

INTERNATIONAL HYDROGRAPHIC ORGANIZATION



IHO UNIVERSAL HYDROGRAPHIC DATA MODEL

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Marine Traffic Management Product Specification
Version 1.0.0

Appendix C-1 **Feature Catalogue**

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1 Catalogue header information

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3 Simple Attributes

3.1 Administrative Division

Name: Administrative Division

Definition: Administrative division is a generic term for an administrative region within a country at a level below that of the sovereign state.

Code: 'administrativeDivision'

Remarks:

Aliases: (none)

Value Type: text

3.2 Application profile

Name: Application profile

Definition: name of an application profile that can be used with the online resource (ISO 19115)

Code: 'applicationProfile'

Remarks:

Aliases: (none)

Value Type: text

3.3 In ballast

Name: In ballast

Definition: Whether the vessel is in ballast.

Code: 'inBallast'

Remarks:

Aliases: BALAST

Value Type: boolean

3.4 Call Name

Name: Call Name

Definition: The designated call name of a station, e.g. radio station, radar station, pilot.

Code: 'callName'

Remarks: This is the name used when calling a radio station by radio i.e. "Singapore Pilots".

Aliases: CALNAM

Value Type: text

3.5 Call sign

Name: Call sign

Definition: The designated call-sign of a radio station.

Code: 'callSign'

Remarks:

Aliases: CALSGN

Value Type: text

3.6 Cardinal direction

Name: Cardinal direction

Definition: Principal and intermediate compass points.

Code: 'cardinalDirection'

Remarks:

Aliases: CARDIR

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'N' Aliases: (none)	north	1	
'NNE' Aliases: (none)	northnortheast	2	
'NE' Aliases: (none)	northeast	3	
'ENE' Aliases: (none)	eastnortheast	4	
'E' Aliases: (none)	east	5	
'ESE' Aliases: (none)	eastsoutheast	6	
'SE' Aliases: (none)	southeast	7	
'SSE' Aliases: (none)	southsoutheast	8	
'S' Aliases: (none)	south	9	
'SSW' Aliases: (none)	southsouthwest	10	
'SW' Aliases: (none)	southwest	11	
'WSW' Aliases: (none)	westsouthwest	12	
'W' Aliases: (none)	west	13	
'WNW' Aliases: (none)	westnorthwest	14	
'NW' Aliases: (none)	northwest	15	
'NNW' Aliases: (none)	northnorthwest	16	

3.7 Category of authority

Name: Category of authority

Definition: The type of person, government agency or organisation granted powers of managing or controlling access to and/or activity in an area

Code: 'categoryOfAuthority'

Remarks:

Aliases: CATAUT

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
-------	------------	------	---------

Label	Definition	Code	Remarks
'customs' Aliases: (none)	The agency or establishment for collecting duties, tolls. (Merriam-Websters online Dictionary 23rd February 2006, amended).	1	
'border control' Aliases: (none)	The administration to prevent or detect and prosecute violations of rules and regulations at international boundaries (adapted from Merriam-Websters online Dictionary 23rd February 2006).	2	
'police' Aliases: (none)	The department of government, or civil force, charged with maintaining public order. (Adapted from OED)	3	
'port' Aliases: (none)	Person or corporation, owners of, or entrusted with or invested with the power of managing a port. May be called a Harbour Board, Port Trust, Port Commission, Harbour Commission, Marine Department (NP 100 8th Edition 14 Oct 2004)	4	
'immigration' Aliases: (none)	The authority controlling people entering a country.	5	
'health' Aliases: (none)	The authority with responsibility for checking the validity of the health declaration of a vessel and for declaring free pratique.	6	
'coast guard' Aliases: (none)	Organisation keeping watch on shipping and coastal waters according to governmental law; normally the authority with responsibility for search and rescue.	7	
'agricultural' Aliases: (none)	The authority with responsibility for preventing infection of the agriculture of a country and for the protection of the agricultural interests of a country.	8	
'military' Aliases: (none)	A military authority which provides control of access to or approval for transit through designated areas or airspace.	9	
'private company' Aliases: (none)	A private or publicly owned company or commercial enterprise which exercises control of facilities, for example a calibration area.	10	
'maritime police' Aliases: (none)	A governmental or military force with jurisdiction in territorial waters. Examples could include Gendarmerie Maritime, Carabinerie, and Guardia Civil.	11	
'environmental' Aliases: (none)	An authority with responsibility for the protection of the environment.	12	
'fishery' Aliases: (none)	An authority with responsibility for the control of fisheries.	13	
'finance' Aliases: (none)	an authority with responsibility for the control and movement of money.	14	
'maritime' Aliases: (none)	A national or regional authority charged with administration of maritime affairs.	15	

3.8 Category of cargo

Name: Category of cargo

Definition: Classification of the different types of cargo that a ship may be carrying.

Code: 'categoryOfCargo'

Remarks:

Aliases: CATCGO

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'bulk' Aliases: (none)	Normally dry cargo which is transported to and from the vessel on conveyors or grabs	1	

Label	Definition	Code	Remarks
'container' Aliases: (none)	One of a number of standard sized cargo carrying units, secured using standard corner attachments and bars	2	
'general' Aliases: (none)	Break bulk cargo normally loaded by crane	3	
'liquid' Aliases: (none)	Any cargo loaded by pipeline	4	
'passenger' Aliases: (none)	A fee paying traveller	5	
'livestock' Aliases: (none)	Live animals carried in bulk	6	
'dangerous or hazardous' Aliases: (none)	Dangerous or hazardous cargo as described by the IMO International Maritime Dangerous Goods code	7	
'heavy lift' Aliases: (none)	Indivisible heavy items of weight generally over 100 tons, and width or height greater than 100 meters.	8	
'ballast' Aliases: (none)	Material carried by a ship to ensure its stability.	9	The material is generally a heavy material such as gravel, sand, iron, or water.

3.9 Category of communication preference

Name: Category of communication preference

Definition: Classification of frequencies, VHF channels, telephone numbers, or other means of communication based on preference.

Code: 'categoryOfCommPref'

Remarks:

Aliases: (none)

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'preferred calling' Aliases: (none)	the first choice channel or frequency to be used when calling a radio station	1	
'alternate calling' Aliases: (none)	a channel or frequency to be used for calling a radio station when the preferred channel or frequency is busy or is suffering from interference	2	
'preferred working' Aliases: (none)	the first choice channel or frequency to be used when working with a radio station	3	
'alternate working' Aliases: (none)	a channel or frequency to be used for working with a radio station when the preferred working channel or frequency is busy or is suffering from interference	4	

3.10 Category of concentration of shipping hazard area

Name: Category of concentration of shipping hazard area

Definition: Classification of shipping hazards due to traffic volume or density.

Code: 'categoryOfConcentrationOfShippingHazardArea'

Remarks:

Aliases: CATSHA

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'concentration of merchant shipping' Aliases: (none)	Concentration of vessels whose primary purpose is to engage in commerce, including ferries.	1	
'concentration of recreational vessels' Aliases: (none)	Concentration of powered or sailing vessels principally engaged in recreation, leisure, or sporting competition.	2	
'concentration of fishing vessels' Aliases: (none)	Concentration of vessels whose primary purpose is to hunt, trap or process fish. The concentration could be on the fishing ground, in transit or in the approaches to home bases or fish markets.	3	
'concentration of military vessels' Aliases: (none)	Concentration of vessels principally engaged in military activities. This includes activities based on mandate of international organisations (e.g. UN). The concentration is in areas others than military exercise areas.	4	

3.11 Category of dangerous or hazardous cargo

Name: Category of dangerous or hazardous cargo

Definition: Classification of dangerous goods or hazardous materials based on the International Maritime Dangerous Goods Code (IMDG Code)

Code: 'categoryOfDangerousOrHazardousCargo'

Remarks:

Aliases: CATDHC

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'IMDG Code Class 1 Div. 1.1' Aliases: (none)	Explosives, Division 1: substances and articles which have a mass explosion hazard	1	
'IMDG Code Class 1 Div. 1.2' Aliases: (none)	Explosives, Division 2: substances and articles which have a projection hazard but not a mass explosion hazard	2	
'IMDG Code Class 1 Div. 1.3' Aliases: (none)	Explosives, Division 3: substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard	3	
'IMDG Code Class 1 Div. 1.4' Aliases: (none)	Explosives, Division 4: substances and articles which present no significant hazard	4	
'IMDG Code Class 1 Div. 1.5' Aliases: (none)	Explosives, Division 5: very insensitive substances which have a mass explosion hazard	5	
'IMDG Code Class 1 Div. 1.6' Aliases: (none)	Explosives, Division 6: extremely insensitive articles which do not have a mass explosion hazard	6	
'IMDG Code Class 2 Div. 2.1' Aliases: (none)	Gases, flammable gases	7	

