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Ships and marine technology — Electronic port clearance (EPC) —

Part 2: Core data elements

Navires et technologie maritime — Opérations portuaires assistées par systèmes électroniques —

Partie 2: Éléments de données principaux

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee 11, *Intermodal and Short Sea Shipping*.

This second edition cancels and replaces the first edition (ISO 28005-2:2011) which has been technically revised.

The main changes compared to the previous edition are as follows:

— new data elements have been added to cover requirements from maritime declaration of health, advance electronic cargo information for customs risk assessment purposes, advanced notification form for waste delivery to port reception facilities, mandatory ship reporting system (MRS) and ETA reporting to pilot station;

— some previously defined data elements have been modified to reflect updated definitions in the IMO Reference Data Model; this applies also to some code lists;

— some data elements have been redefined and the old definitions are marked as deprecated in the respective clause titles.

A list of all parts in the ISO 28005 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Ships and marine technology — Electronic port clearance (EPC) —

Part 2:
Core data elements

1 Scope

This document provides technical specifications to facilitate an efficient exchange of electronic information between ships and shore, for coastal transit or port calls. It specifies requirements for the safety, security and efficiency enhancement of information, related mainly to the relationships between the ship and the port and coastal state authorities.

This document provides the definition of core data elements for use in electronic port clearance (EPC) messages. It does not define any structuring of messages nor provides any guidance on what information is required for a particular purpose; it is a general data dictionary for safety, security or operation-related maritime information. Details about message formats and applications are defined in ISO 28005-1.

The data elements in this document is a superset of the data elements and the data model defined in the IMO Reference Data Model as specified in the IMO Compendium on Facilitation and Electronic Business. It also contains data elements from other IMO instruments as described in 4.1. The specifications in this document is compatible with the definitions in the IMO Reference Data Model and the mapping between ISO 28005 and the data element list in the IMO Reference Data Model is defined in Annex B.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3166-1, *Codes for the representation of names of countries and their subdivisions — Part 1: Country code*

ISO 3166-2, *Codes for the representation of names of countries and their subdivisions — Part 2: Country subdivision code*

ISO 6346, *Freight containers — Coding, identification and marking*

ISO 6709, *Standard representation of geographic point location by coordinates*

ISO 7372, *Trade data interchange — Trade data elements directory*

ISO 9711-1, *Freight containers — Information related to containers on board vessels — Part 1: Bay plan system*

UNECE R16, (UNECE Recommendation No. 16), *Codes for Trade and Transport Locations*

UNECE R20, (UNECE Recommendation No. 20), *Codes for Units of Measure Used in International Trade*

UNECE R21, (UNECE Recommendation No. 21), *Codes for Passengers, Types of Cargo, Packages and Packaging Materials (with Complementary Codes for Package Names)*

UNECE R28, (UNECE Recommendation No. 28), *Codes for Types of Means of Transport*

UNTDD, *United Nations Directories for Electronic Data Interchange for Administration, Commerce and Transport*. This is available as Part 5 on https://www.unece.org/cefact/edifact/welcome.html

World Customs Organization (WCO), *Harmonized Commodity Description and Coding System (HS)*

International Maritime Organiztoin (IMO), *International Convention for the Prevention of Pollution from Ships (MARPOL)*, 1973, as modified by the Protocol of 1978 relating thereto

International Maritime Organiztoin (IMO), Assembly Resolution A.852(20), *Guidelines for a structure of an integrated system of contingency planning for shipboard emergencies*. Adopted November 1997

International Maritime Organiztoin (IMO), MSC/Circ.1056, MEPC/Circ.399, *Guidelines for Ships Operating in Arctic Ice-Covered Waters*

3 Terms, definitions, and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1.1
core data element
data element corresponding to a specific real-world object

Note 1 to entry: The core data elements are instantiated from data types defined in Clause 7 and are listed in Annex A.

3.1.2
data type
definition of the structure of a data element

Note 1 to entry: All data types have a name ending with “Type”.

3.1.3
electronic port clearance
EPC
process of exchanging information between the ship and its agent and various parties on shore to allow the ship clearance to enter port and berth

Note 1 to entry: EPC does not necessarily include customs clearance of goods that are imported or exported.

3.1.4
facility
port or a part of a port that is individually secured according to the ISPS code

Note 1 to entry: This is the meaning implied in the ISPS code.

3.1.5
leg
part of a *voyage* (3.1.7) between a departure port and an arrival port without any intervening port calls

3.1.6
oil-bulk-ore carrier
OBO
ship whose design is similar to a conventional bulk carrier but that is equipped with pipelines, pumps and an inert gas plant so as to enable the carriage of oil cargoes in designated spaces

3.1.7
voyage
sailing of the ship from an initial departure port to a final arrival port with or without a number of intervening port calls

Note 1 to entry: What constitutes a voyage is defined by the ship's operator or its owner.

Note 2 to entry: A voyage consists of one or more *legs* (3.1.5).

3.1.8
XML schema
definition of the structure of an XML document, written in the XML schema language (XSD)

Note 1 to entry: The XML schema language is in itself a valid XML structure, see References [5] and [6].

3.2 Abbreviated terms

BLU	Bulk loading and unloading code (BLU Code).
DG	Dangerous goods. The term "harmful and noxious substances" is also sometimes used instead of "dangerous goods."
FAL	IMO's Facilitation Committee and standard forms defined in the FAL Convention.
HS	World Customs Organization's Harmonized System (WCO Harmonized System).
HME	Harmful to the Marine Environment (MARPOL, Annex V).
IBC	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk.
IMDG	International Maritime Dangerous Goods Code.
IMSBC	International Maritime Solid Bulk Cargoes Code.
INF	Irradiated Nuclear Fuel, see INF Code.
IRI	Internationalized Resource Identifier, see Reference [7].
IRN	IMO Reference Data Model Number, e.g. IMO0111. This is the data number assigned to each data element in the reference model in the FAL Compendium. It is a four-digit number prefixed with IMO. It is zero-padded up to four digits.
ISM	International safety management, as defined in the ISM Code.
ISPS	International ship and port facility security, as defined in the ISPS Code.
MRS	Mandatory ship Reporting System (see IMO Assembly resolution A.851).
NLS	Noxious Liquid Substances (MARPOL, Annex II). See Annex G.
RO	Recognized Organization (delegated certification authority by flag state)
RORO	Roll-on/Roll-off (ship)

RSO Recognized Security Organization. Similar to RO, but for security related certificates.

TDED Trade Data Elements Dictionary (ISO 7372).

URI Uniform Resource Identifier, see Reference [7]. In this document, this is normally in the form of Uniform Resource Locator, that refers to the subset of URIs that, in addition to identifying a resource, provide a means of locating the resource by describing its primary access mechanism (e.g. its network "location").

WCO World Customs Organization

XML Extensible Markup Language, see Reference [4].

XSD XML Schema Definition Language, see References [5], [6].

4 General provisions

4.1 Application area for the core data elements

This document provides definitions of core data elements for electronic port clearance (EPC). These elements are based on requirements for ship-to-shore and shore-to-ship reporting as defined in the following.

a) Most required information sets as defined in the FAL Convention, section 2.1. All these data sets can be sent on arrival or departure, determined by a flag in the message header (MessageHeaderType):

- General Declaration (FAL Form 1);
- Cargo Declaration (FAL Form 2);
- Ship's Stores Declaration (FAL Form 3);
- Crew's Effects Declaration (FAL Form 4);
- Crew List (FAL Form 5);
- Passenger List (FAL Form 6);
- Dangerous Goods Manifest (FAL Form 7);
- the document required under the Universal Postal Convention for mail;

  NOTE Only as a reference to the physical or electronic document in the ListOfCertificatesType data structure.

- Maritime Declaration of Health;

  NOTE This document defines an electronic format for the required information based on the Maritime Declaration of Health (MDH) from WHO, 58th World Health Assembly, WHA58.3.

- security-related information as required under SOLAS regulation XI-2/9.2.2 (ISPS code);
- advance electronic cargo information for customs risk assessment purposes;

  NOTE This is covered as far as the cargo information data structures defined in 7.3 satisfy the relevant WCO or national customs authority requirements.

- Advanced Notification Form for Waste Delivery to Port Reception Facilities, when communicated to the Organization.

  NOTE This is based on the recommended reporting on ship-generated waste as defined in MEPC 644, which is mandatory within the European Union, as described in EU/2000/59.

b) Required reporting as defined in the bulk loading and unloading code IMO Resolution A.862.

c) Mandatory ship reporting system (MRS) requirements as defined in IMO Resolution A.851.

d) ETA reporting to pilot station as defined in IMO Resolution A.960.

Annex B defines the cross-reference between elements in this document and the data elements in the IMO Reference Data Model as defined in the FAL Compendium. This mapping is also found at the IMO site[1)].

The core data elements in many cases contain more information than what is required by the documents referenced above. The actual minimum reporting requirements are defined by the relevant national or international authorities.

4.2 Types of data elements defined by this document

Figure 1 shows the main types of elements that are defined and used in this document. The grey boxes represent objects that are not defined in this document, but which are respectively XML native elements and the concrete information objects that are results of using this document.

The top-most grey box represents standard data types as defined in XML Schema Part 2, see Reference [6]. The bottom-most grey box represents an electronic XML message or a corresponding XML Schema file, containing data objects defined by using the type definitions in this document.

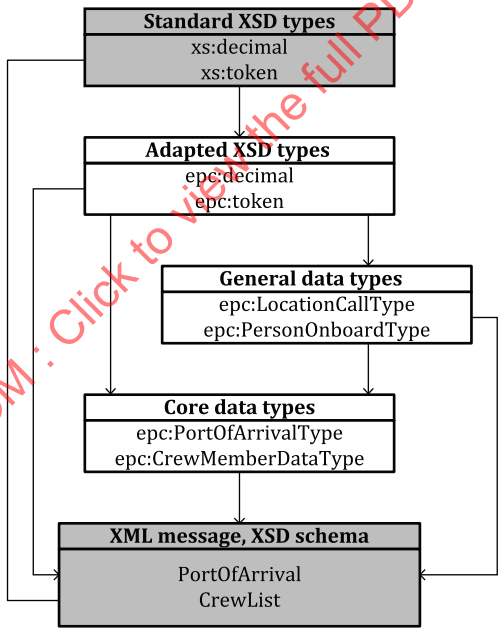

Figure 1 — Elements of this part of ISO 28005

Figure 1 does not include all elements in each group, but has selected a few from each group as examples. From the top downwards, the defined elements are as follows.

— Adapted XSD types: These are basic XSD types with additional restrictions that apply for the use of these elements in this document.

— General data types: These are data types that represent common concepts like a port description or a position which normally need to be specialized more to be given a context-specific meaning.

1) https://www.imo.org/en/OurWork/Facilitation/Pages/IMOCompendium.aspx

— Core data types: These are data types that also contain a contextual meaning in addition to the more generic concept, such as an arrival port instead of a general port or additional crew information instead of a general person on board information.

This document does not prohibit the use of data types other than the core data types when messages and schemas are defined (this is indicated with the thin arrows in Figure 1). However, such data elements are given a specific semantic meaning in the specification of the message format or schema.

4.3 Structure of the data element descriptions

Figure 2 gives an outline of the structure of this document. The two rectangles at the top represent the general data types outlined in 4.2, while the row of rectangles at the bottom represents the EPC core elements.

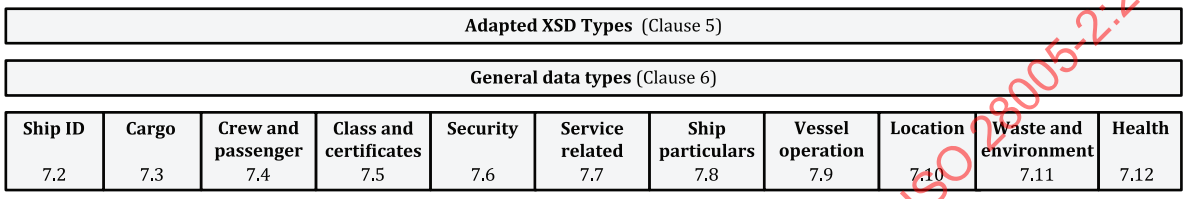

Figure 2 — Overview of the structure of this document

The groups are loosely based on the order in which they appear on typical FAL forms, as follows.

a) Ship ID: ship identification and contact details.

b) Cargo: data related to cargo and cargo types.

c) Crew and passenger: crew- and passenger-related data.

d) Class and certificates: data related to class and certificates kept on board.

e) Security: mainly ISPS-related data.

f) Service-related: data related to services requested by the ship, including message headers and clearance request and status.

g) Ship particulars: static data about the ship.

h) Vessel operation: data that is dependent on current operation or voyage; also physical data that changes, e.g. with loading such as draught.

i) Location: different ways to describe a location.

j) Waste and environment: currently, this section contains information about waste.

k) Health: various health data related to both the ship and persons onboard.

The grouping of core elements is for convenience only and need not result in any particular structuring of EPC messages. Thus, the data elements, when used in a message or an XSD file, are not normally grouped or further structured.

4.4 Use of XML name space

4.4.1 XSD name space

All data elements defined in the XML Schema (XSD) standard, and which are used in this document, use the name space “xs”. Thus, the data type name are prefixed with “xs:”. This corresponds to the XSD definition file header including the following attribute:


```
<xs:schema ...
  xmlns:xs="http://www.w3.org/2001/XMLSchema" ...
```

4.4.2 ISO 28005 name space

All data types defined in this document are defined in the namespace “epc”. Thus, the data type name is prefixed with “epc:”. This corresponds to the XSD file header including the following attribute:

```
<xs:schema ...
  xmlns:epc="https://www.iso.org/28005-1" ...
```

4.5 Creating a main XML schema file

All data definitions in this document can be concatenated into one valid XML schema file by adding a suitable header and footer to the definitions. The header and footer can be as follows:

```
<?xml version="1.0" ?>
<xs:schema  targetNamespace="https://www.iso.org/28005-2"
            xmlns:xs="http://www.w3.org/2001/XMLSchema"
            xmlns:epc="https://www.iso.org/28005-2">
  <xs:simpleType ...
  <xs:simpleType ...
  <xs:complexType ...

</xs:schema>
```

The first line may also include information about character encoding. Without any particular encoding attribute, the XML parser is required to understand UTF-8 and UTF-16[15]. For other encodings, one can insert the appropriate attribute, e.g.:

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
```

4.6 Code set specification schema

Code sets that are not included in the main schema file are represented as external XML files. Thus, it is not automatically possible to validate all aspects of the EPC message files against the EPC schema file. The code set specification file shall be constructed according to the following schema.

```
<?xml version="1.0" ?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">

  <xs:complexType name="EPCCodeValueType">
    <xs:sequence>
      <xs:element name="Code" type="xs:token"/>
      <xs:element name="Description" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="EPCCodeSetList">
    <xs:sequence>
      <xs:element name="EPCCodeValue" type="EPCCodeValueType"
                  minOccurs="0" maxOccurs="unbounded"/>
    </xs:sequence>
  </xs:complexType>

  <xs:element name="CodeSetName" type="xs:string">
  <xs:element name="CodeSetReference" type="xs:string">
  <xs:element name="CodeSet" type="EPCCodeSetList">

</xs:schema>
```

The CodeSetName shall be the name of the code set as specified in the annex title or by other normative references. The CodeSetReference shall be the description of where this particular code set has its origin, with reference to the normative specification where appropriate. The CodeSet is the actual code set.

4.7 Principle for creating a message file with core data elements

Clauses 5 to 7 of this document define data types that can be used to construct core data elements. Annex A defines how each core data element shall be defined from the data type. Any selection of core data elements can be used to generate an XML message for exchange of information between ship and shore. ISO 28005-1 specifies how the message shall be constructed and how messages are exchanged.

4.8 Structure of data type definitions

4.8.1 General

Each data type is defined in a separate subclause, the structure of which is descibed in 4.8.2 to 4.8.5.

4.8.2 Clause and data type name

All data types defined in this document are given a name that is also included as the first part of the heading for the subclause where the data type is defined.

The data type name follows the specifications for XML tag names[15], with the following additional constraints.

a) The name shall always end with the string “Type”.

NOTE 1 Some core data elements can also have the ending “Type”. In that case, the corresponding core data type has the postfix “TypeType”.

b) Enumerated data types shall have the postfix “ContentType”.

c) This document uses the “Upper Camel Case” in all core data types, i.e. the first letter is upper case and, when the tag name consists of a number of concatenated words, each of the words starts with an upper case letter.

d) The name consists only of characters from the sets (A-Z), (a-z) and, exceptionally, (0-9).

NOTE 2 The names have been selected to be generally understandable in the context of ship-to-shore communication for port clearance. The names are in normal British English without any special characters. Names are in singular form except where the data element contains a list of items, in which case the tag name is in plural form.

4.8.3 Definition

Each data type has a definition that is intended to give an unambiguous description of what the data element shall contain and in what context it is valid. This is the first paragraph after the heading of the clause.

4.8.4 Type defined as XSD code

Each data type is defined as a section of XSD code. This section only covers the actual data type definition and is not a valid XML document in itself. Annex S gives a brief overview of the syntax elements used, but the user of this document should refer to Reference [16] for the definitive descriptions.

NOTE The XSD code has been generated automatically and, as the order of child elements in XSD is important and cannot arbitrarily be changed, the ordering in the XSD code is the generated order, and is not always logical.

4.8.5 Representation

Additional information about how the data field shall be formatted is contained in the representation paragraph. This can give, for example, the normative reference to the official sources of enumeration codes.

4.9 Principles for defining enumerated types

Enumerated types, i.e. types that are associated with a fixed set of code values, are defined in one of three ways.

a) When the code set is small, and not defined and maintained by parties external to this document, the allowed code values are listed in the definition of the data type as XSD constraints.

NOTE 1 For an example of inline listing of enumerated types, see type definition for TimeTypeContentType in 6.13.

b) If the code set is larger, and not defined and maintained by parties external to this document, the code set is included in a normative annex, e.g. Annexes D to I.

NOTE 2 The definition of the enumerated types can use the same principle as described in item a) above or as an external file as described under item c).

c) When the code set is maintained by an external party, the data type only defines the data type as a token and makes a reference to where the code set can be found and how the code set shall be used in the core data element. An informative annex contains a list of some of the most common codes, e.g. Annexes J to N. Subclause 4.6 can be used to encode the values in XML or the code set can be included in an XSD file for direct validation of XML messages.

4.10 Character sets for data fields

This document allows all character sets that are supported by XML (see 4.5). Additional restrictions can be specified in the representation part of the data type definitions.

4.11 No use of XML attributes

The data types defined by this document do not use XML attributes. All information is contained within XML start and stop tags.

4.12 Empty tags

Mandatory tags, i.e. tags that are not marked with minOccurs="0", shall normally contain valid data. Tags that are optional may be left out of the message, may be empty, i.e. have no end tag, or may have empty content. The receiver of messages shall treat all forms of empty or missing tags the same.

4.13 Defaults for minOccurs and maxOccurs

According to Reference [16], the default values for minOccurs and maxOccurs equal 1. This is used in some parts of ISO 28005 to shorten the type specifications in the data type definition clauses.

4.14 Order of child elements in XSD templates

The XSD templates uses "<xs:sequence>" to list child elements. This means that the XML file shall have child elements in exactly the same order as the XSD code. Optional child elements (minOccurs="0") can be omitted.

NOTE The XSD code is automatically generated and the order of child elements is not always logical.

5 Adapted XSD data types

5.1 Introduction

The adapted XSD data types used in this document are defined in Reference [16]. Subclauses 5.2 to 5.10 contain additional restrictions on the use of these data types that apply in this document.

5.2 epc:anyURI — Generalized URI

Definition:

This data type contains a valid generalized URI. This may be a mail address, prefixed by “mailto:”, or an external file, prefixed by “file:”.

Type:

```
<xs:simpleType name="anyURI">
   <xs:restriction base="xs:anyURI"/>
</xs:simpleType>
```

Representation:

All generalized URIs are allowed in this document. However, to ensure compatibility with older systems, users are advised to use the URL type strings (seven-bit character set) until a more general internationalized concept is sufficiently well implemented.

5.3 epc:boolean — Boolean flag

Definition:

This data type contains a date flag that can have the logical values true or false.

Type:

```
<xs:simpleType name="boolean">
   <xs:restriction base="xs:boolean"/>
</xs:simpleType>
```

Representation:

All flag values allowed in the XSD definition given in Reference [17] are allowed. When the boolean type is used in contexts where the value represents an answer to a yes/no question, the true value shall represent “yes” while the false value shall represent “no”.

5.4 epc:date — General date

Definition:

This data type contains a date without additional time of day or time zone information.

Type:

```
<xs:simpleType name="date">
  <xs:restriction base="xs:date"/>
</xs:simpleType>
```

Representation:

This is a date in the standard XSD format, without any time zone code in the value.

Senders of date information should not include time zone information. Receivers should be prepared to accept a time zone code, but it shall be disregarded in further processing of the data.

5.5 epc:dateTime — Time and date, with time zone

Definition:

This data type contains a date with additional time of day and time zone information.

Type:


```
<xs:simpleType name="dateTime">
  <xs:restriction base="xs:dateTime"/>
</xs:simpleType>
```

Representation:

This is a date and time in the standard XSD format, with a time zone code in the value.

Senders of date and time information shall include time zone information. Receivers should be prepared to accept values without time zone codes. In this case, the time zone is undefined and proper actions should be taken by the systems processing this data to ensure that this does not cause problems for the intended operation.

NOTE 1 The time zone value "Z" is a valid code and refers to GMT or UTC time.

NOTE 2 The second field can contain the value 60 (when leap seconds occur).

5.6 epc:decimal — Decimal number

Definition:

This data type is used to specify a quantity.

Type:

```
<xs:simpleType name="decimal">
   <xs:restriction base="xs:decimal"/>
</xs:simpleType>
```

Representation:

The decimal type represents a subset of the real numbers, which can be represented by decimal numerals. The value space of decimal is the set of numbers that can be obtained by multiplying an integer by a non-positive power of ten, i.e. expressible as $i \times 10^{-n}$ where i and n are integers and $n \geqslant 0$. Precision is not reflected in this value space; the number 2.0 is not distinct from the number 2.00. The order relation on decimal is the order relation on real numbers, restricted to this subset.

The decimal has a lexical representation consisting of a finite-length sequence of decimal digits (#×30–#×39) separated by a period as a decimal indicator. An optional leading sign is allowed. If the sign is omitted, "+" is assumed. Leading and trailing zeros are optional. If the fractional part is zero, the period and following zeros can be omitted. For example: –1.23, 12678967.543233, +100000.00, 210. See Reference [17].

NOTE The format requires the use of the period (.) as the decimal sign. Some national standards use e.g. a comma (,) for this purpose. In such cases, the sending or receiving application performs the translation to or from the standard XML notation.

5.7 epc:duration — Time duration

Definition:

This data type is used to specify duration in time.

Type:

```
<xs:simpleType name="duration">
  <xs:restriction base="xs:duration"/>
</xs:simpleType>
```

Representation:

This type can specify a time period as specified in Reference [17]. The general format is "[–] P*n*Y*n*M*n*DT*n*H*n*M*n*[.*n*]S", where [–] is an optional minus sign, *n* is a positive integer number, and [.*n*] is an optional decimal field.

5.8 epc:int — Integer number

Definition:

This data type is used to specify an integer quantity.

Type:

```
<xs:simpleType name="int">
  <xs:restriction base="xs:int"/>
</xs:simpleType>
```

Representation:

The integer type is an integer in the range from –2147483648 to 2147483647 (inclusive).

5.9 epc:string — General string

Definition:

This data type contains a general string that is mainly intended to be read by humans. There are no restrictions on the format of the string. See 5.10 for a string type that is intended for computer consumption.

Type:

```
<xs:simpleType name="string">
  <xs:restriction base="xs:string"/>
</xs:simpleType>
```

Representation:

No restrictions on the string representation beyond what is specified in Reference [17] are enforced on the type level. The representation field in the data type definition may put length constraints on the string.

The receiver should be prepared to accept longer strings than specified, but such strings can be truncated. Thus, the sender cannot rely on longer strings being processed or displayed.

5.10 epc:token — Computer-understandable string

Definition:

The token data type is used for a text string that is mainly meant to be interpreted by a computer. This includes enumerated codes as well as other structured strings.

Type:

```
<xs:simpleType name="token">
  <xs:restriction base="xs:token"/>
</xs:simpleType>
```

Representation:

This is represented as a text string that can consist of letters and/or numbers. The clause that uses this mechanism also defines the code values that are valid.

6 General data types

6.1 Introduction

The data types defined in this clause are not specific to any particular function. Some of them are based on UN/CEFACT CCL version 08A[12]. The definition contained in the text is in these cases simplified compared to the full definition of the original types. However, they should be semantically compatible with the data model description of CCL.

General data types related to geographic positions (Location, Position, Port) are given in 7.10. Other non-core data is also collected in introductory subclauses to the main core data groups where these general types are directly related to these.

6.2 epc:AttachmentType — Reference to an attached document

Definition:

This type contains a description of and a reference to an attached document.

Type:

```
<xs:complexType name="AttachmentType">
      <xs:sequence>
        <xs:element name="Description" type="epc:string" minOccurs="0"/>
        <xs:element name="URI" type="epc:string" minOccurs="0"/>
      </xs:sequence>
      </xs:complexType>
```

Representation:

This data element shall contain a valid URI that points to an attached or remote file. The URI should normally use the “file:./xxx.yyy” format to point to a local file with the name “xxx.yyy” (as an example). In this case, the receiver shall find the attached file either as a parallel attachment in an electronic mail message or as a component of an archive file on the same level as the XML message. The Description can give a human-readable description of the attached file or it can contain the attached information itself. If a URI is supplied, the Description is for information only and cannot be read by the receiver. If the URI is empty or does not exist, the Description field may contain the attached information.

NOTE The format of an URI is defined as specified in IETF RFC 3986[7].

6.3 epc:ContactInfoType — Contact information

Definition:

This data type contains contact information for either a person or a company.

Type:

```
<xs:complexType name="ContactInfoType">
   <xs:sequence>
    <xs:element name="Company" type="epc:string" minOccurs="0"/>
    <xs:element name="CompanyId" type="epc:string" minOccurs="0"/>
    <xs:element name="ContactNumbers" type="epc:CommunicationNumberType"
                minOccurs="0"/>
    <xs:element name="Person" type="epc:NameType" minOccurs="0"/>
    <xs:element name="Address" type="epc:PostalAddressType"
                minOccurs="0"/>
   </xs:sequence>
  </xs:complexType>
```

Representation:

Common information for both persons and companies are address and contact numbers. Companies and persons differ in that companies have one name in a string, while persons can have a given name, family name, and middle name. Exactly one of Person and Company shall be included in the data item. CompanyId is the recognized identification number of the company.

6.4 epc:CommunicationNumberType — Communication number information

Definition:

This data type specifies a contact point via telephone or other means.

Type:

```
<xs:complexType name="CommunicationNumberType">
  <xs:sequence>
    <xs:element name="BusinessTelephone" type="epc:string"
                minOccurs="0"/>
    <xs:element name="EMail" type="epc:anyURI" minOccurs="0"/>
    <xs:element name="HomeTelephone" type="epc:string" minOccurs="0"/>
    <xs:element name="MobileTelephone" type="epc:string" minOccurs="0"/>
    <xs:element name="Telefax" type="epc:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

Representation:

This element contains a list of contact points for a person or organization. Telephone numbers shall be specified with an international prefix code. The e-mail tag shall be a valid URI with the “mailto:” prefix.

