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Part 3: Data elements for ship and port operation

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Partie 3: Éléments de données pour l'exploitation des navires et des ports

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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 document 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).

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

A list of all parts in the ISO 28005 series are 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 3:
Data elements for ship and port operation

1 Scope

This document provides technical specifications to facilitate an efficient exchange of electronic information between ships and shore, for coastal transit and port calls, with a specific focus on the operational data exchange. It specifies requirements to enhance the safety, security and efficiency of information exchanges.

This document describes core data elements for use in electronic port clearance (EPC) messages. It does not define any structuring of messages, but rather gives general details on safety-, security- and operation-related maritime information in the context of EPC messages.

Details about message formats and applications are found in ISO 28005-1.

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

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

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

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

UNECE R16 (UNECE Recommendation No. 16), United Nations Code for Trade and Transport Locations (ECE/TRADE/459)

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

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

4 Reference to data types defined in ISO 28005-2:2021

4.1 General

Several XSD [extensible markup language (XML) schema definition] data types defined in ISO 28005-2:2021 have been reproduced in this document. Some of the definitions reproduced from in ISO 28005-2:2021 have been changed in this document. A summary of the changes is listed in Table 1.

4.2 Data types modified from ISO 28005-2:2021

Table 1 lists data types, data elements, and code lists from ISO 28005-2:2021 that have been modified in this document.

Table 1 — Changes to data types from ISO 28005-2:2021

Definitions from ISO 28005-2:2021	Definitions in this document
Epc:InmarsatCallNumberType	epc:SatelliteServiceType
Epc:ShipNameType	epc:ShipIdType
BeamType	epc:ShipParticularsType
DeadWeightType	epc:ShipParticularsType
DoubleBottomContentType	epc:ShipParticularsType
GrossTonnageType	epc:ShipParticularsType
IceClassType	epc:ShipParticularsType
LengthOverallType	epc:ShipParticularsType
NetTonnageType	epc:ShipParticularsType
SummerDraughtType	epc:ShipParticularsType
ShipTypeContentType	epc:ShipParticularsType
ISSCStatus in data type ISSCertificateStatusType	epc:CertificationType.ValidCertificateIndicator and epc:ISSCertificateStatusType.ISSCStatus
Data elements EmbarkationDate and DebarkationDate in PersonOnboardType	Embarkation.DateTime [TimeType = Actual, Planned etc] and Debarkation.DateTime [TimeType = Actual, Planned etc]
Data element IsssuerLocation in CertificateType	CertificateIssueLocationCode and CertificateIssueCountryCode in CertificateType
epc:ContactInfoType	updated version of epc:ContactInfoType
epc:CommunicationNumberType	updated version of epc:CommunicationNumberType
epc:DateTimeType	updated version of epc:DateTimeType
Ship identity and contacts data types	updated versions are used
Cargo data types	updated versions are used
Crew and passenger data	updated versions are used
Class and ship certificates	updated versions are used
Ship particulars types	updated versions are used
Vessel operation data types	updated versions are used
Location Types	updated versions are used
Waste and environmental data types	updated versions are used
Health data types	updated versions are used
epc:ShipClassType	updated versions of epc:ShipClassType and epc: ClassSocietyContentType
Waste and environmental data types	updated versions are used
Ship Particulars Types	updated versions are used
Annex A	Table 2

Table 1 *(continued)*

Definitions from ISO 28005-2:2021	Definitions in this document
Annex B	Annex A
Annex D	code values as defined in the IMO Compendium[30]
Annex E	code values as defined in the IMO Compendium, Annex A Section 9[30]
Annex F	use code values as defined in the IMO Compendium[30] instead.
Annex G	code values as defined in the IMO Compendium[30]
Annex L	code values as defined in the IMO Compendium[30]
Annex P	code values as defined in the IMO Compendium[30]
Annex R	code values as defined in the IMO Compendium[30]
Annex A	Table 2
Annex B	Annex A
Annex D	code values as defined in the IMO Compendium[30]
Annex E	code values as defined in the IMO Compendium Annex A Section 9[30]

5 Relation to the IMO Compendium

The data types defined in this document are a starting point for the implementation of the data elements and the reference model defined in the IMO Compendium on Facilitation and Electronic Business.[30] The mapping between the data elements in this document and the data elements in the IMO Compendium shall be carried out as specified in Annex A. The IMO Compendium[30] is approved by the facilitation committee in IMO (IMO FAL).

This document includes data types for all data elements in the IMO compendium as decided by IMO FAL 47,[31] including data sets for:

— Maritime Declaration of Health[38]

— Just in time concept

— Stowaways

— Ship and company certificates

— Acknowledgment receipt

— Maritime service

— Ship registry and company details

— Inspections

— Port state control (PSC) inspection history data

— Ship reporting systems

— Ballast water arrival reporting

— Waste delivery report

— Advanced passenger information

— Verified gross mass

6 EPC request body

Table 2 lists the data elements in the EPC request body.

Table 2 — EPC request body

Core element	Type	Cardinality	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
BallastWaterArrivalReporting	Epc:BallastWaterManagementType	0..1	Ballast water arrival reporting
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.
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.

Key

* = the maximum number of instances of this data type is unbounded

0..* = there is/are 0, 1 or many instance(s) of this data type

0..1 = there is/are 0 or 1 instance(s) of this data type

Table 2 *(continued)*

Core element	Type	Cardinality	Description
CrewReference	epc:CrewMemberDataType	0..1	Reference to the crew onboard that has authorized a message from the ship.
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.
DepartureDraught	epc:DepartureDraughtType	0..1	Departure draught
DutiableCrewEffects	epc:DutiableCrewEffectType	0..1	List of crew effects that are 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
HasSecurityPlan	epc:HasSecurityPlanType	0..1	Approved security plan
HealthData	epc:HealthDataType	0..1	Health information for the ship
INFClassContent	epc:INFClassContentType	0..1	Irradiated nuclear fuel class
ISSCertificateStatus	epc:ISSCertificateStatusType	0..1	International Ship Security (ISS) Certificate status
LastPortOfCall	epc:LastPortOfCallType	0..1	Last port of call
MaritimeService	Epc:MaritimeServiceType	0..1	Reference to a maritime service related to ServiceName and ServiceCode as given in the EPCMessageHeaderType.
NavigationalStatus	epc:NavigationalStatusContentsType	0..1	Navigational status
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 oil-bulk-ore (OBO)
OtherPersonList	epc:OtherPersonListType	0..1	List of persons onboard that are neither crew nor passengers
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
PilotBoardingPlaceArrival	epc:PilotBoardingPlaceArrivalType	0..1	Time and location for an arrival to a pilot boarding place
PilotBoardingPlaceDeparture	epc:PilotBoardingPlaceDepartureType	0..1	Time and location for a departure from a pilot boarding place
PortCallList	PortCallListType	0..1	Last ten port calls

Key

* = the maximum number of instances of this data type is unbounded

0..* = there is/are 0, 1 or many instance(s) of this data type

0..1 = there is/are 0 or 1 instance(s) of this data type

Table 2 *(continued)*

Core element	Type	Cardinality	Description
PortOfArrival	epc:PortOfArrivalType	0..1	Arrival port and time
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]
PSCInspectionHistory	epc:InspectionType	0..*	List of port inspection information
Radiocommunications	epc:RadiocommunicationsType	0..1	Radiocommunication active
RemarkSRS	epc:SRSRemarksType	0..*	Additional information regarding a ship reporting system
ReportingEvent	epc:VoyageEventType	0..1	This is the location from which a report is given and the time given in coordinated universal time (UTC) when the report is given. The type is changed from LocationCallType to VoyageEventType.
RequestStatus	epc:RequestStatusType	0..1	Status of a request (used by server)
ROBBunkers	epc:ROBBunkersType	0..*	Bunkers remaining onboard
SecurityOtherMattersToReport	SecurityOtherMattersToReportType	0..1	Other security matters to report
ShipBanned	epc:ShipBannedType	0..1	Information related to the banning of a ship as a result of a port state control inspection.
ShipCertificateList	epc:CertificateListType	0..1	List of ship certificates. Name changed from CertificateListType to ShipCertificateListType to distinguish from ship company certificates.
ShipClass	epc:ShipClassType	0..1	Class notation for ship
ShipCompanyInspection	epc:InspectionType	0..1	Report on inspection of the ship's company
ShipCompanyCertificateList	Epc:CertificateListType	0..1	List of certificates for the ship's company
ShipDefects	epc:ShipDefectsType	0..*	Any defects of important ship equipment
ShipID	Epc:ShipIDType	0..1	The set of different identifiers of the ship
ShipInspection	epc:InspectionType	0..*	Reports on inspection of the ship
ShipParticulars	Epc:ShipParticularsType	0..1	Ship particulars
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
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.

Key

* = the maximum number of instances of this data type is unbounded

0..* = there is/are 0, 1 or many instance(s) of this data type

0..1 = there is/are 0 or 1 instance(s) of this data type

Table 2 *(continued)*

Core element	Type	Cardinality	Description
VoyageEventList	epc:VoyageEventListType	0..1	Time and position when entering /exiting from ship reporting or getting to a Pilot-Boarding point..
VoyageNumber	epc:VoyageNumberType	0..1	Voyage identification code
WasteDisposalRequirements	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
Key * = the maximum number of instances of this data type is unbounded 0..* = there is/are 0, 1 or many instance(s) of this data type 0..1 = there is/are 0 or 1 instance(s) of this data type			

7 General data types

7.1 General

This clause contains information on general data types.

7.2 Epc:ContactInfoType – Contact information

7.2.1 Definition

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

7.2.2 Type

```
  <xs:complexType name="ContactInfoType">
   <xs:sequence>
     <xs:element name="Company" type="xs:string" minOccurs="0"/>
     <xs:element name="CompanyId" type="xs:string" minOccurs="0"/>
     <xs:element name="ContactType" type="epc:ContactTypeContentType" 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>
```

7.2.3 Representation

Common information for both persons and companies are addresses 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. CompanyId is the recognized identification number of the company. ContactType is a code specifying the type of contact for dangerous goods. The code values are according to UN/EDIFACT codes 3139 Contact function code.[48]

7.3 epc:CommunicationNumberType – Communication number information

7.3.1 Definition

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

7.3.2 Type

```
<xs:complexType name="CommunicationNumberType">
  <xs:sequence>
    <xs:element name="BusinessTelephone" type="epc:string" minOccurs="0"/>
     <xs:element name="ContactURL" type="epc:anyURI" minOccurs="0" maxOccurs="1"/>
    <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>
```

7.3.3 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 email tag shall be a valid URI with the “mailto:” prefix.

7.4 epc: ContactTypeContentType - Type of contact for dangerous goods

7.4.1 Definition

This data type is used to specify the type of company that is the contact for dangerous goods.

7.4.2 Type

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

7.4.3 Representation

This data type contains the enumated values from UN/EDIFACT codes 3139 Contact function code.

7.5 epc:DateTimeType – DateTime with type

7.5.1 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.

7.5.2 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>
```

7.5.3 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. In addition, an event type can be added, specifying whether the time of event is related to arrival, departure, service start, service end, or if the event is happening at a certain location (at). This type is a generalization of the types ETPType, ATPType, ATAType, ETAType, ATDType and ETDType from ISO 28005-2.

8 Core data types

8.1 General

This clause contains data types that are instantiated as core data elements in EPC-related messages. It is divided into a number of subclauses which contain 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 (see 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 is optional (0..), that it is included exactly once (1:1) or that it is included a number of times (..*).

8.2 Ship identity and contacts data types

8.2.1 epc:SatelliteServiceProviderCodeContentType

8.2.1.1 Definition

This enumeration data type contains a list of mobile satellite service providers used by ships.

8.2.1.2 Type

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

8.2.1.3 Representation

The code list is maintained by IMO and published in the IMO Compendium.[30]

8.2.2 epc: SatelliteServiceType – Satellite service number to the ship

8.2.2.1 Definition

This data type contains satellite service call numbers to a ship.

8.2.2.2 Type