Label	Definition	Code	Remarks
'IMDG Code Class 2 Div. 2.2' Aliases: (none)	Gases, non-flammable, non-toxic gases	8	
'IMDG Code Class 2 Div. 2.3' Aliases: (none)	Gases, toxic gases	9	
'IMDG Code Class 3' Aliases: (none)	flammable liquids	10	
'IMDG Code Class 4 Div. 4.1' Aliases: (none)	flammable solids, self-reactive substances and desensitized explosives	11	
'IMDG Code Class 4 Div. 4.2' Aliases: (none)	substances liable to spontaneous combustion	12	
'IMDG Code Class 4 Div. 4.3' Aliases: (none)	substances which, in contact with water, emit flammable gases	13	
'IMDG Code Class 5 Div. 5.1' Aliases: (none)	oxidizing substances	14	
'IMDG Code Class 5 Div. 5.2' Aliases: (none)	organic peroxides	15	
'IMDG Code Class 6 Div. 6.1' Aliases: (none)	toxic substances	16	
'IMDG Code Class 6 Div. 6.2' Aliases: (none)	infectious substances	17	
'IMDG Code Class 7' Aliases: (none)	Radioactive material	18	
'IMDG Code Class 8' Aliases: (none)	Corrosive substances	19	
'IMDG Code Class 9' Aliases: (none)	Miscellaneous dangerous substances and articles	20	
'Harmful Substances in packaged form' Aliases: (none)	Harmful substances are those substances which are identified as marine pollutants in the International Maritime Dangerous Goods Code (IMDG Code). Packaged form is defined as the forms of containment specified for harmful substances in the IMDG Code. (MARPOL (73/78) Annex III)	21	

3.12 Category of maritime broadcast

Name: Category of maritime broadcast

Definition: Classification of maritime broadcast based on the nature of information conveyed.

Code: 'categoryOfMaritimeBroadcast'

Remarks:

Aliases: CATMAB

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'navigational warning' Aliases: (none)	message containing urgent information relevant to safe navigation broadcast to ships in accordance with the provisions of the International Convention for the Safety of Life at Sea, 1974, as	1	
'meteorological warning' Aliases: (none)	warning of adverse weather conditions	2	
'ice report' Aliases: (none)	report of the ice situation and restrictions to shipping	3	
'SAR information' Aliases: (none)	broadcast message with information about an ongoing SAR operation	4	
'pirate attack warning' Aliases: (none)	warning of possible attack by pirates	5	
'meteorological forecast' Aliases: (none)	broadcast message containing meteorological forecast	6	
'pilot service message' Aliases: (none)	broadcast message about pilot service	7	
'AIS information' Aliases: (none)	broadcast message about AIS information	8	
'LORAN message' Aliases: (none)	broadcast message about the LORAN service	9	
'SATNAV message' Aliases: (none)	broadcast message about Satellite Navigation service	10	
'gale warning' Aliases: (none)	warning of winds of Beaufort force 8 or 9	11	
'storm warning' Aliases: (none)	warning of winds of Beaufort force 10 or over	12	
'tropical revolving storm warning' Aliases: (none)	warning of hurricanes in the North Atlantic and eastern North Pacific, typhoons in the Western Pacific, cyclones in the Indian Ocean and cyclones of similar nature in other regions	13	
'NAVAREA warning' Aliases: (none)	navigational warning or in-force bulletin promulgated as part of a numbered series by a NAVAREA coordinator (Maritime Safety Information Manual 2009)	14	
'coastal warning' Aliases: (none)	navigational warning promulgated as part of a numbered series by a National coordinator (Maritime Safety Information Manual 2009)	15	
'local warning' Aliases: (none)	warning which covers inshore waters, often within the limits of jurisdiction of a harbour or port authority (Maritime Safety Information Manual 2009)	16	
'low water level warning/negative tidal surge' Aliases: (none)	warning of actual or expected low water level	17	
'icing warning' Aliases: (none)	warning of accretion of ice on ships	18	
'tsunami broadcast'	broadcasts about tsunamis, including watches, advisories, and other types of messages relating to tsunamis or potential tsunamis	19	

Label	Definition	Code	Remarks
Aliases: (none)			

3.13 Category of military practice area

Name: Category of military practice area

Definition: Classification of area by military use.

Code: 'categoryOfMilitaryPracticeArea'

Remarks:

Aliases: CATMPA

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'torpedo exercise area' Aliases: (none)	an area within which exercises are carried out with torpedoes.	2	
'submarine exercise area' Aliases: (none)	an area within which submarine exercises are carried out.	3	
'firing danger area' Aliases: (none)	areas for bombing and missile exercises.	4	
'mine-laying practice area' Aliases: (none)	An area within which mine laying exercises are carried out.	5	
'small arms firing range' Aliases: (none)	an area for shooting pistols, rifles and machine guns etc. at a target.	6	

3.14 Category of navigation line

Name: Category of navigation line

Definition: Classification of route guidance given to vessels

Code: 'categoryOfNavigationLine'

Remarks:

Aliases: CATNAV

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'clearing line' Aliases: (none)	a straight line that marks the boundary between a safe and a dangerous area or that passes clear of a navigational danger.	1	
'transit line' Aliases: (none)	a line passing through one or more fixed marks.	2	
'leading line bearing a recommended track' Aliases: (none)	a line passing through one or more clearly defined objects, along the path of which a vessel can approach safely up to a certain distance off.	3	

3.15 Category of pilot

Name: Category of pilot

Definition: Classification of pilots and pilot services by type of waterway where piloting services are provided.

Code: 'categoryOfPilot'

Remarks:

Aliases: CATPLT

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'pilot' Aliases: (none)	Pilot licenced to conduct vessels during approach from sea to a specified place which may be a handover place, an anchorage or alongside.	1	
'deep sea' Aliases: (none)	Pilot licenced to conduct vessels over extensive sea areas.	2	
'harbour' Aliases: (none)	Pilot who is licenced to conduct vessels from a specified place, such as a handover area or anchorage into a harbour.	3	
'bar' Aliases: (none)	Pilot licensed to conduct vessels over a bar to or from a handover with a river pilot (for example as used in USA).	4	
'river' Aliases: (none)	Pilot licensed to conduct vessels from and to specified places, along the course of a river (for example as used in Rio Amazonas and Rio de La Plata).	5	
'channel' Aliases: (none)	Pilot licensed to conduct vessels from and to specified places, along the course of a channel. (for example as used in Rio Amazonas and Rio de La Plata).	6	
'lake' Aliases: (none)	Pilot licensed to conduct vessels from and to specified places on a great lake. (for example as used in the Lago de Maracaibo in Venezuela).	7	

3.16 Category of pilot boarding place

Name: Category of pilot boarding place

Definition: *Definition required*

Code: 'categoryOfPilotBoardingPlace'

Remarks:

Aliases: CATPIL

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'boarding by pilot-cruising vessel' Aliases: (none)	pilot boards from a cruising vessel.	1	
'boarding by helicopter' Aliases: (none)	pilot boards by helicopter which comes out from the shore.	2	
'pilot comes out from shore' Aliases: (none)	pilot boards from a vessel which comes out from the shore on request.	3	

3.17 Category of preference

Name: Category of preference

Definition: The selection of a first choice compared to other options.

Code: 'categoryOfPreference'

Remarks:

Aliases: (none)

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'primary' Aliases: (none)	The preferred first choice used in normal conditions.	1	
'alternate' Aliases: (none)	The preferred choice in extraordinary conditions.	2	

3.18 Category of radio methods

Name: Category of radio methods

Definition: Categories of radiocommunications based on frequency band and radio traffic method.