6.5 epc:CountryCodeContentType — Country identification

Definition:

This data type gives a unique and coded representation of a country identity.

Type:

```
   <xs:simpleType name="CountryCodeContentType">
      <xs:restriction base="xs:token">
         <xs:length value="2"/>
      </xs:restriction>
   </xs:simpleType>
```

Representation:

The content of this element shall be the two-letter country code as defined in ISO 3166-1. Each element is represented as an enumeration, for instance <xs:enumeration value="NO"/>.

6.6 epc:GenderContentType — Enumeration type for gender

Definition:

This enumeration type contains the values for gender according to ISO/IEC 5218.

Type:

```
<xs:simpleType name="GenderContentType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="Not known"/>
    <xs:enumeration value="Male"/>
    <xs:enumeration value="Female"/>
    <xs:enumeration value="Not applicable"/>
  </xs:restriction>
</xs:simpleType>
```

Representation:

The codes specified are the only valid ones.

6.7 epc:LocationOnBoardType — Physical location on board

Definition:

LocationOnBoardType represents a physical location on board the ship.

Type:

```
<xs:simpleType name="LocationOnBoardType">
  <xs:restriction base="epc:string"/>
</xs:simpleType>
```

Representation:

The location on board the ship shall be described by a free text string.

6.8 epc:MeasureType — A physical measurement

Definition:

This data type contains one measurement of a physical quantity.

Type:

```
<xs:simpleType name="MeasurementUnitContentType">
  <xs:restriction base="xs:token"/>
</xs:simpleType>

<xs:complexType name="MeasureType">
  <xs:sequence>
    <xs:element name="Content" type="epc:decimal"/>
    <xs:element name="UnitCode" type="epc:MeasurementUnitContentType"/>
  </xs:sequence>
</xs:complexType>
```

Representation:

The measurement unit content type shall be specified in UnitCode. The codes shall be as defined in UNECE R20. Content is the quantity related to the specified unit code. The content can be both weight/mass and volume, dependent on the UnitCode that is used. The code NAR (number of articles) is used to indicate a count of items.

NOTE Examples of some commonly used codes are given in Annex K.

6.9 epc:NameType — Name of person

Definition:

This data type contains the full name of a person.

Type:

```
<xs:complexType name="NameType">
  <xs:sequence>
    <xs:element name="FamilyName" type="epc:string" minOccurs="0" />
    <xs:element name="GivenName" type="epc:string" minOccurs="0" />
    <xs:element name="MiddleName" type="epc:string" minOccurs="0" />
  </xs:sequence>
</xs:complexType>
```

Representation:

This shall be represented as three text strings. Strings are in free text and may not be suitable for computer-based comparisons.

NOTE Users of this core data element can impose additional restrictions on the data type, e.g. by requiring the spelling to be identical to that used in an electronically readable identification document.

6.10 epc:OrganisationType — Description of an organization

Definition:

This data type is used to give details of an organized body such as a business, government body, department or charity.

Type:

```
<xs:complexType name="OrganisationType">
  <xs:sequence>
    <xs:element name="Name" type="epc:string" minOccurs="0"/>
    <xs:element name="RegistrationDate" type="epc:date" minOccurs="0"/>
    <xs:element name="TaxIdentifier" type="epc:string"
                minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="RegistrationCountryCode"
                type="epc:CountryCodeContentType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

Representation:

The defined details are official name of organization, country of registration, date of registration and tax identification code, e.g. value added tax (VAT) code, goods and services tax (GST) code or similar. The specification allows any or all fields to be omitted. Note also that an organization can have a number of different TaxIdentifier codes. All strings are intended to be read by humans and no restrictions are enforced on the elements.

6.11 epc:PostalAddressType — A postal mail address

Definition:

This is the postal address for a person or organization. The description of country is simplified to contain only the ISO 3166-1 two-letter code as described in CountryCodeContentType.

Type:

```
<xs:complexType name="PostalAddressType">
  <xs:sequence>
    <xs:element name="CityName" type="epc:string" minOccurs="0" />
   <xs:element name="CountrySubdivisionName" type="epc:string"
               minOccurs="0" />
      <xs:element name="LineFive" type="epc:string" minOccurs="0" />
      <xs:element name="LineFour" type="epc:string" minOccurs="0" />
      <xs:element name="LineOne" type="epc:string" minOccurs="0" />
      <xs:element name="LineThree" type="epc:string" minOccurs="0" />
      <xs:element name="LineTwo" type="epc:string" minOccurs="0" />
      <xs:element name="PostCodeCode" type="epc:token" minOccurs="0" />
      <xs:element name="PostOfficeBox" type="epc:string" minOccurs="0" />
      <xs:element name="StreetName" type="epc:string" minOccurs="0" />
      <xs:element name="StreetNumber" type="epc:string" minOccurs="0" />
      <xs:element name="CountryCode" type="epc:CountryCodeContentType"
                  minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

Representation:

This is the description of a postal address. Most fields are intended to be read by humans and are free format, except for the country code. The LineOne to LineFive tags can be used for various contact address information and should in general be printable, one tag data on one line. The CountrySubdivisionName shall follow the national code lists for country subdivisions as listed in ISO 3166-2.

NOTE The ordering of address lines is alphabetic as the XSD is generated automatically.

6.12 epc:VersionType — Version code

Definition:

This type contains a version code.

Type:

```
<xs:simpleType name="VersionType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>
```

Representation:

This string contains a version code in the format “M.N” or “M.N.P” where M, N, and P are positive integers, possibly with leading zeros. The sender and receiver of this version code shall use the following rules to determine if the receiver is able to process the associated information.

a) If the “M” code is different from what the receiver can understand, the receiver shall not try to process the information; it can be incompatibility in coding or semantics.

b) If the “N” code sent is higher than what the receiver understands, the receiver can still safely process the information it understands, but there can be additional enumeration codes or tags in the message that shall be discarded.

c) If the “N” code sent is lower or the same as what the receiver understands, it can safely process the information.

d) The “P” code shall be ignored by the receiver. It can be used by manufacturers to internally identify different revisions of sending systems.

6.13 epc:DateTimeType — DateTime with type

Definition:

This data type defines a date and time with additional time zone information. It also contains the type of this time, whether it is an actual time, estimated time, planned time, or requested time.

Type:

```
<xs:complexType name="DateTimeType">
   <xs:sequence>
      <xs:element name="DateTime" type="epc:dateTime" />
      <xs:element name="TimeType" type="epc:TimeTypeContentType"
                  minOccurs="0"/>
   </xs:sequence>
</xs:complexType>

<xs:simpleType name="TimeTypeContentType">
   <xs:restriction base="xs:token">
      <xs:enumeration value="Actual"/>
      <xs:enumeration value="Estimated"/>
      <xs:enumeration value="Planned"/>
      <xs:enumeration value="Requested"/>
   </xs:restriction>
</xs:simpleType>
```

Representation:

The time is represented by the core type epc:dateTime. The time type is represented by the enumeration TimeTypeContentType containing either actual, estimated, planned or requested.

NOTE This type is a generalisation of the previous types ETPType, ATPType, ATAType, ETAType, ATDType and ETDType.

6.14 epc:CrewDutyType — Duty onboard or on shore

Definition:

This data type specifies the duty of a person. Most codes are for onboard duties, but e.g. Company Security Officer and Agent can also be used in conjunction with ISPS code.

Type:

```
<xs:complexType name="CrewDutyType">
  <xs:sequence>
    <xs:element name="Code" type="epc:CrewDutyCodeContentType"/>
    <xs:element name="Text" type="epc:string" minOccurs="0" />
  </xs:sequence>
</xs:complexType>

<xs:simpleType name="CrewDutyCodeContentType">
  <xs:restriction base="epc:token">
  </xs:restriction>
</xs:simpleType>
```

Representation:

The two fields shall be used as follows.

— Code: This is the crew duty type in coded representation. A list of onboard duty codes is defined in Annex F.

— Text: This is the crew duty in free text. It is optional if a valid coded value is supplied, except for the code "OTH" where the textual name shall be supplied. If supplied and if corresponding to the code in Annex F, it should contain the same textual description as in the annex.

7 Core data types

7.1 Introduction

This clause contains data types that can be instantiated as core data elements in EPC-related messages. It is divided into a number of subclauses where each subclause contains data types from a specific domain. This subdivision is for convenience only, and does not imply any special organization of core data elements in a specific message.

Where relevant, subclauses are introduced with a simplified class diagram showing the main relationships between data types defined in the clause. The notation is based on Unified Modelling Language (ISO/IEC 19501). An open arrow means that a new type includes an existing type as one new attribute, and a closed arrow means that the new type extends the old by adding all old attributes as its own or that it has the type of the same. Extension does not require additional attributes to be added. Cardinality is used to show that an included old type can be optional (0..), that it is included exactly once (1:1) or that it can be included a number of times (..*).

Types in **bold** face are the main types used in the clearance messages, while normal face means that they are components of the main types.

7.2 Ship identity and contacts data types

7.2.1 Class diagram

This subclause defines data elements that are used to identify the ship and the parties that are associated with the ship. See Figure 3 for an overview of the data elements.

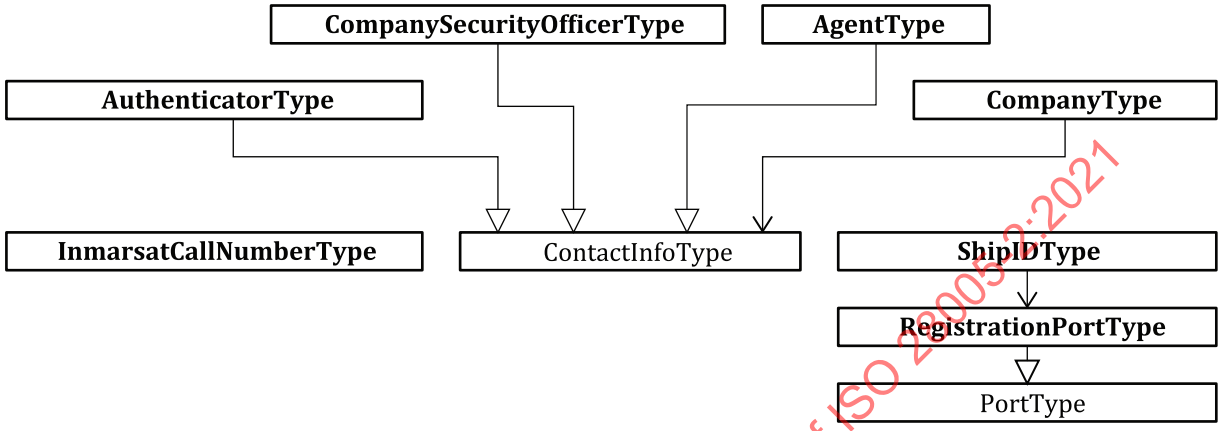

Figure 3 — Class diagram for ship identity and contact details

7.2.2 epc: AgentType — The ship's agent

Definition:

This type contains information about the organization representing the ship in a specific context. This can be the Company or an agent, depending on circumstances.

Type:

```
<xs:complexType name="AgentType">
   <xs:complexContent>
      <xs:extension base="epc:ContactInfoType"/>
   </xs:complexContent>
</xs:complexType>
```

Representation:

The element shall contain contact information for the Company as defined in the ContactInfoType element.

7.2.3 epc:CompanyType — The ship's operating Company

Definition:

This type contains information about the Company as defined in the ISM code.

Type:

```
<xs:complexType name="CompanyType">
  <xs:sequence>
     <xs:element name="IMOCompanyId" type="epc:token" />
     <xs:element name="Contact" type="epc:ContactInfoType"
                 minOccurs="0"/>
     <xs:element name="Organisation" type="epc:OrganisationType"
                 minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

Representation:

The element contains contact information for the Company as defined in the OrganisationType and ContactInfoType elements, and the IMO company identification number.

7.2.4 epc:InmarsatCallNumberType — Inmarsat call number to ship

Definition:

This data type contains the Inmarsat call number for the ship if available. If not, it contains alternative instructions for calling.

Type:

```
<xs:complexType name="InmarsatCallNumberType">
  <xs:sequence>
    <xs:element name="Alternative" type="epc:string" minOccurs="0" />
    <xs:element name="Inmarsat" type="epc:string" minOccurs="0" />
  </xs:sequence>
</xs:complexType>
```

Representation:

The elements shall be used as follows.

— Inmarsat: Inmarsat call number. One normally needs the extension code related to the area that the ship operates in. This extension code shall not be included in this number. If no number is available, the string should be empty.

— Alternative: Alternative contact information, e.g. via mobile phone, satellite, VHF, HF or MF radio.

7.2.5 epc:MasterType — Data for the Ship Master (Deprecated)

Instead of this type, the CrewMemberDataType with the CrewDutyType Code and Text equal to "Master" shall be used.

The corresponding data element in Annex A is CrewList.

7.2.6 epc:ShipIDType — Ship identity

Definition:

This composite element contains data that can be used to identify the ship. Different users of this data structure require different minimum information elements.

Type:

```
   <xs:complexType name="ShipIDType">
      <xs:sequence>
         <xs:element name="CallSign" type="epc:token" minOccurs="0" />
         <xs:element name="Comment" type="epc:string" minOccurs="0" />
         <xs:element name="IMONumber" type="epc:token" minOccurs="0" />
         <xs:element name="MMSINumber" type="epc:token" minOccurs="0" />
         <xs:element name="ShipName" type="epc:string" minOccurs="0" />
         <xs:element name="RegistrationPort" type="epc:RegistrationPortType"
                     minOccurs="0" />
      </xs:sequence>
   </xs:complexType>

<xs:complexType name="RegistrationPortType">
  <xs:complexContent>
    <xs:extension base="epc:PortType"/>
  </xs:complexContent>
</xs:complexType>
```

Representation:

The ShipIDType is represented as follows.

— CallSign: This is the call sign for the ship. The call sign is at least four characters long and can consist of both letters and numbers.

— Comment: Any other information related to ship identity. This can e.g. be used if an identity field is requested by a certain receiver, but is not available for this ship.

— IMONumber: This token consists of the string "IMO" followed by the seven-digit IMO number without any embedded separator character.

— MMSINumber: This token consists of the nine-digit MMSI number without any separator character.

— ShipName: This is the name of the ship. This is in human-readable form and no special restrictions are enforced.

— RegistrationPort: This is the port of registration for the ship. It contains country code and port code for the port of registration. The port name in human-readable format may also be included.

7.2.7 epc: AuthenticatorType — The authenticator of the Information

Definition:

This type contains information about the party attesting to the validity of the transmitted information.

Type:

```
<xs:complexType name="AuthenticatorType">
   <xs:complexContent>
      <xs:extension base="epc:ContactInfoType">
         <xs:sequence>
            <xs:element name="AuthenticationDate" type="epc:dateTime"
                        minOccurs="0"/>
      <xs:element name="AuthenticatorRoleCode" type="epc:CrewDutyType"
                        minOccurs="0"/>
      <xs:element name="AuthenticatorLocation"
                        type="epc:LocationType" minOccurs="0"/>
    </xs:sequence>
   </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Representation:

The element is an extension of the general contact information type and shall contain the additional data elements.

— AuthenticationDate: This is the date of the authentication.

— AuthenticatorRoleCode: This is the role taken by the person that authorises the information.

— AuthenticatorLocation: This is the location of the person when submitting the information.

7.2.8 epc: CompanySecurityOfficerType — The ship's company security officer

Definition:

This type contains information about the ship's company security officer as shown in the ship security plan (ISPS).

Type:

```
<xs:complexType name="CompanySecurityOfficerType">
   <xs:complexContent>
      <xs:extension base="epc:ContactInfoType"/>
```

```
   </xs:complexContent>
</xs:complexType>
```

Representation:

The element shall contain contact information for the person as defined as the ship's company security officer.

7.3 Cargo data types

7.3.1 Class diagram

This subclause describes data types related to the general description of cargo and other goods stored onboard the ship. This subclause does not define sufficient data objects to generally implement a full cargo manifest. See Figure 4 for the class diagram.

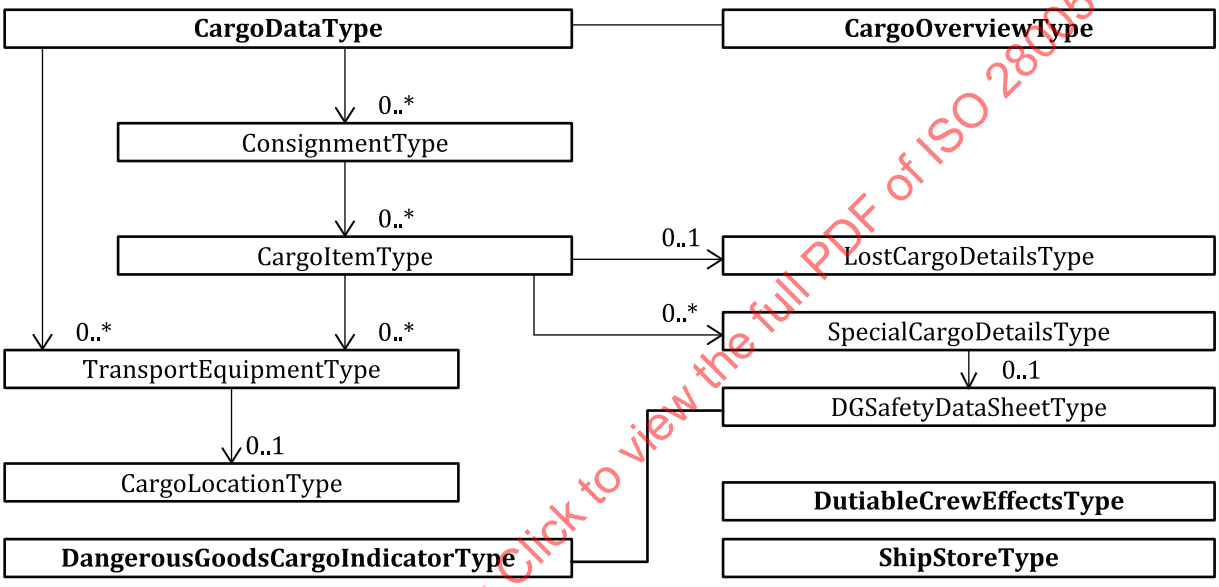

Figure 4 — Class diagram for Cargo Data

The main data type is the cargo data, which consists of one or more consignments which in turn can consist of one or more cargo items. The cargo overview shall give a short textual description of the ship's cargo.

The cargo may itself consist of a number of vehicles, e.g. for a RORO ship, and also that a cargo item, e.g. a container, may be placed on a moveable transport equipment. Transport equipment can also be a container. The location onboard is associated with the transport equipment type.

A cargo items can be lost over board and may have to be reported to coastal authorities. A cargo item can also include special cargo that need additional reporting. Special cargo is often dangerous goods (DG) which needs specific safety information to be reported. The special flag DangerousGoodsCargoIndicatorType is used in conjunction with security reports and should be true if there is dangerous cargo onboard.

This subclause also defines data items for reporting ships stores and dutiable crew items to the port state authorities.

7.3.2 Non-core data types

7.3.2.1 epc:MARPOLPollutionCodeContentType — MARPOL pollution code

Definition:

This element encodes the MARPOL code for noxious liquid substances.

Type:

```
<xs:simpleType name="MARPOLPollutionCodeContentType">
  <xs:restriction base="epc:token">
  </xs:restriction>
</xs:simpleType>
```

Representation:

The code values are those defined in MARPOL - Annex II. The values are represented as enumerations.

NOTE For information, these values are listed in Annex P.

7.3.2.2 epc:UNHazardClassContentType — UN dangerous goods hazard class

Definition:

This type contains the hazard class for dangerous goods.

Type:

```
<xs:simpleType name="UNHazardClassContentType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>
```

Representation:

The enumeration contains the UN Hazard classes as defined in IMDG. The format of the string shall be exactly as defined in the IMDG Code, without the explanatory text. If the material does not have a hazard class, the tag shall be empty.

NOTE The currently defined codes are listed in Annex L.

7.3.3 epc:CargoDataType — Detailed description of cargo

Definition:

The CargoDataType contains the list of consignments of cargo onboard the ship. Each consignment consists of a number of cargo items. Alternatively or additionally, the CargoDataType can contain information about transport equipment, without needing to have a consignment. This can be used, e.g. for certain ferries. The special cargo details block is optional. It gives additional information for special cargo items, e.g. dangerous goods, or cargo items that require special security, health or veterinary clearance.

Type:

```
<xs:complexType name="CargoDataType">
 <xs:sequence>
   <xs:element name="Consignment" type="epc:ConsignmentType"
               minOccurs="0" maxOccurs="unbounded"/>
   <xs:element name="TransportEquipment"
               type="epc:TransportEquipmentType"
               minOccurs="0" maxOccurs="unbounded"/>
 </xs:sequence>
</xs:complexType>

<xs:complexType name="ConsignmentType">
  <xs:sequence>
      <xs:element name="Consignee" type="epc:ContactInfoType"
                  minOccurs="0"/>
      <xs:element name="ConsignmentNumber" type="epc:string"
                  minOccurs="0" />
      <xs:element name="DangerousGoodsShippersReferenceNumber"
                  type="epc:string" minOccurs="0" />
```

```
      <xs:element name="NumberOfItems" type="epc:int" minOccurs="0" />
      <xs:element name="TransportDocumentId" type="epc:string"
                  minOccurs="0 />
      <xs:element name="CargoItem" type="epc:CargoItemType" minOccurs="0"
                  maxOccurs="unbounded"/>
      <xs:element name="PortOfLoading" type="epc:PortType" minOccurs="0" />
      <xs:element name="PortOfDischarge" type="epc:PortType"
                  minOccurs="0" />
  </xs:sequence>
</xs:complexType>

<xs:complexType name="CargoItemType">
  <xs:sequence>
      <xs:element name="ItemNumber" type="epc:string" minOccurs="0" />
      <xs:element name="MarksAndNumber" type="epc:string" minOccurs="0" />
      <xs:element name="NoOfPackages" type="epc:int" minOccurs="0" />
      <xs:element name="NoOfUnits" type="epc:int" minOccurs="0" />
      <xs:element name="SealNumber" type="epc:string" minOccurs="0" />
      <xs:element name="VehicleIdentificationNumber" type="epc:string"
                  minOccurs="0" />
      <xs:element name="CargoType" type="epc:CargoTypeContentType"
                  minOccurs="0"/>
      <xs:element name="Consignee" type="epc:ContactInfoType"
                  minOccurs="0"/>
      <xs:element name="GoodsType" type="epc:GoodsTypeType"
                  minOccurs="0"/>
      <xs:element name="LostDGDetails" type="epc:LostCargoDetailsType"
                  minOccurs="0" />
      <xs:element name="NetWeight" type="epc:MeasureType" minOccurs="0" />
      <xs:element name="GrossWeight" type="epc:MeasureType"
                  minOccurs="0" />
      <xs:element name="GrossVolume" type="epc:MeasureType"
                  minOccurs="0" />
     <xs:element name="PackageType" type="epc:PackageTypeContentType"
                  minOccurs="0" />
     <xs:element name="SpecialCargoDetails"
                  type="epc:SpecialCargoDetailsType"
                  minOccurs="0" maxOccurs="unbounded"/>
     <xs:element name="TransportEquipment"
                  type="epc:TransportEquipmentType"
                  minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="SpecialCargoDetailsType">
  <xs:sequence>
    <xs:element name="Comment" type="epc:string" minOccurs="0" />
    <xs:element name="NoOfPackages" type="epc:int" minOccurs="0" />
    <xs:element name="VehicleIdentificationNumber" type="epc:string"
                minOccurs="0" />
    <xs:element name="SafetyDataSheetReference" type="epc:AttachmentType"
                minOccurs="0" />
    <xs:element name="CargoInformationHolder" type="epc:ContactInfoType"
                minOccurs="0" />
    <xs:element name="Consignor" type="epc:ContactInfoType"
                minOccurs="0"/>
    <xs:element name="Packer" type="epc:ContactInfoType" minOccurs="0" />
    <xs:element name="DGSafetyDataSheet" type="epc:DGSafetyDataSheetType"
                minOccurs="0" />
    <xs:element name="DangerousGoodsPackageType"
                type="epc:PackageTypeContentType"
                minOccurs="0" />
    <xs:element name="OriginalPortOfShipment" type="epc:PortType"
                minOccurs="0" />
  </xs:sequence>
</xs:complexType>

<xs:complexType name="DGSafetyDataSheetType">
   <xs:sequence>
       <xs:element name="AdditionalInformation" type="epc:string"
                minOccurs="0" />
```

```
        <xs:element name="ProperShippingName" type="epc:string"
                    minOccurs="1" />
        <xs:element name="SegregationInformation" type="epc:string"
                    minOccurs="0" />
        <xs:element name="TechnicalSpecification" type="epc:string"
                    minOccurs="0" />
        <xs:element name="UNNumber" type="epc:token" minOccurs="0" />
        <xs:element name="DGClassification"
                    type="epc:DGClassificationContentType"
                    minOccurs="0" />
        <xs:element name="EmergencyInstruction"
                    type="epc:EmergencyInstructionContentType"
                    minOccurs="0" />
        <xs:element name="MARPOLPollutionCode"
                    type="epc:MARPOLPollutionCodeContentType"
                    minOccurs="0" />
        <xs:element name="Mass" type="epc:MeasureType" minOccurs="0" />
        <xs:element name="Volume" type="epc:MeasureType" minOccurs="0" />
        <xs:element name="FlashPoint" type="epc:MeasureType" minOccurs="0"/>
        <xs:element name="PackingGroup"
                    type="epc:PackingGroupCodeContentType"
                    minOccurs="1" />
        <xs:element name="UNClass" type="epc:UNHazardClassContentType"
                    minOccurs="0" />
        <xs:element name="SubsidiaryRisks"
                    type="epc:UNHazardClassContentType"
                    minOccurs="0" maxOccurs="unbounded"/>
   </xs:sequence>
</xs:complexType>

<xs:complexType name="LostCargoDetailsType">
   <xs:sequence>
        <xs:element name="CauseOfLoss" type="epc:string" minOccurs="1" />
        <xs:element name="EstimatedArea" type="epc:int" minOccurs="0" />
        <xs:element name="EstimatedMovement" type="epc:string"
                    minOccurs="0" />
        <xs:element name="GoodsCondition" type="epc:string" minOccurs="1" />
        <xs:element name="LossContinuing" type="epc:boolean" minOccurs="1" />
        <xs:element name="LostGoodsStatus"
                    type="epc:LostGoodsStatusContentType" minOccurs="0"/>
      <xs:element name="EstimatedGoodsLost" type="epc:MeasureType"
                    minOccurs="0" />
   </xs:sequence>
</xs:complexType>

<xs:simpleType name="LostGoodsStatusContentType">
   <xs:restriction base="xs:token">
      <xs:enumeration value="Floated"/>
      <xs:enumeration value="Sank"/>
   </xs:restriction>
</xs:simpleType>

<xs:simpleType name="PackingGroupCodeContentType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="I"/>
    <xs:enumeration value="II"/>
    <xs:enumeration value="III"/>
    <xs:enumeration value="None"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="EmergencyInstructionContentType">
  <xs:restriction base="epc:token">
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="DGClassificationContentType">
    <xs:restriction base="epc:token">
      <xs:enumeration value="IMDG"/>
      <xs:enumeration value="IGC"/>
      <xs:enumeration value="IBC"/>
```

```
      <xs:enumeration value="IMSBC"/>
      <xs:enumeration value="MARPOL_ANNEX1"/>
    </xs:restriction>
</xs:simpleType>

<xs:complexType name="TransportEquipmentType">
    <xs:sequence>
      <xs:element name="MarksAndNumber" type="epc:string"/>
      <xs:element name="OnboardLocation" type="epc:CargoLocationType"
                  minOccurs="0"/>
    </xs:sequence>
</xs:complexType>

<xs:simpleType name="CargoLocationType">
  <xs:restriction base="epc:string"/>
</xs:simpleType>

<xs:simpleType name="CargoTypeContentType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>

<xs:complexType name="GoodsTypeType">
  <xs:sequence>
    <xs:element name="HSCode" type="epc:token"/>
    <xs:element name="Description" type="epc:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

<xs:simpleType name="PackageTypeContentType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>
```

Representation:

The cargo data shall contain a list of consignment descriptions, which in turn contains a list of cargo item descriptions, one for each cargo item that is declared. A cargo item may in principle consist of several units, e.g. a number of boxes which in turn may contain a number of packages.

