the example.
- CGM: attachment identifier and CUS code added. CRT: country of the certificate issuer added.
- VIS: the [Onboard Person] occurrences corrected (one crew member and one other party, with distinct sequence numbers), as required by R-VIS-001 and R-GENERAL-021.
- The other example files are unchanged. All example files validate against the XSD files of version 3.0.1.

Changes in version 3.0.0 compared with Annex F of MIG v2.0.1

This section lists the changes made to the XSD schemas and to the XML example files of version 3.0.0 compared with Annex F of MIG version 2.0.1.

- Type definitions have been renamed: instead of the generic auto-numbering mechanism, all types in all formality envelopes now use meaningful, business-oriented names. This also makes the generated XSDs stable and reproducible across exports, since type names no longer depend on the order in which types are encountered during generation. The following naming principles have been applied:
    - Classes (ASBIE, complex types): original type name + underscore + concatenated MMT business name (e.g. *ram:TransportEventType_3* becomes *ram:TransportEventType_CallEvent*).
    - Data elements (BBIE) without attributes: simple type name + underscore + format suffix (e.g. *udt:NumericType_2* becomes *udt:NumericType_n5*).
    - Text and string types using the *languageID* attribute: *TextType_LanguageID* + underscore + format suffix (e.g. udt:TextType_5 becomes udt:TextType_LanguageID_an512).
    - Measures: original measure type name + underscore + restricting rule ID + underscore + format suffix (e.g. *qdt:VolumeUnitMeasureType_2* becomes *qdt:LinearUnitMeasureType_R-GENERAL-015_n42*).
    - MAI (and RES)-specific classes: original name with _MAI (or _RES) appended to distinguish types specific to the message header from those shared with formality (or response) bodies.

  - Code list restrictions: code content type name + underscore + restricting rule ID + underscore + format suffix (e.g. *qdt:CargoCategoryCodeContentType_R-CGA-003_n2*), so that the restricting rule is identifiable from the type name.
  - Formality- or response-specific classes: original name with the formality (or response) code appended (e.g. *ram:ExchangedDeclarationType_ATA*), to distinguish a class bound to one formality from the corresponding header type.
  - The format suffix encodes the data type restriction: a<N> (alphabetic, fixed length N), an<N> (alphanumeric, maximum length N), n<N> (integer, N total digits) and n<XY> (decimal with X total digits and Y fraction digits, e.g. n42 = 4 total digits and 2 fraction digits).
- The *languageID* attribute is now applied to the data elements identified in the MIG as type “Multilingual Text” (e.g. textual descriptions, remarks, location names, and product names of dangerous goods).
- Two new formalities have been added: GPR (a response) and HAN.
- HZA, HAN: the mapping in the XSD for data element DE-054-07 “Transshipment ship gross tonnage” has been changed from *ram:DeadweightTonnageMeasure* to *ram:GrossTonnageMeasure*.
- FRM: corrected the MMT and XSD paths for the data element RE-015-02 “Error item number” to align its format with MIG:
  - MMT path: “...Identified_ Pointer/Identified_ Pointer. Sequence. Identifier” to “...Identified_ Pointer/Identified_ Pointer. Item. Numeric”
  - XSD path: “.../ram:SpecifiedIdentifiedPointer/ram:SequenceID” to “.../ram:SpecifiedIdentifiedPointer/ram:ItemNumeric”
- A generic quality review of the XSDs to:
  - remove type definitions that are not used in a specific formality,
  - ensure that all code list checks and code restrictions are implemented in the XSD rather than in the Schematron, and removal of duplicate type definitions,
  - make the use of UDT and QDT consistent to align with MMT design documentation,
  - review the *minLength* and *maxLength* constraints for consistency with the MIG (empty string values are not allowed).
- A versioning policy has been implemented for the schema files:
  - Both XSD and SCH schemas share a single version number whose major and medium components are aligned with the MIG, with an independent patch component for schema-only corrections.
  - The version is recorded on the version attribute of the *xs:schema* element in each XSD and on the *schemaVersion* attribute of each Schematron <*schema*> element.
- Schematron files have been added to the Appendix F.
- Populated more values in the XML example files to increase the quality of schema testing.