```
<xs:complexType name="SatelliteServiceType">
   <xs:sequence>
```

```
      <xs:element name="Alternative" type="epc:string" minOccurs="0"/>
      <xs:element name="Number" type="epc:string" minOccurs="0"/>
      <xs:element name="SatelliteServiceProviderCode" type="epc:SatelliteServiceProvid
erCodeContentType" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
```

8.2.2.3 Representation

The elements shall be used as follows.

— Number: Satellite service call number. If it is necessary to have the extension code related to the area in which the ship operates, this extension code shall not be included in this number. If no number is available, the string should be empty.

— SatelliteServiceProviderCode: The ships recognized mobile satellite service provider.

— Alternative contact information, e.g. via mobile phone, satellite, very high frequency radio (VHF), high frequency radio (HF) or medium frequency radio (MF).

8.3 Cargo data types

8.3.1 epc:CargoDataType – Detailed description of cargo

8.3.1.1 Definition

The CargoDataType contains the list of consignments of cargo onboard the ship. Each consignment consists of a number of cargo items. Alternatively, the CargoDataType can also 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.

8.3.1.2 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="CargoItem" type="epc:CargoItemType" minOccurs="0" maxOccurs="u
nbounded"/>
     <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" minOc
curs="0"/>
     <xs:element name="NumberOfItems" type="epc:int" minOccurs="0"/>
     <xs:element name="PortOfDischarge" type="epc:PortType" minOccurs="0"/>
     <xs:element name="PortOfLoading" type="epc:PortType" minOccurs="0"/>
     <xs:element name="TransportDocumentId" type="epc:string" minOccurs="0"/>
   </xs:sequence>
  </xs:complexType>

  <xs:complexType name="CargoItemType">
   <xs:sequence>
     <xs:element name="CargoType" type="epc:CargoTypeContentType" minOccurs="0"/>
     <xs:element name="GoodsType" type="epc:GoodsTypeType" minOccurs="0"/>
     <xs:element name="GrossVolume" type="epc:MeasureType" minOccurs="0"/>
```

```
      <xs:element name="GrossWeight" type="epc:MeasureType" minOccurs="0"/>
      <xs:element name="ItemNumber" type="epc:string" minOccurs="0"/>
      <xs:element name="MarksAndNumber" type="epc:string" minOccurs="0"/>
      <xs:element name="NetWeight" type="epc:MeasureType" minOccurs="0"/>
      <xs:element name="NoOfPackages" type="epc:int" minOccurs="0"/>
      <xs:element name="NoOfUnits" type="epc:int" minOccurs="0"/>
      <xs:element name="PackageType" type="epc:PackageTypeContentType" minOccurs="0"/>
      <xs:element name="SealNumber" type="epc:string" minOccurs="0"/>
      <xs:element name="VehicleIdentificationNumber" type="epc:string" minOccurs="0"/>
      <xs:element name="LostDGDetails" type="epc:LostCargoDetailsType" minOccurs="0"/>
      <xs:element name="SpecialCargoDetails" type="epc:SpecialCargoDetailsType" minOcc
urs="0" maxOccurs="unbounded"/>
      <xs:element name="TransportEquipment" type="epc:TransportEquipmentType" minOccur
s="0"
 maxOccurs="unbounded"/>
    </xs:sequence>
  </xs:complexType>

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

  <xs:complexType name="DGSafetyDataSheetType">
    <xs:sequence>
      <xs:element name="AdditionalInformation" type="epc:string" minOccurs="0"/>
      <xs:element name="DGClassification" type="epc:DGClassificationContentType" minOc
curs="0"/>
      <xs:element name="DGContactDetails" type="epc:ContactInfoType" minOccurs="0"/>
      <xs:element name="EmergencyInstruction" type="epc:EmergencyInstructionContentTyp
e" minOccurs="0"/>
      <xs:element name="FlashPoint" type="epc:MeasureType" minOccurs="0"/>
      <xs:element name="MarinePollutantVolume" type="epc:MeasureType" minOccurs="0"/>
      <xs:element name="MARPOLPollutionCode" type="epc:MARPOLPollutionCodeContentType"
 minOccurs="0"/>
      <xs:element name="Mass" type="epc:MeasureType" minOccurs="0"/>
      <xs:element name="PackingGroup" type="epc:PackingGroupCodeContentType" minOccurs
="0"/>
      <xs:element name="ProperShippingName" type="epc:string" minOccurs="1"/>
      <xs:element name="SegregationInformation" type="epc:string" minOccurs="0"/>
      <xs:element name="SubsidiaryRisks" type="epc:UNHazardClassContentType" minOccurs
="0" maxOccurs="unbounded"/>
      <xs:element name="TechnicalSpecification" type="epc:string" minOccurs="0"/>
      <xs:element name="UNClass" type="epc:UNHazardClassContentType" minOccurs="0"/>
      <xs:element name="UNNumber" type="epc:token" minOccurs="0"/>
      <xs:element name="Volume" type="epc:MeasureType" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="LostCargoDetailsType">
    <xs:sequence>
      <xs:element name="CauseOfLoss" type="epc:string" minOccurs="0"/>
      <xs:element name="EstimatedArea" type="epc:string" minOccurs="0"/>
      <xs:element name="EstimatedGoodsLost" type="epc:MeasureType" minOccurs="0"/>
      <xs:element name="EstimatedGoodsLostQuantity" type="epc:MeasureType" minOccurs="
0"/>
      <xs:element name="EstimatedGoodsLostVolume" type="epc:MeasureType" minOccurs="0"
/>
```

```
      <xs:element name="EstimatedGoodsLostWeight" type="epc:MeasureType" minOccurs="0"
/>
      <xs:element name="EstimatedMovement" type="epc:string" minOccurs="0"/>
      <xs:element name="GoodsCondition" type="epc:string" minOccurs="0"/>
      <xs:element name="LossContinuing" type="epc:boolean" minOccurs="0"/>
      <xs:element name="LossDateTime" type="epc:dateTime" minOccurs="0"/>
      <xs:element name="LossRemark" type="epc:string" minOccurs="0"/>
      <xs:element name="LostGoodsStatus" type="epc:LostGoodsStatusContentType" minOccu
rs="0"/>
      <xs:element name="LossPosition" type="epc:PositionType" minOccurs="0" maxOccurs=
"unbounded"/>
    </xs:sequence>
  </xs:complexType>

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

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

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

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

  <xs:complexType name="TransportEquipmentType">
   <xs:sequence>
     <xs:element name="BookingReferenceNumber" type="epc:string" minOccurs="0"/>
     <xs:element name="EquipmentTypeAndSize" type="epc:EquipmentTypeAndSizeContentTyp
e" minOccurs="0"/>
     <xs:element name="MarksAndNumbers" type="epc:string" minOccurs="0"/>
     <xs:element name="OnboardLocation" type="epc:CargoLocationType" minOccurs="0"/>
     <xs:element name="SealIdentificationNumber" type="epc:string" minOccurs="0" maxO
ccurs="unbounded"/>
     <xs:element name="VerifiedGrossMass" type="epc:VerifiedGrossMassType" 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="Description" type="epc:string" minOccurs="0"/>
<xs:element name="HSCode" type="epc:token"/>
  </xs:sequence>
</xs:complexType>

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

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

8.3.1.3 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 can in principle consist of several units, e.g. a number of boxes which in turn can contain a number of packages.

Each consignment contains the following information:

— ConsignmentNumber: 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: a reference number to identify a document evidencing the transport contract (e.g. bill of lading).

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

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

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

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

— NoOfUnits: 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 as specifed in UNECE Recommendation 21:1996, Annex I. An informative overview of the cargo type codes is given in ISO 28005-2:2021, Annex J.

— Consignee: This field is required by some authorities, although it is not required by the FAL Convention.[14] It is also required for certain types of dangerous and polluting cargo.

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

— LostDGDetails: the details about dangerous cargo that are lost during a voyage. This is related to the reporting requirements defined in A.851 for MRS (Maritime Reporting Scheme).[24]

— NetWeight: Net weight of the goods excluding their respective 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 paragraph below for a description of the fields of "DangerousGoodsPackageType".

— 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.[41] 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 or organization that provides information about the cargo e.g. the manufacturer.

— Consignor: the contact information for the consignor or shipper.

— Packer: the contact information for the packer of the goods, if different from the consignor.

— DGSafetyDataSheet: 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 a port other than the PortOfLoading, e.g. after a trans-shipment.

DGSafetyDatSheetType is the data sheet for dangerous goods safety. It 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,[18] the product name for goods under IBC Code[16] and IGC Code[43], the bulk cargo shipping name for goods under IMSBC Code,[16] or the name of oil for goods under the MARPOL Convention, Annex I.[41]

— 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 the IMDG Code, the IBC Code, IGC Code, the IMSBC Code, or the MARPOL Convention, Annex I.

— UNNumber: 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.

— DGContactDetails: the contact details of the organization from which information about the dangerous goods can be obtained.

— DGClassification: the classification used for the dangerous goods. The code represents the regulatory framework used for classification of dangerous goods, i.e. IMDG Code, IGC Code, IBC Code, IMSBC Code or MARPOL, Annex I.

— EmergencyInstructions: Additional instructions on emergency handling of this item. It comprises two 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 follow IMO Assembly resolution A.852(20).[42]

— 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 IMDG Code,[18] expressed in degrees Celsius or Fahrenheit.

— MarinePollutantVolume: the volume of the referenced marine pollutant properties for the referenced dangerous goods.

— 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[30] for this cargo as defined in IMDG.[18] It specifies the hazard code for the actual substance. Subsidiary hazard codes can 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,[24] including the following:

— 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 have been lost over board.

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

— LossDateTime: the date and time cargo were lost.

— LossRemark: a statement of any other information relevant to the cargo loss.

— LostGoodsStatus: an enumeration of type LostGoodsStatusContentType indicating whether the lost goods are still floating or if they have sunk.

— EstimatedGoodsLostVolume: an estimation of the amount or volume of goods that have been lost over board.

— EstimatedGoodsLostWeight: the estimated weight of the referenced cargo lost per dangerous goods or marine pollutants name.

— EstimatedGoodsLostQuantity: the estimated quantity (number of packages) of the referenced dangerous goods lost per dangerous goods or marine pollutant name.

— LossPosition: the latitude and longitude (geographical coordinate) of the location where cargo was lost overboard.

TransportEquipmentType is used to identify the transport equipment on which the cargo is placed, where relevant, including:

— 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.

— SealIdentificationNumber: the identification number of the seal affixed to the container.

— OnboardLocation: the onboard location of the cargo.

— EquipmentTypeAndSize: a code specifying the characteristics, i.e. size and type of transport equipment.

— VerifiedGrossMass: a reference to the information needed for the verified gross mass.

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 clauses 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 in accordance with ISO 9711-1. This includes leading zeros where necessary.

  EXAMPLE 1 “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. FNO2

  EXAMPLE 2 “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.

  EXAMPLE 3 “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” – portside 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 follows the WCO HS (WCO Harmonized System):[44]

— HSCode is a WCO HS compliant code. This document requires the use of a period (.) between the four first digits (heading) and the next two digits (sub-heading). Additional code digits can be added after the sub-heading after a new period (.). The sub-heading 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 specified in UNECE Recommendation 21:1996, Annexes V and VI (UNECE R21).

EquipmentTypeAndSizeContentType shall contain a code list for specifying the characteristics, i.e. size and type of transport equipment. The code list shall be in accordance with ISO 6346. Examples of some of the codes are given in ISO 28005-2:2021, Annex J.

There is some redundancy in data elements. In case redundancy occurs, the top-most element should be used 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.

8.3.2 epc:CargoOverviewType – Brief description of onboard cargo

8.3.2.1 Definition

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

8.3.2.2 Type

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

8.3.2.3 Representation

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

8.4 Crew and passenger data

8.4.1 Class diagram

This subclause contains data types with information related to the crew and passengers. This includes data types to count persons on board, corresponding to the number of crews and passengers listed in the respective lists. The crew and passenger data types are specializations of the person onboard type, where the crew data type also has an additional element specifying crew duty. The person onboard data type also links to health information, if health issues have been reported during the voyage. A reference code is also associated with each person onboard, which is used in various other data items that refer to these persons.

8.4.2 Non-core data types

8.4.2.1 epc:PersonOnboardType – Information about a person on board

8.4.2.1.1 Definition

PersonOnboardType covers information needed for all persons on board, including passengers, crew, and other persons. The actual information requirements normally vary between passengers, crew and other persons.

8.4.2.1.2 Type

```
<xs:complexType name="PersonOnboardType">
   <xs:sequence>
     <xs:element name="BerthOfBoarding" type="epc:LocationType" minOccurs="0"/>
     <xs:element name="CountryOfBirth" type="epc:CountryCodeContentType"
 minOccurs="0"/>
     <xs:element name="CountryOfResidence" type="epc:CountryCodeContentType" minOccur
s="0"/>
     <xs:element name="DateOfBirth" type="epc:date" minOccurs="0"/>
     <xs:element name="Gender" type="epc:GenderContentType"  minOccurs="0"/>
     <xs:element name="Nationality" type="epc:CountryCodeContentType" minOccurs="0"/>
     <xs:element name="PersonOnboardIndicator" type="epc:boolean" minOccurs="0"/>
     <xs:element name="PersonReference" type="epc:PersonReferenceType" 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="CommunicationNumber" type="epc:CommunicationNumberType" minOcc
urs="0"/>
      <xs:element name="Embarkation" type="epc:LocationCallType" minOccurs="0"/>
      <xs:element name="Debarkation" type="epc:LocationCallType" minOccurs="0"/>
      <xs:element name="PlannedDebarkation" type="epc:LocationCallType" minOccurs="0"/
>
      <xs:element name="Name" type="epc:NameType" minOccurs="1"/>
      <xs:element name="Booking" type="epc:PersonBookingType" minOccurs="0"/>
      <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" maxO
ccurs="unbounded"/>
      <xs:element name="HomeAddress" type="epc:PostalAddressType" minOccurs="0"/>
      <xs:element name="VisitAddress" type="epc:PostalAddressType" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
```

8.4.2.1.3 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 document.

— DateOfBirth: date of birth as a date type.

— PersonOnboardIndicator: a “yes/no” indicator whether the reported person is onboard at the time of reporting.

— 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: this element 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.

— CommunicationNumber: the contact details for the referenced person, including business telephone, mobile telephone, home telephone, telefax, email and URL.

— CountryOfBirth: country code for country of birth.

— Nationality: two-letter country code for nationality.

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

— Gender: the gender of the person.

— Embarkation: port and time where the person embarked or plans to embark the ship. 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 who, for some reason, were transferred to the ship from another ship.

— Debarkation: the port where and the time when the person debarked or plans to debark the ship.

— BerthOfBoarding: the name of the berth at which the referenced stowaway boarded the ship.

— Name: the name of the person.

— Booking: information about the passenger's travel booking.

— PersonHealthParticulars: health information, if person is listed in the WHOs Maritime Declaration of Health (see 8.11).[38]

— PersonIdDocument: the reference to the person's identification document.

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

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

— HomeAddress: the home address for this person.

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

8.4.3 epc:OtherPersonListType – Information about other persons on board

8.4.3.1 Definition

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

8.4.3.2 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="OtherPersonStatus" type="epc:OtherPersonStatusContentType" min
Occurs="0"/>
  <xs:element name="StatusText" type="epc:string" minOccurs="0"/>
  <xs:element name="StowawayDetails" type="epc:StowawayDetailsType" 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>
```

8.4.3.3 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 a coded or a textual value. A textual explanation should be used if the code "Other" is used. For stowaways, more details are given in the element StowawayDetails as described in 8.4.5.

8.4.4 epc:PersonsOnboardNumberType – Number of persons onboard

8.4.4.1 Definition

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

8.4.4.2 Type

```
<xs:complexType name="PersonsOnboardNumberType">
  <xs:sequence>
     <xs:element name="Crew" type="epc:int" minOccurs="0" />
     <xs:element name="NumberOfMedicallyTrainedPersonnelOnboard" type="epc:int" minOc
curs="1"/>
     <xs:element name="NumberOfPersonnelWithoutMedicalTrainingOnboard" type="epc:int"
 minOccurs="1"/>
     <xs:element name="NumberOfPersonsOnboard" type="epc:int" minOccurs="0" />
     <xs:element name="NumberOfProfessionalMedicalPersonnelOnboard" type="epc:int" mi
nOccurs="0" />
    <xs:element name="Passengers" type="epc:int" minOccurs="0" />
  </xs:sequence>
</xs:complexType>
```

8.4.4.3 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.