Each consignment contains the following information.

— ConsignmentNumber: This is a unique identifier for a consignment within a submission which is needed as reference for updates and deletions.

— NumberOfItems: The total number of items making up the consignment. This can also be calculated from the number of cargo items, if unavailable.

— TransportDocumentId: This is a reference number to identify a document evidencing the transport contract (e.g. Bill of Lading).

— DangerousGoodsShippersReferenceNumber: This is a number assigned by the shipper to track the referenced dangerous goods.

— PortOfLoading: This is the identity of the port where the cargo was loaded on board the ship.

— PortOfDischarge: This is the identity of the port where the cargo was discharged from the ship.

— CargoItem: This is a list of cargo items covered by this consignment.

Each cargo item contains the following information.

— ItemNumber: Reference to this cargo item's location in the transport document.

— MarksAndNumbers: Marks and numbers of the cargo item where applicable.

  MarksAndNumbers is also specified in the TransportEquipmentType. If the cargo item has a one to one relationship with the latter, the codes should be identical or this field should not be used.

— NoOfPackages: This is the total number of packages on all cargo units covered by this cargo item.

— NoOfUnits: This is the number of cargo units that this item declaration covers. Each unit can contain multiple packages.

— SealNumber: If the cargo item is sealed, usually for containers, the seal number shall be entered here.

— TransportDocumentId: Transport document, e.g. bill of lading, identity code.

— VehicleIdentificationNumber: This is an alphanumeric identifier assigned by the shipper to identify a vehicle for tracking purposes.

— CargoType: The element shall contain the one-digit cargo type code defined in Annex I of UNECE R21.

NOTE An informative overview of the cargo type codes is given in Annex J.

— Consignee: This field is required by some authorities, although it is not required by the FAL Convention. It may also be required for certain types of dangerous and polluting cargo.

— GoodsType: This is a description of the goods type for this cargo item.

— LostDGDetails: This is the details about dangerous cargo that may be lost during a voyage. This is related to the reporting requirements defined in A.851 for MRS (Maritime Reporting Scheme).

— NetWeight: Net weight of the goods excluding respectively their packing, and without the equipment used by the carrier for their transport.

— GrossWeight: The combined weight or mass of the referenced packaged cargo and its packaging from the shipping data.

— GrossVolume: A measure of the gross volume, normally calculated by multiplying the maximum length, width and height of the cargo item.

— PackageType: This is a code representing the description of the outer package of the cargo item.

— SpecialCargoDetails: This data item shall be included if the cargo item contains dangerous or other types of special goods. See below for a description of the fields of that data type.

— TransportEquipment: This is the container, swap body, vehicle or other equipment on which the cargo item is placed, if applicable.

The special cargo details data type can be used for dangerous cargo (IMDG) or other cargo that falls under the MARPOL convention. The data fields are as follows.

— Comment: Additional information, if provided.

— NoOfPackages: The count of the number of packages of the referenced dangerous goods.

— VehicleIdentificationNumber: An alphanumeric identifier assigned by the shipper to identify a vehicle for tracking purposes.

— SafetyDataSheetReference: Reference to the physicochemical characteristics of the product if required and if provided as, e.g. a printed sheet. If it is electronic information, the next entry shall be used.

— CargoInformationHolder: This is the contact information for the person/organization that can provide information about the cargo. This may be e.g. the manufacturer.

— Consignor: This is the contact information for the consignor/shipper.

— Packer: This is the contact information for the packer of the goods if different from Consignor.

— DGSafetyDataSheet: This is the electronic safety data sheet for dangerous cargo. If the information is not available in the EPC format, reference information can be provided in the previous tag.

— DangerousGoodsPackageType: A code representing the package type of the referenced dangerous goods.

— OriginalPortOfShipment: This is necessary when a goods item originates from another port than PortOfLoading, e.g. after a trans-shipment.

DGSafetyDatSheetType is the data sheet for dangerous goods safety, and contains information for safe handling of dangerous goods. The data elements are as follows.

— AdditionalInformation: A statement of any other information relevant to the characteristics or hazards of the referenced dangerous goods cargo item.

— ProperShippingName: This is the substance name, that is, the formal shipping name, e.g. “Dimethylhydrazine, unsymmetrical” as defined in IMDG, or the product name for goods under IBC Code and IGC Code, or the bulk cargo shipping name for goods under IMSBC Code, or the name of oil for goods under Annex I to the MARPOL Convention.

— SegregationInformation: Additional information on segregation of this cargo item in free text.

— TechnicalSpecification: The recognized chemical or biological name or other name currently used for the referenced dangerous goods. This can be the technical name for goods under IMDG Code, the IBC Code or IGC Code, the IMSBC Code, or under Annex I to the MARPOL Convention.

— UNNumber: This is the UN dangerous goods unique number as defined in IMDG. This is a four-digit number prefixed with “UN”, e.g. “UN1163”. The leading UN shall not be included in the token. If the material does not have a UN code, the tag shall be empty.

— DGClassification: The classification used for the dangerous goods. The code represents the regulatory framework used for classification of dangerous goods, i.e. International Maritime Dangerous Goods Code (IMDG), The International Code of the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC), The international Bulk Chemical code (IBC), The International Maritime Solid Bulk Cargoes Code (IMSBC) or MARPOL Annex I.

— EmergencyInstructions: Additional instructions on emergency handling of this item. It comprises 2 types of values; one for spillage and one for fire, where possible values for spillage are S-A to S-Z and for fire F-A to F-Z. The codes shall be according to IMO Assembly resolution A.852(20).

— MARPOLPollutionCode: This code applies to noxious liquid substances as defined in MARPOL, Annex II.

— Mass: The mass of the referenced dangerous goods.

— Volume: The volume of the referenced dangerous goods.

— FlashPoint: The flashpoint of the referenced dangerous goods according to the IMO IMDG Code expressed in degrees Celsius or Fahrenheit.

— PackingGroup: Packing danger group code as appropriate and as defined in IMDG. If there is no packing group assigned, the tag shall be empty.

— UNClass: Contains the UN Hazard Code for this cargo as defined in IMDG. It specifies the hazard code for the actual substance. Subsidiary hazard codes may be added where applicable in the SubsidiaryRisks data items.

— SubsidiaryRisks: This field specifies additional hazard codes associated with the goods, if applicable. More than one code can be listed. If no subsidiary risk exists, the tag shall be omitted. The values used are the IMDG codes plus 'P' for Marine pollutant.

LostCargoDetailsType contains the details of cargo lost overboard, e.g. harmful substances as reported according to IMO Assembly Resolution A.851.

— CauseOfLoss: Free text description of the cause of loss of harmful substances.

— EstimatedArea: Estimated size of the sea area covered by the harmful substances that have been discharged. Reported in hectares (squares of 100 m side, i.e. the unit is 1 for each 10 000 m^2).

— EstimatedMovement: Free text description of the estimated movement of the harmful substances that have been discharged.

— GoodsCondition: Free text description of the condition of the goods that may have been lost over board.

— LossContinuing: A Boolean field indicating whether the loss of harmful substances continues or not, true means yes.

— LostGoodsStatus: An enumeration of type LostGoodsStatusContentType indicating whether the lost goods is still floating or if it has sunk.

— EstimatedGoodsLost: This is an estimation of the amount or volume of goods that has been lost over board.

TransportEquipmentType is used to identify transport equipment the cargo is placed on where relevant.

— MarksAndNumbers: Marks and numbers of the transport equipment or empty string if not relevant. Use the OnboardLocation to determine the interpretation of this field. For containers, this shall be the identification code as defined in ISO 6346.

— OnboardLocation: This is the onboard location of the cargo.

CargoLocationType is a string with one upper case letter specifying the type of location code, a colon (:) and then the actual location code. The following subclauses specify the type of coding, the coding letter and the format of the code.

— Container ship – Code "C": A string of digits in the form BBRRTT where BB is the bay number, RR is the row number and TT is the tier number. This shall be coded according to ISO 9711-1. This includes leading zeros where necessary. As an example, "C:010212" means container in bay 1, row 2 and tier 12.

— Container feeder – Code "F": A string of digits in the form HHHTTRR where HHH is the hatch number, TT is the tier number and RR is the row number. All fields shall be filled with leading zeros. As an example, "F:0010204" means hatch 1, tier 2 and row 4.

— RORO – Code "R": A string of digits in the form DDBBBRRTT where DD is deck, BBB is bay, RR is row and TT is tier. As an example, "R:030100204" means deck 3, bay 10, row 2 and tier 4.

— General cargo – Code "G": A string of characters in the format CCS or CCSDDD, where CC is the cell number, S is side of ship ("S" – starboard, "P" – port side and "C" – centre), and DDD is an optional code specifying deck (WED – weather deck, TDn – tween deck n, where n is a digit zero to nine and LOH is lower hold deck).

— Bulk vessel, including tankers – Code "B": The tank or hold number as numeral or other coding as used onboard.

— Other – Code "O": Free text description.

GoodsType is a description of the goods that shall be done according to WCO HS (WCO Harmonized System):

— HSCode is a WCO HS compliant code. This standard requires the use of a period (.) between the four first digits (heading) and the next two digits (subheading). Additional code digits may be added after the subheading after a new period (.). The subheading and associated period are optional. Thus,

the codes “3913” (Natural polymers), “3913.10” (Alginic acid, its salts and esters) and “3913.10.10” (Sodium alginate) are all legal codes.

— Description is an optional human readable format.

PackageTypeContentType shall contain the two-letter alphabetic code of Annex V / Annex VI of UNECE R21.

NOTE Examples of some of the codes are given in Annex J.

There is some redundancy in data elements. In case redundancy occurs, one should normally use the top-most element to contain the information and use an empty field in lower level elements. If more than one element is used, the values of these elements should be the same.

7.3.4 epc:CargoOverviewType — Brief description of onboard cargo

Definition:

This is a short text giving a human-readable overview of what cargo the ship carries. This also contains brief details of any harmful substances and gases that could endanger persons or the environment.

Type:

```
<xs:simpleType name="CargoOverviewType">
  <xs:restriction base="epc:string"/>
</xs:simpleType>
```

Representation:

This is a free text for human use. The text may include special characters such as a new line character.

7.3.5 epc:DutiableCrewEffectsType — List of crew effects that may be dutiable

Definition:

This is a list of crew effect items as specified in FAL 4. The list contains all crew effects that may be dutiable. The crew is identified with a reference code that matches a code in the persons on board list.

Type:

```
<xs:complexType name="CrewEffectItemType">
   <xs:sequence>
      <xs:element name="EffectDescription" type="epc:string"
                  minOccurs="0" />
      <xs:element name="SequenceNumber" type="epc:int" minOccurs="0" />
      <xs:element name="CrewEffectItemCode"
                  type="epc:CrewEffectCodeContentType" minOccurs="0" />
      <xs:element name="Measurement" type="epc:MeasureType" minOccurs="0" />
      <xs:element name="CrewReference" type="epc:PersonReferenceType"
                  minOccurs="0" />
   </xs:sequence>
</xs:complexType>

<xs:simpleType name=" CrewEffectCodeContentType ">
  <xs:restriction base="epc:token"/>
</xs:simpleType>

<xs:complexType name="DutiableCrewEffectsType">
  <xs:sequence>
    <xs:element name="CrewEffectItem" type="epc:CrewEffectItemType"
                    minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
```

Representation:

The CrewEffectItemType shall contain one type of crew effect for one specific crew member. Thus, if one crew member possesses, e.g. both cigarettes and alcohol, the list shall contain two entries with the same CrewReference value. The tags are as follows.

— EffectDescription tag contains the description of the type of possible dutiable or prohibited item in a human-readable format. Not necessary if a coded representation is used in CrewEffectsItemCode.

— SequenceNumber: A number indicating the sequence of items for each crew member. For the same crew member this number should be incremented from one to the final number of effects reported for this crew member.

— CrewEffectItemCode: A code representing the type of the referenced crew's effects. Codes are defined in Annex O.

— Measurement: This field specifies the quantity.

— CrewReference: This tag points to the specific crew member in the crew list. This corresponds to the crew number field in FAL 4.

The type DutiableCrewEffectsType contains a list of all crew effects that may be dutiable or prohibited.

7.3.6 epc:GeneralDescriptionOfDGType — General description of dangerous cargo

Definition:

The data element contains a summary list of dangerous goods onboard the ship. This can be generated from the detailed DG cargo list. It uses two of the data types defined in that context.

Type:

```
<xs:complexType name="DGInfoType">
   <xs:sequence minOccurs="0" >
      <xs:element name="Description" type="epc:string" minOccurs="0" />
      <xs:element name="Remarks" type="epc:string" minOccurs="0" />
      <xs:element name="UNNumber" type="epc:token" minOccurs="0" />
      <xs:element name="MARPOLCode"
                  type="epc:MARPOLPollutionCodeContentType"
                  minOccurs="0" />
      <xs:element name="Measure" type="epc:MeasureType" minOccurs="1" />
      <xs:element name="UNHazardClass" type="epc:UNHazardClassContentType"
                  minOccurs="0" />
   </xs:sequence>
</xs:complexType>

<xs:complexType name="GeneralDescriptionOfDGType">
  <xs:sequence>
    <xs:element name="DGInfo" type="epc:DGInfoType"
                minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
```

Representation:

Each element of the list shall contain the UN hazard class, the MARPOL code or a description entry, as well as the total amount of the material onboard (measure). An optional Remarks can give human-readable additional information where relevant in addition to the UNNumber.

The list shall contain all dangerous goods onboard. Each entry represents one class of hazardous goods. It is legal to have several entries with the same hazard class. Thus, to find the complete amount onboard of goods of a given hazard class, the measurements of all items with the same hazard class need to be added together.

NOTE One can, for various reasons, divide one type of goods into different entries, e.g. if they are stored in different compartments. In this case, the comment would normally distinguish between the entities.

7.3.7 epc:ShipStoreType — Description of ship's dutiable stores

Definition:

This is a description of the dutiable stores that the ship carries. This is a list of the ship's stores, including type, quantity and location onboard according to FAL 3.

Type:

```
<xs:simpleType name=" ShipStoreItemCodeContentType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>

<xs:complexType name="ShipStoreItemType">
   <xs:sequence>
      <xs:element name="Description" type="epc:string" minOccurs="0" />
      <xs:element name="LocationOfStorage" type="epc:string"
                  minOccurs="0" />
      <xs:element name="SequenceNumber" type="epc:int" minOccurs="0" />
      <xs:element name="Measurement" type="epc:MeasureType" minOccurs="0" />
      <xs:element name="Code" type="epc:ShipStoreItemCodeContentType"
                  minOccurs="0" />
   </xs:sequence>
</xs:complexType>

<xs:complexType name="ShipStoreType">
  <xs:sequence>
    <xs:element name="StoreItem" type="epc:ShipStoreItemType"
                  minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
```

Representation:

This data structure shall contain information that is for human use, but also some coded values. The tags are as follows.

— Description contains the description of the type of possible dutiable or prohibited item in a human-readable format. Not necessary if a coded representation is used in Code.

— LocationOfStorage: Human readable description of where item is stored.

— SequenceNumber: A reference number indicating the sequence of items. This number should be incremented from one to the final number of stores items reported.

— Measurement: This field specifies the quantity.

— Code: A code representing the type of the item of ship stores. Codes are defined in Annex O.

The type ShipStoresType contains a list of all ship stores that may be dutiable or prohibited.

7.3.8 epc: DangerousGoodsCargoIndicatorType

Definition:

This type contains a yes/no indicator saying whether the ship is carrying any dangerous goods or not.

Type:

```
<xs:simpleType name="DangerousGoodsCargoIndicatorType">
   <xs:restriction base="xs:boolean"/>
</xs:simpleType>
```

Representation:

This type shall contain a Boolean value true if the ship is carrying any dangerous goods. If the value equals false, the ship is not carrying any dangerous goods. If the value equals false, a related instance of type DGSafetyDataSheetType containing some none-null values, cannot exist.

7.4 Crew and passenger data

7.4.1 Class diagram

This subclause contains data types with information related to the crew and passengers. See Figure 5 for the class diagram.

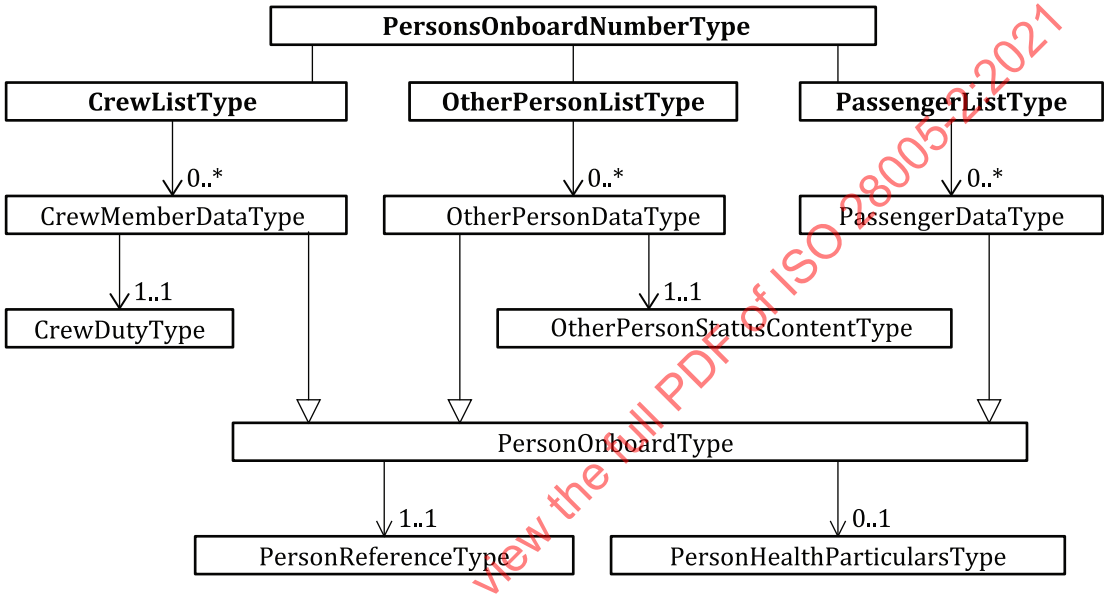

Figure 5 — Crew and passenger class diagram

This subclause defines a data type to count persons on board. This should correspond to the number of crews and passengers listed in the respective lists. Crew and passenger are specializations of the person onboard type where crew also has an additional element specifying crew duty. Person onboard may also have a link to health information, if there has been health issues to be reported during the voyage (see 7.12). A reference code is also associated with each person onboard which is used in various other data items that refer to these persons.

7.4.2 Non-core data types

7.4.2.1 epc:PersonOnboardType — Information about a person on board

Definition:

PersonOnboardType is the information that may be needed for all persons on board, both passengers, crew, and other persons. The actual information requirements normally vary between passengers, crew and other persons.

Type:

```
<xs:complexType name="PersonOnboardType">
   <xs:sequence>
      <xs:element name="DateOfBirth" type="epc:date" minOccurs="0" />
      <xs:element name="DebarkationDate" type="epc:date" minOccurs="0" />
      <xs:element name="EmbarkationDate" type="epc:date" minOccurs="0" />
      <xs:element name="PlaceOfBirth" type="epc:string" minOccurs="0" />
      <xs:element name="Remarks" type="epc:string" minOccurs="0" />
      <xs:element name="Transit" type="epc:boolean" minOccurs="0" />
```

```
      <xs:element name="CountryOfBirth" type="epc:CountryCodeContentType"
                  minOccurs="0" />
      <xs:element name="Nationality" type="epc:CountryCodeContentType"
                  minOccurs="0" />
      <xs:element name="CountryOfResidence"
                  type="epc:CountryCodeContentType"
                  minOccurs="0" />
      <xs:element name="Gender" type="epc:GenderContentType"
                  minOccurs="0" />
      <xs:element name="Name" type="epc:NameType"  />
      <xs:element name="PersonHealthParticulars"
                  type="epc:PersonHealthParticularsType"
                  minOccurs="0" />
      <xs:element name="PersonIdDocument" type="epc:PersonIdDocumentType"
                  minOccurs="0" maxOccurs="unbounded"/>
      <xs:element name="VisaNumber" type="epc:PersonIdDocumentType"
                  minOccurs="0" maxOccurs="unbounded"/>
      <xs:element name="PersonReference" type="epc:PersonReferenceType"  />
      <xs:element name="EmbarkationPort" type="epc:PortType"
                  minOccurs="0" />
      <xs:element name="DebarkationPort" type="epc:PortType"
                  minOccurs="0" />
      <xs:element name="HomeAddress" type="epc:PostalAddressType"
                  minOccurs="0" />
      <xs:element name="VisitAddress" type="epc:PostalAddressType"
                  minOccurs="0" />
   </xs:sequence>
</xs:complexType>
```

Representation:

The following elements are defined as parts of the PersonOnboardType data objects. Requirements for inclusion of elements other than PersonReference is determined by local port regulations. PersonReference is a mandatory element as it is used to refer to the description of the person from other elements in this standard.

— DateOfBirth: Date of birth as a date type.

— DebarkationDate: Date and time when the person debarked the ship.

— EmbarkationDate: Date and time when the person embarked the ship.

— PlaceOfBirth: Place of birth, city name or similar.

— Remarks: Optional remarks, e.g. if the person requests special assistance, instructions can be entered into this field.

— Transit: Shall be true if the person is a transit person in this port call, i.e. if the person enters the ship again before departure.

— CountryOfBirth: Country code for country of birth.

— Nationality: Two-letter country code for nationality.

— CountryOfResidence: Two-letter country code for country of residence.

— Gender: This is the gender of the person.

— Name: This is the name of the person.

— PersonHealthParticulars: Health information, if the person is listed in the WHOs Maritime Declaration of Health (see 7.12).

— PersonIdDocument: This is the reference to the person's identification document. See below for a description of this element.

— VisaNumber: This is the unique number assigned to the referenced person's visa by the issuing nation. This is represented as a PersonIdDocumentType.

— PersonReference: This is the person reference that uniquely identifies each of the persons on board the ship and which can be used to refer to the person.

— EmbarkationPort: Port where the person embarked the ship.

NOTE This data element is a general location item and it is possible to specify an embarkation point, e.g. at sea. This can be relevant, e.g. for persons rescued at sea or persons that for some reason were transferred to the ship from another ship.

— DebarkationPort: Port where the person debarked or plan to debark the ship.

— HomeAddress: This is the home address for the person.

— VisitAddress: This is the address for the person's first stay in the country of arrival.

7.4.2.2 epc:PersonReferenceType — Reference to a person member

Definition:

This data type is used as a reference to a specific crew or passenger. It is defined in the passenger list as a unique code for each passenger, and in the crew list as a unique code for each crew member. The code can be used in other data objects to give a reference to this passenger and crew.

Type:

```
<xs:simpleType name="PersonReferenceType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>
```

Representation:

The reference code shall be an arbitrary, but unique, string within the list of passengers and crew members. A typical reference code may be the number of this passenger on the passenger list, e.g. prefixed with 'P' and the number of this crew in a crew list, prefixed with 'C'. There are no requirements to the format of this element other than it being unique for a certain message or set of messages.

7.4.2.3 epc:PersonIdDocumentType — Identification papers for a person

Definition:

This data type contains information about the personal identity papers carried by a specific person on a ship.

Type:

```
<xs:simpleType name="IdDocumentCodeContentType">
  <xs:restriction base="epc:token">
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="PersonIdDocumentType">
  <xs:sequence>
      <xs:element name="ExpirationDate" type="epc:date" minOccurs="0" />
      <xs:element name="IdNumber" type="epc:string" minOccurs="0" />
      <xs:element name="IssueDate" type="epc:date" minOccurs="0" />
      <xs:element name="IssuingCountry" type="epc:CountryCodeContentType" />
      <xs:element name="IdDocument" type="epc:IdDocumentCodeContentType"
                  minOccurs="0" />
</xs:sequence>
</xs:complexType>
```

Representation:

The following elements are defined.

— ExpirationDate: Date of expiration of identity document.

— IdNumber: The identity code as shown in document.

— IssueDate: Date of issue.

— IssuingCountry: Country where document was issued.

— IdDocument: The coded type of the document shall follow the code values defined for ISO 7372, data element 1001 as defined by UN/EDIFACT. The normally used values are:

  — 36 - Identity card;

  — 39 – Passport;

  — 101 - Registration document.