Code: 'categoryOfRadioMethods'

Remarks:

Aliases: CATRMT

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'Low Frequency (LF) voice traffic' Aliases: (none)	Frequency in a frequency range between 30 and 300 kHz used for voice traffic	1	
'Medium Frequency (MF) voice traffic' Aliases: (none)	Frequency in a frequency range between 300 and 3 000kHz used for voice traffic	2	
'High Frequency (HF) voice traffic' Aliases: (none)	Frequency in a frequency range between 3 and 30 MHz used for voice traffic	3	
'Very High Frequency (VHF) voice traffic' Aliases: (none)	Frequency in a frequency range between 30 and 300 MHz used for voice traffic	4	
'High Frequency Narrow Band Direct Printing' Aliases: (none)	High Frequency Narrow Band Direct Printing	5	
'NAVTEX' Aliases: (none)	Narrow-band direct-printing telegraphy system for transmission of maritime safety information. (IHO Dictionary, S-32, 5th Edition, 3412)	6	
'SafetyNET' Aliases: (none)	SafetyNET is an international automatic direct-printing satellite-based service for the promulgation of navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages - maritime safety information (MSI) - to ships. (International SafetyNET Manual, 2003 Edition, IMO Publication Number IA908E)	7	
'NBDP Telegraphy (Narrow Band Direct	A communications system consisting of teletypewriters connected to a telephonic network to send and receive Narrow Band Direct Printing. (Adapted American	8	

Label	Definition	Code	Remarks
Printing Telegraphy)' Aliases: (none)	Heritage Dictionary)		
'facsimile' Aliases: (none)	A method or device for transmitting documents, drawings, photographs, or the like, by means of radio or telephone for exact reproduction elsewhere.	9	
'NAVIP' Aliases: (none)	A Russian system transmitting navigational information, send by radio and containing information relevant to coastal waters of foreign countries and high seas. (Central Marine Research and Design Institute, St.-Petersburg, Russia)	10	
'Low Frequency (LF) digital traffic' Aliases: (none)	Frequency in a frequency range between 30 and 300 kHz used for digital traffic	11	
'Medium Frequency (MF) digital traffic' Aliases: (none)	Frequency in a frequency range between 300 and 3000kHz used for digital traffic	12	
'High Frequency (HF) digital traffic' Aliases: (none)	Frequency in a frequency range between 3 and 30 MHz used for digital traffic	13	
'Very High Frequency (VHF) digital traffic' Aliases: (none)	Frequency in a frequency range between 30 and 300 MHz used for digital traffic	14	
'Low Frequency (LF) telegraph traffic' Aliases: (none)	Frequency in a frequency range between 30 and 300 kHz used for telegraph traffic	15	
'Medium Frequency (MF) telegraph traffic' Aliases: (none)	Frequency in a frequency range between 300 and 3 000kHz used for telegraph traffic	16	
'High Frequency (HF) telegraph traffic' Aliases: (none)	Frequency in a frequency range between 3 and 30 MHz used for telegraph traffic	17	
'Medium Frequency (MF) Digital Selective Call traffic' Aliases: (none)	Frequency in a frequency range between 300 and 3000kHz used for Digital Selective Call traffic	18	
'High Frequency (HF) Digital Selective Call traffic' Aliases: (none)	Frequency in a frequency range between 3 and 30 MHz used for Digital Selective Call traffic	19	
'Very High Frequency (VHF) Digital Selective Call traffic' Aliases: (none)	Frequency in a frequency range between 30 and 300 MHz used for Digital Selective Call traffic	20	

3.19 Category of relationship

Name: Category of relationship

Definition: Expresses constraints or requirements on vessel actions or activities in relation to a geographic feature, facility, or service

Code: 'categoryOfRelationship'

Remarks:

Aliases: CATREL

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'prohibited' Aliases: (none)	use of facility, waterway or service is forbidden	1	
'not recommended' Aliases: (none)	use of facility, waterway or service is not recommended	2	
'permitted' Aliases: (none)	use of facility, waterway, or service is permitted but not required	3	
'recommended' Aliases: (none)	use of facility, waterway, or service is recommended	4	
'required' Aliases: (none)	use of facility, waterway, or service is required	5	
'not required' Aliases: (none)	use of facility, waterway, or service is not required	6	

3.20 Category of restricted area

Name: Category of restricted area

Definition: The official legal status of each kind of restricted area defines the kind of restriction(s), e.g., the restriction for a 'game preserve' may be 'entering prohibited', the restriction for an 'anchoring prohibition area' is 'anchoring prohibited'.

Code: 'categoryOfRestrictedArea'

Remarks: Permitted values for status should be reviewed, some are probably irrelevant to MPAs without wrecks, obstructions, or any navigation aids

Aliases: CATREA

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'offshore safety zone' Aliases: (none)	the area around an offshore installation within which vessels are prohibited from entering without permission special regulations protect installations within a safety zone and vessels of all nationalities are required to respect the zone.	1	
'nature reserve' Aliases: (none)	a tract of land managed so as to preserve it's flora, fauna, physical features, etc.	4	
'bird sanctuary' Aliases: (none)	a place where birds are bred and protected.	5	
'game reserve' Aliases: (none)	a place where wild animals or birds hunted for sport or food are kept undisturbed for private use.	6	
'seal sanctuary' Aliases: (none)	a place where seals are protected.	7	
'degaussing range' Aliases: (none)	an area, usually about two cables diameter, within which ships' magnetic fields may be measured sensing instruments and cables are installed on the sea bed in the range and there are cables leading from the range to a control position ashore.	8	

Label	Definition	Code	Remarks
'military area' Aliases: (none)	an area controlled by the military in which restrictions may apply.	9	
'historic wreck area' Aliases: (none)	an area around certain wrecks of historical importance to protect the wrecks from unauthorized interference by diving, salvage or deposition (including anchoring).	10	
'navigational aid safety zone' Aliases: (none)	an area around a navigational aid which vessels are prohibited from entering.	12	
'minefield' Aliases: (none)	an area laid and maintained with explosive mines for defence or practice purposes.	14	
'waiting area' Aliases: (none)	an area reserved for vessels waiting to enter a harbour.	19	
'research area' Aliases: (none)	an area where marine research takes place.	20	
'fish sanctuary' Aliases: (none)	a place where fish are protected.	22	
'ecological reserve' Aliases: (none)	a tract of land managed so as to preserve the relation of plants and living creatures to each other and to their surroundings.	23	
'swinging area' Aliases: (none)	an area where vessels turn.	25	
'environmentally sensitive sea area' Aliases: (none)	A generic term which may be used to describe a wide range of areas, considered sensitive for a variety of environmental reasons.	27	
'particularly sensitive sea area' Aliases: (none)	An area that needs special protection through action by IMO because of its significance for regional ecological, socio-economic or scientific reasons and because it may be vulnerable to damage by international shipping activities.	28	
'disengagement area' Aliases: (none)	An area near a fairway where vessels can go to clear the way or make an about turn and possibly return to a waiting area when nautical conditions impose it.	29	Capitalization in registry is inconsistent
'port security area' Aliases: (none)	<i>Definition required</i>	30	Capitalization in registry is inconsistent and definition is N/A
'coral sanctuary' Aliases: (none)	A place where coral is protected.	31	
'recreation area' Aliases: (none)	An area within which recreational activities regularly take place and therefore vessel movement may be restricted.	32	(Adapted from S-57 Edition 3.1, Appendix A – Chapter 2, Page 2.76, November 2000).

3.21 Category of routing measure

Name: Category of routing measure

Definition: Classification of routing measures by type.

Code: 'categoryOfRoutingMeasure'

Remarks:

Aliases: (none)

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'archipelagic sea lane' Aliases: (none)	Sea lanes designated by an archipelagic State for the passage of ships and aircraft.	1	
'deep water route' Aliases: (none)	A route within defined limits which has been accurately surveyed for clearance of sea bottom and submerged obstacles as indicated on the chart.	2	
'fairway system' Aliases: (none)	That part of a river, harbour and so on, where the main navigable channel for vessels of larger size lies. It is also the usual course followed by vessels entering or leaving harbours, called "ship channel".	3	
'recommended route' Aliases: (none)	A navigation line, range system, or a recommended track, lane, or route.	4	
'traffic separation scheme' Aliases: (none)	A scheme which aims to reduce the risk of collision in congested and/or converging areas by separating traffic moving in opposite, or nearly opposite, directions.	5	
'two-way route' Aliases: (none)	A route within defined limits inside which two way traffic is established, aimed at providing safe passage of ships through waters where navigation is difficult or dangerous.	6	

3.22 Category of ship report

Name: Category of ship report

Definition: Classification of ship reports based on IMO standard report formats.

Code: 'categoryOfShipReport'

Remarks: Through Resolution A.851(20), the IMO encourages authorities to require standard formats and procedures for ship reporting specified at ID 1 to 7 above but recognises that some authorities require amended formats and these cases are covered by ID 8 "any other report". (Appendix to IMO Resolution A.851(20) GENERAL PRINCIPLES FOR SHIP REPORTING SYSTEMS AND SHIP REPORTING REQUIREMENTS, INCLUDING GUIDELINES FOR REPORTING INCIDENTS INVOLVING DANGEROUS GOODS, HARMFUL SUBSTANCES AND/OR MARINE POLLUTANTS.)