— NumberOfMedicallyTrainedPersonnelOnboard: this is the number of personnel with medical training on board.

— NumberOfPersonnelWithoutMedicalTrainingOnboard: this is the number of personnel without medical training but engaged in administrative, caring or other medical tasks onboard.

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

— NumberOfProfessionalMedicalPersonnelOnboard: this is the number of personnel with medical education (e.g. doctors, nurses) on board.

— 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.

8.4.5 epc: StowawayDetailsType – Details about stowaways found onboard

8.4.5.1 Definition

This data type is used to specify details about a stowaway found onboard.

8.4.5.2 Type

```
  <xs:complexType name="StowawayDetailsType">
   <xs:sequence>
     <xs:element name="CareProvidedToTheStowaway" type="epc:string" minOccurs="0"/>
     <xs:element name="ClaimedNationality" type="epc:CountryCodeContentType" minOccur
s="0"/>
     <xs:element name="FirstReadingLanguage" type="epc:LanguageContentType" minOccurs
="0"/>
     <xs:element name="FirstSpokenLanguage" type="epc:LanguageContentType" minOccurs=
"0"/>
     <xs:element name="FirstWrittenLanguage" type="epc:LanguageContentType" minOccurs
="0"/>
     <xs:element name="IntendedFinalDestinationName" type="epc:string" minOccurs="0"/
>
     <xs:element name="InterviewDate" type="epc:date" minOccurs="0" maxOccurs="unboun
ded"/>
     <xs:element name="MasterStatement" type="epc:string" minOccurs="0"/>
```

```
      <xs:element name="MethodOfBoarding" type="epc:string" minOccurs="0"/>
      <xs:element name="NameByWhichKnown" type="epc:string" minOccurs="0"/>
      <xs:element name="OtherReadingLanguage" type="epc:LanguageContentType" minOccurs
="0" maxOccurs="unbounded"/>
      <xs:element name="OtherSpokenLanguage" type="epc:LanguageContentType" minOccurs=
"0" maxOccurs="unbounded"/>
      <xs:element name="OtherWrittenLanguage" Type="epc:LanguageContentType" minOccurs
="0" maxOccurs="unbounded"/>
      <xs:element name="Photograph" type="epc:anyURI" minOccurs="0" maxOccurs="unbound
ed"/>
      <xs:element name="PhysicalDescription" type="epc:string" minOccurs="0"/>
      <xs:element name="Possessions" type="epc:string" minOccurs="0"/>
      <xs:element name="StatedReasonsForBoardingShip" type="epc:string" minOccurs="0"/
>
      <xs:element name="Statement" type="epc:string" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
```

8.4.5.3 Representation

StowawayDetailsType contains the following information:

— CareProvidedToTheStowaway: care provided to the stowaway (e.g. first aid, clothing, food).

— IntendedFinalDestinationName: the name of the final destination that the stowaway intended to go to.

— InterviewDate: date of interview of the stowaway.

— MasterStatement: statement made by the Master (including any observations on the credibility of the information provided by the stowaway).

— MethodOfBoarding: method of boarding, including other persons involved (e.g. crew, port workers, etc.) and whether the stowaway was secreted in the cargo or container, or hidden in the ship.

— NameByWhichKnown: the name of the referenced stowaway, by which he or she is known.

— PhysicalDescription: general physical description of the stowaway.

— Possessions: inventory of the stowaway's possessions.

— StatedReasonsForBoardingShip: reasons stated by the stowaway for boarding the ship. If the stowaway declares themselves to be a refugee or an asylum seeker, this information shall be treated as confidential to the extent necessary to the security of the stowaway.

— Statement: statement made by the stowaway.

— ClaimedNationality: a code representing the nationality claimed by the stowaway.

— Photograph: photograph of the stowaway.

— FirstSpokenLanguage: a code representing the referenced stowaway's first spoken language.

— FirstWrittenLanguage: a code representing the referenced stowaway's first written language.

— FirstReadingLanguage: a code representing the referenced stowaway's first reading language.

— OtherSpokenLanguage: a code representing another language spoken by the referenced stowaway.

— OtherWrittenLanguage: a code representing another language written by the referenced stowaway.

— OtherReadingLanguage: a code representing another language read by the referenced stowaway.

8.4.6 LanguageContentType

8.4.6.1 Definition

This enumeration contains values for different languages according to set 1 as specified in ISO 639.

8.4.6.2 Type

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

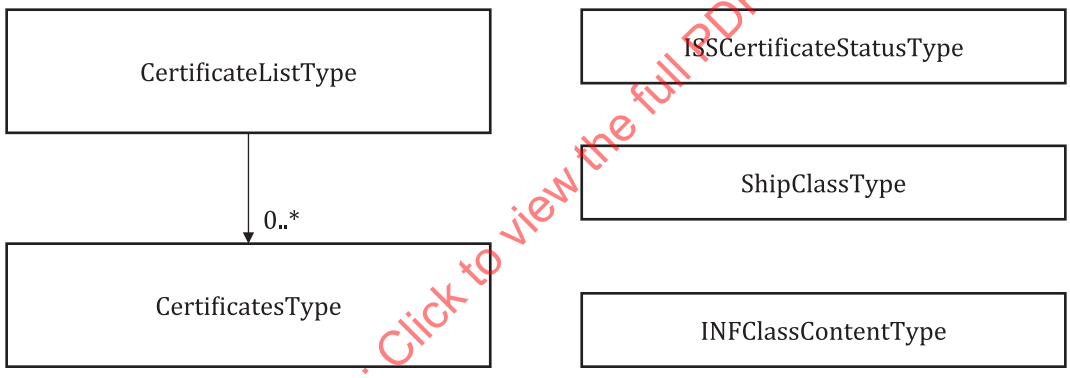
8.4.6.3 Representation

The code list is as maintained by set 1 as specified in ISO 639.

8.5 Class and ship certificates

8.5.1 Class diagram

This subclause defines data types that represent the ship's class approval status, its certificates and related ship type information. See Figure 1 for the class diagram.



Key

0..* there is/are 0, 1 or many instances of this data type

Figure 1 — Class and ship certificates

8.5.2 epc:CertificateType – Certificate description

8.5.2.1 Definition

This data type is used to give details about a specific certificate. This can be ship certificates or certificates for the ship company. The code lists releated to certificates are maintained by IACS and IMO, as described in the IMO Compendium.[25][30]

8.5.2.2 Type

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

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

```
  </xs:simpleType>

  <xs:simpleType name="CertificateValidityTypeContentType">
     <xs:restriction base="xs:token">
        <xs:length value="3"/>
     </xs:restriction>
  </xs:simpleType>

  <xs:simpleType name="CompanyISMcertificateShipTypeContentType">
     <xs:restriction base="xs:token">
        <xs:length value="3"/>
     </xs:restriction>
  </xs:simpleType>

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


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


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

  <xs:complexType name="CertificateType">
   <xs:sequence>
     <xs:element name="AcronymCode" type="epc:CertificateAcronymCodeContentType"
minOccurs="0"/>
     <xs:element name="ActiveCertificateSequenceNumber" type="epc:int" minOccurs="0"/>
     <xs:element name="Category" type="epc:CertificateCategoryCodeContentType" minOccurs="0"/>
     <xs:element name="CertificateFlagStateIssuerName" type="epc:string" minOccurs="0"/>
     <xs:element name="CertificateIssueCountryCode" type="epc:CountryCodeContentType"
minOccurs="0"/>
     <xs:element name="CertificateIssueLocationCode" type="epc:UNLoCodeContentType"
minOccurs="0"/>
     <xs:element name="CertificateNumber" type="epc:string" minOccurs="0"/>
     <xs:element name="CertificateSpecialCondition" type="epc:string" minOccurs="0"/>
     <xs:element name="CertificateStatus" type="epc:CertificateStatusContentType"
minOccurs="0"/>
     <xs:element name="CertificateStatusDate" type="epc:date" minOccurs="0"/>
     <xs:element name="CertificateValidityType" type="epc:CertificateValidityTypeContentType"
minOccurs="0"/>
     <xs:element name="Code" type="epc:CertificateCodeContentType" minOccurs="0"/>
     <xs:element name="Comment" type="epc:string" minOccurs="0"/>
     <xs:element name="CompanyISMcertificateShipType" type="epc:CompanyISMcertificateShipTypeC
ontentType" 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="IssuerCode" type="epc:ClassSocietyContentType" minOccurs="0"/>
     <xs:element name="IssuerType" type="epc:CertificateIssuerTypeContentType" 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="ValidCertificateIndicator" type="epc:boolean" minOccurs="0"/>
     <xs:element name="Issuer" type="epc:OrganisationType" minOccurs="0">
   </xs:sequence>
  </xs:complexType>
```

8.5.2.3 Representation

CertificateCodeContentType contains the codes as described by the IMO Compendium.[30]

CertificateStatusContentType specifies the status of the certificate. The code list is maintained by IACS, and contains the values as V (valid), S (suspended), W (withdrawn) and E (expired).[30]

CertificateValidititytypeContentType contains the code list according to IACS REC 75, Table A4.[33]

CertificateIssuerTypeContentType contains the code list for the type of organization that has issued the certificate. This code list is maintained by IMO in the IMO Compendium.[30]

CompanyISMcertificateShipTypeContentType contains the code list for company ISM certificate ship types. The code list is maintained by IMO in the IMO Compendium, Annex 4 Section 10.[25][30]

The elements of CertificateType are as follows:

— ActiveCertificateSequenceNumber: a number assigned to the active certificate if there is more than one certificate of the same type. This number is defined by the certificate issuer.

— CertificateFlagStateIssuerName: name of the entity within the flag state authorized to issue the certificate.

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

— CertificateSpecialCondition: this indicates the provisions covered by the certificate for which an exemption or special condition has been issued, if any.

— CertificateStatusDate: date when the current status has become effective.

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

— IssueDate, ExpiryDate, ExtendedUntil and LastEndorsementDate: these dates apply to the certificate's validity.

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

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

— ValidCertificateIndicator: a "yes/no" indicator whether the ship has a valid certificate of the indicated type.

— AcronymCode: an acronym representing the certificate type. The code list is maintained by IACS as described in IACS REC 75, Table A4.[33]

— Category: certificate categories are defined dependent on the status of the referred regulation and the authorization of the issuing organization. The code list is maintained by IACS.[30]

— Code: this code represents the certificate type as specified in UN/CEFACT code list 1001 document name code.

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

— CertificateStatus: this element shall contain a code that represents the status of the certificate.

— CertificateValidityType: a code to indicate the type of validity of the certificate. The code list is maintained by IACS according to IACS REC 75, Table A4.[33]

— IssuerCode: the identifier representing the body/organization that issued the certificate (in case it is a RO/RSO/Class).

— CompanyISMcertificateShipType: ship type(s) authorized under the company ISM certificate.

— CertificateIssueCountryCode: the code representing the country where the certificate was issued.

— 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.

— CertificateIssueLocationCode: the code representing the location where the certificate was issued.

8.5.3 epc:ISSCertificateStatusType – Security certificate information

8.5.3.1 Definition

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

8.5.3.2 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="ISSCertificateStatusReasonNotValidCode" type="epc:ISSCertificate
StatusReasonNotValidCodeContentType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

8.5.3.3 Representation

An International Ship Security Certificate (ISSC) is issued to a ship to verify that the ship complies with the maritime security provisions of SOLAS chapter XI-2 and part A of the ISPS (International Ship and Port Facility Security) Code. ISSCertificateStatusType contains the status of the ship's International Ship Security (ISS) Certificate including the following elements:

— ISSCertificateStatusReasonNotValid: the explanation of why the ship is not provided with a valid ISS certificate of the actual type or not.

— ISSCertificateStatusReasonNotValidCode: a coded explanation of why the ship is not provided with a valid ISS certificate of the actual type or not.

For the ISSC, the ISSCStatus is replaced by CertificationType.ValidCertificateIndicator.

8.5.4 epc:ShipClassType – Class notation for ship

8.5.4.1 Definition

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

8.5.4.2 Type

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

```
<xs:simpleType name="ShipClassStatusContentType">
 <xs:restriction base="xs:token">
   <xs:length value="2"/>
   <xs:enumeration value="V"/>
   <xs:enumeration value="S"/>
   <xs:enumeration value="W"/>
 </xs:restriction>
</xs:simpleType>
```

8.5.4.3 Representation

The following attributes are defined:

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

— SocietyName is the printable name of the classification society.

— SocietyCode is a code representing the classification society currently having the ship in class. The code list used by this data element is maintained by IMO as described in the IMO Compendium, Annex A Section 9.[30] The code list is represented in the enumerated type ClassSocietyContentType.

— Country is the country where the society is registered.

— ShipClassStatus is a code representing the status of class certificate (referring to the class rules) for the ship. The code list is represented in type ShipClassStatusContentType. The code list is maintained by IACS.[30]

8.5.5 Epc: ClassSocietyContentType – Enumeration type for RO/RSO/class

8.5.5.1 Definition

This enumerated type contains the codes for class societies as defined by IMO in the GISIS Recognized Organizations module.[33]

8.5.5.2 Type

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

8.5.5.3 Representation

The code list for the enumeration type ClassSocietyContentType is maintained by IMO as described in IMO Compendium Annex 4, Section 9.[30]

8.6 Ship particulars types

8.6.1 General

These data items contain static information about the physical characteristics of the ship. For semi-dynamic information elements, such as draught and air-draught, see 8.7.

8.6.2 Epc:ShipParticularsType – Ship particulars

8.6.2.1 Definition

This type contains the collection of information on ship particulars.