7.4.3 epc:CrewListType — Information about all crew onboard

Definition:

CrewDataType is a list of information items, one for each crew member onboard the ship. This list is needed in FAL 1, FAL 4 and ISPS. FAL 4 (crew effects) requires a reference to the crew in question by including the crew's number or reference code on the crew list (entry number in FAL 5).

Type:

```
<xs:complexType name="CrewListType">
   <xs:sequence>
      <xs:element name="CrewMemberData" type="epc:CrewMemberDataType"
                  minOccurs="0" maxOccurs="unbounded"/>
   </xs:sequence>
</xs:complexType>

<xs:element name="CrewMemberDataType" type="epc:CrewMemberDataType"/>
<xs:complexType name="CrewMemberDataType">
   <xs:complexContent>
      <xs:extension base="epc:PersonOnboardType">
         <xs:sequence>
            <xs:element name="Duty" type="epc:CrewDutyType" minOccurs="0" />
         </xs:sequence>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

One CrewMemberData element shall exist for each of the crew members. This is an extension of the PersonOnboardType and includes the additional data element.

— Duty: Crew duty or rank.

7.4.4 epc:PassengerListType — Information about passengers

Definition:

The passenger data can contain one or more records of the general passenger data item.

Type:

```
   <xs:complexType name="PassengerListType">
      <xs:sequence>
         <xs:element name="PassengerData" type="epc:PassengerDataType"
                     minOccurs="0" maxOccurs="unbounded"/>
```

```
      </xs:sequence>
   </xs:complexType>

   <xs:complexType name="PassengerDataType">
      <xs:complexContent>
         <xs:extension base="epc:PersonOnboardType">
            <xs:sequence/>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
```

Representation:

The passenger data list shall contain a list of passenger data items according to FAL 6 requirements. Each passenger data item is of type PassengerDataType. PassengerDataType is an extension of PersonOnboardType, with no additional data elements.

7.4.5 epc:OtherPersonListType — Information about other persons on board

Definition:

The passenger data can contain one or more records of the general passenger data item.

Type:

```
   <xs:complexType name="OtherPersonListType">
      <xs:sequence>
         <xs:element name="OtherPersonData" type="epc:OtherPersonDataType"
                     minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
   </xs:complexType>

   <xs:complexType name="OtherPersonDataType">
      <xs:complexContent>
         <xs:extension base="epc:PersonOnboardType">
            <xs:sequence>
               <xs:element name="StatusText" type="epc:string"
                           minOccurs="0"/>
        <xs:element name="OtherPersonStatus"
                     type="epc:OtherPersonStatusContentType"
                                 minOccurs="0"/>
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>

<xs:simpleType name="OtherPersonStatusContentType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="Stowaway"/>
    <xs:enumeration value="RescuedAtSea"/>
    <xs:enumeration value="Other"/>
  </xs:restriction>
</xs:simpleType>
```

Representation:

The other person data list shall contain a list of data items similar to that of passengers and crew. One additional element is added to specify the status of the person. This can be coded and/or textual. A textual explanation should be used if the code "Other" is used.

7.4.6 epc:PersonsOnboardNumberType — Number of persons onboard

Definition:

This data item is used to specify the number of persons onboard.

Type:

```
<xs:complexType name="PersonsOnboardNumberType">
  <xs:sequence>
    <xs:element name="Crew" type="epc:int" minOccurs="0" />
    <xs:element name="NumberOfMedicalPersonsOnboard" type="epc:int"
                minOccurs="0" />
    <xs:element name="NumberOfPersonsOnboard" type="epc:int"
                minOccurs="0" />
    <xs:element name="Passengers" type="epc:int" minOccurs="0" />
  </xs:sequence>
</xs:complexType>
```

Representation:

PersonsOnboardNumberType shall contain counts of different person categories onboard the ship. The following elements are included.

— Crew: This is the count of persons actually employed for duties on board during a voyage in the working or service of a ship and included in the crew list. This number shall equal the number of instances of CrewListType for this port call.

— NumberOfMedicalPersonsOnboard: This is the total number of medical persons onboard. This number may count medical persons both among the crew and the passengers.

— NumberOfPersonsOnboard: This is the total number of persons onboard, including passengers, crew and other persons onboard.

— Passengers: This is the count of persons on board the ship who are passengers as defined by SOLAS. This number shall equal the number of instances of PassengerListType for this port call.

7.5 Class and ship certificates

7.5.1 Class diagram

This subclause defines data types that represent the ship's class approval status, its certificates and related ship type information. See Figure 6 for the class diagram.

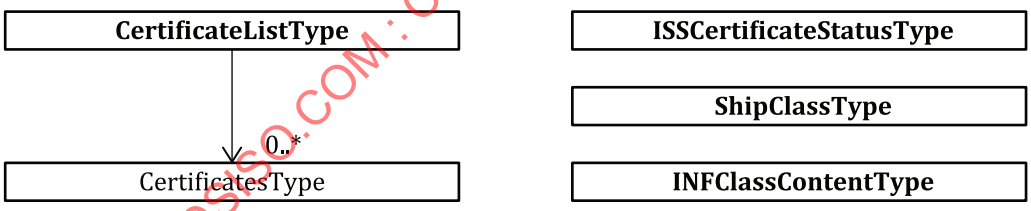

Figure 6 — Class and ship certificates

This subclause defines a way to provide a list of ship certificates as defined in Annex D. In addition, three data elements are used to give more specific information about certain certificates and class documents.

7.5.2 epc:CertificateType — Certificate description

Definition:

This data type is used to give details about a specific certificate. Annex D defines codes for all certificates that are defined for use in this document, but additional certificates can be added by using the code "Other".

Type:

```
<xs:simpleType name="CertificateCodeContentType" type="epc:token" />

<xs:simpleType name="epc:CertificateStatusContentType">
```

```
  <xs:restriction base="epc:token">
    <xs:enumeration value="Approved"/>
    <xs:enumeration value="Intermediate"/>
    <xs:enumeration value="USCGApproved"/>
    <xs:enumeration value="Exemption"/>
    <xs:enumeration value="Other"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="CertificateIssuerTypeContentType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="Flag"/>
    <xs:enumeration value="Class"/>
    <xs:enumeration value="RO"/>
    <xs:enumeration value="RSO"/>
    <xs:enumeration value="NB"/>
    <xs:enumeration value="Insurance"/>
    <xs:enumeration value="Other"/>
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="CertificateType">
   <xs:sequence>
      <xs:element name="CertificateNumber" type="epc:string"
                  minOccurs="0" />
      <xs:element name="Comment" type="epc:string" minOccurs="0" />
      <xs:element name="ExpiryDate" type="epc:date" minOccurs="0" />
      <xs:element name="ExtendedUntil" type="epc:date" minOccurs="0" />
      <xs:element name="IssueDate" type="epc:date" minOccurs="0" />
      <xs:element name="LastEndorsementDate" type="epc:date"
                  minOccurs="0" />
      <xs:element name="Name" type="epc:string" minOccurs="0" />
      <xs:element name="Restrictions" type="epc:string" minOccurs="0" />
      <xs:element name="Code" type="epc:CertificateCodeContentType"
                  minOccurs="0" />
      <xs:element name="IssuerType"
                  type="epc:CertificateIssuerTypeContentType"
                  minOccurs="0" />
      <xs:element name="CertificateStatus"
                  type="epc:CertificateStatusContentType" />
      <xs:element name="Issuer" type="epc:OrganisationType" minOccurs="0" />
      <xs:element name="IssuerLocation" type="epc:PortType"
                  minOccurs="0" />
  </xs:sequence>
</xs:complexType>
```

Representation:

CertificateCodeContentType shall contain the coded token defined in Table D.1 and specifies the type of certificate. The code "OTHER" can be used for certificates not listed in Annex D. In this case it is necessary to include the Name of the certificate.

CertificateStatusContentType specifies the status of the certificate. Exception certificates use the same code as the corresponding certificate, but uses the code "Exemption". Likewise, an intermediate or interim certificate uses the status code "Intermediate".

The elements of CertificateType are as follows.

— CertificateNumber: The unique alphanumeric identifier assigned to the Certificate, for instance to the Certificate of Registry, by the issuing nation for tracking purposes.

— Comment: This field can be used to give additional information and is in human-readable format.

— IssueDate, ExpiryDate, ExtendedUntil and LastEndorsementDate: These are the dates that may apply to the certificate's validity.

— Name: This is the name of the certificate as it is normally written in English. This is to be read by humans.

— Restrictions: This can be used to specify any restrictions in force with regards to the certificate.

— Code: This field shall contain a code as specified in Annex D.

— IssueDate, ExpiryDate, ExtendedUntil and LastEndorsementDate: These are the dates that may apply to the certificate's validity.

— IssuerType: This is the type of organization. RO or RSO should be used instead of class when class operates on behalf of a flag state.

— Issuer: This is the description of the issuing body. This should, for most certificates, be the flag state but, if issued by a recognized organization, the field shall contain the description and type of organization in the IssuerType field.

— CertificateStatus: This element shall contain one of the specified codes. “Approved” and “Exemption” are generally useful for many certificates, while “Intermediate” and “USCGApproved” are usually only appropriate for international ship safety certificates.

— IssuerLocation: The location of the issuer of the certificate.

7.5.3 epc:ISSCertificateStatusType — Security certificate information

Definition:

This data type is used to give additional details about the ship security certificate.

Type:

```
<xs:simpleType name="ISSCertificateStatusReasonNotValidCodeContentType">
  <xs:restriction base="epc:token">
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="ISSCertificateStatusType">
   <xs:sequence minOccurs="0" >
      <xs:element name="ISSCertificateStatusReasonNotValid"
                  type="epc:string"
                  minOccurs="0" />
      <xs:element name="ISSCStatus" type="xs:boolean" minOccurs="0" />
      <xs:element name="ISSCertificateStatusReasonNotValidCode"
            type="epc:ISSCertificateStatusReasonNotValidCodeContentType"
            minOccurs="0" />
   </xs:sequence>
</xs:complexType>
```

Representation:

ISSCertificateStatusType shall contain the status of the ship's International Ship Security Certificate and contains the following elements.

— ISSCertificateStatusReasonNotValid: The explanation of why the ship is not provided with a valid ISS certificate of the actual type or not. Possible code values are defined in Annex Q.

— ISSCStatus: This is an indicator of whether the ship has a valid Interim International Ship Security Certificate or valid International Ship Security Certificate. The type is a Boolean where true indicates that the ship has a valid interim International Ship Security Certificate or valid International Ship Security Certificate. False indicates that none of these two certificates are valid.

— ISSCertificateStatusReasonNotValidCode: A coded explanation of why the ship is not provided with a valid ISS certificate of the actual type or not. Possible code values are defined in Annex Q.

7.5.4 epc:CertificateListType — List of certificates

Definition:

This data type is used to list information on certificates that are requested by clearance authorities.

Type:

```
<xs:complexType name="CertificateListType">
   <xs:sequence>
      <xs:element name="Certificate" type="epc:CertificateType"
                                 minOccurs="0" maxOccurs="unbounded" />
   </xs:sequence>
</xs:complexType>
```

Representation:

CertificateListType is the carrier of the general list of certificates. More specific certificates may also be attributes of some other data elements.

7.5.5 epc:ShipClassType — Class Notation for Ship

Definition:

This is the class society and the class notation for the ship.

Type:

```
<xs:simpleType name="ClassSocietyContentType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>

<xs:complexType name="ShipClassType">
  <xs:sequence>
    <xs:element name="SocietyName" type="epc:string"/>
    <xs:element name="SocietyCode" type="epc:ClassSocietyContentType"
                  minOccurs="0"//>
    <xs:element name="Country" type="epc:CountryCodeContentType"
                  minOccurs="0"//>
    <xs:element name="Notation" type="epc:string" minOccurs="0"//>
  </xs:sequence>
</xs:complexType>
```

Representation:

The following attributes are defined.

— SocietyName is the printable name of the classification society.

— SocietyCode is the corresponding code as defined in Annex E.

— Country is the country where the society is registered.

— Notation is the class notation as a printable text string.

7.5.6 epc:INFClassContentType — Irradiated nuclear fuel class

Definition:

This enumerated type contains the codes for the license of the vessel according to the INF Code.

Type:

```
<xs:simpleType name="INFClassContentType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="INF0"/>
    <xs:enumeration value="INF1"/>
    <xs:enumeration value="INF2"/>
    <xs:enumeration value="INF3"/>
  </xs:restriction>
```

```
</xs:simpleType>
```

Representation:

The codes correspond to the INF classifications in the above-referenced INF Code. INF0, if used, means that the ship is not certified to carry this type of cargo.

7.6 Security data types

7.6.1 Class diagram

This clause defines data elements related to ISPS-related reporting. See Figure 7 for a simplified object diagram.

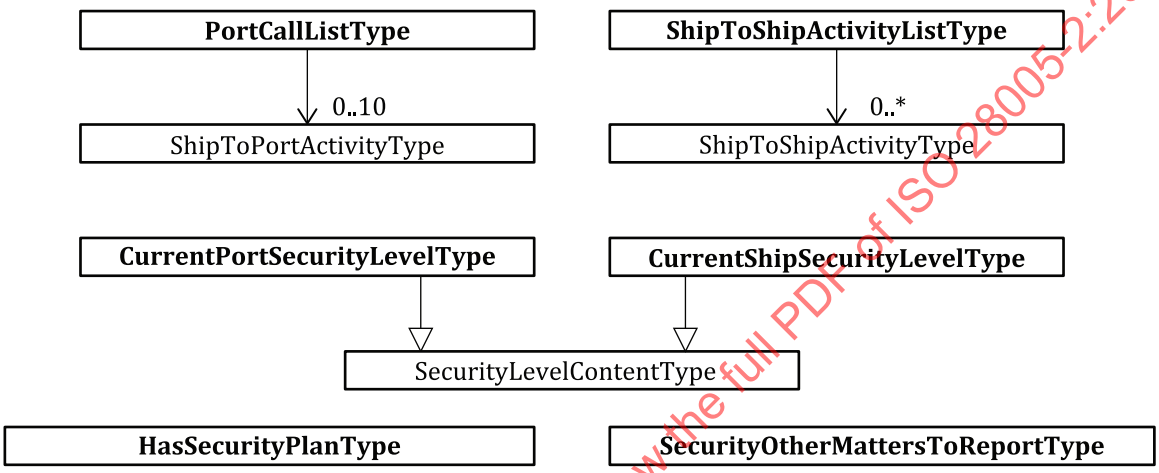

Figure 7 — Security related data items

This clause defines data elements related to ISPS code. This is mainly port call list, ship to ship activity list as well as current security levels in port and ship and some other special reporting data. The DangerousGoodsCargoIndicatorType (see 7.3.7) is also used in ISPS related reporting.

7.6.2 epc:CurrentPortSecurityLevelType — Current security level on ship

Definition:

This type contains the port's current security level as defined in the ISPS code.

Type:

```
<xs:simpleType name="CurrentPortSecurityLevelType">
  <xs:restriction base="epc:SecurityLevelContentType"/>
</xs:simpleType>
```

Representation:

This shall be the port's current security level according to the ISPS code.

7.6.3 epc:CurrentShipSecurityLevelType — Current security level in port

Definition:

This type contains the ship's current security level according to the ISPS code.

Type:

```
<xs:simpleType name="CurrentShipSecurityLevelType">
  <xs:restriction base="epc:SecurityLevelContentType"/>
</xs:simpleType>
```

Representation:

This shall be the ship's current security level according to the ISPS code.

7.6.4 epc: PortCallListsType — Last ten port calls

Definition:

This data type contains a list of the last ten port calls with arrival and departure times, security level and additional security measures.

Type:

```
<xs:complexType name="ShipToPortActivityType">
   <xs:sequence>
      <xs:element name="FromDateTime" type="epc:dateTime" minOccurs="0" />
      <xs:element name="SequenceNumber" type="epc:int" minOccurs="0" />
      <xs:element name="ToDateTime" type="epc:dateTime" minOccurs="0" />
      <xs:element name="PortSecurityLevel"
                  type="epc:CurrentPortSecurityLevelType"
                  minOccurs="0" />
      <xs:element name="Port" type="epc:PortType" minOccurs="0" />
      <xs:element name="AdditionalSecurityMeasure"
                  type="epc:SecurityMeasureType" minOccurs="0"
                     maxOccurs="unbounded"/>
   </xs:sequence>
</xs:complexType>

<xs:complexType name="PortCallListType">
   <xs:sequence>
      <xs:element name="PortCall" type="epc:ShipToPortActivityType"
                  maxOccurs="10"/>
   </xs:sequence>
</xs:complexType>

<xs:simpleType name="SecurityMeasureCodeContentType">
   <xs:restriction base="xs:token" />
</xs:simpleType>

<xs:complexType name="SecurityMeasureType">
   <xs:sequence>
      <xs:element name="Description" type="epc:string" minOccurs="0" />
      <xs:element name="Code" type="epc:SecurityMeasureCodeContentType"
                  minOccurs="0" />
   </xs:sequence>
</xs:complexType>
```

Representation:

PortCallListType shall be used to list the last ten port calls, with the following information for each.

— FromDateTime is the date and time of arrival.

— SequenceNumber is the arrival sequence number from 1 (first) to 10 (last).

— ToDateTime is the departure date and time.

— PortSecurityLevel is the lowest security level in the visited port during stay.

— Port is the name and code of the port visited.

— AdditionalSecurityMeasures describes any special security measures that were taken during call. If none, this field should be left out or be empty. This can be described as a code defined in Annex R or as free text.

7.6.5 epc:ShipToShipActivityListType — Ship-to-ship activities

Definition:

This data type contains a list with the description of recent ship-to-ship activities and any security measures applied during these activities.

Type:

```
<xs:complexType name="ShipToShipActivityType">
   <xs:sequence>
      <xs:element name="Activity" type="epc:string" minOccurs="0" />
      <xs:element name="FromDateTime" type="epc:dateTime" minOccurs="0" />
      <xs:element name="SequenceNumber" type="epc:int" minOccurs="0" />
      <xs:element name="ToDateTime" type="epc:dateTime" minOccurs="0" />
      <xs:element name="Location" type="epc:LocationType" minOccurs="0" />
      <xs:element name="ShipSecurityMeasure" type="epc:SecurityMeasureType"
                  minOccurs="0" maxOccurs="unbounded"/>
      <xs:element name="Code" type="epc:ShipToShipActivityCodeContentType"
                  minOccurs="0" />
   </xs:sequence>
</xs:complexType>

<xs:complexType name="ShipToShipActivityListType">
   <xs:sequence>

      <xs:element name="ShipToShipActivity"
                  type="epc:ShipToShipActivityType"
                  minOccurs="0" maxOccurs="unbounded"/>
   </xs:sequence>
</xs:complexType>

<xs:simpleType name="ShipToShipActivityCodeContentType">
   <xs:restriction base="xs:token" />
</xs:simpleType>
```

Representation:

The ShipToShipActivityType shall be used to describe a ship-to-ship activity that has taken place during the period when the last ten ports were visited (see 7.6.3). The description shall contain the following information.

— Activity describes the activity undertaken as a free text string. This can be used if none of the Code values can be used.

— FromDateTime is the date and time of the start of the activity.

— SequenceNumber is the number showing the order of ship-to-ship activity which has been carried out during the period of the last ten port calls.

— ToDateTime is the ending date and time of the activity.

— Location is the location of the activity.

— ShipSecurityMeasure is the security measures that was taken on the ship, if applicable.

— Code is a coded value for ship to ship activity that can be used if applicable. The code values are defined in UN/EDIFACT Code 8025 (Conveyance call purpose description code).

7.6.6 epc:HasSecurityPlanType — Approved security plan

Definition:

This data type indicates if the ship has an approved security plan.

Type:

```
<xs:simpleType name="HasSecurityPlanType">
  <xs:restriction base="epc:boolean"/>
</xs:simpleType>
```

Representation:

True if the ship has a security plan, False if the ship does not have a security plan.

7.6.7 epc:SecurityLevelContentType — ISPS security level

Definition:

This type contains the security level on ships or in ports as defined in the ISPS code.

Type:

```
<xs:simpleType name="SecurityLevelContentType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="SL1"/>
    <xs:enumeration value="SL2"/>
    <xs:enumeration value="SL3"/>
  </xs:restriction>
</xs:simpleType>
```

Representation:

This type enumerates the security levels according to the ISPS code. The codes used are:

a) SL1: minimum security level,

b) SL2: heightened security level, and

c) SL3: exceptional security level.

7.6.8 epc: SecurityOtherMattersToReportType — Other Security Matters to Report at a Port Call

Definition:

This data type contains an explanation of any other security-related matters to report at the port call.

Type:

```
<xs:simpleType name="SecurityOtherMattersToReportType">
  <xs:restriction base="epc:string"/>
</xs:simpleType>
```

Representation:

A string containing the description in free text.

7.7 Service-related data types

7.7.1 Class diagram

This subclause defines data types related to formatting EPC messages and what services the message may request. See Figure 8 for the class diagram.

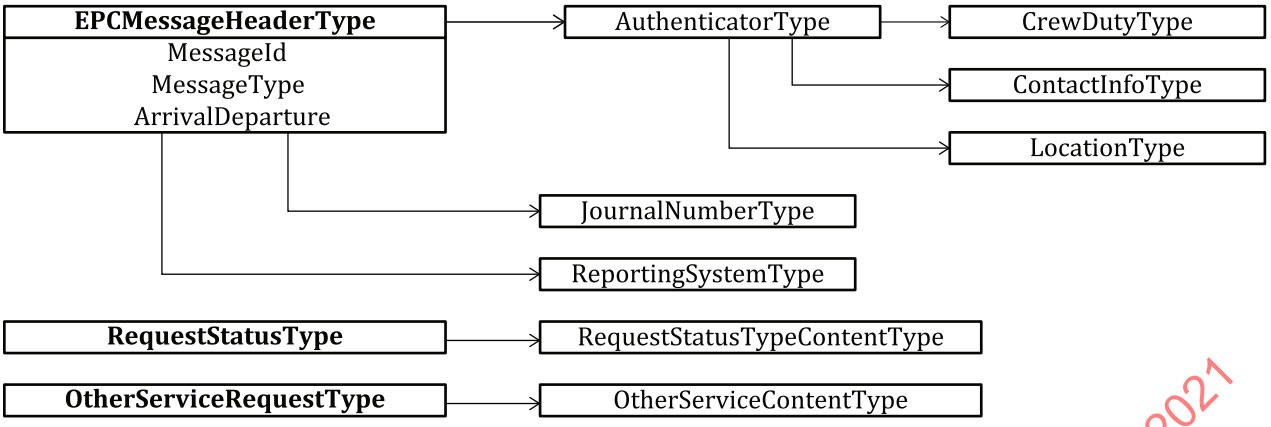

Figure 8 — Services data types class diagram

This subclause defines data types related to message formatting and general use. The EPCMessageHeaderType is used in all messages and contains various information related to the request. MessageType and ArrivalDeparture define the purpose of the message. MessageId is defined by the client and used as a reference to a specific message by the client. Authenticator identifies crew duty, location and person that is responsible for the correct information in the message. JournalNumber is used by the service as a fixed reference to one specific service request. MessageId is used to identify a specific message related to the service request. ReportingSystemType is used to reference a MRS that the message is sent to. The use of this code also allows relaying from another reporting system to the main receipient.

RequestStatusType is an additional data type used by the server to provide a response to a service request or a specific message.

OtherServiceRequest is used by the client to request other services than port clearance or mandatory reporting.

7.7.2 epc:EPCMessageHeaderType — Standard header for an EPC message

Definition:

This data item contains the definition of a message header for EPC and other service requests and replies.

Type:

```
<xs:simpleType name="MessageTypeContentType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>

<xs:simpleType name="ReportingSystemType">
  <xs:restriction base="epc:string"/>
     </xs:simpleType>

<xs:simpleType name="JournalNumberType">
   <xs:restriction base="epc:token"/>
 </xs:simpleType>

<xs:complexType name="EPCMessageHeaderType">
   <xs:sequence>
      <xs:element name="MessageId" type="epc:token" />
      <xs:element name="ReplyURI" type="epc:anyURI" minOccurs="0" />
      <xs:element name="SenderId" type="epc:token" minOccurs="0" />
      <xs:element name="SentTime" type="epc:dateTime"  />
      <xs:element name="ArrivalDeparture" type="epc:ArrivalDepartureType"
                minOccurs="0" />
      <xs:element name="Authenticator" type="epc:AuthenticatorType"
```

```
                minOccurs="0" />
        <xs:element name="Sender" type="epc:ContactInfoType" minOccurs="0" />
        <xs:element name="SenderDuty" type="epc:CrewDutyType" minOccurs="0" />
        <xs:element name="JournalNumber" type="epc:JournalNumberType"
                minOccurs="0" />
        <xs:element name="MessageType" type="epc:MessageTypeContentType"  />
                minOccurs="0"/>
        <xs:element name="ReportingSystem" type="epc:ReportingSystemType"
                minOccurs="0" />
        <xs:element name="RelayReportingSystem" type="epc:ReportingSystemType"
                minOccurs="0" maxOccurs="unbounded" />
        <xs:element name="Version" type="epc:VersionType" />
    </xs:sequence>
</xs:complexType>
```

Representation:

This data item shall contain information required to process an incoming message. The data elements are as follows.

— MessageId: A unique identifier assigned by the client of a request message exchange as a reference. Any response sent in reply to this message shall contain the same identifier in the same data item. The client should use different IDs for all messages.

NOTE 1 The messaging system is a server/client system. Thus, the direct response from the server related to a specific client message refers to that message. The JournalNumber item is used by both client and server, when assigned, to refer to more general status changes related to the overall request the message exchange relates to.

NOTE 2 If there is a problem with the server-side message, the client needs to manually contact the server system operators to resolve the problem. The client has no method available to return information to the server about problems in a message to the server.

— ReplyURI: This is an address to which any reply to the message should be sent. The ship should always use this code, while the port/reporting system may omit it if messages are always sent to a fixed URI.

— SenderId: This is the identifier of the sender transmitting the message. This shall identify the entity that sends the message, e.g. the ship or port/reporting system.

— SentTime: This is date and time when this message was sent from the ship or port/reporting system.

— ArrivalDeparture: This flag shall be used in the cases where the same message may be used both for arrival and departure.

— Authenticator: This is the information about the person attesting to the validity of the transmitted information, both the name of the person, the role of the person, the company of the person doing the attesting, and the location and time for doing this attesting.

— Sender: This is the contact information for the person transmitting the message.

— SenderDuty: The crew duty for Sender.

— JournalNumber: This data element contains a computer-recognizable identifier issued by the server as a reference to the requested service, e.g. port clearance. It shall be used as a unique identifier in all messages relating to this service request by the client and server. It should be omitted in the first request from the client, but the first server reply should define the value.

NOTE 3 This code is used by the port data systems to identify a ship's port call. The ship can use the VoyageNumber (see 7.9.22) to identify a voyage between ports.

— MessageType: This field contains a message type code. The allowed types are defined in Annex H. Additional codes may be defined in later editions of this document or in other standards.

— ReportingSystem: Name of reporting system the message is sent to, if appropriate. This is used for all messages of the MRS type.

— RelayReportingSystem: Name of reporting system that this ship reporting message should be relayed to. The message sent to *ReportingSystem* is relayed to RelayReportingSystem by *ReportingSystem*. This is according to designator "Y" in A.851. This is also for MRS messages.

— Version: This is the version code the sender used when formatting the message.

7.7.3 epc:OtherServiceRequestType — Additional service request

Definition:

These data items can be used to request other services, e.g. from a port or port authority. These can be tugs, pilots, linesmen or other facilities.

Type:

```
<xs:simpleType name="OtherServiceContentType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>

<xs:complexType name="OtherServiceRequestType">
  <xs:sequence>
    <xs:element name="Description" type="epc:string"/>
    <xs:element name="ServiceType" type="epc:OtherServiceContentType" />
  </xs:sequence>
</xs:complexType>
```

Representation:

The ServiceType element shall contain one of the codes that are defined in Annex I. Other codes could be added by revisions of this document or other standards. The Description gives a description of how the service should be provided. It also needs to specify the service when the service type code “Other” is used.

7.7.4 epc:RequestStatusType — Status of a service request

Definition:

This data item is used to report back status of a request from a ship to a port or a ship reporting system.

Type:

```
<xs:simpleType name="RequestStatusTypeContentType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="Discarded"/>
    <xs:enumeration value="Pending"/>
    <xs:enumeration value="Accepted"/>
    <xs:enumeration value="NotAccepted"/>
    <xs:enumeration value="AcceptedWithConditions"/>
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="RequestStatusType">
  <xs:sequence>
    <xs:element name="Comment" type="epc:string" minOccurs="0"/>
    <xs:element name="Status" type="epc:RequestStatusTypeContentType"/>
  </xs:sequence>
</xs:complexType>
```

Representation:

The status field shall be an enumerated type that shall contain one of the allowed code values. The “Discarded” code is used if the message for some reason was not understood, e.g. because receiver did

not understand the specified message type or if the version code was incompatible. The “Pending” code is used if the message was received and understood, but final acceptance and rejection are to be sent at a later time. The three remaining codes are used to indicate acceptance, part acceptance or rejection. If the request is not accepted or only partly accepted, the remarks field shall explain how and why restrictions apply or the reason for discarding the message. For “Pending”, the field may indicate when a final answer can be expected.

7.7.5 epc:RemarksType — General remarks

Definition:

This is a remark that contains a statement of any other information relevant to the ship arrival, stay or departure.

Type:

```
<xs:simpleType name="RemarksType">
  <xs:restriction base="epc:string"/>
</xs:simpleType>
```

Representation:

This shall be a human-readable general remark.

7.8 Ship particulars types

7.8.1 General

These data items contain static information about the physical characteristics of the ship. For some semi-dynamic information elements, e.g. draught and air-draught, see 7.9.

7.8.2 epc:BeamType — Beam of vessel

Definition:

This is the width of the vessel at its widest point or at the midpoint. It does not cover cargo that extends over the ship's fixed beam.

Type:

```
<xs:simpleType name="BeamType">
  <xs:restriction base="epc:decimal"/>
</xs:simpleType>
```

Representation:

The ship's beam as described above, measured in metres.

7.8.3 epc:DeadWeightType — Dead weight

Definition:

Dead weight (DWT) of ship.

Type:

```
<xs:simpleType name="DeadWeightType">
  <xs:restriction base="epc:decimal"/>
</xs:simpleType>
```

Representation:

Dead weight, measured in metric tonnes.

7.8.4 epc:DoubleBottomContentType — Double bottom or sides indicator

Definition:

This enumerated type lists possible values for double bottoms or hulls. It is normally only used for tankers.

Type:

```
<xs:simpleType name="DoubleBottomContentType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="DoubleHull"/>
    <xs:enumeration value="DoubleBottom"/>
    <xs:enumeration value="SingleHull"/>
  </xs:restriction>
</xs:simpleType>
```

Representation:

The following codes are valid.

— DoubleHull: Ship has double bottom and sides.

— DoubleBottom: Ship has double bottom only.

— SingleHull: Normal single-hull ship.

7.8.5 epc:GrossTonnageType — Gross tonnage

Definition:

This is the gross tonnage as defined by The International Convention on Tonnage Measurement of Ships.

Type:

```
<xs:simpleType name="GrossTonnageType">
  <xs:restriction base="epc:decimal"/>
</xs:simpleType>
```

Representation:

Gross tonnage, as defined in the convention.

7.8.6 epc:IceClassType — Ship ice class

Definition:

This data type contains one or more ice class codes for the ship.

Type:

```
<xs:simpleType name="IceClassBalticContentType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="A1"/>
    <xs:enumeration value="A1Super"/>
    <xs:enumeration value="B1"/>
    <xs:enumeration value="C1"/>
    <xs:enumeration value="II"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="PolarClassContentType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="PC1"/>
```

```
    <xs:enumeration value="PC2"/>
    <xs:enumeration value="PC3"/>
    <xs:enumeration value="PC4"/>
    <xs:enumeration value="PC5"/>
    <xs:enumeration value="PC6"/>
    <xs:enumeration value="PC7"/>
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="IceClassType">
  <xs:sequence>
    <xs:element name="Comment" type="epc:string" minOccurs="0"/>
    <xs:element name="BalticIceClass"
                    type="epc:IceClassBalticContentType"
                    minOccurs="0"/>
    <xs:element name="PolarClass"
                    type="epc: epc:PolarClassContentType"
                    minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

Representation:

The ice class can contain zero or more elements from the enumerated lists. If zero elements exist, the ship has no ice class. If only the comment field exists, the ship may have another class that is not one of the described ones.

— BalticIceClass: This the ice class as used by Finland and Sweden in the Baltic region[2].

— PolarClass: This shall be the polar class as defined in MSC 1056. This coding is also sometimes called the IACS ice class.

— Comment: Additional information or other ice class than the ones listed above.

7.8.7 epc:LengthOverallType — Length overall

Definition:

Length overall, i.e. maximum length of a vessel from the two points on the hull most distant from each other, measured perpendicular to the waterline.

Type:

```
<xs:simpleType name="LengthOverallType">
  <xs:restriction base="epc:decimal"/>
</xs:simpleType>
```

Representation:

Length overall, measured in metres.

7.8.8 epc:NetTonnageType — Net tonnage

Definition:

This is the net tonnage as defined by The International Convention on Tonnage Measurement of Ships.

Type:

```
<xs:simpleType name="NetTonnageType">
  <xs:restriction base="epc:decimal"/>
</xs:simpleType>
```

Representation:

The ship's net tonnage as defined in the Convention.

7.8.9 epc:SummerDraughtType — Summer draught

Definition:

Worst-case loaded draught for the ship.

Type:

```
<xs:simpleType name="SummerDraughtType">
  <xs:restriction base="epc:decimal"/>
</xs:simpleType>
```

Representation:

The element shall contain the ship's summer draught, in metres.

7.8.10 epc:ShipTypeContentType — Ship type code

Definition:

This is an enumerated type containing ship type codes that shall be as defined in UNECE R28.

Type:

```
<xs:simpleType name="ShipTypeContentType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>
```

Representation:

This data type shall contain the ship type code as defined in UNECE R28. The actual codes shall be taken from and constructed according to the reference. The code is a two- or three-digit number without any inserted space.

NOTE Examples of codes for ship types are listed in Annex M.

7.9 Vessel operation data types

7.9.1 General

This clause defines dynamic data items related to ship operation, including draughts, arrival times and voyage itineraries.

7.9.2 epc:AirDraughtType — Air draught

Definition:

Distance from waterline to highest point of vessel under the current loading conditions.

Type:

```
<xs:simpleType name="AirDraughtType">
  <xs:restriction base="epc:decimal"/>
     </xs:simpleType>
```

Representation:

This shall be the ship's air draught, in metres.

7.9.3 epc:ArrivalDraughtType — Arrival draught

Definition:

Draught of ship at arrival (before loading or unloading).

Type:

```
<xs:complexType name="ArrivalDraughtType">
  <xs:sequence>
    <xs:element name="ForeDraught" type="epc:decimal" minOccurs="0"/>
    <xs:element name="MidShipDraught" type="epc:decimal" minOccurs="0"/>
    <xs:element name="AftDraught" type="epc:decimal" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

Representation:

The data fields shall contain the ship's draught at arrival, in metres. It is possible to specify fore, aft and mid-ship draughts. If only one is specified, it should normally be mid-ship draught.

7.9.4 epc:ArrivalDepartureType — Arrival or departure flag

Definition:

Flag distinguishing between an arrival or departure message.

Type:

```
<xs:simpleType name="ArrivalDepartureType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="Arrival"/>
    <xs:enumeration value="Departure"/>
    <xs:enumeration value="Other"/>
  </xs:restriction>
</xs:simpleType>
```

Representation:

The item shall contain the code as defined here. It is mandatory for the sender to use correct coding if the data item is required in the message. If it is not required, it can usually be omitted if the message is neither arrival nor departure.

7.9.5 epc:ATAType — Actual time of arrival (Deprecated)

Use instead the Time with TimeType=Actual in PortOfArrivalType.

This is the actual time and date of arrival. Local time offset from UTC is required. The TimeType is set to "Actual". In the EPCRequestBodyMessage, this is represented by the PortOfArrival's Time attribute with TimeType equal to "Actual".

7.9.6 epc:ATDType — Actual time of departure (Deprecated)

Use instead the Time with TimeType=Actual in PortOfDepartureType.

This is the actual time and date of departure. Local time offset from UTC is required. The TimeType is set to "Actual". In the EPCRequestBodyMessage, this is represented by the PortOfDeparture's Time attribute with TimeType equal to "Actual".

7.9.7 epc:ATPType — Actual time of passage

Definition:

Actual time of passage referenced to a specific location.

Type:

```
   <xs:complexType name="ATPType">
      <xs:complexContent>
         <xs:extension base="epc:DateTimeType">
            <xs:sequence/>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
```

Representation:

This shall be the actual time and date of passage. Local time offset from UTC is required. The TimeType is set to "Actual".

7.9.8 epc:BulkLoadUnloadDataType — Data required for safe loading and unloading

Definition:

This data type contains information that is specified as required exchange between the ship's master and terminal before loading or unloading a bulk carrier (as described in the BLU Code). The data item does not cover information covered in other data items in this document, like ship identity, length overall, beam, etc.

Type:

```
<xs:complexType name="BulkCargoPartType">
  <xs:sequence>
    <xs:element name="Hatch" type="epc:string" />
    <xs:element name="Quantity" type="epc:MeasureType" />
  </xs:sequence>
</xs:complexType>

<xs:complexType name="BulkCargoListType">
   <xs:sequence>
      <xs:element name="Stage" type="epc:string" minOccurs="0" />
      <xs:element name="Unit" type="epc:BulkCargoPartType"
                  maxOccurs="unbounded"/>
   </xs:sequence>
</xs:complexType>

<xs:complexType name="OperationPlanType">
   <xs:sequence>
      <xs:element name="Quantity" type="epc:BulkCargoListType"
                  minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="BulkLoadUnloadDataType">
   <xs:sequence>
      <xs:element name="AccommodationLadder" type="epc:string"
                  minOccurs="0"/>
      <xs:element name="CargoHandlingGear" type="epc:string"
                  minOccurs="0" />
      <xs:element name="CargoType" type="epc:string" minOccurs="0" />
      <xs:element name="ChecklistCompleted" type="epc:boolean"
                  minOccurs="0"/>
      <xs:element name="DistanceSideToHatch" type="epc:decimal"
                  minOccurs="0"/>
      <xs:element name="DistanceWaterlineToHatch" type="epc:decimal"
                  minOccurs="0" />
      <xs:element name="IsLoading" type="epc:boolean" minOccurs="0" />
      <xs:element name="LengthOfCargoArea" type="epc:decimal"
                  minOccurs="0"/>
      <xs:element name="MooringLines" type="epc:string" minOccurs="0" />
      <xs:element name="Remarks" type="epc:string" minOccurs="0" />
      <xs:element name="RequiredRepairs" type="epc:string" minOccurs="0" />
      <xs:element name="SpecificInstructions" type="epc:string"
                  minOccurs="0" />
      <xs:element name="TimeForBallasting" type="epc:duration"
                  minOccurs="0"/>
```

```
      <xs:element name="TotalQuantity" type="epc:BulkCargoPartType"
                  minOccurs="0" />
      <xs:element name="OperationPlan" type="epc:OperationPlanType"
                  minOccurs="0" />
   </xs:sequence>
</xs:complexType>
```

Representation:

This data structure shall contain various information elements required by IMO A.862 (BLU Code), Annex II. The data elements are as follows.

BulkCargoPartType is a list of elements where each element, from the first to the last, represents one stage of the loading or unloading process. All steps in a stage shall be completed before the next stage can be started. The two following data types are used.

— Hatch: What hatch the loading or unloading shall take place through.

— Quantity: The quantity of cargo to handle in this stage of the operation

The BulkCargoListType is a list of elements where each element, from the first to the last, represents one stage of the loading or unloading process. All steps in a stage shall be completed before the next stage can be started. The tow following data types are used.

— Stage: Symbolic name for the stage. The order of stages is the order of elements.

— Unit: All steps that needs to be completed within the stage before the next stage is started on.

The main data item contains the two above attributes. All attributes in order are the following.

— AccommodationLadder: Free text description of accommodation ladder position, if provided.

NOTE See MSC.1/Circ 1160, Annex I[30] for an example of use.

— CargoHandlingGear: Details and capacities of ship's cargo-handling gear, if any. Free text.

— CargoType: Brief description of cargo. Free text. An arrival message provides more machine-readable details.

— ChecklistCompleted: True if the terminal's checklist has been completed and all entries check out positive. If false, give explanations in “Remarks” field.

— DistanceSideToHatch: Distance from the ship's side to the hatch opening. Shall be specified in metres.

— DistanceWaterlineToHatch: Distance from the waterline to the first hatch to be loaded or unloaded. Shall be specified in metres.

— IsLoading: True if ship is message refers to loading, false if ship is unloading.

— LengthOfCargoArea: Length of the cargo area (“working length”) from the forward coaming of the forward-most hatch to the after coaming of the aft-most hatch into which cargo is to be loaded or from which cargo is to be unloaded. Shall be specified in metres.

— MooringLines: Number and type of mooring lines. Number of enclosed fairleads forward and aft. This is a free text field.

— Remarks: Any other information related to the ship requested by the terminal. Free text.

— RequiredRepairs: Details of any necessary repairs which may delay berthing, the commencement of loading or unloading, or the ship sailing on completion of loading or unloading. Free text.

— SpecificInstructions: Specific requests, such as for trimming or continuous measurement of the water content of the cargo. Free text.

— TimeForBallasting: Time needed for ballasting or de-ballasting.

— TotalQuantity: Total quantity of cargo, stowage specified by hatch.

— OperationPlan: Quantity of cargo to be loaded or unloaded per stage, in quantity per hatch. First stage as first element of the list.

7.9.9 epc:CallPurposeType — Purpose of call

Definition:

This is a data type with coded content specifying the purpose of a ship's port call.

Type:

```
<xs:simpleType name="CallPurposeContentType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>

<xs:complexType name="CallPurposeType">
  <xs:sequence>
    <xs:element name="CallPurposeCode" type="epc:CallPurposeContentType"
                minOccurs="0"/>
    <xs:element name="CallPurposeText" type="epc:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

Representation:

This data element shall contain the purpose of the call as a textual description and/or coded value. The coded value can only be omitted if the purpose of the call does not match any of the defined codes. The coded value shall be according to the definition in UN Directories definitions UNTDD for code element 8025, conveyance call purpose description code. The textual description is free format to be read by humans.

NOTE Examples of purpose of call codes are listed in Annex N.

7.9.10 epc:DepartureDraughtType — Departure draught

Definition:

Draught of ship at departure (after loading and/or unloading).

Type:

```
<xs:complexType name="DepartureDraughtType">
  <xs:sequence>
    <xs:element name="AftDraught" type="epc:decimal" minOccurs="0"/>
    <xs:element name="ForeDraught" type="epc:decimal" minOccurs="0"/>
    <xs:element name="MidShipDraught" type="epc:decimal" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

Representation:

The data fields shall contain the ship's draught at departure, in metres. It is possible to specify fore, aft and mid-ship draughts. If only one is specified, it should normally be mid-ship draught.

7.9.11 epc:ETAType — Estimated time of arrival (Deprecated)

Use instead the Time, with TimeType=Estimated, in PortOfArrivalType.

This is the estimated time and date of arrival. Local time offset from UTC is required. The TimeType is set to "Estimated".

7.9.12 epc:ETDType — Estimated time of departure (Deprecated)

Use instead the Time, with TimeType=Estimated, in PortOfDepartureType.

This is the estimated time and date of departure. Local time offset from UTC is required. The TimeType is set to "Estimated".

7.9.13 epc:ETPType — Estimated time of passage

Definition:

Estimated time of passage referenced to a specific location.

Type:

```
<xs:complexType name="ETPType">
   <xs:complexContent>
      <xs:extension base="epc:DateTimeType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

This shall be the estimated time and date of passage. Local time offset from UTC is required. The TimeType is set to "Estimated".

A number of different estimated passage times may exist simultaneously, e.g. as information from management to master, from master to ship reporting system or as an internal coast state generated passage estimate.

7.9.14 epc:NavigationalStatusContentType — Navigational status

Definition:

This data type contains a coded representation of the ship's navigational status.

Type:

```
<xs:simpleType name="NavigationalStatusContentType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="Underway by engines"/>
    <xs:enumeration value="At anchor"/>
    <xs:enumeration value="Not under command"/>
    <xs:enumeration value="Restricted in ability to manoeuvre"/>
    <xs:enumeration value="Moored"/>
    <xs:enumeration value="Constrained by draught"/>
    <xs:enumeration value="Aground"/>
    <xs:enumeration value="Engaged in fishing"/>
    <xs:enumeration value="Underway by sail"/>
  </xs:restriction>
</xs:simpleType>
```

Representation:

The code shall correspond to navigational status as defined by COLREG.

7.9.15 epc:NextReportTimeType — Time of next report

Definition:

This is the time when the receiver can expect the next report. Context is given by the type of report the data item is embedded in.

Type:

```
<xs:simpleType name="NextReportTimeType">
   <xs:restriction base="epc:dateTime"/>
</xs:simpleType>
```

Representation:

Time and date, including UTC offset.

7.9.16 epc:OBOLoadUnloadDataType — Data required for safe loading and unloading of OBO

Definition:

This data type contains additional information that is specified as transferred between ship's master and terminal before loading or unloading an OBO carrier as described in IMO A.862 (BLU).

Type:

```
<xs:complexType name="OBOLoadUnloadDataType">
   <xs:sequence>
      <xs:element name="LastOilCargoDate" type="epc:date"  />
      <xs:element name="PrecedingCargo1" type="epc:string"  />
      <xs:element name="PrecedingCargo2" type="epc:string"  />
      <xs:element name="PrecedingCargo3" type="epc:string"  />
      <xs:element name="SlopTankStatus" type="epc:string"  />
      <xs:element name="GasFreeCertificate" type="epc:CertificateType"  />
      <xs:element name="LastOilCargoPort" type="epc:PortType"  />
   </xs:sequence>
</xs:complexType>
```

Representation:

This data structure shall contain various information elements required by IMO A.862 (BLU), Annex II, which, specifically relate to OBO carriers. The data elements are as follows.

— LastOilCargoDate: Date where last oil cargo was discharged.

— PrecedingCargo[123]: Nature of preceding three cargos (1 is most recent).

— SlopTankStatus: Advice as to content of slop tanks and whether fully inerted and sealed.

— GasFreeCertificate: Date, place and name of authority that issued the last gas-free certificate which includes pipelines and pumps.

— LastOilCargoPort: Place where last oil cargo was discharged.

7.9.17 epc:PeriodOfStayType — Period of stay

Definition:

This can be used as an alternative to specify both arrival and departure times for a port call.

Type:

```
<xs:simpleType name="PeriodOfStayType">
  <xs:restriction base="epc:duration"/>
</xs:simpleType>
```

Representation:

This type shall be used to represent the duration of a port stay only if at least one of the ETD/ATD and ETA/ATA are missing.

7.9.18 epc:RadioCommunicationsType — Radiocommunication active

Definition:

Specifying frequencies and/or stations actively listened to and used.

Type:

```
<xs:simpleType name="RadioCommunicationsType">
  <xs:restriction base="epc:string"/>
</xs:simpleType>
```

Representation:

State in full names of stations/frequencies that are guarded. Free text.

7.9.19 epc:ROBBunkersType — Bunkers remaining onboard

Definition:

Quantity of bunkers remaining onboard (ROB).

Type:

```
   <xs:complexType name="ROBBunkersType">
   <xs:sequence>
      <xs:element name="RemainOnBoard" type="epc:decimal" minOccurs="0" />
      <xs:element name="Remarks" type="epc:string" minOccurs="0" />
      <xs:element name="BunkersType" type="epc:BunkersTypeContentType"
                  minOccurs="0" />
   </xs:sequence>
</xs:complexType>

<xs:simpleType name="BunkersTypeContentType">
      <xs:restriction base="xs:token">
         <xs:enumeration value="HFO"/>
         <xs:enumeration value="HFOLS"/>
         <xs:enumeration value="HFOVLS"/>
         <xs:enumeration value="LPG"/>
         <xs:enumeration value="MDO"/>
         <xs:enumeration value="MDOLS"/>
         <xs:enumeration value="MDOVLS"/>
         <xs:enumeration value="MGO"/>
         <xs:enumeration value="MGOLS"/>
         <xs:enumeration value="MGOVLS"/>
         <xs:enumeration value="IFO"/>
         <xs:enumeration value="IFOLS"/>
         <xs:enumeration value="IFOVLS"/>
         <xs:enumeration value="LNG"/>
         <xs:enumeration value="LO"/>
         <xs:enumeration value="Other"/>
  </xs:restriction>
</xs:simpleType>
```

Representation: This data type allows the sender to specify remaining bunker oil, fuel oil or LNG fuel onboard, in one or more of the following categories.

— HFO (HFOLS, HFOVLS): Heavy Fuel Oil (Low and Very Low Sulphur ditto).

— MDO (MDOLS MDOVLS): Marine Diesel Oil (Low and Very Low Sulphur ditto).

— MGO (MGOLS, MGOVLS): Marine Gas Oil (Low and Very Low Sulphur ditto).

— IFO (IFOLS, IFOVLS): Intermediate Fuel Oil (Low and Very Low Sulphur ditto).

— LNG: Liquefied Natural Gas.

— LO: Lubrication Oil.

— Other: Any other type of oil. A remark on this can be added in the Remarks data element.

All measurements shall be in metric tonnes. Low Sulphur means oil with less than 0,5 % sulphur and Very Low Sulphur means less than 0,1 % as defined in regulation 14(4)(a) of Annex VI of MARPOL.

7.9.20 epc:ShipDefectsType — Any defects of important ship equipment

Definition:

This type is used to report problems that could cause significantly reduced manoeuvrability.

Type:

```
<xs:complexType name="ShipDefectsType">
  <xs:sequence>
      <xs:element name="AbilityToTransferCargoBallastFuel"
                  type="epc:boolean" minOccurs="0" />
      <xs:element name="CargoHandling" type="epc:string" minOccurs="0" />
      <xs:element name="Commuication" type="epc:string" minOccurs="0" />
      <xs:element name="HullIntegrity" type="epc:string" minOccurs="0" />
      <xs:element name="Maneuvrability" type="epc:string" minOccurs="0" />
      <xs:element name="Mooring" type="epc:string" minOccurs="0" />
      <xs:element name="Navigation" type="epc:string" minOccurs="0" />
      <xs:element name="Other" type="epc:string" minOccurs="0" />
  </xs:sequence>
</xs:complexType>
```

Representation:

This data item allows a ship to report various conditions that may impair its ability to operate as expected. The categories are as follows.

— AbilityToTransferCargoBallastFuel: This is a Boolean attribute indicating whether the ship is able to transfer cargo, ballast or fuel (true), or none of these (false).

— CargoHandling: Problems that may impact loading or unloading performance.

— Communication: Problems in communication systems.

— HullIntegrity: Any problems with hull or superstructure that may cause operational problems.

— Manoeuvrability: Defects in hull, steering or propulsion systems that affect manoeuvrability.

— Mooring: Anchor or mooring systems problems.

— Navigation: Problems with bridge and/or navigation systems.

— Other: Other systems.

7.9.21 epc: ShipStatusType — Ship status information

Definition:

This data item gives ship navigational status during a voyage. This data element is mainly intended for reporting relative to IMO A.851.

Type:

```
   <xs:complexType name="ShipStatusType">
   <xs:sequence>
      <xs:element name="Course" type="epc:decimal" minOccurs="0" />
      <xs:element name="PilotOnboard" type="epc:boolean" minOccurs="0" />
      <xs:element name="PresentDraught" type="epc:decimal" minOccurs="0" />
      <xs:element name="Speed" type="epc:decimal" minOccurs="0" />
```



```
      <xs:element name="NavigationalStatus"
                  type="epc:NavigationalStatusContentType"
                  minOccurs="0" />
   </xs:sequence>
</xs:complexType>
```

Representation:

This data item contains elements that describe a vessel's navigational status during a voyage. The elements are as follows.

— Course: True course as decimal degree angle in the range 0 (zero) to 360, inclusive.

— PilotOnboard: True if a pilot is onboard, false otherwise.

— PresentDraught: This is the draught of the ship at the time of reporting.

— NavigationalStatus: Optional code specifying the ship's navigational status according to COLREG.

— Speed: Speed over ground in decimal knots.

7.9.22 epc: VoyageNumberType — Voyage identification code

Definition:

This is an operator-assigned reference code for one particular voyage.

Type:

```
<xs:simpleType name="VoyageNumberType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>
```

Representation:

The number, or code, shall conform to the token data type and shall be unique for the ship in question.

NOTE This code is normally used by a ship to identify a voyage between ports. The port normally uses the JournalNumber (see 7.7.1) to identify a given port call by the ship.

7.9.23 epc: VoyageDescriptionType — Brief description of voyage

Definition:

This is a description of the voyage as required in FAL 1. It lists all ports called on or to be called on in the current voyage and states if cargo was loaded or discharged in the port.