Aliases: CATREP

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'sailing plan' Aliases: (none)	before or as near as possible to the time of departure from a port within a system or when entering the area covered by a system [for instance A, B, J, X etc.)	1	
'position report' Aliases: (none)	when necessary to ensure effective operation of the system	2	
'deviation report' Aliases: (none)	when the ship's position varies significantly from the position that would have been predicted from previous reports, when changing the reported route, or as decided by the master	3	
'final report' Aliases: (none)	on arrival at the destination or on leaving the area covered by the system	4	
'dangerous goods report' Aliases: (none)	when an incident takes place involving the loss or likely loss overboard of packaged dangerous goods, including those in freight containers, portable tanks, road and rail vehicles and shipborne barges, into the sea	5	
'harmful substances report' Aliases: (none)	when an incident takes place involving the discharge or probable discharge of oil (Annex I of MARPOL 73/78) or noxious liquid substances in bulk (Annex II of MARPOL 73/78)	6	
'marine pollutants report'	in the case of the loss or likely loss overboard of harmful substances in packaged form, including those in freight containers, portable tanks, road and rail vehicles	7	

Label	Definition	Code	Remarks
Aliases: (none)	and shipborne barges identified in the International Maritime Goods Code as marine pollutants (Annex III of MARPOL 73/78).		
'any other report' Aliases: (none)	any other report should be made in accordance with the system procedures as notified in accordance with paragraph 9 of the general principles	8	

3.23 Category of signal station, traffic

Name: Category of signal station, traffic

Definition: Classification of station based on the traffic service provided

Code: 'categoryOfSignalStationTraffic'

Remarks:

Aliases: CATSIT

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'port control' Aliases: (none)	a signal station for the control of vessels within a port.	1	
'port entry and departure' Aliases: (none)	a signal station for the control of vessels entering or leaving a port.	2	
'International Port Traffic' Aliases: (none)	a signal station displaying International Port Traffic signals.	3	
'berthing' Aliases: (none)	a signal station for the control of vessels when berthing.	4	
'dock' Aliases: (none)	a signal station for the control of vessels entering or leaving a dock.	5	
'lock' Aliases: (none)	a signal station for the control of vessels entering or leaving a lock.	6	
'flood barrage' Aliases: (none)	a signal station for the control of vessels wishing to pass through a flood control barrage.	7	
'bridge passage' Aliases: (none)	a signal station for the control of vessels wishing to pass under a bridge.	8	
'dredging' Aliases: (none)	a signal station indicating when dredging is in progress.	9	
'traffic control light' Aliases: (none)	visual signal lights placed in a waterway to indicate to shipping the movements authorised at the time at which they are shown.	10	
'oncoming traffic indication' Aliases: (none)	indicates the oncoming traffic on an inland waterway.	13	

3.24 Category of signal station, warning

Name: Category of signal station, warning

Definition: Classification of station based on the warning service provided

Code: 'categoryOfSignalStationWarning'

Remarks:

Aliases: CATSIW

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'danger' Aliases: (none)	a signal or message warning of the presence of a danger to navigation.	1	
'maritime obstruction' Aliases: (none)	a signal or message warning of the presence of a maritime obstruction.	2	
'cable' Aliases: (none)	a signal or message warning of the presence of a cable.	3	
'military practice' Aliases: (none)	a signal or message warning of activity in a military practice area.	4	
'distress' Aliases: (none)	a station that may receive or transmit distress signals.	5	
'weather' Aliases: (none)	a visual signal displayed to indicate a weather forecast.	6	
'storm' Aliases: (none)	a signal or message conveying information about storm conditions.	7	
'ice' Aliases: (none)	a signal or message conveying information about ice conditions.	8	
'time' Aliases: (none)	an accurate signal marking a specified time or time interval. It is used primarily for determining errors of timepieces. Such signals are usually sent from an observatory by radio or telegraph, but visual signals are used at some ports.	9	
'tide' Aliases: (none)	a signal or message conveying information on tidal conditions in the area in question.	10	
'tidal stream' Aliases: (none)	a signal or message conveying information on condition of tidal currents in the area in question.	11	
'tide gauge' Aliases: (none)	a device for measuring the height of tide. A graduated staff in a sheltered area where visual observations can be made or it may consist of an elaborate recording instrument making a continuous graphic record of tide height against time. Such an instrument is usually actuated by a float in a pipe communicating with the sea through a small hole which filters out shorter waves.	12	
'tide scale' Aliases: (none)	a visual scale which directly shows the height of the water above chart datum or a local datum.	13	
'diving' Aliases: (none)	a signal or message warning of diving activity	14	
'water level gauge' Aliases: (none)	a device for measuring and conveying information about the water level (non-tidal) in the area in question.	15	
'vertical clearance indication' Aliases: (none)	An indication of the vertical clearance of a bridge, overhead cable, etc.	16	
'high water mark' Aliases: (none)	An indication of the official high water level.	17	
'depth indication' Aliases: (none)	An indication of the local depth.	18	

3.25 Category of Traffic Separation Scheme

Name: Category of Traffic Separation Scheme

Definition: International classification of traffic separation scheme

Code: 'categoryOfTrafficSeparationScheme'

Remarks:

Aliases: CATTSS

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'IMO - Adopted' Aliases: (none)	A defined Traffic Separation Scheme that has been adopted as an IMO routing measure.	1	
'not IMO - adopted' Aliases: (none)	a defined Traffic Separation Scheme that has not been adopted as an IMO routing measure.	2	

3.26 Category of temporal variation

Name: Category of temporal variation

Definition: An assessment of the likelihood of change over time.

Code: 'categoryOfTemporalVariation'

Remarks:

Aliases: (none)

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'Extreme Event' Aliases: (none)	Indication of the possible impact of a significant event (for example hurricane, earthquake, volcanic eruption, landslide, etc), which is considered likely to have changed the seafloor or landscape significantly.	1	
'Likely to Change' Aliases: (none)	Continuous or frequent change to non-bathymetric features (for example river siltation, glacier creep/recession, sand dunes, buoys, marine farms, etc.).	4	
'Unlikely to Change' Aliases: (none)	Significant change to the seafloor is not expected.	5	

3.27 Category of text

Name: Category of text

Definition: Classification of completeness of textual information in relation to the source.

Code: 'categoryOfText'

Remarks:

Aliases: (none)

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'abstract or summary' Aliases: (none)	A statement summarizing the important points of a text	1	
'extract' Aliases: (none)	An excerpt or excerpts from a text	2	

Label	Definition	Code	Remarks
'full text' Aliases: (none)	The whole text	3	

3.28 Category of vessel registry

Name: Category of vessel registry

Definition: The locality of vessel registration or enrolment relative to the nationality of a port, territorial sea, administrative area, exclusive zone or other location.

Code: 'categoryOfVesselRegistry'

Remarks:

Aliases: CATRGY

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'domestic' Aliases: (none)	The vessel is registered or enrolled under the same national flag as the port, harbour, territorial sea, exclusive economic zone, or administrative area in which the object that possesses this attribute applies or is located.	1	
'foreign' Aliases: (none)	The vessel is registered or enrolled under a national flag different from the port, harbour, territorial sea, exclusive economic zone, or other administrative area in which the object that possesses this attribute applies or is located.	2	

3.29 Category of vessel traffic service

Name: Category of vessel traffic service

Definition: Classification of vessel traffic services based on the nature of the control or services provided.

Code: 'categoryOfVesselTrafficService'

Remarks:

Aliases: (none)

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'Information Service' Aliases: (none)	A service to ensure that essential information becomes available in time for on-board navigational decision-making	1	IMO Resolution A.857(20)
'Traffic Organisation Service' Aliases: (none)	A service to assist on-board navigational decision-making and to monitor its effects	2	IMO Resolution A.857(20)
'Navigational Assistance Service' Aliases: (none)	A service to prevent the development of dangerous maritime traffic situations and to provide for the safe and efficient movement of vessel traffic within the VTS area	3	IMO Resolution A.857(20)

3.30 City name

Name: City name

Definition: The name of a town or city.

Code: 'cityName'

Remarks:

Aliases: CITYNM

Value Type: text

3.31 Communication channel

Name: Communication channel

Definition: A channel number assigned to a specific radio frequency, frequencies or frequency band.

Code: 'communicationChannel'

Remarks: The expected input is the specific VHF-Channel. The attribute 'communication channel' encodes the various VHF-channels used for communication.

Aliases: COMCHA

Value Type: text

3.32 Comparison Operator

Name: Comparison Operator

Definition: Numerical comparison

Code: 'comparisonOperator'

Remarks: The definition of COMPOP provides the relation between the value given in the model and the real ship's value.