8.6.2.2 Type

```
<xs:complexType name="ShipParticularsType">
   <xs:sequence>
     <xs:element name="Beam" type="epc:BeamType" minOccurs="0"/>
     <xs:element name="DeadWeight" type="epc:DeadWeightType" minOccurs="0"/>
     <xs:element name="DoubleBottom" type="epc:DoubleBottomContentType" minOccurs="0"
/>
     <xs:element name="GrossTonnage" type="epc:GrossTonnageType" minOccurs="0"/>
     <xs:element name="LengthOverall" type="epc:LengthOverallType" minOccurs="0"/>
     <xs:element name="MaxDeadWeight" type="epc:DeadWeightType" minOccurs="0"/>
     <xs:element name="NetTonnage" type="epc:NetTonnageType" minOccurs="0"/>
     <xs:element name="ShipType" type="epc:ShipTypeContentType" minOccurs="0"/>
     <xs:element name="SummerDraught" type="epc:SummerDraughtType" minOccurs="0"/>
     <xs:element name="TotalBallastWaterCapacity" type="epc:TotalBallastWaterCapacity
Type" minOccurs="0"/>
     <xs:element name="TotalNumberOfBallastTanksOnBoard" type="epc:TotalNumberOfBalla
stTanksOnBoardType" minOccurs="0"/>
     <xs:element name="IceClass" type="epc:IceClassType" minOccurs="0"/>
     <xs:element name="SatelliteService" type="epc:SatelliteServiceType" minOccurs="0
" maxOccurs="unbounded"/>
     <xs:element name="ShipClass" type="epc:ShipClassType" minOccurs="0" maxOccurs="u
nbounded"/>
     <xs:element name="Registry" type="epc:ShipRegistryType" minOccurs="0"/>
     </xs:sequence>
  </xs:complexType>
```

8.6.2.3 Representation

This type is used to make the data model more readable to humans by collecting all information related to ship particulars in a common type. This information includes:

— Beam: 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.

— MaxDeadWeight: the difference in tonnes between the displacement of a ship in water of a specific gravity of 1,025 at the draught and the lightweight of the ship.

— DeadWeight: dead weight, measured in metric tonnes.

— DoubleBottom: possible values for double bottoms or hulls. It is normally only used for tankers.

— GrossTonnage: the gross tonnage shown on the ship's International Tonnage Certificate or other document issued by the flag state or recognized organization. An International Tonnage Certificate shows the ship's gross and net tonnages according to the International Convention on Tonnage Measurement of Ships.

— IceClass: ice class codes for the ship.

— LengthOverall: 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.

— NetTonnage: the net tonnage as defined by The International Convention on Tonnage Measurement of Ships[23].

— SatelliteService: mobile satellite service number and provider.

— ShipClass: the details about the class society that has classified the ship.

— Registry: this is the details of the registry of the ship,

— ShipType: the ship type as defined in UNECE R28.

— SummerDraught: worst-case loaded draught for the ship.

— TotalBallastWaterCapacity: maximum ballast water capacity on board including sediments in cubic metres (m^3).

— TotalNumberOfBallastTanksOnboard: total number of ballast tanks and holds on board certified to carry ballast water.

8.6.3 epc:ShipRegistryType – Ship registry details

8.6.3.1 Definition

This type contains the information related to a ship's registry.

8.6.3.2 Type

```
  <xs:complexType name="ShipRegistryType">
   <xs:sequence>
     <xs:element name="ShipBuildingContractDate" type="epc:date" minOccurs="0"/>
     <xs:element name="ShipClassEntryDate" type="epc:date" minOccurs="0"/>
     <xs:element name="ShipClassNotation" type="epc:string"/>
     <xs:element name="ShipDeliveryDate" type="epc:date" minOccurs="0"/>
     <xs:element name="ShipIdentifierAssignedByClassificationSociety" type="epc:stri
ng" minOccurs="0"/>
     <xs:element name="ShipInClassIndicator" type="epc:boolean" minOccurs="0"/>
     <xs:element name="ShipKeelLayingDate" type="epc:date" minOccurs="0"/>
     <xs:element name="ShipResponsibilityOrganizationType" type="epc:ShipResponsibili
tyOrganizationTypeContentCode" minOccurs="0"/>
   </xs:sequence>
  </xs:complexType>


<xs:simpleType name="ShipResponsibilityOrganizationTypeContentCode">
   <xs:restriction base="xs:token">
     <xs:length value="2"/>
     <xs:enumeration value="C"/>
     <xs:enumeration value="N"/>
     <xs:enumeration value="O"/>
     <xs:enumeration value="X"/>
   </xs:restriction>
  </xs:simpleType>
```

8.6.3.3 Representation

— ShipBuildingContractDate: this is the date when the building contract is placed between ship builder and ship owner.

— ShipClassEntryDate: this is the date of entry of the ship into the class of the classification society.

— ShipClassNotation: this is the class notation(s) assigned by the classification society to the ship.

— ShipDeliveryDate: this is the date of delivery of the ship from the ship builder to the ship owner.

— ShipIdentifierAssignedByClassificationSociety: this is the identifier assigned to the ship by the classification society.

— ShipInClassIndicator: this is a “yes/no” indicator of whether the ship is in class of the classification society.

— ShipKeelLayingDate: this is the date when the keel was laid, or when the ship was at similar stage of construction.

— ShipResponsibilityOrganizationType: this is a code representing the type of organization within a member state that has the responsibility of the ship. The code list is represented in the enumerated type ShipResponsibilityOrganizationTypeContentCode. This code list is maintained by IACS.[30]

8.6.4 epc:DeadWeightType – Dead weight

8.6.4.1 Definition

This is the dead weight (DWT) of a ship as the difference in tonnes between the displacement of the ship in water of a specific gravity of 1,025 at the actual draught and the lightweight of the ship.

8.6.4.2 Type

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

8.6.4.3 Representation

The dead weight, measured in metric tonnes.

8.6.5 epc:GrossTonnageType – Gross tonnage

8.6.5.1 Definition

This is the gross tonnage as defined by the International Convention on Tonnage Measurement of Ships[23] or another document issued by the flag state or recognized organization.

8.6.5.2 Type

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

8.6.5.3 Representation

The gross tonnage, as defined in the International Convention on Tonnage Measurement of Ships.

8.6.6 epc: SRSRemarksType – Remarks for ship reporting systems

8.6.6.1 Definition

This is a data type containing any other information added to the report sent to the Ship Reporting System, including brief details of incidents and of other ships involved either in incident, assistance or salvage.

8.6.6.2 Type

```
<xs:complexType name="SRSRemarksType">
  <xs:sequence>
   <xs:element name="Comment" type="epc:string" minOccurs="0"/>
     <xs:element name="RemarksCode" type="epc:RemarksCodeContentType" minOccurs="0"/>
   </xs:sequence>
</xs:complexType>

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

8.6.6.3 Representation

This data type contains a free text string in the comment, in addition to the type of the remarks. The codes for the remark types are maintained by IMO, and includes values such as Assistance (AS), Incident (IN), Miscellaneous (MI), Other (OT), Particulars (PA), and Salvage (SA).[30]

8.7 Vessel operation data types

8.7.1 General

This subclause builds upon ISO 28005-2:2021, regarding the dynamic data items related to ship operation, including draughts, arrival times and voyage itineraries.

8.7.2 epc: ShipStatusType – Ship status information

8.7.2.1 Definition

This data item gives ship navigational status during a voyage. This data element is mainly intended for reporting relative to IMO A.851.[24]

8.7.2.2 Type

```
  <xs:complexType name="ShipStatusType">
   <xs:sequence>
     <xs:element name="AverageSpeed" type="epc:decimal" minOccurs="0"/>
     <xs:element name="Course" type="epc:decimal" minOccurs="0"/>
     <xs:element name="NavigationalStatus" type="epc:NavigationalStatusContentType" m
inOccurs="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:sequence>
  </xs:complexType>
```

8.7.2.3 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 a decimal degree angle in the range of 0 to 360 degrees, inclusive.

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

— PresentDraught: this is the maximum ship present static draught in metres and centimetres, at the time of reporting.

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

— Speed: speed over ground in decimal knots.

8.7.3 epc:WeatherInformationType – Weather information as observed

8.7.3.1 Definition

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

8.7.3.2 Type

```
<xs:complexType name="WeatherInformationType">
  <xs:sequence>
   <xs:element name="PrecipitationCoded" type="epc:string" minOccurs="0
   <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="VisibilityCoded" type="epc:string" minOccurs="0"/>"/>
   <xs:element name="WindDirection" type="epc:int" minOccurs="0" />
   <xs:element name="WindDirectionCoded" type="epc:string" minOccurs="0"/>
   <xs:element name="WindForce" type="epc:int" minOccurs="0" />
   <xs:element name="WindSpeedCoded" type="epc:string"/>
  </xs:sequence>
</xs:complexType>
```

8.7.3.3 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: a code indicating the state of the sea by significant wave height. The code values are as given in code table 3700 in WMO 306 Vol I.1[35] (0 to 9, inclusive). The state of the sea is the state of agitation of the sea resulting from various factors such as wind, swell, currents, angle between swell and wind.

— SeaStateDirection: the compass direction in true degrees (0 to 360 degrees inclusive), from where the sea state is coming.

— Swell: swell in Douglas Scale, 0 to 9 inclusive.

— SwellDirection: direction in true degrees, from 0 to 360 degrees inclusive.

— WindForce: wind strength in Beaufort scale, from 0 to 12, inclusive.

— WindDirection: the compass direction in true degrees, (0 to 360 degrees inclusive), from where the wind is coming.

— WindSpeedCoded: a code indicating the wind speed. The wind speed is coded according to Code Table 1855 (WMO 306 Vol I.1[35]). If the wind speed is 99 units or more, special coding is done according to WMO 306 Vol I.1, Regulation 12.2.2.3.3.[35] The unit is either metres per second or knots, according to WMO 306 Vol I.1.[35]

— WindDirectionCoded: this is a code indicating the true direction, in tens of degrees, from which wind is blowing (or will blow). The wind direction is coded according to WMO 306 Vol I.1, Code Table 0877.[35] The direction is given according to the direction in two figures in WMO 306 Vol I.1.[35]

— VisibilityCoded: this is a code indicating the horizontal visibility at surface or the visibility towards the sea. The visibility is coded according to WMO 306 Vol I.1, code table 4377.[35] The visibility is given in kilometres.

— PrecipitationCoded: this is a code indicating the amount of precipitation which has fallen during the period preceding the time of observation. The precipitation is coded according to code tables 3590 and 4019 in WMO 306 Vol I.1.[35] The value is given in millimetres.

8.8 Location types

8.8.1 General

The location is specified using the LocationType, and are given in various ways:

— Position: normally specified as latitude/longitude (LAT/LON) position.

— Waypoint: a position with an optional track type leading up to the waypoint. Waypoints are 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 identified as a position, name or code, e.g. with a global location number (GLN) code.

— Facility: reference to an International Ship and Port Facility Security Code (ISPS) facility that is part of a terminal or port area. It can be arrival or departure. It is 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:

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

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

8.8.2 Non-core data types

8.8.2.1 epc:LocationType – Identification of a location

8.8.2.1.1 Definition

This data type contains the possible identifiers for a location. It is normally used in a specific context to define the type of location.

8.8.2.1.2 Type

```
<xs:complexType name="LocationType">
   <xs:sequence>
     <xs:element name="CountryCode" type="epc:CountryCodeContentType" minOccurs="0"/>
     <xs:element name="FacilityCode" type="epc:GISISCodeContentType" minOccurs="0"/>
     <xs:element name="FacilityName" type="epc:FacilityNameType" minOccurs="0"/>
     <xs:element name="GLN" type="epc:GLNType" minOccurs="0"/>
     <xs:element name="MRN" type="epc:MRNType" minOccurs="0"/>
     <xs:element name="Name" type="xs:string" minOccurs="0"/>
     <xs:element name="NauticalMilesToDestination" type="epc:decimal" minOccurs="0"/>
     <xs:element name="Position" type="epc:PositionType" minOccurs="0"/>
     <xs:element name="SMDGTerminalCode" type="epc:SMDGterminalCode" minOccurs="0"/>
     <xs:element name="UNLoCode" type="epc:UNLoCodeContentType" minOccurs="0"/>
     <xs:element name="VisualPosition" type="epc:VisualPositionType" minOccurs="0"/>
   </xs:sequence>
  </xs:complexType>


<xs:simpleType name="FacilityNameType">
  <xs:restriction itemType="epc:token"/>
</xs:simpleType>
<xs:simpleType name="GLNContentType">
  <xs:restriction base="epc:token"/>
</xs:simpleType>
```

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

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

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

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

  <xs:complexType name="VisualPositionType">
   <xs:sequence minOccurs="0" maxOccurs="1">
     <xs:element name="Bearing" type="epc:int" minOccurs="0"/>
     <xs:element name="Distance" type="epc:decimal" minOccurs="0"/>
     <xs:element name="Landmark" type="epc:string" minOccurs="0"/>
   </xs:sequence>
  </xs:complexType>
```

8.8.2.1.3 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 according to the alpha-2 code specified in ISO 3166-1, which is typically used together with attributes of type UNLoCodeContentType.

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

— FacilityCode: this code contains the port facility four-digit code used by the IMO GISIS maritime security database. The combination of the UN/LOCODE as defined in UNECE R16, the Country Code as defined in alpha-2 of ISO 3166-1 and the GISISCode uniquely identify a facility related to ISPS handling.

— Global Location Number (GLN) of a position assigned by GS1 Standards.[50] 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 attributes of type CountryCodeContentType.

— VisualPosition: this is used to describe a position based on visual observations by specifying the bearing and distance to a certain landmark.

8.8.2.2 epc:LocationCallType – Location including time

8.8.2.2.1 Definition

This data type identifies a call of a ship to a certain location at a specified time. The specified time is either the arrival time or the departure time to or from this location, in addition to the time when a service starts or ends at the location, or the time when a service is performed at the 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.