Type:

```
<xs:complexType name="VoyageDescriptionItemType">
   <xs:sequence>
      <xs:element name="Load" type="epc:string" minOccurs="0" />
      <xs:element name="Unload" type="epc:string" minOccurs="0" />
      <xs:element name="ETA" type="epc:DateTimeType"  />
      <xs:element name="Port" type="epc:PortType"  />
   </xs:sequence>
</xs:complexType>

<xs:complexType name="VoyageDescriptionType">
   <xs:sequence>
      <xs:element name="PortCall" type="epc:VoyageDescriptionItemType"
                  minOccurs="0" maxOccurs="unbounded"/>
   </xs:sequence>
</xs:complexType>
```

Representation:

It is required that each port call in a voyage be listed with ETA, what cargo was loaded and what cargo was unloaded. The cargo descriptions are free format to be read by humans. The loaded or unloaded cargo fields should be omitted or empty if no loading and/or unloading took place in a particular port.

For simplicity, this description should remain unchanged throughout the voyage and list planned activities as stated. However, if cargo loading and discharge plans change, the description shall also be changed.

The DateTimeType with TimeType set to Estimated is used to represent the ETA to each port.

7.9.24 epc:WeatherInformationType — Weather information as observed

Definition:

This data item can be used to describe the current weather observation. This is based on observations and manual assessments.

Type:

```
<xs:complexType name="WeatherInformationType">
   <xs:sequence>
      <xs:element name="Remarks" type="epc:string" minOccurs="0" />
      <xs:element name="SeaState" type="epc:int" minOccurs="0" />
      <xs:element name="SeaStateDirection" type="epc:int" minOccurs="0" />
      <xs:element name="Swell" type="epc:int" minOccurs="0" />
      <xs:element name="SwellDirection" type="epc:int" minOccurs="0" />
      <xs:element name="WindDirection" type="epc:int" minOccurs="0" />
      <xs:element name="WindForce" type="epc:int" minOccurs="0" />
   </xs:sequence>
</xs:complexType>
```

Representation:

All fields are optional, but if any of the first six elements are empty, the remarks field should be used to give further descriptions, as follows.

— Remarks: Alternative free text description.

— SeaState: Sea state in World Metrological Organization (WMO) code, zero (0) to 9, inclusive.

— SeaStateDirection: Direction in true degrees, zero (0) to 360, inclusive.

— Swell: Swell in Douglas Scale, zero (0) to 9, inclusive.

— SwellDirection: Direction in true degrees, zero (0) to 360, inclusive.

— WindForce: Wind strength in Beaufort scale, from zero (0) to 12, inclusive.

— WindDirection: Direction in true degrees, zero (0) to 360, inclusive.

7.10 Location types

7.10.1 Class diagram

The diagram in Figure 9 gives an overview of the most important location related types. All are based on the general LocationType. The location can be specified in various ways, as follws.

— Position: Normally specified as LAT/LON position.

— Waypoint: A position with an optional track type leading up to the waypoint. Waypoints can be collected into a WaypointListType.

— Port: Normally identified by the location code and country code. The PortType is a special named type representing a port.

— Terminal, berth or berth position: Reference to a specific terminal in a port, a berth inside a terminal or a position alongside the berth, normally as position, name or coded, e.g. with a GLN code.

— Facility: Reference to an ISPS facility that can be part of a terminal or port area. Can be arrival or departure. Normally identified by name or by GISIS code.

The LocationCallType is a location with an additional time stamp. The time stamp can be related to actual, estimated, planned or requested times. This type is further specialized into the following.

— BerthPosition, Berth, Terminal, Facility, Port or Anchorage arrival or departure times: This is an arrival or departure reference to a specific position inside a port. Time may be actual, estimated, planned, etc.

— VoyageEvent: A specific point on a voyage with an associated event other than those related to port calls. Normally specified as a position.

Some of these data types are not associated with a core data element and are defined in 7.10.2.

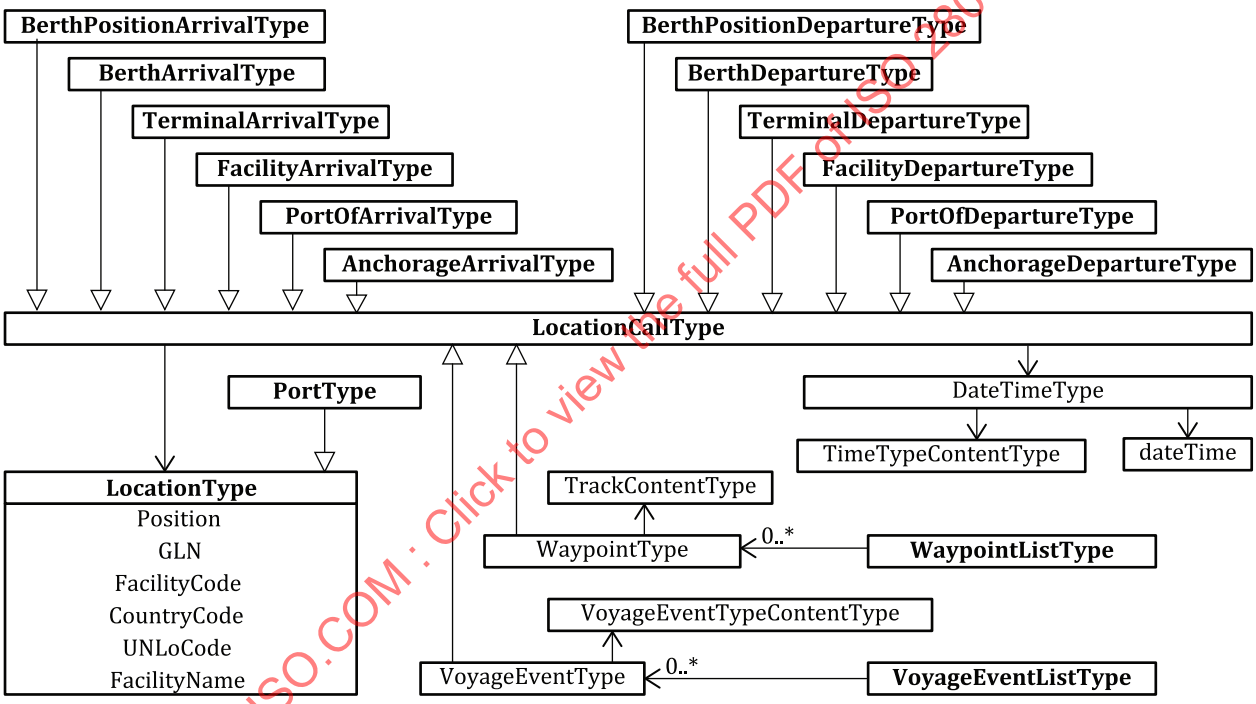

Figure 9 — Location types class diagram

7.10.2 Non-core data types

7.10.2.1 epc:LocationType — Identification of a location

Definition:

This data type identifies any location, which may also be given a name. This data type is normally used in a specific context to define what type of location this is.

Type:

```
<xs:complexType name="LocationType">
   <xs:sequence>
      <xs:element name="Name" type="epc:string" minOccurs="0" />
      <xs:element name="CountryCode" type="epc:CountryCodeContentType"
                  minOccurs="0" />
      <xs:element name="FacilityName" type="epc:FacilityNameType"
                  minOccurs="0" />
```

```
      <xs:element name="FacilityCode" type="epc:GISISCodeContentType"
                  minOccurs="0" />
      <xs:element name="GLN" type="epc:GLNContentCodeType" minOccurs="0" />
      <xs:element name="Position" type="epc:PositionType" minOccurs="0" />
      <xs:element name="UNLoCode" type="epc:UNLoCodeContentType"
   </xs:sequence>
</xs:complexType>

<xs:simpleType name="FacilityNameType">
   <xs:list itemType="epc:string"/>
</xs:simpleType>

<xs:simpleType name="GLNContentCodeType">
   <xs:restriction base="epc:token"/>
</xs:simpleType>

<xs:simpleType name="GISISCodeContentType">
   <xs:restriction base="xs:token"/>
</xs:simpleType>

<xs:simpleType name="GISISCodeContentType">
   <xs:restriction base="xs:token"/>
</xs:simpleType>

<xs:complexType name="PositionType">
   <xs:sequence>
      <xs:element name="Latitude" type="epc:LatitudeType"/>
      <xs:element name="Longitude" type="epc:LongitudeType"/>
   </xs:sequence>
</xs:complexType>

<xs:simpleType name="LatitudeType">
  <xs:restriction base="epc:decimal">
    <xs:minInclusive value="-90"/>
    <xs:maxInclusive value="90"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="LongitudeType">
  <xs:restriction base="epc:decimal">
    <xs:minInclusive value="-180"/>
    <xs:maxInclusive value="180"/>
  </xs:restriction>
</xs:simpleType>

<xs:simpleType name="UNLoCodeContentType">
  <xs:restriction base="epc:token">
    <xs:length value="3"/>
  </xs:restriction>
</xs:simpleType>
```

Representation:

This data type allows the user to specify a location by a selection of different schemes. The following attributes can be used.

— Name: This is a free text name that can be used either as an alternative to the other code types or as an optional name on the location.

— CountryCode. Two-letter country code, typically used together with UN LOCODE.

— FacilityName: The name of the facility in a port or terminal.

— FacilityCode: This code contains the port facility 4-digit code used by the IMO GISIS maritime security database. The UNLOCODE, Country Code and GISISCode uniquely identifies a facility related to ISPS handling.

— GLN (Global Location Number) of a position assigned by GS1. The GLN is a 13-digit number assigned by GS1.

— Position of type PositionType specifying the latitude and longitude of a geographical position. The latitude and longitude shall be represented using the degrees and decimal degree format specified by ISO 6709, i.e. {±}dd.dd for latitude and {±}ddd.dd for longitude, where '+' (plus) indicates north or east and '–' (minus) indicates south or west. The '+' (plus) sign can be omitted.

— UNLoCode three-letter code for a port. The enumeration shall be the three-letter location code as defined in UNECE R16. This code shall normally be used together with CountryCode.

7.10.2.2 epc:PortType — Identification of a port

Definition:

This data type is used to identify a specific port in those cases where the Country Code and UNLoCode is the suitable identification. Thus, this type uses the UNLoCode and CountryCode from the LocationType. If the UNLoCode does not exist, the name in LocationType can be used instead.

NOTE This type is included for backwards compatibility to older versions of the standard. One normally uses LocationType directly, instead of PortType.

Type:

```
<xs:complexType name="PortType">
   <xs:complexContent>
      <xs:extension base="epc:LocationType"/>
   </xs:complexContent>
</xs:complexType>
```

Representation:

The PortType is a specialization of LocationType, where the CountryCode and the UNLoCode are used to identify the port. Other types are used for giving a more detailed position inside a port, for instance a terminal, anchorage, berth, berth position or facility. In cases where the UNLoCode is missing, the name can be used to identify the port. The name is written as the port name is normally written. This is to be read by humans.

7.10.2.3 epc:LocationCallType — Location including Time

Definition:

This data type identifies a call of a ship to a certain location at specified time. The specified time is either the Arrival Time and/or the Departure Time to/from this location. For each time, the DateTimeType contains a specification of whether the time is an actual time, an estimated time, a planned time or a requested time.

Type:

```
<xs:complexType name="LocationCallType">
   <xs:sequence>
      <xs:element name="ArrivalTime" type="epc:DateTimeType" minOccurs="0"
                  maxOccurs="unbounded"/>
      <xs:element name="DepartureTime" type="epc:DateTimeType" minOccurs="0"
                  maxOccurs="unbounded"/>
      <xs:element name="Location" type="epc:LocationType" minOccurs="0" />
   </xs:sequence>
</xs:complexType>
```

Representation:

The location is of type LocationType, and the arrival and departure times are of time DateTimeType. Several arrival and departure times can be given, each with different attributes, e.g. planned and estimated.

7.10.3 epc:WaypointListType — Waypoint and Waypoint list

Definition:

This is a list of waypoints as positions, possibly specifying a part of a voyage leg. One normally has to specify a starting point and possibly an end point in addition to the waypoint list.

Type:

```
<xs:simpleType name="TrackContentType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="RL"/>
    <xs:enumeration value="GC"/>
    <xs:enumeration value="CO"/>
  </xs:restriction>
</xs:simpleType>

<xs:complexType name="WaypointType">
      <xs:complexContent>
         <xs:extension base="epc:LocationCallType">
            <xs:sequence>
               <xs:element name="Track" type="epc:TrackContentType"
                           minOccurs="0" />
            </xs:sequence>
         </xs:extension>
      </xs:complexContent>
</xs:complexType>

<xs:complexType name="WaypointListType">
      <xs:sequence>
         <xs:element name="Waypoint" type="epc:WaypointType" minOccurs="0"
                     maxOccurs="unbounded"/>
      </xs:sequence>
</xs:complexType>
```

Representation:

This is a list of positions and times in increasing time order (earliest time first) defining a ship's trajectory between the specified positions. Position and time shall be specified according to defined rules.

The track type applies to the track to the specified position, i.e. between the previous and the specified position, and can be a rhumb line (RL), a great circle line (GC) or a costal transit (CO) where the ship is kept along a coast at a minimum distance and otherwise at a minimum distance rhumb line.

The WaypointType is of type LocationCallType, where the location is specified by the PositionType as LAT/LON.

7.10.4 epc:VoyageEventListType — Time and position for voyage events

This data type replaces EntryPositionType and ExitPositionType from the previous edition of the standard.

Definition:

This type contains the time (actual, estimated, planned, requested) and position (usually in LAT/LON) for entry to or exit from a ship reporting or other area, or the arrival at a pilot boarding place.

Type:

```
<xs:complexType name="VoyageEventListType">
   <xs:sequence>
      <xs:element name="epc:VoyageEventType" minOccurs="0"
                  maxOccurs="unbounded" />
   </xs:sequence>
</xs:complexType>
```

```
<xs:complexType name="VoyageEventType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence>
            <xs:element name="EventType" type="epc:VoyageEventTypeContentType"
                    minOccurs="0"/>
            <xs:element name="Comment" type="epc:string" minOccurs="0"/>

         </xs:sequence>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>

<xs:simpleType name="VoyageEventTypeContentType">
   <xs:restriction base="xs:token">
      <xs:enumeration value="PilotBoarding"/>
      <xs:enumeration value="PilotLeaving"/>
      <xs:enumeration value="MSRArrival"/>
      <xs:enumeration value="MSRDeparture"/>
      <xs:enumeration value="ReportingPosition"/>
      <xs:enumeration value="PointOfPassage"/>
      <xs:enumeration value="Other"/>
   </xs:restriction>
</xs:simpleType>
```

Representation:

The VoyageEventListType allows the listing of one or more events that have taken place or are planned during a voyage. The VoyageEventType is a generalization of the LocationCallType. The time is defined as being actual, estimated, planned or requested.

The VoyageEventTypeContentType contains the type of voyage event that the time and position is describing. Currently, this is eitherpilot boarding or leaving, reporting area entry or departure, a general reporting point or some other event. Additional text can be given in the comment field.

7.10.5 epc:PortOfArrivalType — Arrival port

Definition:

When referring to a voyage leg, this is the port at the end of that leg and the time when the ship arrives at the port. This is normally the case when this element is used in prearrival notifications. In other contexts, the element needs additional context definitions.

Type:

```
   <xs:complexType name="PortOfArrivalType">
      <xs:complexContent>
         <xs:extension base="epc:LocationCallType">
            <xs:sequence/>
         </xs:extension>
      </xs:complexContent>
   </xs:complexType>
```

Representation:

A port definition and the time of arrival to that port according to standard coding rules.

NOTE See Annex C for an informal discussion of the use of arrival and departure port in EPC messages.

7.10.6 epc:PortOfDepartureType — Departure port

Definition:

When referring to a leg of a voyage, this is the departure port for that leg and the departure time from that port. When referring to a port stay, this type is used only for messages relating to the departure

from that port. In this case, PortOfDepartureType is the current port that the reporting is done for and the departure time from the port.

Type:

```
<xs:complexType name="PortOfDepartureType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

A port and time definition according to standard coding rules.

NOTE See Annex C for an informal discussion of the use of arrival and departure port in EPC messages.

7.10.7 epc:NextPortOfCallType — Next port of call

Definition:

When referring to a specific leg of a voyage, the next port of call is the next port to be visited after the leg's arrival port. When referring to a port stay, the next port of call is the arrival port for the next leg leading from this port.

Type:

```
<xs:complexType name="NextPortOfCallType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

A port and time definition according to standard coding rules. The TimeType can be set to estimated, planned or requested, not to actual, since this covers reporting of future events. Both arrival and departure can be included.

NOTE See Annex C for an informal discussion of the use of arrival and departure port in EPC messages.

7.10.8 epc:LastPortOfCallType — Last port of call

Definition:

When referring to a specific leg of a voyage, the last port of call is the last port visited before the leg's departure port. When referring to a port stay, the last port of call is the departure port for the last leg leading to this port.

Type:

```
<xs:complexType name="LastPortOfCallType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

A port and time definition according to standard coding rules. The TimeType can be set to actual, planned or requested, not to estimated, since this covers reporting of past events.

NOTE See Annex C for an informal discussion of the use of arrival and departure port in EPC messages.

7.10.9 epc:BerthArrivalType — Identification of a berth and an arrival time

Definition:

This type is similar to PortOfArrivalType, but refers to a specific berth.

Type:

```
<xs:complexType name="BerthArrivalType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

This type is represented as a specialization of a LocationCallType.

7.10.10 epc:BerthDepartureType — Identification of a berth and a departure time

Definition:

This type is similar to PortOfDepartureType, but refers to a specific berth.

Type:

```
<xs:complexType name="BerthDepartureType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

This type is represented as a specialization of a LocationCallType.

7.10.11 epc:BerthPositionArrivalType — Position inside a berth and the arrival time

Definition:

This type is used to identify a specific position along the line of a berth, specified by one point (e.g. bollard, manifold or ramp number), allowing the ship to berth in the correct position along the berth.

Type:

```
<xs:complexType name="BerthPositionArrivalType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

This type is represented as a specialization of a LocationCallType.

7.10.12 epc:BerthPositionDepartureType — Position inside a berth and the departure time

Definition:

This type is used to identify a position along the line of a berth, specified by one point (e.g. bollard, manifold or ramp number), allowing the ship to berth in the correct position along the berth.

Type:

```
<xs:complexType name="BerthPositionArrivalType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

This type is represented as a specialization of a LocationCallType.

7.10.13 epc:AnchorageArrivalType — Anchorage area and arrival time

Definition:

This type identifies anchorage area and the time when the ship arrives or arrived at this place.

Type:

```
<xs:complexType name="AnchorageArrivalType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

This type is represented as a specialization of a LocationCallType.

7.10.14 epc:AnchorageDepartureType — Anchorage area and departure time

Definition:

This type identifies anchorage area and the time when the ship departs or have departed from this place.

Type:

```
<xs:complexType name="AnchorageDepartureType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

This type is represented as a specialization of a LocationCallType.

7.10.15 epc:TerminalArrivalType — Terminal area and arrival time

Definition:

This type is an identification of a terminal which is normally a number of berths grouped together and provided with facilities for handling (loading and unloading) cargo, e.g. an oil terminal or a container terminal. It also contains the arrival time from this terminal.

Type:

```
<xs:complexType name="TerminalArrivalType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

This type is represented as a specialization of a LocationCallType.

7.10.16 epc:TerminalDepartureType — Terminal area and departure time

Definition:

This type is an identification of a terminal which is a number of berths grouped together and provided with facilities for handling (loading and unloading) cargo, e.g. an oil terminal or a container terminal. It also contains the departure time from this terminal.

Type:

```
<xs:complexType name="TerminalDepartureType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

This type is represented as a specialization of a LocationCallType.

7.10.17 epc:FacilityArrivalType — Facility area and arrival time

Definition:

This type is an identification of a facility in a berth and the related arrival time to this facility. The facility is named according to the number given by IMO in the GISIS database.

Type:

```
<xs:complexType name="FacilityArrivalType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

This type is represented as a specialization of a LocationCallType. Both the country code and the 4-digit GISIS code shall be filled in for the facility.

7.10.18 epc:FacilityDepartureType — Facility area and departure time

Definition:

This type is an identification of a facility in a berth and the related arrival time to this facility. The facility is named according to the number given by IMO in the GISIS database.

Type:

```
<xs:complexType name="FacilityDepartureType">
   <xs:complexContent>
      <xs:extension base="epc:LocationCallType">
         <xs:sequence/>
      </xs:extension>
   </xs:complexContent>
</xs:complexType>
```

Representation:

This type is represented as a specialization of a LocationCallType. Both the country code and the 4-digit GISIS code shall be filled in for the facility.

7.11 Waste and environmental data types

7.11.1 General

These data items are related to mandatory reporting of waste and other environmental information. The main element is WasteInformationType which contains general mandatory reporting information, including a list of WasteDisposalInformationType which contains the specific information about the waste types and amount onboard, to be delivered and to be retained onboard.

WasteDisposalRequirementsType and BallastStatusType can be used to give additional information to the port.

7.11.2 epc:BallastStatusType — Status of ship's ballast water when in port

Definition:

This data item describes the status of the ship's ballast water when reaching port.

Type:

```
<xs:complexType name="BallastStatusType">
  <xs:sequence>
    <xs:element name="IsClean" type="epc:boolean" minOccurs="0" />
    <xs:element name="Remarks" type="epc:string" minOccurs="0" />
  </xs:sequence>
</xs:complexType>
```

Representation:

This data type indicates the status of the ballast tanks.

— IsClean: This flag shall be true if the ballast tanks only contain clean water (as per port or terminal regulations).

— Remarks: This field shall be used to explain any discrepancies if the flag is false.

7.11.3 epc:WasteDisposalRequirementsType — Ship's requirements for waste disposal

Definition:

This data item is a free text description of the ship's requirements for waste and residue disposal.

Type:

```
<xs:simpleType name="WasteDisposalRequirementsType">
  <xs:restriction base="epc:string"/>
```

```
</xs:simpleType>
```

Representation:

This is a free text description of a ship's requirements for waste and residue disposal at arrival port as required in FAL 1.

NOTE When the WasteDisposalInformation data is supplied, this field is in principle superfluous. However, authorities can still require it.

7.11.4 epc: WasteInformationType — Waste information

Definition:

This data element contains information that shall be sent to a port in conjunction with an arrival as specified by MEPC.1/Circ.644 and MEPC.1/Circ.834/Rev. 1. The transmission of some elements of this data is required by EU Directive 2000/59/EC[1] for ships visiting European ports.

NOTE 1 The current FAL convention does not mandate the transmission of this information set. It only requires a general report on requirements for safe waste disposal.

Type:

```
<xs:complexType name="WasteInformationType">
   <xs:sequence>
      <xs:element name="Comment" type="epc:string" minOccurs="0" />
      <xs:element name="PointOfContact" type="epc:ContactInfoType"
                  minOccurs="0" />
      <xs:element name="LastPortDelivered" type="epc:LocationCallType"
                  minOccurs="0" />
      <xs:element name="NextPortToDeliver" type="epc:PortType"
                  minOccurs="0"/>
      <xs:element name="WasteDeliveryStatus"
                  type="epc:WasteDeliveryStatusContentType"
                  minOccurs="0" />
      <xs:element name="WasteDisposalInformation"
                  type="epc:WasteDisposalInformationType"
                  minOccurs="0" maxOccurs="unbounded"/>
   </xs:sequence>
</xs:complexType>

<xs:complexType name="WasteDisposalInformationType">
   <xs:sequence>
      <xs:element name="EstimatedGenerated" type="epc:MeasureType"
                  minOccurs="0" />
      <xs:element name="MaxStorage" type="epc:MeasureType" minOccurs="0"/>
      <xs:element name="RetainedOnboard" type="epc:MeasureType"
                    minOccurs="0" />
      <xs:element name="ToBeDelivered" type="epc:MeasureType"
                  minOccurs="0"/>
      <xs:element name="DisposedOfInPort" type="epc:PortType"
                  minOccurs="0"/>
      <xs:element name="WasteType" type="epc:WasteTypeType" />
   </xs:sequence>
</xs:complexType>

<xs:complexType name="WasteTypeType">
   <xs:sequence>
      <xs:element name="Description" type="epc:string" minOccurs="0" />
      <xs:element name="Code" type="epc:WasteTypeCodeContentType" />
   </xs:sequence>
</xs:complexType>

<xs:simpleType name="WasteDeliveryStatusContentType">
   <xs:restriction base="xs:token">
      <xs:enumeration value="All"/>
      <xs:enumeration value="None"/>
   </xs:restriction>
```

```
</xs:simpleType>

<xs:simpleType name="WasteTypeCodeContentType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>
```

Representation:

The information regarding waste is represented as follows.

— Comment: Additional information that is not provided below.

— PointOfContact: Point of contact (POC) in arrival terminal or port.

— LastPortDelivered: Last port and date when ship-generated waste was delivered.

— NextPortToDeliver: The next port where the ship plans to deliver waste of any type.

— WasteDeliveryStatus: If the ship delivers all or none of its waste in the port it reports to.

— WasteDisposalInformation: One entry per type of waste the ship has onboard. Each entry shall contain the following.

  — EstimateGenerated: Estimate amount of waste to be generated between notification and next port of call in cubic metres (m^3).

  — MaxStorage: Maximum dedicated storage capacity for this type of waste in cubic metres (m^3).

  — RetainedOnboard: Quantity in cubic metres (m^3) of waste to be retained onboard.

  — ToBeDelivered: Quantity in cubic metres (m^3) of waste to be delivered in port. This can be an estimate.

  — DisposedOfInPort: Name of port where remaining waste is disposed of.

  — WasteType: Type of waste. The code shall be as specified in Annex G. In addition, the proper shipping name is required for codes 504 (cargo residues) and all types of waste in category 2 (NLS). This can be provided in the Comment field. Otherwise, the text description of waste is optional.

NOTE 2 The structure of information is not the same as given in MEPC 644, but all information elements are present. In particular, only one waste list is provided, which contains both waste to be delivered and waste kept onboard.

7.12 Health data types

7.12.1 Class diagram

This subclause defines the data that must be reported according to WHOs Maritime Declaration of Health (MDH). This should be completed and submitted to the competent authorities from ships at arrival to a port from a foreign port. See Figure 10 for the class diagram.