Aliases: COMPOP

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'greater than' Aliases: (none)	The value of the left value is greater than that of the right.	1	
'greater than or equal to' Aliases: (none)	The value of the left expression is greater than or equal to that of the right.	2	
'less than' Aliases: (none)	The value of the left expression is less than that of the right.	3	
'less than or equal to' Aliases: (none)	The value of the left expression is less than or equal to that of the right.	4	
'equal to' Aliases: (none)	The two values are equivalent.	5	
'not equal to' Aliases: (none)	The two values are not equivalent.	6	

3.33 Condition

Name: Condition

Definition: The various conditions of buildings and other constructions.

Code: 'condition'

Remarks:

Aliases: CONDTN

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'under construction' Aliases: (none)	a structure that is in the process of being built.	1	
'under reclamation' Aliases: (none)	an area of the sea that is being reclaimed as land, usually by the dumping of earth and other material.	3	

Label	Definition	Code	Remarks
'planned construction' Aliases: (none)	an area where a future construction is planned.	5	

3.34 Contact instructions

Name: Contact instructions

Definition: Instructions provided on how to contact a particular person, organisation or service.

Code: 'contactInstructions'

Remarks:

Aliases: (none)

Value Type: text

3.35 Country Name

Name: Country Name

Definition: The name of a nation.

Code: 'countryName'

Remarks:

Aliases: CNTRNM

Value Type: text

3.36 Day of Week

Name: Day of Week

Definition: Days of the week.

Code: 'dayOfWeek'

Remarks:

Aliases: DYOFWK

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'Sunday' Aliases: (none)	The first day of the week.	1	
'Monday' Aliases: (none)	The second day of the week.	2	
'Tuesday' Aliases: (none)	The third day of the week.	3	
'Wednesday' Aliases: (none)	The fourth day of the week.	4	
'Thursday' Aliases: (none)	The fifth day of the week.	5	
'Friday' Aliases: (none)	The sixth day of the week.	6	
'Saturday' Aliases: (none)	The seventh day of the week.	7	

3.37 Day of week is range

Name: Day of week is range

Definition: A statement expressing if the days of the week identified define a range or not.

Code: 'dayOfWeekIsRange'

Remarks:

Aliases: DYWKRN

Value Type: boolean

3.38 Date end

Name: Date end

Definition: The latest date on which an object (e.g., a buoy) will be present.

Code: 'dateEnd'

Remarks: This attribute is to be used to indicate the removal or cancellation of an object at a specific date in the future. See also 'periodic date end' (PEREND).

Aliases: DATEND

Value Type: S100_TruncatedDate

3.39 Date start

Name: Date start

Definition: The earliest date on which an object (e.g., a buoy) will be present.

Code: 'dateStart'

Remarks: This attribute is to be used to indicate the deployment or implementation of an object at a specific date in the future. See also 'periodic date start' (PERSTA).

Aliases: DATSTA

Value Type: S100_TruncatedDate

3.40 Delivery point

Name: Delivery point

Definition: Details of where post can be delivered such as the apartment, name and/or number of a street, building or PO Box.

Code: 'deliveryPoint'

Remarks:

Aliases: DELPNT

Value Type: text

3.41 Destination

Name: Destination

Definition: The place or general direction to which a vessel is going or directed.

Code: 'destination'

Remarks: In addition to a placename of a port, harbour area or terminal, the place could include generalities such as “The north-west”, or “upriver”.

Aliases: DSTNTN

Value Type: text

3.42 Display name

Name: Display name

Definition: A statement expressing if a feature name is to be displayed in certain system display settings or not

Code: 'displayName'

Remarks:

Aliases: (none)

Value Type: boolean

3.43 Distance

Name: Distance

Definition: A numeric measure of the spatial separation between two locations.

Code: 'distance'

Remarks: The value may be estimated or approximate, or accurate to a known uncertainty factor. Product specifications should indicate the uncertainty factor, if any, in metadata or an uncertainty co-attribute.

Aliases: DISTNC

Value Type: real

Unit of measure name: nautical miles definition: Nautical mile symbol: NM

Quantity specification: length

Constraints

string Length	text Pattern	range	precision
(not specified)	(none)	(not specified)	1

For real values, precision is the number of digits after the decimal point.

3.44 Dynamic resource

Name: Dynamic resource

Definition: Whether a vessel must use a shore-based or other resource to obtain up-to-date information.

Code: 'dynamicResource'

Remarks:

Aliases: (none)

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'static' Aliases: (none)	The information is static, or a source of up-to-date information is unavailable or unknown.	1	
'mandatory external dynamic' Aliases: (none)	An external source of up-to-date information is available and interaction with it to obtain up-to-date information is required.	2	
'optional external dynamic' Aliases: (none)	An external source of up-to-date information is available but interaction with it to obtain up-to-date information is not required.	3	
'onboard dynamic' Aliases: (none)	Up-to-date information may be computed using only onboard resources.	4	

3.45 File Locator

Name: File Locator

Definition: The string encodes the location of a fragment of text or other information in a support file.

Code: 'fileLocator'

Remarks: Product specifications must state how the association between a FILLOC and a support file is made. For example, the associated support file may be identified as the file named by a TXTDSC attribute bound to the same TXTCON attribute. Product specifications are also expected to describe the meaning of the pointer for a data product and state how the supporting files must be structured (bookmarked, tagged, etc.). For example, the pointer may be an XML ID, HTML ID, line number, bookmark in a PDF file, a "key" in a resources file, etc.

Aliases: FILLOC

Value Type: text

3.46 File Reference

Name: File Reference

Definition: The string encodes the file name of an external text file that contains the text in English

Code: 'fileReference'

Remarks:

Aliases: (none)

Value Type: text

3.47 Date fixed

Name: Date fixed

Definition: The date of an event.

Code: 'dateFixed'

Remarks:

Aliases: (none)

Value Type: S100_TruncatedDate

3.48 Flip bearing

Name: Flip bearing

Definition: The bearing at which text is re-located to the opposite side of a feature when screen display is oriented away from true north.

Code: 'flipBearing'

Remarks:

Aliases: (none)

Value Type: integer

Unit of measure name: degrees definition: degrees of arc symbol: (none)

Quantity specification: planeAngle

Constraints

string Length	text Pattern	range		precision
(not specified)	(none)	lowerBound	0	0
		upperBound	360	
		closure	closedInterval	

For real values, precision is the number of digits after the decimal point.

3.49 Frequency Shore Station Receives

Name: Frequency Shore Station Receives

Definition: The shore station receiver frequency expressed in kHz to one decimal place.

Code: 'frequencyShoreStationReceives'

Remarks: Examples: 4379.1 kHz becomes 043791; 13162.8 kHz becomes 131628

Aliases: FRQRXXV

Value Type: integer

Unit of measure name: kHz definition: Kilohertz to 1 decimal place converted to an integer symbol: kHz

Quantity specification: frequency

Constraints

string Length	text Pattern	range		precision
(not specified)	(none)	lowerBound	1	1
		upperBound	(none)	
		closure	gtSemiInterval	

For real values, precision is the number of digits after the decimal point.

3.50 Frequency Shore Station Transmits

Name: Frequency Shore Station Transmits

Definition: The shore station transmitter frequency expressed in kHz to one decimal place.

Code: 'frequencyShoreStationTransmits'

Remarks: Examples: 4379.1 kHz becomes 043791; 13162.8 kHz becomes 131628

Aliases: FRQTXM

Value Type: integer

Unit of measure name: kHz definition: Kilohertz to 1 decimal place converted to an integer symbol: kHz

Quantity specification: frequency

Constraints

string Length	text Pattern	range		precision
(not specified)	(none)	lowerBound	1	1
		upperBound	(none)	
		closure	gtSemiInterval	

For real values, precision is the number of digits after the decimal point.

3.51 Headline

Name: Headline

Definition: Words set at the head of a passage or page to introduce or categorize

Code: 'headline'

Remarks:

Aliases: HEADLN

Value Type: text

3.52 Horizontal distance uncertainty

Name: Horizontal distance uncertainty

Definition: The best estimate of the horizontal accuracy of horizontal clearances and distances.

Code: 'horizontalDistanceUncertainty'

Remarks: the error is assumed to be positive and negative. The plus/minus character must not be encoded.

Aliases: HORACC

Value Type: real

Unit of measure name: metres definition: SI Metres symbol: m

Quantity specification: length

Constraints

string Length	text Pattern	range		precision
(not specified)	(none)	lowerBound	0	1
		upperBound	(none)	
		closure	geSemiInterval	

For real values, precision is the number of digits after the decimal point.