8.8.2.2.2 Type

```
<xs:complexType name="LocationCallType">
 <xs:sequence>
  <xs:element name="Arrival" type="epc:DateTimeType" minOccurs="0" maxOccurs="unbound
ed"/>
   <xs:element name="Departure" type="epc:DateTimeType" minOccurs="0" maxOccurs="unbo
unded"/>
  <xs:element name="Start" type="epc:DateTimeType" minOccurs="0" maxOccurs="unbounded
"/>
   <xs:element name="End" type="epc:DateTimeType" minOccurs="0" maxOccurs="unbounded"
/>
  <xs:element name="At" type="epc:DateTimeType" minOccurs="0" maxOccurs="unbounded"/>
   <xs:element name="Location" type="epc:LocationType" minOccurs="0" />
  </xs:sequence>
</xs:complexType>
```

8.8.2.2.3 Representation

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

8.8.3 epc:WaypointListType – Waypoint and waypoint list

8.8.3.1 Definition

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

8.8.3.2 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="SequenceNumber" type="epc:int" minOccurs="0"/>
      <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="unb
ounded"/>
   </xs:sequence>
</xs:complexType>
```

8.8.3.3 Representation

This is a list of positions and times in increasing time order (starting from the earliest time) defining a ship's trajectory between the specified positions. Position and time are specified according to each specific usage.

The track type applies to the track, from the previous position to 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. In addition, the WaypointType contains the sequence number of the waypoint in the list of waypoints. This is a number representing the order of the referenced voyage waypoint, in the list of turn points on route within a ship reporting system area.

8.8.4 epc:VoyageEventListType – Time and position for voyage events

8.8.4.1 General

This subclause defines data types that replace EntryPositionType and ExitPositionType.

8.8.4.2 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 area or another area, or the arrival to and departure from a pilot boarding place.

8.8.4.3 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="Comment" type="epc:string" minOccurs="0"/>
     <xs:element name="EventType" type="epc:VoyageEventTypeContentType" 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>
```

8.8.4.4 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 VoyageEventType is used for instance for a ReportingEvent related to ship reporting system.

The VoyageEventTypeContentType contains the type of voyage event that the time and position is describing. Currently, this is either pilot 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.

PilotBoarding and PilotLeaving is used for general reporting of voyage events. For booking and planning of pilots related to a port call, PilotBoardingPlaceArrivalType and PilotBoardingPlaceDepartureType are used.

8.8.5 epc:PilotBoardingPlaceArrivalType – Pilot boarding place and arrival time

8.8.5.1 Definition

This type is an identification of a pilot boarding place and the related arrival time to this place for an arriving ship.

8.8.5.2 Type

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

8.8.5.3 Representation

This type is represented as a specialization of a LocationCallType.

8.8.6 epc:PilotBoardingPlaceDepartureType – Pilot boarding place and departure time

8.8.6.1 Definition

This type is an identification of a pilot boarding place and the related arrival time from this place for a departing ship.

8.8.6.2 Type

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

8.8.6.3 Representation

This type is represented as a specialization of a LocationCallType.

8.9 Ballast water arrival reporting data types

8.9.1 General

The data types for ballast water arrival reporting are created to cover the reporting requirements shown in Resolution MEPC.288(71). [36]

8.9.2 epc:BallastWaterManagementType

8.9.2.1 Definition

This data contains information required for the reporting of how the ballast water is managed onboard.

8.9.2.2 Type

```
<xs:complexType name="BallastWaterManagementType">
<xs:sequence>
   <xs:element name="BallastWaterManagementPlanOnboardIndicator" type="epc:boolean"
minOccurs="0"/>
   <xs:element name="BallastWaterManagementSystemUsed" type="epc:string" minOccurs="0"/>
   <xs:element name="BallastWaterRecordBookOnboardIndicator" type="epc:boolean"
minOccurs="0"/>
   <xs:element name="ImplementationOfBallastWaterManagementPlanIndicator" type="epc:boolean"
minOccurs="0"/>
   <xs:element name="NumberOfBallastTanksExchanged" type="epc:int" minOccurs="0"/>
   <xs:element name="NumberOfBallastTanksNotManaged" type="epc:int" minOccurs="0"/>
   <xs:element name="NumberOfBallastTanksToBeDischarged" type="epc:int" minOccurs="0"/>
   <xs:element name="NumberOfBallastTanksTreatedUsingABallastWaterManagementSystem"
type="epc:int" minOccurs="0"/>
   <xs:element name="NumberOfTanksInBallast" type="epc:int" minOccurs="0"/>
   <xs:element name="OtherControlActionsTaken" type="epc:string" minOccurs="0"/>
   <xs:element name="ReasonWhyNoBallastWaterManagementWasConducted" type="epc:ReasonWhyNoBalla
stWaterManagementWasConductedContentType" minOccurs="0"/>
   <xs:element name="StartingDateRequiredToMeetRegulationD2" type="epc:date" minOccurs="0"/>
   <xs:element name="TotalBallastWaterOnboard" type="epc:decimal" minOccurs="0"/>
   <xs:element name="BallastTank" type="epc:BallastTankType" minOccurs="0"
maxOccurs="unbounded"/>
</xs:sequence>
</xs:complexType>

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

8.9.2.3 Representation

This data types contains the following data elements:

— BallastWaterManagementPlanOnboardIndicator: a ""yes/no"" indicator of whether the ship is carrying a ballast water management plan on board. A ship with the flag of a Party to the Convention shall have a ballast water management plan.

— BallastWaterManagementSystemUsed: description of the ballast water management system used. If any, provide the manufacturer and model.

— BallastWaterRecordBookOnboardIndicator: a ‘’yes/no" indicator of whether the ship is carrying out the ballast water record book on board. A ship with the flag of a Party to the Convention shall carry a ballast water record book on board.

— ImplementationOfBallastWaterManagementPlanIndicator: a "yes/no" indicator of whether the ship management plan is implemented. A ship with flag of a Party to the Convention shall have a ballast water management plan implemented.

— NumberOfBallastTanksExchanged: the number of tanks that underwent exchange.

— NumberOfBallastTanksNotManaged: the number of ballast tanks that are not managed (exchange or treatment).

— NumberOfBallastTanksToBeDischarged: the number of ballast tanks and holds to be discharged.

— NumberOfBallastTanksTreatedUsingABallastWaterManagementSystem: the number of ballast tanks treated using a ballast water management system.

— NumberOfTanksInBallast: the number of tanks and holds with ballast water as the ship arrives into the arrival port.

— OtherControlActionsTaken: other control actions taken, if ballast water management were not conducted.

— StartingDateRequiredToMeetRegulationD2: the date from which the ship is required to comply with regulation D-2 of the Ballast Water Management Convention, 2004.[37]

— TotalBallastWaterOnboard: total physical measurement of ballast water on board including sediments in cubic metres (m^3).

— BallastTank: this data element contains information about each ballast tank needed for the reporting, as specified in IMO Resolution MEPC.288(71),[36] and as described in 8.9.3.

— ReasonWhyNoBallastWaterManagementWasConducted: the explanation of why the ship has not conducted ballast water management. The code list is contained in the data type ReasonWhyNoBallastWaterManagementWasConductedContentType, and the code values are maintained by IMO.[30] The following code values were decided by IMO FAL 47:[31]

  — A31: Uptake or discharge in emergency situations or saving life at sea.

  — A32: Accidental discharge or ingress resulting from damage to a ship.

  — A33: Uptake or discharge for avoiding or minimizing pollution.

  — A34: Uptake and discharge at high seas.

  — A35: Uptake and discharge at same location.

  — A4: Exemptions in accordance with regulation A-4 of the BWM Convention.[37]

  — B44: Ballast water exchange not required to comply with regulation B-4.1 or B-4.2 due to circumstances as set out in regulation B-4.4 in the BWM Convention.[37]

  — O: Other reasons.

8.9.3 epc:BallastTankType

8.9.3.1 Definition

This data type contains the description of the properties of a ballast tank as needed according to the BWM Convention.[37]

8.9.3.2 Type

```
<xs:complexType name="BallastTankType">
<xs:sequence>
   <xs:element name="BallastTankCapacity" type="epc:decimal" minOccurs="0"/>
   <xs:element name="BallastTankType" type="epc:BallastTankTypeContentType" minOccurs="0"/>
   <xs:element name="BallastWaterDischargedSalinity" type="epc:decimal" minOccurs="0"/>
   <xs:element name="BallastWaterDischargeVolume" type="epc:decimal" minOccurs="0"/>
   <xs:element name="BallastWaterManagedSalinity" type="epc:decimal" minOccurs="0"/>
   <xs:element name="BallastWaterUptakePort" type="epc:PortType" minOccurs="0"/>
   <xs:element name="CurrentVolumeInBallastTank" type="epc:decimal" minOccurs="0"/>
   <xs:element name="DateImplementingBallastWaterManagement" type="epc:date" minOccurs="0"/>
   <xs:element name="DateOfBallastWaterDischarge" type="epc:date" minOccurs="0"/>
```

```
   <xs:element name="DateOfBallastWaterUptake" type="epc:date" minOccurs="0"/>
   <xs:element name="DepthOfWaterWhereBallastWaterExchangeTookPlace" type="epc:int"
minOccurs="0"/>
   <xs:element name="ExchangePercentageOfBallastWaterExchanged" type="epc:decimal"
minOccurs="0"/>
   <xs:element name="MethodOfBallastWaterManagement" type="epc:MethodOfBallastWaterManagementC
ontentType" minOccurs="0"/>
   <xs:element name="OtherManagementMethod" type="epc:string" minOccurs="0"/>
   <xs:element name="PortOfDischargeOfBallastWater" type="epc:PortType" minOccurs="0"/>
   <xs:element name="VolumeBallastWaterExchanged" type="epc:decimal" minOccurs="0"/>
   <xs:element name="LocationOfBallastWaterUptake" type="epc:PositionType" minOccurs="0"/>
   <xs:element name="StartPointLocationBallastWaterExchangeImplemented"
type="epc:PositionType" minOccurs="0"/>
   <xs:element name="EndPointLocationBallastWaterExchangeImplemented" type="epc:PositionType"
minOccurs="0"/>
   <xs:element name="LocationBallastWaterDischarge" type="epc:PositionType" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

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

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

8.9.3.3 Representation

This data type contains the following data elements:

— BallastTankCapacity: a measure of the maximum tank/hold capacity in cubic meters.

— BallastWaterDischargedSalinity: a measure of the salinity of the proposed ballast water discharge in Practical Salinity Units (PSU).

— BallastWaterDischargeVolume: the volume of the proposed ballast water discharge.

— BallastWaterManagedSalinity: a measure of the salinity of water used for ballast water management practices in Practical Salinity Units (PSU).

— CurrentVolumeInBallastTank: the current volume in the ballast tanks/holds after the last uptake of ballast water.

— DateImplementingBallastWaterManagement: the date implementing ballast water management.

— DateOfBallastWaterDischarge: the date of the proposed ballast water discharge.

— DateOfBallastWaterUptake: the date of ballast water uptake into tanks/holds before ballast water management practices.

— DepthOfWaterWhereBallastWaterExchangeTookPlace: the depth of water where the ballast water exchange took place.

— ExchangePercentageOfBallastWaterExchanged: the percentage of exchanged ballast water.

— OtherManagementMethod: any other ballast water management method used.

— VolumeBallastWaterExchanged: the volume of ballast water exchanged in cubic metres.

— BallastTankType: the type of ballast tank containing ballast water. The code list is contained in the data type BallastTankTypeContentType, and the code values are maintained by IMO.[30] The following code values are specified in IMO FAL 47:[31]

  — AP: aftpeak

  — CH: cargo hold

  - DB: double bottom
  - FP: forepeak
  - O: other
  - TS: topside
  - WT: wing
- MethodOfBallastWaterManagement: the method of ballast water management. The code list is contained in the data type MethodOfBallastWaterManagementContentType, and the code values are maintained by IMO.[30] The following code values were decided by IMO FAL 47:[31]
  - ED: Exchange Dilution
  - EF: Exchange Flow through
  - ES: Exchange Sequential
  - O: Other
  - T: Treatment
- BallastWaterUptakePort: this is the location given as the UN/LOCODE according to UNECE R16 including the country of the port of the ballast water uptake. If the port does not have a UN/LOCODE, the name and country of the port of the ballast water uptake is given instead.
- PortOfDischargeOfBallastWater: this is the port of discharge of ballast water given as the UN/LOCODE according to UNECE R16 including the country. If a UN/LOCODE of the port does not exist, the name and country of the port of discharge of ballast water is given instead.
- LocationOfBallastWaterUptake: this is the latitude and longitude (geographical coordinate) of the location of discharging ballast water.
- StartPointLocationBallastWaterExchangeImplemented: this is the latitude and longitude (geographical coordinate) of the start location where the ballast water exchange was implemented.
- EndPointLocationBallastWaterExchangeImplemented: this is the latitude and longitude (geographical coordinate) of the end location where the ballast water exchange was implemented.
- LocationBallastWaterDischarge: this is the latitude and longitude (geographical coordinate) of the location of discharging ballast water.

8.10 Waste and environmental data types

8.10.1 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.

The waste data types have been extended to cover information described in MEPC.1/Circ.834/Rev.1.[29] The reporting of the waste delivery receipt information is part of a broader operational process to execute the delivery of the waste by the ship in the port, and thus, the data are relevant for both operational and administrative purposes.