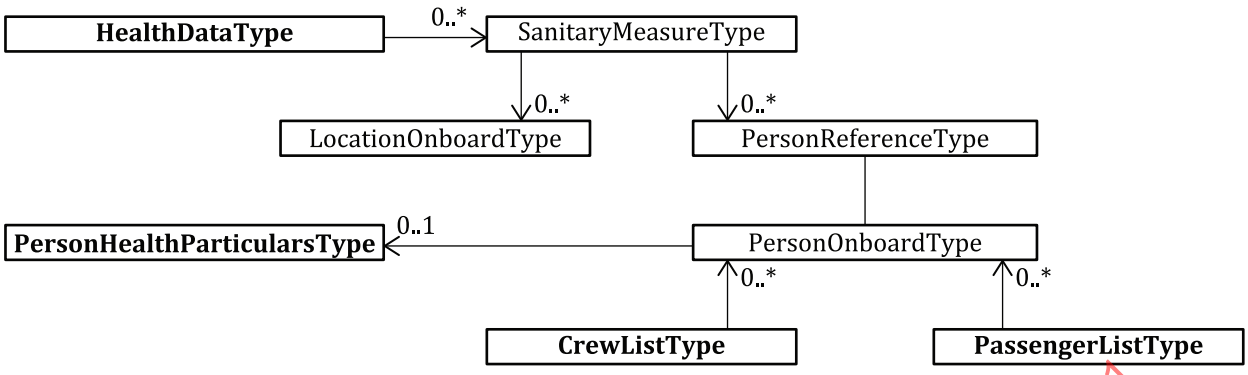

Figure 10 — Health data items

The main data object is HealthDataType that contains most mandatory reporting information, except details that are related to persons. It also includes a list of sanitary measures that have been undertaken that can be related to a location and/or a person.

The element PersonHealthParticularsType is used in the PersonOnboardType (7.4.1) to add information directly linked to a crew or passenger. Thus, this is not a core data element.

If sanitary measures refer to a person, the person referred to should normally also contain a health particulars record. A person can be either crew or passenger.

7.12.2 epc: HealthDataType — Health information for the ship

Definition:

This type contains health information sent by the ship to health authorities in a port.

Type:

```
<xs:complexType name="HealthDataType">
   <xs:sequence>
      <xs:element name="DiseaseOnBoard" type="epc:boolean" minOccurs="0" />
      <xs:element name="IllPersonsGreaterThanExpected" type="epc:boolean"
                  minOccurs="0" />
      <xs:element name="IllPersonsNow" type="epc:boolean" minOccurs="0" />
      <xs:element name="InfectionConditionOnBoard" type="epc:boolean"
                  minOccurs="0" />
      <xs:element name="MedicalConsulted" type="epc:boolean"
                  minOccurs="0" />
      <xs:element name="NumberOfDeaths" type="epc:int" minOccurs="0" />
      <xs:element name="NumberOfIllPersons" type="epc:int" minOccurs="0" />
      <xs:element name="PersonDied" type="epc:boolean" minOccurs="0" />
      <xs:element name="ReInspectionRequired" type="epc:boolean"
                  minOccurs="0" />
      <xs:element name="SanitaryMeasureApplied" type="epc:boolean"
                  minOccurs="0" />
      <xs:element name="SickAnimal" type="epc:boolean" minOccurs="0" />
      <xs:element name="StowawaysFound" type="epc:boolean" minOccurs="0" />
      <xs:element name="ValidShipSanitationControlCertificate"
                  type="epc:boolean" minOccurs="0" />
      <xs:element name="ValidShipSanitationControlExemptionCertificate"
                  type="epc:boolean" minOccurs="0" />
      <xs:element name="VisitedInfectedArea" type="epc:boolean"
                  minOccurs="0" />
      <xs:element name="ShipSanitationControlExemptionCertificate"
                  type="epc:CertificateType" minOccurs="0" />
      <xs:element name="ShipSanitationControlCertificate"
                  type="epc:CertificateType" minOccurs="0" />
      <xs:element name="LocationStowawaysJoinedShip" type="epc:LocationType"
                  minOccurs="0" maxOccurs="unbounded"/>
      <xs:element name="SanitaryMeasure" type="epc:SanitaryMeasureType"
```

```
                minOccurs="0" maxOccurs="unbounded"/>
      <xs:element name="CallInInfectedArea"
                type="epc:ShipToPortActivityType"
                minOccurs="0" maxOccurs="unbounded"/>
      <xs:element name="LastPortCalls" type="epc:ShipToPortActivityType"
                minOccurs="0" maxOccurs="unbounded"/>
   </xs:sequence>
</xs:complexType>
<xs:complexType name="SanitaryMeasureType">
   <xs:sequence>
    <xs:element name="Comment" type="epc:string" minOccurs="0" />
       <xs:element name="Date" type="epc:date" minOccurs="0" />
       <xs:element name="LocationOnBoard" type="epc:LocationOnBoardType"
                 minOccurs="0" />
       <xs:element name="Person" type="epc:PersonReferenceType
                 minOccurs="0" />
       <xs:element name="SanitaryMeasureCode"
                 type="epc:SanitaryMeasureCodeContentType"
                 minOccurs="0" />
   </xs:sequence>
</xs:complexType>

<xs:simpleType name="SanitaryMeasureCodeContentType">
  <xs:restriction base="epc:token">
    <xs:enumeration value="Quarantine"/>
    <xs:enumeration value="Isolation"/>
    <xs:enumeration value="Disinfection"/>
    <xs:enumeration value="Decontamination"/>
    <xs:enumeration value="Other"/>
  </xs:restriction>
</xs:simpleType>
```

Representation:

This type contains the following elements.

— DiseaseOnBoard: This element is true if there is or has been any case of disease on board during the international voyage which is suspected to be of an infectious nature. Otherwise, it is false and no other information should normally be necessary.

— IllPersonsGreaterThanExpected: This element is true if the total number of ill passengers during the voyage has been greater than normal or greater than expected. Otherwise, it is false.

— IllPersonsNow: This element is true if there is any ill person on board now. Otherwise, it is false.

— InfectionConditionOnBoard: This element is true if the reporter is aware of any condition on board which may lead to infection or spread of disease. Otherwise, it is false.

— MedicalConsulted: This element is true if a medical practitioner were consulted. Otherwise, it is false.

— NumberOfDeaths: This element contains the total number of deaths during the voyage. This should match the number of dead persons in the lists of persons on board.

— NumberOfIllPersons: This element contains the number of ill persons during the voyage. This should match the number of ill persons in the lists of persons on board.

— PersonDied: This element is true if any person has died on board during the voyage otherwise than as a result of accident. Otherwise, it is false.

— ReInspectionRequired: This element is true if a re-inspection is required. Otherwise, it is false.

— SanitaryMeasureApplied: This element is true if any sanitary measure (e.g. quarantine, isolation, disinfection or decontamination) has been applied on board. Otherwise, it is false.

— SickAnimal: This element is true if there is a sick animal or pet on board. Otherwise, it is false.

— StowawaysFound: This element is true if any stowaways have been found on board. Otherwise, it is false.

— VisitedInfectedArea: This element is true if the ship has visited an infected area identified by the World Health Organization. Otherwise, it is false.

— ValidShipSanitationControlExemptionCertificate: This element contains true if the ship carries a valid ship sanitation control exemption certificate on board. Otherwise, it is false.

— ValidShipSanitationControlCertificate: This element contains true if the ship carries a valid ship sanitation control certificate on board. Otherwise, it is false.

— LocationStowawaysJoinedShip: This element contains the location(s) where the stowaways are assumed to have joined the ship, if any.

— SanitaryMeasure: This element contains a list of sanitary measures that has been applied, if any.

— CallInInfectedArea: This element contains a list of infected areas (as defined by WHO) that the ship has called in to, if any.

— LastPortCalls: This element contains a list of port calls taken by the ship in the last thirty days, or during this voyage, whichever is shortest.

SanitaryMeasureType contains the following elements.

— Comment: Additional textual description, if necessary.

— Date: The date when the sanitary measure was done.

— LocationOnBoard: The location on board the ship where the sanitary measure was done, if the measure was associated with a physical position.

— Person: Reference to a person if the sanitary measure was related to a specific person.

— SanitaryMeasureCode: The type of sanitary measure that was done onboard. This can be one of the enumerations listed in the type SanitaryMeasureCodeContentType.

7.12.3 epc: PersonHealthParticularsType — Health information for a person on board

NOTE This data element is not a core data element, but is used in the passenger or crew lists.

Definition:

This type contains health information for one person on board.

Type:

```
<xs:complexType name="PersonHealthParticularsType">
   <xs:sequence>
      <xs:element name="Comments" type="epc:string" minOccurs="0" />
      <xs:element name="ReportedToPortMedical" type="epc:boolean"
                  minOccurs="0" />
      <xs:element name="SymptomsDate" type="epc:date" minOccurs="0" />
      <xs:element name="Treatment" type="epc:string" minOccurs="0" />
      <xs:element name="CaseDisposal" type="epc:CaseOfDisposalType"
                  minOccurs="0" />
      <xs:element name="IllnessCode" type="epc:IllnessCodeContentType"
                  minOccurs="0" />
   </xs:sequence>
</xs:complexType>

   <xs:simpleType name="IllnessCodeContentType">
      <xs:restriction base="xs:anyURI">
         <xs:enumeration value="Asymptomatic"/>
         <xs:enumeration value="Chronic condition"/>
```

```
            <xs:enumeration value="Convulsions"/>
            <xs:enumeration value="Decreased consciousness"/>
            <xs:enumeration value="Diarrhea"/>
            <xs:enumeration value="Difficulty breathing"/>
            <xs:enumeration value="Eye redness"/>
            <xs:enumeration value="Fever"/>
            <xs:enumeration value="Glandular swelling"/>
            <xs:enumeration value="Headache"/>
            <xs:enumeration value="Injury"/>
            <xs:enumeration value="Jaundice"/>
            <xs:enumeration value="Neck stiffness"/>
            <xs:enumeration value="Obviously unwell"/>
            <xs:enumeration value="Other"/>
            <xs:enumeration value="Paralysis"/>
            <xs:enumeration value="Persistent cough"/>
            <xs:enumeration value="Prostration"/>
            <xs:enumeration value="Recent onset of focal weakness"/>
            <xs:enumeration value="Runny nose"/>
            <xs:enumeration value="Skin Eruption"/>
            <xs:enumeration value="Skin Rash"/>
            <xs:enumeration value="Sore throat"/>
            <xs:enumeration value="Swollen glands"/>
            <xs:enumeration value="Unusual bleeding"/>
            <xs:enumeration value="Vomitting"/>
         </xs:restriction>
      </xs:simpleType>

<xs:complexType name="CaseOfDisposalType">
      <xs:sequence>
         <xs:element name="CaseDisposalCode"
                     type="epc:CaseDisposalCodeContentType"
                     minOccurs="0" />
         <xs:element name="HealthStateCode"
                     type="epc:HealthStateCodeContentType"
                     minOccurs="0"/>
         <xs:element name="LocationOfEvaculation" type="epc:PortType"
                     minOccurs="0" />
      </xs:sequence>
</xs:complexType>

<xs:simpleType name="HealthStateCodeContentType">
      <xs:restriction base="xs:token">
         <xs:enumeration value="D"/>
         <xs:enumeration value="I"/>
         <xs:enumeration value="R"/>
      </xs:restriction>
</xs:simpleType>

<xs:simpleType name="CaseDisposalCodeContentType">
      <xs:restriction base="xs:token">
         <xs:enumeration value="B"/>
         <xs:enumeration value="E"/>
         <xs:enumeration value="S"/>
      </xs:restriction>
</xs:simpleType>
```


Representation:

PersonHealthParticularsType contains health information related to each person on board. This type has the following elements.

— Comments: This element contains a free text comment on the specific case.

— ReportedToPortMedical: This element is true if the medical case is reported to a port medical officer. Otherwise, it is false.

— SymptomsDate: This is the date for the onset of symptoms.

— Treatment: This is a free text description of the treatment given to the person, for instance drugs, medicines or other treatment given to the patient.

— CaseDisposal: This describes the current health state of the person, if he is dead (D), ill (I) or recovered (R) as defined in HealthStateCodeContentType. It also describes whether the person is still on board (S), has been evacuated (E), or has been buried at sea (B) as defined in CaseDisposalCodeContentType.

— IllnessCode: This describes the nature of the illness for the patient as listed in the enumeration type IllnessCodeContentType.

Annex A
(normative)

EPC Request Body

The request data block is defined in ISO 28005-1 as a general list of the top layer core data elements defined in this document. All elements are optional, but with different cardinality. The ship is responsible for including those information elements that are required for clearance or for a specific service request. All defined core data elements are listed in Table A.1 (core element) with their corresponding type (type). Table A.1 also defines the cardinality in the request data block.

The data elements can be ordered arbitrarily in the request body and they may be mixed with information elements from other parts of the ISO 28005 series.

An information element should only occur once, except when it has cardinality larger than one, but also in this case all information elements with the same name shall be strictly sequential and ordered as specified in the standard, where applicable.

The main XML Schema file for the EPC message as defined in this annex (epc-msg.xsd) is available at https://standards.iso.org/iso/28005/-2/ed-2/en/. The data elements are defined in epc.xsd, available at the same location.

Table A.1 — The EPC Request Body

Core element	Type	Card.	Description
Agent	epc:Agent Type	0..1	The ship's agent
AirDraught	epc:AirDraughtType	0..1	Air draught
AnchorageArrival	epc:AnchorageArrivalType	0..*	Specification of arrival to an anchorage. The arrival time can be actual, estimated, planned or requested.
AnchorageDeparture	epc:AnchorageDepartureType	0..*	Specification of departure from an anchorage. The departure time can be actual, estimated, planned or requested.
ArrivalDeparture	epc:ArrivalDepartureType	0..1	Arrival or departure flag
ArrivalDraught	epc:ArrivalDraughtType	0..1	Arrival draught
ATP	epc:ATPType	0..1	Actual time of passage
Authenticator	epc:AuthenticatorType	0..1	Information about the authenticator of the information
BallastStatus	epc:BallastStatusType	0..1	Status of ship's ballast water when in port
Beam	epc:BeamType	0..1	Beam of vessel
BerthArrival	epc:BerthArrivalType	0..*	Specification of arrival to a berth. The arrival time can be actual, estimated, planned or requested.
BerthDeparture	epc:BerthDepartureType	0..*	Specification of departure from a berth. The departure time can be actual, estimated, planned or requested.
BerthPositionArrival	epc:BerthPositionArrivalType	0..*	Specification of arrival to a berth position. The arrival time can be actual, estimated, planned or requested.
BerthPositionDeparture	epc:BerthPositionDepartureType	0..*	Specification of departure from a berth position. The departure time can be actual, estimated, planned or requested.

Table A.1 *(continued)*

Core element	Type	Card.	Description
BulkLoadUnloadData	epc:BulkLoadUnloadDataType	0..1	Data required for safe loading and unloading
CallPurpose	epc:CallPurposeType	0..*	Purpose of call
CargoData	epc:CargoDataType	0..1	Detailed description of cargo
CargoOverview	epc:CargoOverviewType	0..1	Brief description of onboard cargo
CertificateList	epc:CertificateListType	0..1	List of ship's certificates
Company	epc:CompanyType	0..1	The ship's operating company
CSO	epc:CompanySecurityOfficerType	0..1	Information about the company security officer shown in the ship security plan
CrewList	epc:CrewListType	0..1	Information about all crew on board, including information about the Master
CurrentPortSecurityLevel	epc:CurrentPortSecurityLevelType	0..1	Current security level in port
CurrentShipSecurityLevel	epc:CurrentShipSecurityLevelType	0..1	Current security level on ship
DangerousGoodsCargoIndicator	epc:DangerousGoodsCargoIndicatorType	0..1	A yes/no indicator whether the ship is carrying any dangerous goods.
DeadWeight	epc:DeadWeightType	0..1	Dead weight
DepartureDraught	epc:DepartureDraughtType	0..1	Departure draught
DoubleBottom	epc:DoubleBottomContentType	0..1	Double bottom or sides indicator
DutiableCrewEffects	epc:DutiableCrewEffectType	0..1	List of crew effects that may be dutiable
ETP	epc:ETPType	0..1	Estimated time of passage
FacilityArrival	epc: FacilityArrivalType	0..*	Specification of arrival to a facility. The arrival time can be actual, estimated, planned or requested.
FacilityDeparture	epc: FacilityDepartureType	0..*	Specification of departure from a facility. The departure time can be actual, estimated, planned or requested.
GeneralDescriptionOfDG	epc:GeneralDescriptionOfDGType	0..1	General description of dangerous cargo
GeneralRemark	epc:RemarksType	0..1	Statement of any other information relevant to ship arrival, stay or departure
GrossTonnage	epc:GrossTonnageType	0..1	Gross tonnage
HasSecurityPlan	epc:HasSecurityPlanType	0..1	Approved security plan
HealthData	epc:HealthDataType	0..1	Health information for the ship
IceClass	epc:IceClassType	0..1	Ship ice class
INFClass	epc:INFClassContentType	0..1	Irradiated Nuclear Fuel class
InmarsatCallNumber	epc:InmarsatCallNumberType	0..1	Inmarsat call number to ship
ISSCertificateStatus	epc:ISSCertificateStatusType	0..1	ISS Certificate status
LastPortOfCall	epc:LastPortOfCallType	0..1	Last port of call
LengthOverall	epc:LengthOverallType	0..1	Length overall
NavigationalStatus	epc:NavigationalStatusContentsType	0..1	Navigational status
NetTonnage	epc:NetTonnageType	0..1	Net tonnage
NextPortOfCall	epc:NextPortOfCallType	0..1	Next port of call
NextReportTime	epc:NextReportTimeType	0..1	Time of next report
OBOLoadUnloadData	epc:OBOLoadUnloadDataType	0..1	Data required for safe loading and unloading of OBO
OtherPersonList	epc:OtherPersonListType	0..1	List of persons onboard that are neither crew nor passengers.

Table A.1 *(continued)*

Core element	Type	Card.	Description
OtherServiceRequest	epc:OtherServiceRequestType	0..n	Additional service request
PassengerList	epc:PassengerListType	0..1	Information about passengers
PeriodOfStay	epc:PeriodOfStayType	0..1	Period of stay
PersonsOnboard	epc:PersonsOnboardNumberType	0..1	Number of persons onboard
PortCallList	PortCallListType	0..1	Last ten port calls
PortOfArrival	epc:PortOfArrivalType	0..1	Arrival port and time. This includes port name and possibly ETA and ATA. PortOfArrival/Time[Estimated] and PortOfArrival/Time[Actual]
PortOfDeparture	epc:PortOfDepartureType	0..1	Departure port and time. This includes port name and possibly ETD and ATD. PortOfDeparture/Time[Estimated] and PortOfDeparture/Time[Actual]
Radiocommunications	epc:RadiocommunicationsType	0..1	Radiocommunication active
ReportingEvent	epc:LocationCallType	0..1	This is the location from which a report is given and the time in UTC when the report is given.
RequestStatus	epc:RequestStatusType	0..1	Status of a request (used by server)
ROBBunkers	epc:ROBBunkersType	0..*	Bunkers remaining onboard
SecurityOtherMatter-sToReport	SecurityOtherMattersToReportType	0..1	Other security matters to report
ShipClass	epc:ShipClassType	0..1	Class Notation for Ship
ShipDefects	epc:ShipDefectsType	0..1	Any defects of important ship equipment
ShipID	epc:ShipIDType	0..1	Ship identity
ShipStatus	epc:ShipStatusType	0..1	Vessel status information
ShipStore	epc:ShipStoreType	0..1	Description of ship's dutiable stores
ShipToShipActivityList	epc:ShipToShipActivityListType	0..1	Ship-to-ship activities
ShipType	epc:ShipTypeContentType	0..1	Ship type code
SummerDraught	epc:SummerDraughtType	0..1	Summer draught
TerminalArrival	epc: TerminalArrivalType	0..*	Specification of arrival to a terminal. The arrival time can be actual, estimated, planned or requested.
TerminalDeparture	epc: TerminalDepartureType	0..*	Specification of departure from a terminal. The departure time can be actual, estimated, planned or requested.
VoyageDescription	epc:VoyageDescriptionType	0..1	Brief description of voyage
VoyageEventList	epc:VoyageEventListType	0..1	Time and position when enter to/exit from ship reporting or getting to a PilotBoarding point. This was previously ExitPosition or EntryPosition.
VoyageNumber	epc:VoyageNumberType	0..1	Voyage identification code
WasteDisposalRequire-ments	epc:WasteDisposalRequirementsType	0..1	Ship's requirements for waste disposal
WasteInformation	epc:WasteInformationType	0..1	Waste information
WayPointList	epc:WayPointListType	0..1	Way-point list
WeatherInformation	epc:WeatherInformationType	0..1	Weather information as observed

Annex B
(normative)

IMO FAL mapping

Table B.1 gives the mapping between the Data Elements in the IMO FAL Reference Data Model and ISO 28005.

An electronic version of Table B.1 is available at https://standards.iso.org/iso/28005/-2/ed-2/en/.

Table B.1 — Mapping to IMO FAL Reference Data Model

IRN code	Data Element	ISO28005-Mapping
IMO0001	Agent City	/Agent/Address/CityName
IMO0002	Agent Contact Name	ISO->IMO: Concatenate: /Agent/Person/FamilyName /Agent/Person/MiddleName /Agent/Person/GivenName IMO->ISO If one name => Copy to: /Agent/Person/FamilyName If two names => Copy first to: /Agent/Person/FamilyName Copy second to: /Agent/Person/GivenName If three names => Copy to: /Agent/Person/FamilyName /Agent/Person/MiddleName /Agent/Person/GivenName
IMO0003	Agent country code	/Agent/Address/CountryCode
IMO0004	Agent country subdivision name	/Agent/Address/CountrySubdivisionName
IMO0006	Agent email	/Agent/ContactNumbers/Email
IMO0007	Agent identification number	/Agent/CompanyId
IMO0008	Agent landline number	/Agent/ContactNumbers/BusinessTelephone
IMO0009	Agent mobile number	/Agent/ContactNumbers/MobileTelephone
IMO0010	Agent name	/Agent/Company
IMO0011	Agent post-code	/Agent/Address/PostCodeCode
IMO0012	Agent street and number/P.O. Box.	/Agent/Address/StreetName /Agent/Address/StreetNumber or: /Agent/Address-/CityName /Agent/Address-/PostOfficeBox

Table B.1 *(continued)*

IRN code	Data Element	ISO28005-Mapping
IMO0013	Arrival/departure code	/ArrivalDeparture
IMO0014	Authentication date	/Authenticator/AuthenticationDate
IMO0015	Authenticator location	/Authenticator/AuthenticatorLocation/CountryCode /Authenticator/AuthenticatorLocation/UNLoCode Plus "At sea" as a possible value for the name of the location: /Authenticator/AuthenticatorLocation/Name="At sea"
IMO0016	Authenticator name	ISO->IMO: /Authenticator/Person/FamilyName /Authenticator/Person/MiddleName /Authenticator/Person/GivenName IMO->ISO: If one name => copy to: /Authenticator/Person/FamilyName If two names => copy first to: /Authenticator/Person/FamilyName Copy second to: /Authenticator/Person/GivenName If three names => same as ISO->IMO.
IMO0017	Authenticator party identification number	/Authenticator/CompanyId
IMO0019	Cargo brief description	/CargoOverview
IMO0021	Transport equipment identification number	Can be used in two different contexts: 1) /CargoData/Consignment/CargoItem/TransportEquipment/MarksAndNumbers 2) /CargoData/TransportEquipment/MarksAndNumber
IMO0022	Cargo item description of goods	/CargoData/Consignment/CargoItem/GoodsType/Description
IMO0023	Cargo item gross volume	/CargoData/Consignment/CargoItem/GrossVolume/Content From/to IMO0077: /CargoData/Consignment/CargoItem/GrossVolume/UnitCode
IMO0024	Cargo item gross weight	/CargoData/Consignment/CargoItem/GrossWeight/Content From/to IMO0077: /CargoData/Consignment/CargoItem/GrossWeight/UnitCode
IMO0025	Cargo item HS code	/CargoData/Consignment/CargoItem/GoodsType/HSCode
IMO0026	Cargo item marks and numbers	/CargoData/Consignment/CargoItem/MarksAndNumber
IMO0028	Cargo item number of packages	/CargoData/Consignment/CargoItem/NoOfPackages
IMO0029	Cargo item package type, coded	/CargoData/Consignment/CargoItem/PackageType
IMO0031	IMO Company number	/Company/IMOCompanyId

Table B.1 *(continued)*

IRN code	Data Element	ISO28005-Mapping
IMO0032	IMO Company name	/Company/Organisation/Name
IMO0033	Company security officer email	/CSO/ContactNumbers/Email
IMO0034	Company security officer landline number	/CSO/ContactNumbers/BusinessTelephone
IMO0035	Company security officer mobile number	/CSO/ContactNumbers/MobileTelephone
IMO0036	Company security officer name	ISO->IMO /CSO/Person/FamilyName /CSO/Person/MiddleName /CSO/Person/GivenName IMO->ISO: If one name => copy to: /CSO/Person/FamilyName If two names => copy first to: /CSO/Person/FamilyName Copy second to: /CSO/Person/GivenName If three names => same as ISO->IMO.
IMO0037	Crew effect description, coded	/DutiableCrewEffect/CrewEffectItem/CrewEffectItemCode
IMO0039	Crew effect quantity onboard	/DutiableCrewEffect/CrewEffectItem/Measurement/Content From/to IMO0077: /DutiableCrewEffect/CrewEffectItem/Measurement/UnitCode
IMO0040	Crew effects description	/DutiableCrewEffect/CrewEffectItem/EffectDescription
IMO0041	Crew effects sequence number	/DutiableCrewEffect/CrewEffectItem/SequenceNumber
IMO0042	Crewmember rank or rating name	/CrewList/CrewMemberData/Duty/Text
IMO0043	Crewmember rank or rating, coded	/CrewList/CrewMemberData/Duty/Code
IMO0044	Person on board sequence number	/CrewList/CrewMemberData/PersonReference
IMO0045	Stowage position onboard	Can be used in two different contexts: 1) /CargoData/Consignment/CargoItem/TransportEquipment/OnBoardLocation 2) /CargoData/TransportEquipment/OnBoardLocation
IMO0046	Dangerous goods carried indicator	/DangerousGoodsCargoIndicator 1=Yes, 0=No.
IMO0047	Dangerous goods EmS number	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/EmergencyInstruction