3.53 IMO format for reporting

Name: IMO format for reporting

Definition: Whether a report must be in an IMO standard format

Code: 'imoFormatForReporting'

Remarks:

Aliases: IMOREP

Value Type: boolean

3.54 ISPS level

Name: ISPS level

Definition: Classification of ISPS security levels according to the ISPS Code.

Code: 'ispsLevel'

Remarks:

Aliases: ISPSLV

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'ISPS Level 1' Aliases: (none)	The level for which minimum appropriate protective security measures shall be maintained at all times.	1	
'ISPS Level 2' Aliases: (none)	The level for which appropriate additional protective security measures shall be maintained for a period of time as a result of heightened risk of a security incident.	2	
'ISPS Level 3' Aliases: (none)	The level for which further specific protective security measures shall be maintained for a limited period of time when a security incident is probable or imminent, although it may not be possible to identify the specific target.	3	

3.55 Jurisdiction

Name: Jurisdiction

Definition: The jurisdiction applicable to an administrative area.

Code: 'jurisdiction'

Remarks:

Aliases: JRSDTN

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'international' Aliases: (none)	involving more than one country covering more than one national area.	1	
'national' Aliases: (none)	an area administered or controlled by a single nation.	2	
'national sub-division' Aliases: (none)	an area smaller than the nation in which it lies.	3	

3.56 Language

Name: Language

Definition: The method of human communication, either spoken or written, consisting of the use of words in a structured and conventional way.

Code: 'language'

Remarks: The language is encoded by a character code following ISO 639-3

Aliases: LANGGE

Value Type: text

3.57 Logical Connectives

Name: Logical Connectives

Definition: Expresses whether all the constraints described by its co-attributes must be satisfied, or only one such constraint need be satisfied.

Code: 'logicalConnectives'

Remarks: This attribute is intended to be used with co-attributes that encode limits on vessel dimensions, type of cargo, and other characteristics. The combination of constraints described by logicalConnective and its co-attributes defines a subset of vessels to which information described by a feature or information type instance applies (or does not apply, is required, recommended, etc.). The relationship between the vessel subset and the information is indicated by an association - see PermissionType and InclusionType). The two listed values of logicalConnective are two of the basic operations of Boolean logic. The third basic operation (not) is not used.

Aliases: LOGCON

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'logical conjunction' Aliases: (none)	all the conditions described by the other attributes of the object, or sub-attributes of the same complex attribute, are true	1	
'logical disjunction' Aliases: (none)	at least one of the conditions described by the other attributes of the object, or sub-attributes of the same complex attributes, is true	2	

3.58 Linkage

Name: Linkage

Definition: location (address) for on-line access using a URL/URI address or similar addressing scheme. (Adapted from ISO 19115:2014.)

Code: 'linkage'

Remarks: Adapted from ISO 19115:2014.

Aliases: LINKGE

Value Type: URL

3.59 Membership

Name: Membership

Definition: indicates whether a vessel is included or excluded from the regulation / restriction / recommendation / nautical information

Code: 'membership'

Remarks:

Aliases: MBRSHIP

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'included' Aliases: (none)	Vessels with these characteristics are included in the regulation/restriction/recommendation/nautical information	1	
'excluded' Aliases: (none)	Vessels with these characteristics are excluded from the regulation/restriction/recommendation/nautical information	2	

3.60 MMSI Code

Name: MMSI Code

Definition: The Maritime Mobile Service Identity (MMSI) Code is formed of a series of nine digits which are transmitted over the radio path in order to uniquely identify ship stations, ship earth stations, coast stations, coast earth stations, and group calls. These identities are formed in such a way that the identity or part thereof can be used by telephone and telex subscribers connected to the general telecommunications network principally to call ships automatically.

Code: 'mMSICode'

Remarks:

Aliases: (none)

Value Type: text

Constraints

string Length	text Pattern	range	precision
9	\d{9}	(not specified)	(not specified)

For real values, precision is the number of digits after the decimal point.

3.61 Nationality

Name: Nationality

Definition: The nationality of the specific object.

Code: 'nationality'

Remarks:

Aliases: NATION

Value Type: text

3.62 Notice time hours

Name: Notice time hours

Definition: The time duration prior to the time the service is needed, when notice must be provided to the service provider.

Code: 'noticeTimeHours'

Remarks:

Aliases: (none)

Value Type: real

Unit of measure name: hour definition: Hour symbol: hrs

Quantity specification: duration

3.63 Notice time text

Name: Notice time text

Definition: Text string qualifying the notice time specified in NTCHRS. This may explain the time specification in NTCHRS (e.g., “3 working days” for a NTCHRS value of “72” where NTCTIM is supposed to be “3 working days”) or consist of other language qualifying the time, e.g., “On departure from last port” or “On passing reporting line XY”).

Code: 'noticeTimeText'

Remarks:

Aliases: (none)

Value Type: text

3.64 Name

Name: Name

Definition: The individual name of a feature.

Code: 'name'

Remarks:

Aliases: (none)

Value Type: text

3.65 Name of resource

Name: Name of resource

Definition: Name of the online resource.

Code: 'nameOfResource'

Remarks:

Aliases: NAMRES

Value Type: text

3.66 Online resource description

Name: Online resource description

Definition: Detailed text description of what the online resource is/does

Code: 'onlineResourceDescription'

Remarks:

Aliases: (none)

Value Type: text

3.67 Operation

Name: Operation

Definition: Indicates whether the minimum or maximum value should be used to describe a condition or in application processing

Code: 'operation'

Remarks:

Aliases: OPERAT

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
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Label	Definition	Code	Remarks
'largest value' Aliases: (none)	The numerically largest value computed from the applicable attributes or sub-attributes	1	
'smallest value' Aliases: (none)	The numerically smallest value computed from the applicable attributes or sub-attributes	2	

3.68 Orientation uncertainty

Name: Orientation uncertainty

Definition: The best estimate of the accuracy of a bearing.

Code: 'orientationUncertainty'

Remarks:

Aliases: (none)

Value Type: real

Unit of measure name: degrees definition: degrees of arc symbol: °

Quantity specification: planeAngle

Constraints

string Length	text Pattern	range		precision
(not specified)	(none)	lowerBound	0.000	3
		upperBound	360.000	
		closure	closedInterval	

For real values, precision is the number of digits after the decimal point.

3.69 Picture caption

Name: Picture caption

Definition: Short description of the purpose of the image

Code: 'pictureCaption'

Remarks:

Aliases: PICCAP

Value Type: text

3.70 Picture information

Name: Picture information

Definition: A set of information to provide credits to picture creator, copyright owner etc.

Code: 'pictureInformation'

Remarks:

Aliases: (none)

Value Type: text

3.71 Pilot movement

Name: Pilot movement

Definition: Classification of pilot activity by arrival, departure, or change of pilot. It may also describe the place where the pilot's advice begins, ends, or is transferred to a different pilot.

Code: 'pilotMovement'

Remarks:

Aliases: PLTMOV

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'embarkation' Aliases: (none)	The place where vessels not being navigated according to a pilot's instructions pick up a pilot while in transit from sea to a port or constricted waters for future navigation under pilot instructions.	1	
'disembarkation' Aliases: (none)	The place where vessels being navigated under a pilot's instructions in transit from sea to a port or constricted waters drop the pilot and proceed without being subject to pilot instructions.	2	
'pilot change' Aliases: (none)	The place where vessels being navigated under a pilot's instructions drop off the pilot and pick up a different pilot for future navigation under pilot's instructions.	3	

3.72 Pilot qualification

Name: Pilot qualification

Definition: Classification of pilots and pilot services by type of license qualification or type of organization providing services.

Code: 'pilotQualification'

Remarks:

Aliases: PLTQFC

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'government pilot' Aliases: (none)	A pilot service carried out by government pilots.	1	
'pilot approved by government' Aliases: (none)	A pilot service carried out by pilots who are approved by government.	2	
'state pilot' Aliases: (none)	A pilot that is licensed by the State (USA) and/or their respective pilot association, required for all foreign vessels and all American vessels under registry, bound for a port with compulsory State pilotage. A federal licence is not sufficient to pilot such vessels into the port.	3	
'federal pilot' Aliases: (none)	A pilot who carries a Federal endorsement, offering services to vessels that are not required to obtain compulsory State pilotage. Services are usually contracted for in advance.	4	
'company pilot' Aliases: (none)	A pilot provided by a commercial company.	5	
'local pilot' Aliases: (none)	A pilot with local knowledge but who does not hold a qualification as a pilot.	6	
'citizen with sufficient local knowledge' Aliases: (none)	A pilot service carried out by a citizen with sufficient local knowledge.	7	
'citizen with doubtful local knowledge'	A pilot service carried out by a citizen whose local knowledge is uncertain.	8	

Label	Definition	Code	Remarks
Aliases: (none)			

3.73 Pilot request

Name: Pilot request

Definition: Description of the pilot request procedure.