8.10.2 epc:BallastStatusType – Status of ship's ballast water when in port

8.10.2.1 Definition

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

8.10.2.2 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>
```

8.10.2.3 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.

8.10.3 epc:WasteDisposalRequirementsType – Ship's requirements for waste disposal

8.10.3.1 Definition

This data item is a free text description of the ship's requirements for waste and residue disposal.

8.10.3.2 Type

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

8.10.3.3 Representation

This is a free text description of a ship's requirements for waste and residue disposal at the arrival port as required in FAL 1 and as described in the IMO Compendium.[30] When the WasteDisposalInformation data are supplied, this field is in principle superfluous. However, authorities can still require it.

8.10.4 epc: WasteInformationType – Waste information

8.10.4.1 Definition

This data element contains information that is sent to a port in conjunction with an arrival (see MEPC.1/Circ.644 and MEPC.1/Circ.834/Rev. 1 for further details). The transmission of some elements of this data are required by EU Directive 2000/59/EC[1] for ships visiting European ports.

8.10.4.2 Type

```
<xs:complexType name="WasteInformationType">
  <xs:sequence>
   <xs:element name="Comment" type="epc:string" minOccurs="0" />
   <xs:element name="WasteDeliveryDateTimeFrom" type="epc:dateTime" minOccurs="0"/>
     <xs:element name="WasteDeliveryDateTimeTo" type="epc:dateTime" minOccurs="0"/>
   <xs:element name="WasteDeliveryStatus" type="epc:WasteDeliveryStatusContentType" m
inOccurs="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="WasteDisposalInformation" type="epc:WasteDisposalInformationType
" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>

<xs:complexType name="WasteDisposalInformationType">
  <xs:sequence>
   <xs:element name="PortReceptionFacilityProvider" type="epc:string" minOccurs="0" m
axOccurs="unbounded"/>
   <xs:element name="TreatmentFacilityProvider" type="epc:string" minOccurs="0" maxOc
curs="unbounded"/>
   <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="AmountOfWasteReceived" 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="Code" type="epc:WasteTypeCodeContentType" />
   <xs:element name="Description" type="epc:string" minOccurs="0" />
  </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>
```

8.10.4.3 Representation

The information regarding waste is represented as follows in WasteInformationType.

— Comment: additional information that is not provided below.

— WasteDeliveryDateTimeFrom: date and time when the waste delivery started.

— WasteDeliveryDateTimeTo: date and time when the waste delivery was completed.

— 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 to which it reports.

— WasteDisposalInformation: one entry per type of waste that the ship has onboard. Each entry shall contain:

  — EstimateGenerated: estimated amount of waste to be generated between notification and the 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.

— AmountOfWasteReceived: the volume of waste received (m^3).

— PortReceptionFacilityProvider: the name of the port reception facility provider.

— DisposedOfInPort: name of port where remaining waste is disposed of.

— TreatmentFacilityProvider: the name of the treatment facility provider, if different from the port reception facility provider.

— WasteType: type of waste. The codes are as maintained by IMO in the IMO Compendium[25][30] for data element IMO0183. 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.

8.11 Health data types

8.11.1 Class diagram

This subclause defines the data that must be reported according to the WHO Maritime Declaration of Health (MDH).[38] This must be completed and submitted to the competent authorities from ships at arrival to a port from a foreign port.

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 undertaken which can be related to a location or a person.

The element PersonHealthParticularsType is used in the PersonOnboardType 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.

8.11.2 epc: HealthDataType – Health information for the ship

8.11.2.1 Definition

This type contains health information sent by the ship to health authorities in a port.

8.11.2.2 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="LocationStowawaysJoinedShip" type="epc:LocationType" 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" minOcc
urs="0" />
    <xs:element name="ValidShipSanitationControlExemptionCertificate" type="epc:boolea
n" minOccurs="0" />
    <xs:element name="VisitedInfectedArea" type="epc:boolean" minOccurs="0" />
```

```
   <xs:element name="SanitaryMeasure" type="epc:SanitaryMeasureType" minOccurs="0" ma
xOccurs="unbounded"/>
   <xs:element name="CallInInfectedArea" type="epc:ShipToPortActivityType" minOccurs=
"0" maxOccurs="unbounded"/>
   <xs:element name="LastPortCalls" type="epc:ShipToPortActivityType" minOccurs="0" m
axOccurs="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="PersonReference" 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>
```

8.11.2.3 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 is required.

— 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 at the time of reporting. Otherwise, it is false.

— InfectionConditionOnBoard: this element is true if the reporter is aware of any condition on board which can lead to infection or spread of disease. Otherwise, it is false.

— MedicalConsulted: this element is true if a medical practitioner was 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, excluding if the death was 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.

— ValidShipSanitationControlCertificate: this element is true if the ship carries a valid ship sanitation control certificate on board. Otherwise, it is false.

— ValidShipSanitationControlExemptionCertificate: this element is true if the ship carries a valid ship sanitation control exemption certificate 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 (WHO). 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 have been applied, if any.

— CallInInfectedArea: this element contains a list of ports in 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 30 days, or during that 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 is one of the enumerations listed in the type SanitaryMeasureCodeContentType.

8.12 Maritime service data types

8.12.1 epc:MaritimeServiceType – Information related to a maritime service

8.12.1.1 Definition

This data item describes details related to maritime services that are provided to ships in a port or terminal during a port call.

8.12.1.2 Type

```
  <xs:complexType name="MaritimeServiceType">
   <xs:sequence>
     <xs:element name="CoastalStationName" type="epc:CoastalStationNameType" minOccur
s="0"/>
     <xs:element name="PlannedServiceIndicator" type="epc:boolean" minOccurs="0"/>
     <xs:element name="ServiceProvider" type="epc:ContactInfoType" minOccurs="0"/>
     <xs:element name="ServiceLocationCall" type="epc:LocationCallType" minOccurs="0"
/>
     <xs:element name="OtherPositionReference" type="epc:LocationType" minOccurs="0"/
>
   </xs:sequence>
  </xs:complexType>
```

8.12.1.3 Representation

This data type contains the information related to a maritime service:

— CoastalStationName: this is the name of the coastal station receiving a ship report.

— PlannedServiceIndicator: this is a “yes/no” indicator on whether the maritime service is scheduled prior to the port call.

— ServiceProvider: this is the details of the party that delivers the maritime service. This includes the name of the contact in the maritime service company, the contact email address for the maritime service company, the landline telephone number for the maritime service company, the mobile number for the maritime service company, and the maritime service provider end-point to the maritime service (the URL).

— ServiceLocationCall: This contains the berth or anchor name for the delivery of the maritime service in port. It also contains the date and time when a maritime service starts. This data element may contain maximum four different timestamps, dependent on the value used for TimeType, namely whether the time is of type actual (actual time start, ATS), estimated (estimated time start, ETS), planned (planned time start, PTS) or requested (requested time start, RTS). ETS, PTS, and ATS are set by the maritime service provider. RTS is set by the ship. Further, it contains the date and time when a maritime service completes. This data element may contain maximum four different timestamps, dependent on the value used for TimeType, namely whether the time is of type ATS, ETS, PTS or RTS. ETS, PTS, and ATS are set by the maritime service provider. RTS is set by the ship.

— OtherPositionReference: further position information such as berth position or bollard number.

8.13 Inspection data types

8.13.1 General

This subclause defines the data used to report on the inspection of ships and of the ship's company. These data types are also used for historical inspection data performed by a port state control (PSC). The main data object is InspectionType.

8.13.2 epc:InspectionType – Information related to inspections

8.13.2.1 Definition

This data type contains the main information reported during an inspection.

8.13.2.2 Type

```
<xs:complexType name="InspectionType">
   <xs:sequence>
      <xs:element name="Category" type="epc:InspectionCategoryContentType" minOccurs="
0"/>
      <xs:element name="NextDueDate" type="epc:date" minOccurs="0"/>
      <xs:element name="NextInspectionStatusCode" type="epc:NextInspectionStatusCodeCo
ntentType" minOccurs="0"/>
      <xs:element name="NextRangeEndDate" type="epc:date" minOccurs="0"/>
      <xs:element name="NextRangeStartDate" type="epc:date" minOccurs="0"/>
      <xs:element name="NumberOfComments" type="epc:int" minOccurs="0"/>
      <xs:element name="PerformedDate" type="epc:date" minOccurs="0"/>
      <xs:element name="PSCMoURegimeCode" type="epc:PSCMoURegimeCodeContentType" minOc
curs="0"/>
      <xs:element name="Type" type="epc:InspectionTypeContentType" minOccurs="0"/>
      <xs:element name="Detention" type="epc:DetentionType" minOccurs="0"/>
      <xs:element name="Comment" type="epc:InspectionCommentType" minOccurs="0" maxOcc
urs="unbounded"/>
      <xs:element name="PerformedLocation" type="epc:LocationType" minOccurs="0"/>
   </xs:sequence>
  </xs:complexType>
```

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

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

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

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

8.13.2.3 Representation

This data type contains the following attributes:

— NextDueDate: this is the due date of the next inspection.

— NextRangeEndDate: this is the latest date at which the next inspection should be performed.

— NextRangeStartDate: this is the earliest date at which the next inspection can be performed at the earliest.

— NumberOfComments: this is the number of comments found during the inspection.

— PerformedDate: this is the date when the inspection was performed.

— Detention: this is the information related to the detention of the ship.

— Category: this is the code identifying the inspection category. The code list from type InspectionCategoryContentType is used. These codes are maintained by IACS according to IACS REC 75, Table A5.[33] For port state control inspections, the inspection category is set to O (Occasional).

— Comment: the code list from type InspectionCommentType is used.

— Type: this is the code identifying the type of inspection. The code list from type InspectionTypeContentType is used. This code list is maintained by IACS.[33] For statutory inspections, the inspection type code is the certificate code as defined in IACS REC 75, Table A4. For bottom inspections, the code is BOT. For class inspections, the coding of the classification society is used. For port state control inspections, the code is PSC.

— PerformedLocation: this is the place where the inspection was performed. The place is represented by the UN/LOCODE of the place according to UNECE R16. If the UN(LOCODE for the place does not exist, the place is given by the name of the place. The name of a port always includes the port name and the country name. The format is: PortName, CountryName. If the inspection was performed at sea, the name may include the position at sea instead.

— NextInspectionStatusCode: this is the status of the next inspection. This data element shall be filled in only for inspection(s) not yet carried out or completed. The code list from type NextInspectionStatusCodeContentType is used. The code list is maintained by IACS according to the IMO Compendium.[30]

— PSCMoURegimeCode: this is a code identifying the relevant port state control Memorandum of Understanding or regime. The code list from type PSCMoURegimeCodeContentType is used. The code list is maintained by IMO.[30]

8.13.3 epc:DetentionType – Inspection detention

8.13.3.1 Definition

This data type contains information about a detention related to an inspection.

8.13.3.2 Type

```
<xs:complexType name="DetentionType">
   <xs:sequence>
     <xs:element name="AgreedActions" type="epc:string" minOccurs="0"/>
     <xs:element name="ReleasedDate" type="epc:date" minOccurs="0"/>
     <xs:element name="WasDetained" type="epc:boolean" minOccurs="0"/>
   </xs:sequence>
  </xs:complexType>
```

8.13.3.3 Representation

This data type contains the following information about a ship detention:

— AgreedActions: these are the agreed actions as per the rectification action plan.

— ReleasedDate: this is the date when the ship was released from detention.

— WasDetailed: this is a “yes/no” indicator, whether the ship was detained as a result of the inspection.

8.13.4 epc:InspectionCommentType – Information related to an comment given during an inspection

8.13.4.1 Definition

This data type contains information about a comment that was given during an inspection.

8.13.4.2 Type

```
<xs:complexType name="InspectionCommentType">
   <xs:sequence>
     <xs:element name="Content" type="epc:anyURI" minOccurs="0"/>
     <xs:element name="ExpiryInspectionCategoryCode " type="epc:IACSInspectionCategor
yCodeContentType" minOccurs="0"/>
     <xs:element name="ExpiryInspectionType" type="epc:InspectionCommentExpiryInspect
ionTypeContentType" minOccurs="0"/>
     <xs:element name="IssuerType" Type="epc:InspectionCommentIssuerTypeContentType"
minOccurs="0"/>
     <xs:element name="IssuingDate" type="epc:date" minOccurs="0"/>
     <xs:element name="PostponedExpiryInspectionCategoryCode" type="epc:IACSInspectio
nCategoryCodeContentType" minOccurs="0"/>
     <xs:element name="Reference" type="epc:InspectionCommentReferenceContentType" mi
nOccurs="0"/>
     <xs:element name="RelatedCertificateTypeAcronym" type="epc:string" minOccurs="1"
 maxOccurs="unbounded"/>
     <xs:element name="ResolutionDueDate" type="epc:date" minOccurs="0"/>
     <xs:element name="ResolutionPostponedDueDate" type="epc:date" minOccurs="0"/>
     <xs:element name="ResolutionPostponedExpiryInspectionType" type=
"epc:InspectionCommentResolutionPostponedExpiryInspectionTypeContentType" minOccurs="
0"/>
     <xs:element name="ResolutionStatus" type="epc:InspectionCommentResolutionStatusC
ontentType" minOccurs="0"/>
     <xs:element name="ResolvedDate" type="epc:date" minOccurs="0"/>
     <xs:element name="SequenceNumber" type="epc:int" minOccurs="0"/>
     <xs:element name="Type" type="epc:InspectionCommentTypeContentType" minOccurs="0
"/>
     <xs:element name="DeficiencyList" type="epc:DeficiencyType" minOccurs="0" maxOcc
urs="unbounded"/>
     <xs:element name="IssuingLocation" type="epc:LocationType" minOccurs="0"/>
   </xs:sequence>
```

```
  </xs:complexType>

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

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

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

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

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

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

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

8.13.4.3 Representation

This data type is represented by the following data elements:

— Content: this is the actual content of the comment, including text, drawings, pictures, etc.

— IssuingDate: this is the date when the inspection comment was issued.

— RelatedCertificateTypeAcronym: this is the certificate type acronyms to which the inspection comment applies.

— ResolutionDueDate: this is the due date for the resolution of the comment. When both this data element is given in addition to the ExpiryInspectionType, the earliest shall apply. This is not relevant for PSC inspections.

— ResolutionPostponedDueDate: this is the due date for the resolution of the comment following the last postponement. When both this data element and the data element for PostponedExpiryInspectionCategoryCode are provided, the earliest shall apply. This is not relevant for PSC inspections.

— ResolvedDate: this is the date when the inspection comment was closed.

— SequenceNumber: this is a number indicating the order of the comments in an inspection.

— DeficiencyList: this is the list of deficiencies related to this comment.

— ExpiryInspectionCategoryCode: this is a code indicating the expiry inspection category. The code list from type IACSInspectionCategoryCodeContentType is used. This code list is maintained according to IACS REC 75, Table A5.[33]

— PostponedExpiryInspectionCategoryCode: this is a code indicating the postponed expiry inspection category. The code list from type IACSInspectionCategoryCodeContentType is used. This code list is maintained according to IACS REC 75, Table A5.[33]

— ExpiryInspectionType: this is a code indicating the expiry inspection type, i.e. the type of inspection when the inspection will verify that the comment can be closed. The code list from type InspectionCommentExpiryInspectionTypeContentType is used. The code list is maintained by IACS according to IACS REC 75, Table A5.[33]

— IssuerType: this is a code indicating the issuer of the inspection comment. The code list from type InspectionCommentIssuerTypeContentType is used. The code list is maintained by IACS[30] and contains values as: F (flag state), P (port state), C (classification society) and R (recognized organization).

— Reference: this is the reference to the code of the regulation/rule and the specific applicable chapters/paragraphs. The code list from type InspectionCommentReferenceContentType is used. The code list is maintained according to IACS REC 75, Table A4.[33] The text is formatted as follows: regulation and chapter/paragraph number of the applicable regulation are separated by commas.

EXAMPLE SOLAS Ch. IV Reg.5, LL Annex I Reg.19.[22]

— ResolutionPostponedExpiryInspectionType: this is a code indicating the postponed expiry inspection type. i.e. the inspecthe type of inspection when the inspection will verify that the comment can be closed.

— InspectionCommentResolutionPostponedExpiryInspectionTypeContentType is used as the code list for this data type. The code list is maintained according to IACS REC 75, Table A4.[33]

— ResolutionStatus: this is a code representing the status with respect to the resolution of the comment. The code list from type InspectionCommentResolutionStatusContentType is used. The code list is maintained by IACS.[30]

— Type: this is a code categorizing the comment upon conclusion of the inspection. The code list from type InspectionCommentTypeContentType is used. The code list is maintained by IACS.[30]

— IssuingLocation: this is the location where the inspection which resulted in the imposition of the comment was undertaken. The location is represented by the UNLoCode and CountryCode as described in 8.8.2.1. If the UNLoCode does not exist, the location is given by the Name as described in 8.8.2.1. The name of a port always includes the port name and the country name. The format is: PortName, CountryName as described in 8.8.2.1.

8.13.5 epc:DeficiencyType – Inspection deficiency

8.13.5.1 Definition

This data type contains information about a deficiency that is detected during a port state control inspection.

8.13.5.2 Type