Table B.1 *(continued)*

IRN code	Data Element	ISO28005-Mapping
IMO0048	Dangerous goods flash-point	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/FlashPoint/Content From/to IMO0077: The unit is either Celsius or Fahrenheit /CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/FlashPoint/UnitCode
IMO0049	Dangerous goods hazard class, coded	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/UNClass
IMO0051	Dangerous goods marine pollutant type, coded	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/MARPOLPollutionCode
IMO0052	Dangerous goods mass	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/Mass/Content From/to IMO0077: /CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/Mass/UnitCode
IMO0053	Dangerous goods number of packages	/CargoData/Consignment/CargoItem/SpecialCargoDetails/NoOfPackages
IMO0054	Dangerous goods packing group	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/PackingGroup
IMO0055	Dangerous goods proper shipping name	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/ProperShippingName
IMO0056	Dangerous goods shipper's reference number	/CargoData/Consignment/DangerousGoodsShippersReferenceNumber
IMO0058	Dangerous goods subsidiary risks, coded	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/SubsidiaryRisks
IMO0059	Dangerous goods technical specifications	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/TechnicalSpecification
IMO0060	Dangerous goods UNDG number	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/UNNumber
IMO0061	Dangerous goods volume	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/Volume/Content From/to IMO0077: /CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/Volume/UnitCode
IMO0063	Date and time of arrival - actual	/PortOfArrival/ArrivalTime[TypeType="Actual"]
IMO0064	Date and time of arrival - estimated	/PortOfArrival/ArrivalTime[TypeType="Estimated"]
IMO0065	Date and time of departure - actual	/PortOfDeparture/DepartureTime[TypeType="Actual"]

Table B.1 *(continued)*

IRN code	Data Element	ISO28005-Mapping
IMO0066	Date and time of departure - estimated	/PortOfDeparture/DepartureTime[TypeType="Estimated"]
IMO0067	ISSC status, coded	/ISSCStatus 1=yes, 0=no
IMO0068	Reason why ship has no valid ISSC or interim ISSC	/ISSCertificateStatus/CertificateStatusReasonNotValid
IMO0069	Reason why ship has no valid ISSC or interim ISSC, coded	/ISSCertificateStatus/CertificateStatusReasonNotValidCode
IMO0070	ISSC contracting Government code	/CertificateList/Certificate/Issuer/RegistrationCountryCode, for Code="ISSC"
IMO0071	ISSC expiry date	/CertificateList/Certificate /ExpiryDate for Code= "ISSC"
IMO0075	Last port of call name	Use the country code to find the country name: /LastPortOfCall/CountryCode /LastPortOfCall/Name
IMO0076	Last port of call, coded	/LastPortOfCall/CountryCode /LastPortOfCall/UNLoCode
IMO0077	Measurement unit, coded	See mapping for each of the values. Mapping is done to UnitCode
IMO0078	Message Date Time	In EPCMessageHeader: /SentTime
IMO0082	Message sender identifier	In EPCMessageHeader: /SenderId
IMO0083	Name of master	Select the crew with CrewDutyType.Code="Master": ISO->IMO: Concatenation of: /CrewList/CrewMemberData/Name/FamilyName /CrewList/CrewMemberData/Name/MiddleName /CrewList/CrewMemberData/Name/GivenName IMO->ISO /CrewList/CrewMemberData/Name/FamilyName /CrewList/CrewMemberData/Name/MiddleName /CrewList/CrewMemberData/Name/GivenName If one name => copy to: /CrewList/CrewMemberData/Name/FamilyName If two names => copy first to: /CrewList/CrewMemberData/NameFamilyName Copy second to: /CrewList/CrewMemberData/Name/GivenName If three names => same as ISO->IMO.
IMO0084	Next port of call, coded	/NextPortOfCall/CountryCode /NextPortOfCall/UNLoCode
IMO0085	Next port of call, name	Use the country code to find the country name: /NextPortOfCall/CountryCode /NextPortOfCall/Name
IMO0086	Number of crew	/PersonsOnBoardNumber/Crew

Table B.1 *(continued)*

IRN code	Data Element	ISO28005-Mapping
IMO0087	Number of passengers	/PersonsOnBoardNumber/Passengers
IMO0088	Number of persons on board	/PersonsOnBoardNumber/NumberOfPersonsOnboard
IMO0089	Person in transit indicator	/PassengerList/PassengerData/Transit
IMO0091	Person port of embarkation, coded	/PassengerList/PassengerData/EmbarkationPort/CountryCode /PassengerList/PassengerData/EmbarkationPort/UNLoCode
IMO0092	Person port of disembarkation, name	Use the country code to find the country name: /PassengerList/PassengerData/DebarkationPort/CountryCode /PassengerList/PassengerData/DebarkationPort/Name
IMO0093	Person port of disembarkation, coded	/PassengerList/PassengerData/DebarkationPort/CountryCode /PassengerList/PassengerData/DebarkationPort/UNLoCode
IMO0094	Person port of embarkation, name	Use the country code to find the country name: /PassengerList/PassengerData/EmbarkationPort/CountryCode /PassengerList/PassengerData/EmbarkationPort/Name
IMO0095	Person visa number	/PassengerList/PassengerData/VisaNumber/IdNumber
IMO0096	Person country of birth, coded	Must check the person type in IMO0107 to know whether it is a crew (including master) or passenger: /CrewList/CrewMemberData/CountryOfBirth /PassengerList/PassengerData/CountryOfBerth
IMO0097	Person date of birth	Must check the person type in IMO0107 to know whether it is a crew (including master) or passenger: /CrewList/CrewMemberData/DateOfBirth /PassengerList/PassengerData/DateOfBerth
IMO0098	Person family name	Must check the person type in IMO0107 to know whether it is a crew (including master) or passenger: /CrewList/CrewMemberData/Name/FamilyName /PassengerList/PassengerData/Name/FamilyName
IMO0099	Person gender, coded	Must check the person type in IMO0107 to know whether it is a crew (including master) or passenger: /CrewList/CrewMemberData/Gender /PassengerList/PassengerData/Gender
IMO0100	Person given name	Must check the person type in IMO0107 to know whether it is a crew (including master) or passenger: /CrewList/CrewMemberData/Name/GivenName /PassengerList/PassengerData/Name/GivenName
IMO0101	Person identity or travel document expiry date	Must check the person type in IMO0107 to know whether it is a crew (including master) or passenger: /CrewList/CrewMemberData/PersonIdDocument/ExpirationDate /PassengerList/PassengerData/PersonIdDocument/ExpirationDate
IMO0102	Person identity or travel document issuing nation, coded	Must check the person type in IMO0107 to know whether it is a crew (including master) or passenger: /CrewList/CrewMemberData/PersonIdDocument/IssuingCountry /PassengerList/PassengerData/PersonIdDocument/IssuingCountry
IMO0103	Person identity or travel document number	Must check the person type in IMO0107 to know whether it is a crew (including master) or passenger: /CrewList/CrewMemberData/PersonIdDocument/IdNumber /PassengerList/PassengerData/PersonIdDocument/IdNumber

Table B.1 *(continued)*

IRN code	Data Element	ISO28005-Mapping
IMO0104	Person identity or travel document type, coded	Must check the person type in IMO0107 to know whether it is a crew (including master) or passenger: /CrewList/CrewMemberData/PersonIdDocument/IdDocument /PassengerList/PassengerData/PersonIdDocument/IdDocument
IMO0105	Person nationality, coded	Must check the person type in IMO0107 to know whether it is a crew (including master) or passenger: /CrewList/CrewMemberData/Nationality /PassengerList/PassengerData/Nationality
IMO0106	Person place of birth name	Must check the person type in IMO0107 to know whether it is a crew (including master) or passenger: /CrewList/CrewMemberData/PlaceOfBirth /PassengerList/PassengerData/PlaceOfBerth
IMO0107	Person type, coded	For persons that are in the crew list: Use the code for **Crew**, to map the person to the **CrewMemberDataType** This includes crew that has CrewDutyType.Code="Master" in addition to all other crew. For persons that are in the passenger list: Use the code for **Passenger**, to map the person to the **PassengerDataType**
IMO0108	Port of arrival, coded	/PortOfArrival/Location/CountryCode /PortOfArrival/Location/UNLoCode
IMO0109	Port of arrival, name	Use the country code to find the country name: /PortOfArrival/Location/CountryCode /PortOfArrival/Location/Name
IMO0110	Port of call sequence number	/PortCallList/PortCall/SequenceNumber
IMO0111	Port of departure, coded	/PortOfDeparture/Location/CountryCode /PortOfDeparture/Location/UNLoCode
IMO0112	Port of departure, name	Use the country code to find the country name: /PortOfDeparture/Location/CountryCode /PortOfDeparture/Location/Name
IMO0113	Port of discharge, coded	/CargoData/Consignment/PortOfDischarge/CountryCode /CargoData/Consignment/PortOfDischarge/UNLoCode
IMO0114	Port of discharge, name	Use the country code to find the country name: /CargoData/Consignment/PortOfDischarge/CountryCode /CargoData/Consignment/PortOfDischarge/Name
IMO0115	Port of last waste delivery, name	Use the country code to find the country name: /WasteInformation/LastPortDelivered/CountryCode /WasteInformation/LastPortDelivered/Name
IMO0116	Port of last waste delivery, coded	/WasteInformation/LastPortDelivered/CountryCode /WasteInformation/LastPortDelivered/UNLoCode
IMO0117	Port of loading, coded	/CargoData/Consignment/PortOfLoading/CountryCode /CargoData/Consignment/PortOfLoading/UNLoCode
IMO0118	Port of loading, name	Use the country code to find the country name: /CargoData/Consignment/PortOfLoading/CountryCode /CargoData/Consignment/PortOfLoading/Name
IMO0119	Port of next waste delivery, name	Use the country code to find the country name: /WasteInformation/NextPortToDeliver/CountryCode /WasteInformation/NextPortToDeliver/Name
IMO0120	Port of next waste delivery, coded	/WasteInformation/NextPortToDeliver/CountryCode /WasteInformation/NextPortToDeliver/UNLoCode

Table B.1 *(continued)*

IRN code	Data Element	ISO28005-Mapping
IMO0121	Port of remaining waste delivery, coded	/WasteInformation/WasteDisposalInformation/DisposedOfInPort/CountryCode /WasteInformation/WasteDisposalInformation/DisposedOfInPort/UNLoCode
IMO0122	Port of remaining waste delivery, name	Use the country code to find the country name: /WasteInformation/WasteDisposalInformation/DisposedOfInPort/CountryCode /WasteInformation/WasteDisposalInformation/DisposedOfInPort/Name
IMO0123	Port period of stay	If both ETD and ETA is given, the value for Period of stay should be calculated from these. Otherwise the following is used: /PeriodOfStay
IMO0124	Previous port facility call start date	/PortCallList/PortCall/FromDateTime
IMO0125	Previous port facility call end date	/PortCallList/PortCall/ToDateTime
IMO0126	Previous port of call, name	Use the country code to find the country name: /PortCallList/PortCall/Port/CountryCode /PortCallList/PortCall/Port/Name
IMO0127	Previous port of call, coded	Concatenation of the following: /PortCallList/PortCall/Port/CountryCode /PortCallList/PortCall/Port/UNLoCode
IMO0128	Authenticator role, coded	/Authenticator/AuthenticatorRoleCode/Code
IMO0129	RSO Name	/CertificateList/Certificate/Issuer/Name for Code ="ISSC"
IMO0130	Security Plan approval indicator	/HasSecurityPlan
IMO0131	Security, other matters to report	/SecurityOtherMattersToReport
IMO0133	Ship additional security measures, coded	/PortCallList/PortCall/AdditionalSecurityMeasure/Code
IMO0135	Ship additional security measures, description	/PortCallList/PortCall/AdditionalSecurityMeasure/Description
IMO0136	Ship call sign	/ShipID/CallSign
IMO0137	Ship current security level, coded	/CurrentShipSecurityLevel
IMO0138	Ship flag state, coded	/ShipID/RegistrationPort/CountryCode
IMO0139	Ship gross tonnage	/GrossTonnage
IMO0140	Ship IMO number	/ShipID/IMONumber
IMO0141	Ship INMARSAT call number	/InmarsatCallNumber/Inmarsat
IMO0142	Ship name	/ShipID/ShipName

Table B.1 *(continued)*

IRN code	Data Element	ISO28005-Mapping
IMO0143	Ship net tonnage	/NetTonnage
IMO0144	Location in port	From ISO to IMO: Select the required values from the following data elements: /PortOfArrival/Location/Name /PortOfArrival/Location/FacilityCode /PortOfArrival/Location/GLN From IMO to ISO: Put the whole string in this element if no business rule is given: /PortOfArrival/Location/Name
IMO0145	Ship registry issue date	/CertificateList/Certificate/IssueDate for Code="COR"
IMO0146	Ship registry number	/CertificateList/Certificate/CertificateNumber for Code="COR"
IMO0147	Ship registry port, coded	/ShipID/RegistrationPort/CountryCode /ShipID /RegistrationPort/UNLoCode
IMO0148	Ship registry port, name	The country code is used to find the country name: /ShipID /RegistrationPort/CountryCode Port name: /ShipID /RegistrationPort/Name
IMO0149	Ship security level in a previous port, coded	PortCallList/PortCall/PortSecurityLevel
IMO0150	Ship security measures, coded	/ShipToShipActivityList/ShipToShipActivity/ShipSecurityMeasure/Code
IMO0151	Ship security measures, text	/ShipToShipActivityList/ShipToShipActivity/ShipSecurityMeasure/Description
IMO0153	Ship stay reference number	/JournalNumber
IMO0154	Ship stores article name, text	/ShipStore/StoreItem/Description
IMO0155	Ship stores article name, coded	/ShipStore/StoreItem/Code
IMO0156	Ship stores location onboard, text	/ShipStore/StoreItem/LocationOfStorage
IMO0158	Ship stores quantity onboard	/ShipStore/StoreItem/Measurement/Content From/to IMO0077: /ShipStore/StoreItem/Measurement/UnitCode
IMO0159	Ship stores sequence number	/ShipStore/StoreItem/SequenceNumber
IMO0160	Ship type, coded	/ShipType
IMO0161	Ship-to-ship activity, coded	/ShipToShipActivityList/ShipToShipActivity/Code
IMO0162	Ship-to-ship activity, text	/ShipToShipActivityList/ShipToShipActivity/Activity

Table B.1 *(continued)*

IRN code	Data Element	ISO28005-Mapping
IMO0163	Ship-to-ship activity end date	/ShipToShipActivityList/ShipToShipActivity/ToDateTime
IMO0164	Ship-to-ship activity location, name	When the location is a port (UNLOCODE or name): This is used to find the name of the country based on the code: /ShipToShipActivityList/ShipToShipActivity/Location/CountryCode This is the name of the port, if the UNLOCODE does not exist: /ShipToShipActivityList/ShipToShipActivity/Location/Name This is the UNLOCODE of the Port: /ShipToShipActivityList/ShipToShipActivity/Location/UNLoCode When the location is a position (lat/lon): /ShipToShipActivityList/ShipToShipActivity/Location/Position/Latitude /ShipToShipActivityList/ShipToShipActivity/Location/Position/Longitude
IMO0165	Ship-to-ship activity sequence number	/ShipToShipActivityList/ShipToShipActivity/SequenceNumber
IMO0166	Ship-to-ship activity start date	/ShipToShipActivityList/ShipToShipActivity/FromDateTimed
IMO0167	Ship-to-ship activity location, coded	/ShipToShipActivityList/ShipToShipActivity/Location/CountryCode /ShipToShipActivityList/ShipToShipActivity/Location/UNLoCode
IMO0168	Subsequent port of call, name	/VoyageDescription/PortCall/Port/CountryCode (this is used to find the name of the country based on the code) /VoyageDescription/PortCall/Port/name
IMO0169	Subsequent port of call, coded	/VoyageDescription/PortCall/Port/CountryCode /VoyageDescription/PortCall/Port/UNLoCode
IMO0170	Transport contract number	/CargoData/Consignment/TransportDocumentId
IMO0172	Primary purpose of call, coded	/CallPurpose/CallPurposeCode
IMO0173	Waste estimated amount to be generated	/WasteInformation/WasteDisposalInformation/EstimatedGenerated/Content From/to IMO0077: /WasteInformation/WasteDisposalInformation/EstimatedGenerated/UnitCode
IMO0174	Waste amount to be delivered	/WasteInformation/WasteDisposalInformation/ToBeDelivered/Content From/to IMO0077: /WasteInformation/WasteDisposalInformation/ToBeDelivered/UnitCode
IMO0175	Waste amount retained	/WasteInformation/WasteDisposalInformation/RetainedOnboard/Content From/to IMO0077: /WasteInformation/WasteDisposalInformation/RetainedOnboard/UnitCode

IMO0178	All waste delivery indicator	IF /WasteInformation/[WasteDeliveryStatus="All"] THEN
		Set value to "yes"
		ELSE
		Set value to "no".
		IF IMO0178="yes", THEN
		Set /WasteInformation/[WasteDeliveryStatus="All"]
		ELSE
		"None".

IMO0179	Waste last delivery date	/WasteInformation/LastPortDeliveredDate

Table B.1 *(continued)*

IRN code	Data Element	ISO28005-Mapping
IMO0180	Waste maximum dedicated storage capacity	/WasteInformation/WasteDisposalInformation/MaxStorage/Content From/to IMO0077: /WasteInformation/WasteDisposalInformation/MaxStorage/UnitCode
IMO0181	Waste reception facility point of contact	Concatenation of: /WasteInformation/PointOfContact/Person/FamiliyName /WasteInformation/PointOfContact/Person/MiddleName /WasteInformation/PointOfContact/Person/GivenName
IMO0183	Waste type, coded	/WasteInformation/WasteDisposalInformation/WasteType/Code
IMO0184	Port facility, coded	/PortOfArrival/Location/CountryCode /PortOfArrival/Location/UNLoCode /PortOfArrival/Location/FacilityCode
IMO0185	Port facility, name	Facility name: /PortOfArrival/Location/FacilityName Port name: /PortOfArrival/Location/Name Use the code for country to find the name of the country: /PortOfArriva/Location/CountryCode
IMO0186	Dangerous goods additional information	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/AdditionalInformation
IMO0187	Dangerous goods package type, coded	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DangerousGoodsPackageType
IMO0188	Previous port facility, name	Facility name: /PortCallList/PortCall/Port/FacilityName Port name: /PortCallList/PortCall/Port/Name Use the code for country to find the name of the country: /PortCallList/PortCall/Port/CountryCode
IMO0189	Previous port facility, coded	/PortCallList/PortCall/Port/CountryCode /PortCallList/PortCall/Port/UNLoCode /PortCallList/PortCall/Port/FacilityCode
IMO0190	Waste description	/WasteInformation/WasteDisposalInformation/WasteType/Description
IMO0191	Voyage number	/VoyageNumber
IMO0192	Message type, coded	/EPCMessageHeader/MessageType
IMO0194	Ship-to-ship activity location, latitude	/ShipToShipActivityList/ShipToShipActivity/Location/Position/Latitude
IMO0195	Ship-to-ship activity location, longitude	/ShipToShipActivityList/ShipToShipActivity/Location/Position/Longitude
IMO0196	Remarks	/GeneralRemark
IMO0197	Vehicle identification number (VIN)	/CargoData/Consignment/CargoItem/VehicleIdentificationNumber

Table B.1 *(continued)*

IRN code	Data Element	ISO28005-Mapping
IMO0198	Dangerous Goods Regulation, coded	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/DGClassification

Annex C
(informative)

Example of IMO-ISO Mapping

Figure C.1 shows two examples of how the IMO-ISO mapping for the data elements related to the timing of port arrival and port departure is done. A selection of data elements from the general declaration with corresponding IRN codes are listed in Table C.1 and shown as reporting requirements in the figure. This is only a small selection of the required data elements.

Table C.1 — Mapping to IMO FAL Reference Data Model

IRN Code	Arr/Dep	Description
IMO0111	A	Port of departure (P1)
IMO0065	A	Actual time of departure from P1
IMO0108	A	Port of Arrival (P2)
IMO0064	A	Estimated time of arrival in P2
IMO0111	D	Port of departure (P2)
IMO0066	D	Estimated time of departure from P2
IMO0084	D	Next port of call (P3)

The semantic meaning of the port reported to changes from arrival to departure. Figure C.1 shows the data elements exchanged in conjunction with respectively arrival and departure.

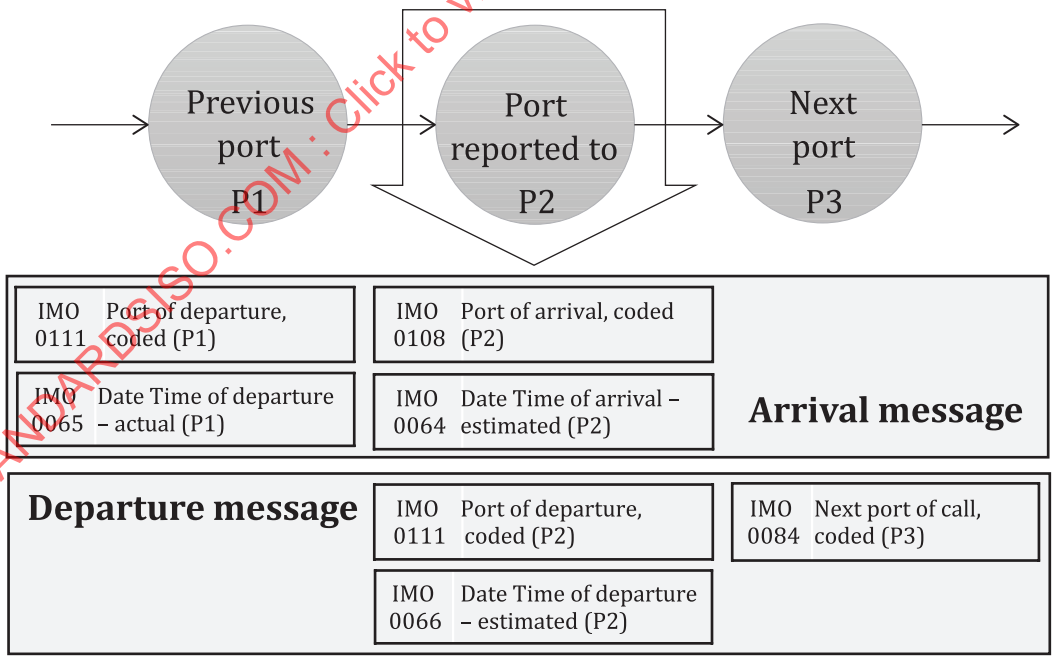

Figure C.1 — Arrival and departure reporting to same port

Annex D
(normative)

Certificate codes

Table D.1 specifies code values that are used to identify a specific certificate type. The list is based on FAL.2/Circ.131. The Gr and No columns give a reference to the numbered group and the listed order of where the certificate was mentioned. Some certificates that are commonly requested and which are not listed in FAL.2/Circ. 131 have been given the group number zero.

Note that not all list order numbers are used as the referenced document also includes other documents that are required to be carried on the ship which are not certificates.

The code OTHER can be used for certificates not listed in this table.

Refer to FAL.2/Circ.131 for the use of these certificates and accurate references to where they are mandated. The following list is normative for certificate codes.

Table D.1 — Certificate code values and reference to FAL.2/Circ. 131

Code	Gr	No	TITLE/DESCRIPTION
CSS	3	4	Cargo Ship Safety Certificate
SCC	3	1	Cargo Ship Safety Construction Certificate
SEC	3	2	Cargo Ship Safety Equipment Certificate
SRC	3	3	Cargo Ship Safety Radio Certificate
OSVCFO	13	3	Certificate of Fitness for Offshore Support Vessels
BCHC	5	1	Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk
LGCC	6	1	Certificate of Fitness for the Carriage of Liquefied Gases in Bulk
CIFBUN	1	63	Certificate of insurance or other financial security in respect of civil liability for bunker oil pollution damage
CLC	3	21	Certificate of insurance or other financial security in respect of civil liability for oil pollution damage
CIFPAX	2	7	Certificate of insurance or other financial security in respect of liability for the death of and personal injury to passengers
CIFWRE	1	64	Certificate of insurance or other financial security in respect of liability for the removal of wrecks
PANDI	0	11	Certificate of insurance P&I
COR	0	2	Certificate of Registry
CASCOMP	3	11	Condition Assessment Scheme (CAS) Statement of Compliance
DIVC	13	4	Diving System Safety Certificate
GAD	3	8	Document of authorization for the carriage of grain and grain loading manual
ISMC	1	34	Document of Compliance (ISM)
IMDG	8	1	Document of compliance with the special requirements for ships carrying dangerous goods (in Packaged or Dry Bulk Form)
DSCCEC	13	6	Dynamically Supported Craft Construction and Equipment Certificate
CLCM	0	4	Engine Class Certificate
ESD	3	9	Enhanced survey report file
GFC	0	6	Gas Free Certificate
HSCS	7	1	High-Speed Craft Safety Certificate

Table D.1 *(continued)*

Code	Gr	No	TITLE/DESCRIPTION
CLCH	0	3	Hull Class Certificate
ILO133	0	9	ILO Convention C. 133 Document of Compliance
ILO92	0	8	ILO Convention C. 92 Document of Compliance
IAPC	1	45	International Air Pollution Prevention Certificate
IAFSC	1	58	International Anti-fouling System Certificate
IBWMC	1	60	International Ballast Water Management Certificate
IBCHC	5	2	International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk
INFC	10	1	International Certificate of Fitness for the Carriage of INF Cargo
ILGCC	6	2	International Certificate of Fitness for the Carriage of Liquefied Gases in Bulk
IEEC	1	46	International Energy Efficiency Certificate
LLC	1	2	International Load Line Certificate or Exception
IOPP	1	38	International Oil Pollution Prevention Certificate
NLS	4	1	International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances in Bulk (NLS Certificate)
ISPP	1	41	International Sewage Pollution Prevention Certificate
ISSC	1	37	International Ship Security Certificate (ISSC) or Interim International Ship Security Certificate
ITC	1	1	International Tonnage Certificate
ITF	0	10	ITF Blue Card (for flags of convenience)
DOH	0	5	Maritime Declaration of Health (if not electronic)
MSM	1	23	Minimum safe manning document
MOUSC	13	7	Mobile Offshore Drilling Unit Safety Certificate
INFCSS	11	2	Nuclear Cargo Ship Safety Certificate
INFPSS	11	2	Nuclear Passenger Ship Safety Certificate
OSVDOC	13	2	Offshore Supply Vessel Document of Compliance
OTHER	0	1	Other certificate or document not mentioned in this list
PSSC	2	1	Passenger Ship Safety Certificate
HSCOP	7	2	Permit to Operate High-Speed Craft
WIGPTO	13	9	Permit to Operate WIG Craft
POLARC	12	1	Polar Ship Certificate
SCCPSC	13	5	Safety Compliance Certificate for Passenger Submersible Craft
SMC	1	33	Safety Management Certificate
DRC	0	7	Ship Sanitation Control Certificate (WHO)
SPSSC	13	1	Special Purpose Ship Safety Certificate
STPSSaC	2	5	Special Trade Passenger Ship Safety Certificate
STPSSpC	2	6	Special Trade Passenger Ship Space Certificate
UPCM	0	12	Universal Postal Convention for mail required document
VDR	1	24	Voyage data recorder system – certificate of compliance
WIGSC	13	8	Wing–in–ground Craft Safety Certificate