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

Part 2: Core data elements

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

Partie 2: Éléments de données principaux

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Foreword

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

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

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

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

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

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

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

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

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

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

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

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

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

Part 2:
Core data elements

1 Scope

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

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

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

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2 Normative references

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

3 Terms, definitions, and abbreviated terms

3.1 Terms and definitions

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

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

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

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

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

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

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3.1.2
data type
definition of the structure of a data element

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

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

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

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

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

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

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

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

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

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

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

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

3.2 Abbreviated terms

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

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

TDED Trade Data Elements Dictionary (ISO 7372).

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

WCO World Customs Organization

XML Extensible Markup Language, see Reference [4].

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

4 General provisions

4.1 Application area for the core data elements

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

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

   — General Declaration (FAL Form 1);

   — Cargo Declaration (FAL Form 2);

   — Ship's Stores Declaration (FAL Form 3);

   — Crew's Effects Declaration (FAL Form 4);

   — Crew List (FAL Form 5);

   — Passenger List (FAL Form 6);

   — Dangerous Goods Manifest (FAL Form 7);

   — the document required under the Universal Postal Convention for mail;

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

   — Maritime Declaration of Health;

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

   — security-related information as required under SOLAS regulation XI-2/9.2.2 (ISPS code);

   — advance electronic cargo information for customs risk assessment purposes;

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

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

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

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

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

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

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

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

4.2 Types of data elements defined by this document

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

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

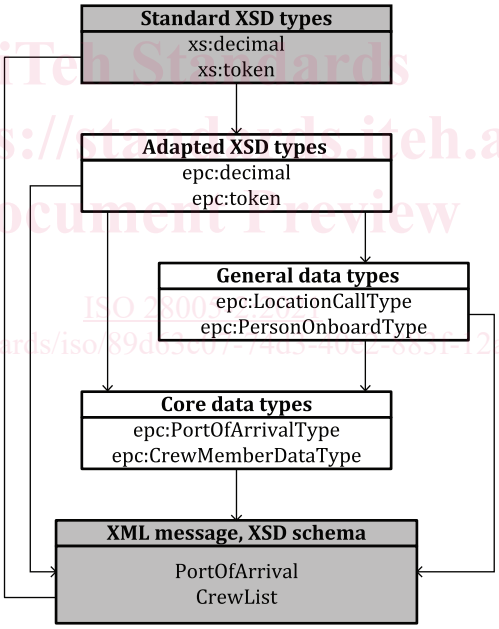

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Figure 1 — Elements of this part of ISO 28005

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

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

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

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

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

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

4.3 Structure of the data element descriptions

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

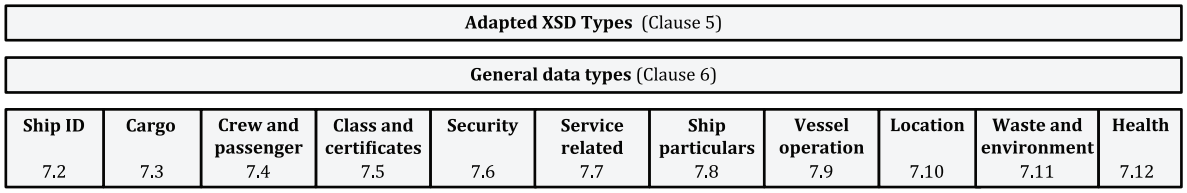

Figure 2 — Overview of the structure of this document

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

a) Ship ID: ship identification and contact details.

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

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

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

e) Security: mainly ISPS-related data.

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

g) Ship particulars: static data about the ship.

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

i) Location: different ways to describe a location.

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

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

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

4.4 Use of XML name space

4.4.1 XSD name space

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

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https://standards.iteh.ai/catalog/standards/iso/89d63c07-74d3-40e2-883f-12abd54f879c/iso-28005-2-2021

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