```
<xs:complexType name="DeficiencyType">
   <xs:sequence>
     <xs:element name="ActionToResolveDeficiencyCode" type="epc:ActionToResolveDefici
encyCodeContentType" minOccurs="0"/>
     <xs:element name="DeficiencyCode" type="epc:DeficiencyCodeContentType" minOccurs
="0"/>
   </xs:sequence>
  </xs:complexType>
```

8.13.5.3 Representation

This data type has the following data elements:

— ActionToResolveDeficiencyCode: this is a code indicating the actions required by the inspection authority to resolve the deficiency. The code list from type ActionToResolveDeficiencyCodeContentType is used.

— DeficiencyCode: this is the code representing the deficiency found during the inspection. The code list from type DeficiencyCodeContentType is used, representing the actual memorandum of understanding (MoU) code.

8.13.6 epc:ShipBannedType – Ship banned type

8.13.6.1 Definition

This data type contains information related to the banning of a ship as a result of a port state control inspection.

8.13.6.2 Type

```
<xs:complexType name="ShipBannedType">
   <xs:sequence>
     <xs:element name="IsBanned" type="epc:boolean" minOccurs="0"/>
     <xs:element name="ShipBanArea" type="epc:string" minOccurs="0"/>
     <xs:element name="ShipBanEndDate" type="epc:date" minOccurs="0"/>
     <xs:element name="ShipBanStartDate" type="epc:date" minOccurs="0"/>
     <xs:element name="IssuerPSC" type="epc:OrganizationType" minOccurs="0"/>
   </xs:sequence>
  </xs:complexType>
```

8.13.6.3 Representation

This data type contains the details related to a ship banning.

— IsBanned: this is a “yes/no” indicator of whether the ship has been banned from a specific area.

— ShipBanArea: this is the area where the ship has been banned to sail.

— ShipBanEndDate: this is the date when the ship ban ends.

— ShipBanStartDate: this is the date when the ship ban started.

— IssuerPSC: this is the name of the port state/MoU that has issued the ban to the ship.

8.14 Advanced passenger information

8.14.1 General

This subclause contains data types related to the information requirements for advanced passenger information as described in the IMO Compendium as approved by FAL 47.[25][30] The advanced passenger information data set consists of information found in the passenger list declaration (FAL Form 6), the crew list declaration (FAL Form 5) and additional information. However, the time of submission of advanced passenger information is different from FAL Form 6 and FAL form 5 declarations since information is requested by law enforcement and border agencies prior to the (cruise) ship departuring from the previous port.

8.14.2 Epc:PersonBookingType

8.14.2.1 Definition

PersonBookingType contains the information about the travel booking completed by a person on a voyage, related to the advanced passenger information.

8.14.2.2 Type

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

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

8.14.2.3 Representation

— CabinNumber: number of the cabin or room on board.

— UniquePassengerReferenceNumber: passenger's Unique Reference Number (UNR) in relation to the travel booking.

— UniqueTravellingBookingNumber: unique number to identify a specific booking related to one or more passengers.

8.15 Verified gross mass

8.15.1 General

This subclause contains data types related to the information requirements as described in MSC.1/Circ.1475[39] and in the IMO Compendium.[30]

8.15.2 Epc:VerifiedGrossMassType

8.15.2.1 Definition

The VerifiedGrossMassType contains information about the verified gross mass of a container.

8.15.2.2 Type

```
  <xs:complexType name="VerifiedGrossMassType">
     <xs:sequence>
        <xs:element name="GrossMassVerificationNumber" type="epc:string" minOccurs="0"/>
        <xs:element name="GrossMassVerifiedDate" type="epc:date" minOccurs="0"/>
        <xs:element name="GrossMassVerifyingCountry" type="epc:CountryCodeContentType"
minOccurs="0"/>
        <xs:element name="VerifiedGrossMass" type="epc:MeasureType" minOccurs="0"/>
        <xs:element name="VGMDocumentIssueDateTime" type="epc:dateTime" minOccurs="0"/>
        <xs:element name="VGMMeasuringMethod" type="epc:VGMMeasuringMethodContentType"
minOccurs="0"/>
        <xs:element name="VerifyingParty" type="epc:ContactInfoType" minOccurs="0"/>
     </xs:sequence>
  </xs:complexType>