Code: 'pilotRequest'

Remarks:

Aliases: PLTRQS

Value Type: text

3.74 Pilot vessel

Name: Pilot vessel

Definition: Description of the pilot vessel. The pilot vessel is a small vessel used by a pilot to go to or from a vessel employing the pilot's services.

Code: 'pilotVessel'

Remarks:

Aliases: PLTVSL

Value Type: text

3.75 Postal code

Name: Postal code

Definition: Known in various countries as a postcode, or ZIP code, the postal code is a series of letters and/or digits that identifies each postal delivery area.

Code: 'postalCode'

Remarks:

Aliases: POSCOD

Value Type: text

3.76 Protocol

Name: Protocol

Definition: connection protocol to be used. Example: ftp, http get KVP, http POST, etc.

Code: 'protocol'

Remarks:

Aliases: PROTCL

Value Type: text

3.77 Protocol request

Name: Protocol request

Definition: Request used to access the resource. Structure and content depend on the protocol and standard used by the online resource, such as Web Feature Service standard.

Code: 'protocolRequest'

Remarks:

Aliases: PROTRQ

Value Type: text

3.78 Remote pilot

Name: Remote pilot

Definition: Whether remote pilot services are available.

Code: 'remotePilot'

Remarks: True: remote pilot is available: Pilotage is available remotely from shore or other location remote from the vessel requiring

pilotage. False: remote pilot is not available: Remote pilotage is not available.

Aliases: RMTPLT

Value Type: boolean

3.79 Reported date

Name: Reported date

Definition: The date that the item was observed, done, or investigated

Code: 'reportedDate'

Remarks:

Aliases: (none)

Value Type: S100_TruncatedDate

3.80 Requirements for maintenance of listening watch

Name: Requirements for maintenance of listening watch

Definition: Description of continuous listening watch requirements.

Code: 'requirementsForMaintenanceOfListeningWatch'

Remarks:

Aliases: RMTLWT

Value Type: text

3.81 Restriction

Name: Restriction

Definition: The official legal statute of each kind of restricted area.

Code: 'restriction'

Remarks: Defines the kind of restriction(s), e.g., the restriction for 'a game preserve' may be 'entry prohibited', the restriction for an 'anchoring prohibition' is 'anchoring prohibited'. The complete information about the restriction(s), actually held in handbooks or other publications, may be encoded by the attribute 'TXTDSC'. A short explanation may be given by the use of the attribute 'INFORM'.

Aliases: RESTRN

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'anchoring prohibited' Aliases: (none)	an area within which anchoring is not permitted.	1	
'anchoring restricted' Aliases: (none)	a specified area designated by appropriate authority, within which anchoring is restricted in accordance with certain specified conditions.	2	
'fishing prohibited' Aliases: (none)	an area within which fishing is not permitted.	3	
'fishing restricted' Aliases: (none)	a specified area designated by appropriate authority, within which fishing is restricted in accordance with certain specified conditions.	4	
'trawling prohibited' Aliases: (none)	an area within which trawling is not permitted.	5	
'trawling restricted' Aliases: (none)	a specified area designated by appropriate authority, within which trawling is restricted in accordance with certain specified conditions.	6	
'entry prohibited' Aliases: (none)	an area within which navigation and/or anchoring is prohibited.	7	
'entry restricted' Aliases: (none)	a specified area designated by appropriate authority, within which navigation is restricted in accordance with certain specified conditions.	8	
'dredging prohibited' Aliases: (none)	an area within which dredging is not permitted.	9	

Label	Definition	Code	Remarks
'dredging restricted' Aliases: (none)	a specified area designated by appropriate authority, within which dredging is restricted in accordance with certain specified conditions.	10	
'diving prohibited' Aliases: (none)	an area within which diving is not permitted.	11	
'diving restricted' Aliases: (none)	a specified area designated by appropriate authority, within which diving is restricted in accordance with certain specified conditions.	12	
'no wake' Aliases: (none)	mariners must adjust the speed of their vessels to reduce the wave or wash which may cause erosion or disturb moored vessels.	13	
'area to be avoided' Aliases: (none)	an IMO designated area to be avoided, defined as a routeing measure.	14	
'construction prohibited' Aliases: (none)	the erection of permanent or temporary fixed structures or artificial islands is prohibited.	15	
'discharging prohibited' Aliases: (none)	an area within which discharging or dumping is prohibited	16	
'discharging restricted' Aliases: (none)	a specified area designated by an appropriate authority, within which discharging or dumping is restricted in accordance with specified conditions.	17	
'industrial or mineral exploration/development prohibited' Aliases: (none)	an area within which industrial or mineral exploration and development are prohibited.	18	
'industrial or mineral exploration/development restricted' Aliases: (none)	a specified area designated by an appropriate authority, within which industrial or mineral exploration and development is restricted in accordance with certain specified conditions.	19	
'drilling prohibited' Aliases: (none)	an area within which excavating a hole on the sea-bottom with a drill is prohibited.	20	
'drilling restricted' Aliases: (none)	a specified area designated by an appropriate authority, within which excavating a hole on the sea-bottom with a drill is restricted in accordance with certain specified conditions.	21	
'removal of historical artifacts prohibited' Aliases: (none)	an area within which the removal of historical artifacts is prohibited.	22	
'cargo transshipment (lightering) prohibited' Aliases: (none)	an area in which cargo transshipment (lightering) is prohibited.	23	
'dragging prohibited' Aliases: (none)	an area in which the dragging of anything along the bottom, e.g. bottom trawling, is prohibited.	24	
'stopping prohibited' Aliases: (none)	an area in which a vessel is prohibited from stopping.	25	
'landing prohibited' Aliases: (none)	an area in which landing is prohibited.	26	
'speed restricted' Aliases: (none)	an area within which speed is restricted.	27	
'overtaking prohibited' Aliases: (none)	a specified area designated by appropriate authority, within which overtaking is generally prohibited	28	

Label	Definition	Code	Remarks
'overtaking of convoys by convoys prohibited' Aliases: (none)	a specified area designated by appropriate authority, within which overtaking between convoys prohibited	29	
'passing or overtaking prohibited' Aliases: (none)	a specified area designated by appropriate authority, within which passing or overtaking is generally prohibited	30	
'berthing prohibited' Aliases: (none)	a specified area designated by appropriate authority, within which vessels, assemblies of floating material or floating establishments may not berth.	31	
'berthing restricted' Aliases: (none)	a specified area designated by appropriate authority, within which berthing is restricted	32	
'making fast prohibited' Aliases: (none)	a specified area designated by appropriate authority, within which vessels, assemblies of floating material or floating establishments may not make fast to the bank.	33	
'making fast restricted' Aliases: (none)	a specified area designated by appropriate authority, within which making fast to the bank is restricted	34	
'turning prohibited' Aliases: (none)	a specified area designated by appropriate authority, within which all turning is generally prohibited	35	
'restricted fairway depth' Aliases: (none)	an area within which the fairway depth is restricted.	36	
'restricted fairway width' Aliases: (none)	an area within which the fairway width is restricted.	37	
'use of spuds prohibited' Aliases: (none)	The use of anchoring spuds (telescopic piles) is prohibited	38	
'swimming prohibited' Aliases: (none)	An area in which swimming is prohibited	39	

3.82 Scale minimum

Name: Scale minimum

Definition: The minimum scale at which the object may be used, e.g., for ECDIS presentation.

Code: 'scaleMinimum'

Remarks: The modulus of the scale is indicated, that is 1:1 250 000 is encoded as 1250000.

Aliases: SCAMIN

Value Type: integer

3.83 Service access procedure

Name: Service access procedure

Definition: A description of the procedure to access the marine service.

Code: 'serviceAccessProcedure'

Remarks:

Aliases: SVAPRC

Value Type: text

3.84 Signal frequency

Name: Signal frequency

Definition: The frequency of a signal.

Code: 'signalFrequency'

Remarks:

Aliases: SIGFRQ

Value Type: integer

Unit of measure name: Hertz definition: Cycles per second symbol: Hz

Quantity specification: frequency

Constraints

string Length	text Pattern	range		precision
(not specified)	(none)	lowerBound	0	(not specified)
		upperBound	(none)	
		closure	gtSemiInterval	

For real values, precision is the number of digits after the decimal point.

3.85 Siltation rate

Name: Siltation rate

Definition: A description of the rate at which the depth in an area decreases.

Code: 'siltationRate'

Remarks:

Aliases: SILTAT

Value Type: text

3.86 Source

Name: Source

Definition: An identifier (publication, document, reference work, instrument, vessel, etc) from which information comes or is acquired.