  <xs:simpleType name="VGMMeasuringMethodContentType">
    <xs:restriction base="xs:token">
          <xs:enumeration value="1"/>
          <xs:enumeration value="2"/>
    </xs:restriction>
  </xs:simpleType>
```

8.15.2.3 Representation

— GrossMassVerificationNumber: this is the unique identification number of verification for the verified gross mass.

— GrossMassVerifiedDate: this is the date and time of determining the verified gross mass of the container.

— VGMDocumentIssueDateTime: this is the date and time of issuing the document for verified gross mass.

— VerifyingParty: this data element contains the company id and name of the responsible shipper or third party verifying the gross mass, and also the name of the person in charge of verifying the gross mass

authorized by the shipper. This data element also contains the email, landline, mobile number, country code, street and number/P.O. Box, city, and postcode of the party responsible for verifying the gross mass.

— GrossMassVerifyingCountry: this is the code of the country where the verified gross mass is determined.

— VerifiedGrossMass: this is the verified gross mass of the container (VGM).

— VGMMeasuringMethod: this is a code representing the Gross Mass Verifying Method.

VGMMeasuringMethodContentType contains a code list for the various verifying methods that are used: "1" for method 1 and "2" for method 2.

8.16 Coastal station name type

8.16.1 Definition

This is the name of the coastal station that is receiving a ship report.

8.16.2 Type

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

8.16.3 Representation

The name is represented as a string.

Annex A
(normative)

Mapping between this document and the IMO FAL

Table A.1 shows the mapping between the data elements in the IMO Compendium[30] and this document. The first column "IMO data number" refers to the data numbers in the IMO Compendium. The second column "Data element" lists the name of the data elements as found in the IMO Compendium. The third column "Mapping to this document" explains how each of the data elements in the IMO Compendium is mapped to the data types defined in this document and to data types defined in ISO 28005-1 and ISO 28005-2. The mapping is described using XPath syntax. Each node is named according to the data types defined in this document, except that the text "Type" at the end of the data type name are removed for simple and complex types, and "ContentType" is removed for enumerated types.

Table A.1 — Mapping to IMO Compendium

IMO data number	Data element	Mapping to this document
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 sub-division 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 postcode	/Agent/Address/PostCode

Table A.1 *(continued)*

IMO data number	Data element	Mapping to this document
IMO0012	Agent street and number/P.O Box.	/Agent/Address/StreetName /Agent/Address/StreetNumber or: /Agent/Address/CityName /Agent/Address/PostOfficeBox
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 (harmonized commodity description and coding system) 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

Table A.1 *(continued)*

IMO data number	Data element	Mapping to this document
IMO0031	IMO Company number	/Company/IMOCompanyId
IMO0032	IMO Company name	/Company/Organization/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 (emergency schedule) number	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/EmergencyInstruction

Table A.1 *(continued)*

IMO data number	Data element	Mapping to this document
IMO0048	Dangerous goods flashpoint	/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 (United Nations dangerous goods identifier) 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/Arrival[TypeType="Actual"]
IMO0064	Date and time of arrival - estimated	/PortOfArrival/Arrival[TypeType="Estimated"]
IMO0065	Date and time of departure - actual	/PortOfDeparture/Departure[TypeType="Actual"]
IMO0066	Date and time of departure - estimated	/PortOfDeparture/Departure[TypeType="Estimated"]
IMO0067	Valid certificate indicator	For ship certificates: /ShipCertificateList/Certificate/ValidCertificateIndicator For ship company certificate: /Company/Certificate/ ValidCertificateIndicator

Table A.1 *(continued)*

IMO data number	Data element	Mapping to this document
IMO0068	Reason why ship has no valid ISSC (international ship security certificate) or interim ISSC	/ISSCertificateStatus/CertificateStatusReasonNotValid
IMO0069	Reason why ship has no valid ISSC or interim ISSC, coded	/ISSCertificateStatus/CertificateStatusReasonNotValidCode
IMO0070	Certificate issuer flag state, coded	For ship certificates: /ShipCertificateList/Certificate/Issuer/RegistrationCountryCode For ship company certificate: /Company/Certificate/Issuer/RegistrationCountryCode
IMO0071	Certificate expiry date	For ship certificates: /ShipCertificateList/Certificate/ExpiryDate For ship company certificate: /Company/Certificate/ExpiryDate
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
IMO0087	Number of passengers	/PersonsOnBoardNumber/Passengers
IMO0088	Number of persons on board	/PersonsOnBoardNumber/NumberOfPersonsOnboard

Table A.1 *(continued)*

IMO data number	Data element	Mapping to this document
IMO0089	Person in transit indicator	/PassengerList/PassengerData/Transit
IMO0091	Person port of embarkation, coded	/PassengerList/PassengerData/Embarkation/Location/CountryCode /PassengerList/PassengerData/Embarkation/Location/UNLoCode OtherPersonList.OtherPersonData.Embarkation.Location.CountryCode[OtherPersonStatus="Stowaway"] OtherPersonList.OtherPersonData.Embarkation.Location.UNLoCode[OtherPersonStatus="Stowaway"]
IMO0092	Person port of disembarkation, name	Use the country code to find the country name: /PassengerList/PassengerData/Debarkation/Location/CountryCode /PassengerList/PassengerData/Debarkation/Location/Name
IMO0093	Person port of disembarkation, coded	/PassengerList/PassengerData/Debarkation/Location/CountryCode /PassengerList/PassengerData/Debarkation/Location/UNLoCode
IMO0094	Person port of embarkation, name	Use the country code to find the country name: /PassengerList/PassengerData/Embarkation/Location/CountryCode /PassengerList/PassengerData/Embarkation/Location/Name /OtherPersonList/OtherPersonData/Embarkation/Location/CountryCode[OtherPersonStatus="Stowaway"] /OtherPersonList/OtherPersonData/Embarkation/Location/Name[OtherPersonStatus="Stowaway"]
IMO0095	Person visa number	/PassengerList/PassengerData/VisaNumber/IdNumber
IMO0096	Person country of birth, coded	Check the person type in IMO0107 to know whether it is a crew (including master) or passenger or stowaway: /CrewList/CrewMemberData/CountryOfBirth /PassengerList/PassengerData/CountryOfBerth /OtherPersonList/OtherPersonData/CountryOfBirth[OtherPersonStatus="Stowaway"]
IMO0097	Person date of birth	Check the person type in IMO0107 to know whether it is a crew (including master) or passenger or stowaway: /CrewList/CrewMemberData/DateOfBirth /PassengerList/PassengerData/DateOfBerth /OtherPersonList/OtherPersonData/DateOfBerth[OtherPersonStatus="Stowaway"]
IMO0098	Person family name	Check the person type in IMO0107 to know whether it is a crew (including master) or passenger or stowaway: /CrewList/ CrewMemberData/Name/FamilyName /PassengerList/PassengerData/Name/FamilyName /OtherPersonList/OtherPersonData/Name/FamilyName[OtherPersonStatus="-Stowaway"]
IMO0099	Person gender, coded	Check the person type in IMO0107 to know whether it is a crew (including master) or passenger or stowaway: /CrewList/CrewMemberData/Gender /PassengerList/PassengerData/Gender /OtherPersonData/Gender[OtherPersonStatus="Stowaway"]
IMO0100	Person given name	Check the person type in IMO0107 to know whether it is a crew (including master) or passenger or stowaway: /CrewList/CrewMemberData/Name/GivenName /PassengerList/PassengerData/Name/GivenName OtherPersonList/OtherPersonData/Name/GivenName[OtherPersonStatus="Stowaway"]
IMO0101	Person identity or travel document expiry date	Check the person type in IMO0107 to know whether it is a crew (including master) or passenger or stowaway: /CrewList/CrewMemberData/PersonIdDocument/ExpirationDate /PassengerList/PassengerData/PersonIdDocument/ExpirationDate /OtherPersonList/OtherPersonData/PersonIdDocument/ExpirationDate[OtherPersonStatus="Stowaway"]

Table A.1 *(continued)*

IMO data number	Data element	Mapping to this document
IMO0102	Person identity or travel document issuing nation, coded	Check the person type in IMO0107 to know whether it is a crew (including master) or passenger or other: /CrewList/CrewMemberData/PersonIdDocument/IssuingCountry /PassengerList/PassengerData/PersonIdDocument/IssuingCountry /OtherPersonList/OtherPersonData/PersonIdDocument/IssuingCountry[OtherPersonStatus="Stowaway"]
IMO0103	Person identity or travel document number	Check the person type in IMO0107 to know whether it is a crew (including master) or passenger or stowaway: /CrewList/CrewMemberData/PersonIdDocument/IdNumber /PassengerList/PassengerData/PersonIdDocument/IdNumber /OtherPersonList/OtherPersonData/PersonIdDocument/IdNumber[OtherPersonStatus="Stowaway"]
IMO0104	Person identity or travel document type, coded	Check the person type in IMO0107 to know whether it is a crew (including master) or passenger or other: /CrewList/CrewMemberData/PersonIdDocument/IdDocument /PassengerList/PassengerData/PersonIdDocument/IdDocument /OtherPersonList/OtherPersonData/PersonIdDocument/IdDocument[OtherPersonStatus="Stowaway"]
IMO0105	Person nationality, coded	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	Check the person type in IMO0107 to know whether it is a crew (including master) or passenger or stowaway: /CrewList/CrewMemberData/PlaceOfBirth /PassengerList/PassengerData/PlaceOfBirth /OtherPersonList/OtherPersonData/PlaceOfBirth[OtherPersonStatus="Stowaway"]
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

Table A.1 *(continued)*

IMO data number	Data element	Mapping to this document
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
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 the estimated time of departure (ETD) and estimated time of arrival (ETA) are 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/ContactType
IMO0129	Certificate issuer name	For ship certificates: /ShipCertificateList/Certificate/Issuer/Name For ship company certificate: /Company/Certificate/Issuer/Name
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	/ShipParticulars/GrossTonnage

Table A.1 *(continued)*

IMO data number	Data element	Mapping to this document
IMO0140	Ship IMO number	/ShipID/IMONumber
IMO0141	Ship satellite service, number	/ ShipParticulars/SatelliteService/Number
IMO0142	Ship name	/ShipID/ShipName
IMO0143	Ship net tonnage	/ShipParticulars/NetTonnage
IMO0144	Location in port	From the data types defined in this document to the IMO Compendium:[30] Select the required values from the following data elements: /PortOfArrival/Location/Name /PortOfArrival/Location/FacilityCode /PortOfArrival/Location/GLN From the IMO Compendium to the data types defined in this document: Put the whole string in this element if no business rule is given: /PortOfArrival/Location/Name
IMO0145	Certificate issue date	For ship certificates: /ShipCertificateList/Certificate/IssueDate For ship company certificate: /Company/Certificate/IssueDate
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	/ShipStayReference
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	/ShipParticulars/ShipType
IMO0161	Ship-to-ship activity, coded	/ShipToShipActivityList/ShipToShipActivity/Code
IMO0162	Ship-to-ship activity, text	/ShipToShipActivityList/ShipToShipActivity/Activity

Table A.1 *(continued)*

IMO data number	Data element	Mapping to this document
IMO0163	Ship-to-ship activity end date	/ShipToShipActivityList/ShipToShipActivity/ToDateTime
IMO0164	Ship-to-ship activity location, name	When the location is a port (UN/LOCODE 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 UN/LOCODE does not exist in UNECE R16: /ShipToShipActivityList/ShipToShipActivity/Location/Name This is the UN/LOCODE 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/FromDateTime
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
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

Table A.1 *(continued)*

IMO data number	Data element	Mapping to this document
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/ MessageFunctionCode
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
IMO0198	Dangerous Goods Regulation, coded	/CargoData/Consignment/CargoItem/SpecialCargoDetails/DGSafetyDataSheet/DGClassification
IMO0200	Certificate issue location, coded	For ship certificates: /ShipCertificateList/Certificate/CertificateIssueLocationCode /ShipCertificateList/Certificate/CertificateIssueCountryCode For ship company certificate: /Company/Certificate/Issuer/ CertificateIssueLocationCode /Company/Certificate/Issuer/ CertificateIssueCountryCode
IMO0202	Re-inspection required indicator	/HealthData/ReInspectionRequired
IMO0203	Visited affected area indicator	/HealthData/VisitedInfectedArea
IMO0204	Port of call in affected area, coded	/HealthData/CallInInfectedArea
IMO0205	Date of call in affected area	/HealthData/CallInfectedArea/FromDateTime
IMO0206	Person died indicator	/HealthData/PersonDied
IMO0207	Disease on board indicator	/HealthData/DiseaseOnBoard

Table A.1 *(continued)*

IMO data number	Data element	Mapping to this document
IMO0208	Ill persons greater than expected indicator	/HealthData/IllPersonsGreaterThanExpected
IMO0209	Ill persons now indicator	/HealthData/IllPersonsNow
IMO0210	Medical practioner consulted indicator	/HealthData/MedicalConsulted
IMO0211	Infection condition on board indicator	/HealthData/InfectionConditionOnBoard
IMO0212	Sanitary measure applied indicator	/HealthData/SanitaryMeasureApplied
IMO0213	Sanitary measure	/HealthData/SanitaryMeasure/Comment
IMO0214	Sanitary measure, place	/HealthData/SanitaryMeasure/LocationOnBoard
IMO0215	Sanitary measure, date	/HealthData/SanitaryMeasure/Date
IMO0216	Stowaway found indicator	/HealthData/StowawaysFound
IMO0217	Port stowaways joined ship, coded	/HealthData/LocationStowawaysJoinedShip/UNLoCode /HealthData/LocationStowawaysJoinedShip/CountryCode
IMO0218	Sick animal indicator	/HealthData/SickAnimal
IMO0219	Person embarkation date and time - planned	For crew: /CrewList/CrewMemberData/Embarkation/At/DateTime[TimeType=Actual] For passengers: /PassengerList/PassengerData/Embarkation/At/DateTime[TimeType=Actual] For stowaways: /OtherPersonList/OtherPersonData/Embarkation/At/DateTime[TimeType=Actual] [OtherPersonStatus="Stowaway"] For Advanced Passenger Information: /PassengerList/PassengerData/Embarkation/At/DateTime[TimeType=Planned]
IMO0220	Illness	/PassengerData/PersonHealthParticulars/IllnessCode
IMO0221	Symptoms onset date	/PassengerData/PersonHealthParticulars/SymptomsDate
IMO0222	Health status reported indicator	/PassengerData/PersonHealthParticulars/ReportedToPortMedical
IMO0223	Health status, coded	/PassengerData/PersonHealthParticulars/CaseDisposal/HealthStateCode
IMO0224	Case disposition, coded	/PassengerData/PersonHealthParticulars/CaseDisposal/CaseDisposalCode
IMO0225	Location of evacuation name	/PassengerData/ Debarkation/Location/Name
IMO0226	Location of evacuation, coded	/PassengerData/ Debarkation/Location/CountryCode /PassengerData/ Debarkation/Location/UNLoCode
IMO0227	Treatment	/PassengerData/PersonHealthParticulars/Treatment
IMO0228	Comments	/PassengerData/PersonHealthParticulars/Comments
IMO0229	Anchorage name	/AnchorageArrival/Location/Name or/AnchorageDeparture/Location/Name, dependent on the value of /ArrivalDeparture (IMO0013)
IMO0230	Terminal name	/TerminalArrival/Location/SMDGterminalCode /TerminalDeparture/Location/SMDGterminalCode (dependent of IMO0013 Arrival/departure code) (shall map to the correct type of location.)

Table A.1 *(continued)*

IMO data number	Data element	Mapping to this document
IMO0231	Pilot boarding place	/PilotBoardingPlaceDeparture/Location (shall map to the correct type of location.) /PilotBoardingPlaceArrival/Location
IMO0232	Berth name	/BerthArrival/Location/Name /BerthDeparture/Location/Name (dependent of IMO0013 Arrival/departure code)
IMO0233	Berth position	/BerthPositionArrival/Location/Name /BerthPositionDeparture/Location/Name (dependent of IMO0013 Arrival/departure code) (shall map to the correct type of location.)
IMO0234	Date and time of arrival - requested	/BerthArrival/Arrival[TimeType="Requested"] /BerthPositionfArrival/Arrival[TimeType="Requested"] /PortOfArrival/Arrival[TimeType="Requested"] /TerminalArrival/Arrival[TimeType="Requested"] /AnchorageArrival/Arrival[TimeType="Requested"] /FacilityArrival/Arrival[TimeType="Requested"] /PilotBoardingPlaceArrival/Arrival[TimeType="Requested"]
IMO0235	Date and time of arrival - planned	/PortOfArrival/Arrival[TimeType="Planned"] /BerthArrival/Arrival[TimeType=" Planned"] /BerthPositionfArrival/Arrival[TimeType="Planned"] /PortOfArrival/Arrival[TimeType="Planned"] /TerminalArrival/Arrival[TimeType="Planned"] /AnchorageArrival/Arrival[TimeType="Planned"] /FacilityArrival/Arrival[TimeType="Planned"] /PilotBoardingPlaceArrival/Arrival[TimeType="Planned"]
IMO0236	Date and time of departure - requested	/PortOf Departure/ Departure[TimeType=" Requested"] /Berth Departure/ Departure[TimeType=" Requested"] /BerthPositionf Departure/ Departure[TimeType=" Requested"] /PortOf Departure/ Departure[TimeType=" Requested"] /Terminal Departure/ Departure[TimeType=" Requested"] /Anchorage Departure/ Departure[TimeType=" Requested"] /Facility Departure/ Departure[TimeType=" Requested"] /PilotBoardingPlace Departure/ Departure[TimeType=" Requested"]
IMO0237	Date and time of departure – planned	/PortOf Departure/ Departure[TimeType=" Planned"] /Berth Departure/ Departure[TimeType=" Planned"] /BerthPositionf Departure/ Departure[TimeType=" Planned"] /PortOf Departure/ Departure[TimeType=" Planned"] /Terminal Departure/ Departure[TimeType=" Planned"] /Anchorage Departure/ Departure[TimeType=" Planned"] /Facility Departure/ Departure[TimeType=" Planned"] /PilotBoardingPlace Departure/ Departure[TimeType=" Planned"]
IMO0238	Number of ill persons	/HealthData/NumberOfIllPersons
IMO0239	Ship company street and number/P.O. Box	/Company/Contact/Address/StreetName /Company/Contact/Address/StreetNumber or: /Company/Contact/Address/PostOfficeBox
IMO0240	Ship company post-code	/Company/Contact/Address/PostCode
IMO0241	Ship company city	/Company/Contact/Address/CityName
IMO0242	Ship company country code	/Company/Contact/Address/CountryCode
IMO0243	Ship company country sub-division name	/Company/Contact/Address/CountrySubdivisionName

Table A.1 *(continued)*

IMO data number	Data element	Mapping to this document
IMO0244	Stowaway date and time found onboard	/OtherPersonList/OtherPersonData/Embarkation/At/DateTime[OtherPersonStatus="Stowaway"]
IMO0245	Stowaway port facility of boarding, coded	/OtherPersonList/OtherPersonData/Embarkation/Location/CountryCode[OtherPersonStatus="Stowaway"] plus /OtherPersonList/OtherPersonData/Embarkation/Location/UNLoCode[OtherPersonStatus="Stowaway"] plus /OtherPersonList/OtherPersonData/Embarkation/Location/FacilityCode[OtherPersonStatus="Stowaway"]
IMO0246	Stowaway port facility of boarding name	/OtherPersonList/OtherPersonData/Embarkation/Location/CountryCode[OtherPersonStatus="Stowaway"] plus /OtherPersonList/OtherPersonData/Embarkation/Location/UNLoCode[OtherPersonStatus="Stowaway"] plus /OtherPersonList/OtherPersonData/Embarkation/Location/FacilityName[OtherPersonStatus="Stowaway"]
IMO0247	Stowaway berth of boarding name	/OtherPersonList/OtherPersonData/BerthOfBoarding/Name[OtherPersonStatus="Stowaway"]
IMO0248	Stowaway country of boarding, coded	/OtherPersonList/OtherPersonData/Embarkation/Location/CountryCode[OtherPersonStatus="Stowaway"]
IMO0250	Stowaway intended final destination name	/OtherPersonList/OtherPersonData/StowawaysDetails/IntendedFinalDestinationName
IMO0251	Stowaway stated reasons for boarding the ship	/OtherPersonList/OtherPersonData/StowawaysDetails/StatedReasonsForBoardingShip
IMO0252	Stowaway name by which known	/OtherPersonList/OtherPersonData/StowawaysDetails/NameByWhichKnown
IMO0253	Stowaway claimed nationality	/OtherPersonList/OtherPersonData/StowawaysDetails/ClaimedNationality
IMO0254	Person's home address street and number/P.O. Box	For crew: /CrewList/CrewMemberData/HomeAddress/StreetName /CrewList/CrewMemberData/HomeAddress/StreetNumber For passengers: /PassengerList/PassengerData/HomeAddress/StreetName /PassengerList/PassengerData/HomeAddress/StreetNumber For stowaways: /OtherPersonList/OtherPersonData/HomeAddress/StreetName[OtherPersonStatus="Stowaway"] /OtherPersonList/OtherPersonData/HomeAddress/StreetNumber[OtherPersonStatus="Stowaway"]
IMO0255	Person's home address postcode	For crew: /CrewList/CrewMemberData/HomeAddress/PostCode For passengers: /PassengerList/PassengerData/HomeAddress/PostCode For stowaways: /OtherPersonList/OtherPersonData/HomeAddress/PostCode[OtherPersonStatus="Stowaway"]
IMO0256	Person's home address city	For crew: /CrewList/CrewMemberData/HomeAddress/CityName For passengers: /PassengerList/PassengerData/HomeAddress/CityName For stowaways: /OtherPersonList/OtherPersonData/HomeAddress/CityName[OtherPersonStatus="Stowaway"]