Code: 'source'

Remarks:

Aliases: SOURCE

Value Type: text

3.87 Source type

Name: Source type

Definition: type of the source

Code: 'sourceType'

Remarks:

Aliases: SORTYP

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'law or regulation' Aliases: (none)	treaty, convention, or international agreement; law or regulation issued by a national or other authority	1	
'official publication'	publication not having the force of law, issued by an international organisation or a national or local administration	2	

Label	Definition	Code	Remarks
Aliases: (none)			
'mariner report, confirmed' Aliases: (none)	Reported by mariner(s) and confirmed by another source	7	
'mariner report, not confirmed' Aliases: (none)	reported by mariner(s) but not confirmed	8	
'industry publications and reports' Aliases: (none)	shipping and other industry publication, including graphics, charts and web sites	9	
'remotely sensed images' Aliases: (none)	information obtained from satellite images	10	
'photographs' Aliases: (none)	information obtained from photographs	11	
'products issued by HO services' Aliases: (none)	information obtained from products issued by Hydrographic Offices	12	
'news media' Aliases: (none)	information obtained from news media	13	
'traffic data' Aliases: (none)	information obtained from the analysis of traffic data	14	

3.88 Status

Name: Status

Definition: The condition of an object at a given instant in time.

Code: 'status'

Remarks:

Aliases: STATUS

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'permanent' Aliases: (none)	intended to last or function indefinitely.	1	
'occasional' Aliases: (none)	acting on special occasions happening irregularly.	2	
'recommended' Aliases: (none)	presented as worthy of confidence, acceptance, use, etc.	3	
'not in use' Aliases: (none)	no longer used for the purpose intended disused.	4	
'periodic/intermittent' Aliases: (none)	recurring at intervals.	5	
'reserved' Aliases: (none)	set apart for some specific use.	6	

Label	Definition	Code	Remarks
'temporary' Aliases: (none)	meant to last only for a time.	7	
'private' Aliases: (none)	not in public ownership or operation.	8	
'mandatory' Aliases: (none)	compulsory enforced.	9	
'extinguished' Aliases: (none)	no longer lit	11	
'illuminated' Aliases: (none)	lit by floodlights, strip lights, etc.	12	
'historic' Aliases: (none)	famous in history of historical interest.	13	
'public' Aliases: (none)	belonging to, available to, used or shared by, the community as a whole and not restricted to private use.	14	
'synchronized' Aliases: (none)	occur at a time, coincide in point of time, be contemporary or simultaneous.	15	
'watched' Aliases: (none)	looked at or observed over a period of time especially so as to be aware of any movement or change.	16	
'un-watched' Aliases: (none)	usually automatic in operation, without any permanently-stationed personnel to superintend it.	17	
'existence doubtful' Aliases: (none)	an object that has been reported but has not been definitely determined to exist.	18	
'buoyed' Aliases: (none)	Marked by buoys	28	

3.89 Telecommunication identifier

Name: Telecommunication identifier

Definition: An identifier, such as words, numbers, letters, symbols, or any combination of those used to establish a contact to a particular person, organisation or service.

Code: 'telecommunicationIdentifier'

Remarks:

Aliases: (none)

Value Type: text

3.90 Telecommunication carrier

Name: Telecommunication carrier

Definition: The name of a provider or type of carrier for a telecommunication service. This service may include land line based, shore based or satellite based radio connections.

Code: 'telcomCarrier'

Remarks:

Aliases: (none)

Value Type: text

3.91 Text

Name: Text

Definition: A non-formatted digital text string

Code: 'text'

Remarks:

Aliases: (none)

Value Type: text

3.92 Thickness of ice capability

Name: Thickness of ice capability

Definition: The thickness of ice that the ship can safely transit

Code: 'thicknessOfIceCapability'

Remarks:

Aliases: ICECAP

Value Type: integer

Unit of measure name: centimetres definition: Centimetres (SI) symbol: cm

Quantity specification: length

Constraints

string Length	text Pattern	range		precision
(not specified)	(none)	lowerBound	0	0
		upperBound	(none)	
		closure	gtSemiInterval	

For real values, precision is the number of digits after the decimal point.

3.93 Time of day end

Name: Time of day end

Definition: Ending time of day, possibly for a period within the day

Code: 'timeOfDayEnd'

Remarks:

Aliases: (none)

Value Type: time

3.94 Time of day start

Name: Time of day start

Definition: Starting time of day, possibly for a period within the day

Code: 'timeOfDayStart'

Remarks:

Aliases: (none)

Value Type: time

3.95 Traffic flow

Name: Traffic flow

Definition: Direction of vessels passing a reference point.

Code: 'trafficFlow'

Remarks: The direction of travel.

Aliases: TRAFIC

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'inbound' Aliases: (none)	traffic flow in a general direction toward a port or similar destination.	1	
'outbound' Aliases: (none)	traffic flow in a general direction away from a port or similar point of origin.	2	
'one-way' Aliases: (none)	traffic flow in one general direction only.	3	
'two-way' Aliases: (none)	traffic flow in two generally opposite directions.	4	

3.96 Uncertainty Fixed

Name: Uncertainty Fixed

Definition: The best estimate of the fixed horizontal or vertical accuracy component for positions, depths, heights, vertical distances and vertical clearances.

Code: 'uncertaintyFixed'

Remarks:

Aliases: POSACC; SOUACC; VERACC

Value Type: real

Unit of measure name: metre definition: SI metre symbol: m

Quantity specification: length

Constraints

string Length	text Pattern	range		precision
(not specified)	(none)	lowerBound	0.0	1
		upperBound	(none)	
		closure	leSemiInterval	

For real values, precision is the number of digits after the decimal point.

3.97 Uncertainty Variable Factor

Name: Uncertainty Variable Factor

Definition: The factor to be applied to the variable component of an uncertainty equation so as to provide the best estimate of the variable horizontal or vertical accuracy component for positions, depths, heights, vertical distances and vertical clearances.

Code: 'uncertaintyVariableFactor'

Remarks:

Aliases: (none)

Value Type: real

Constraints

string Length	text Pattern	range		precision
(not specified)	(none)	lowerBound	0.00	2
		upperBound	(none)	
		closure	leSemiInterval	

For real values, precision is the number of digits after the decimal point.

3.98 Transmission content

Name: Transmission content
 Definition: Content of transmission
 Code: 'transmissionContent'
 Remarks: Other than MSI.
 Aliases: TRMCTN
 Value Type: text

3.99 Underkeel allowance fixed

Name: Underkeel allowance fixed
 Definition: A fixed allowance given by an authority, which is added to draught in order to maintain a minimum underkeel clearance.
 Code: 'underkeelAllowanceFixed'
 Remarks:
 Aliases: UKAFIX
 Value Type: real

Unit of measure name: metre definition: SI metre symbol: m

Constraints

string Length	text Pattern	range	precision
(not specified)	(none)	(not specified)	1

For real values, precision is the number of digits after the decimal point.

3.100 Underkeel allowance variable beam based

Name: Underkeel allowance variable beam based
 Definition: A percentage value, given by an authority, which is applied to ship's beam in order to calculate underkeel allowance.
 Code: 'underkeelAllowanceVariableBeamBased'
 Remarks:
 Aliases: UKAVBB
 Value Type: real

Constraints

string Length	text Pattern	range		precision
(not specified)	(none)	lowerBound	0	0
		upperBound	(none)	
		closure	gtSemiInterval	

For real values, precision is the number of digits after the decimal point.

3.101 Underkeel allowance variable draught based

Name: Underkeel allowance variable draught based

Definition: A percentage value, given by an authority, which is applied to ship's draught in order to calculate underkeel allowance.

Code: 'underkeelAllowanceVariableDraughtBased'

Remarks:

Aliases: UKAVDB

Value Type: real

Constraints

string Length	text Pattern	range	precision
(not specified)	(none)	lowerBound 0	0
		upperBound (none)	
		closure gtSemiInterval	

For real values, precision is the number of digits after the decimal point.

3.102 Vessels characteristics

Name: Vessels characteristics

Definition: Characteristics of vessels

Code: 'vesselsCharacteristics'

Remarks:

Aliases: VSLCAR

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'length overall' Aliases: (none)	The maximum length of the ship (L.O.A.). (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)	1	
'length at waterline' Aliases: (none)	The ship's length measured at the waterline (L.W.L.). (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)	2	
'breadth' Aliases: (none)	The width or beam of the vessel.	3	
'draught' Aliases: (none)	The depth of water necessary to float a vessel fully loaded.	4	
'height' Aliases: (none)	The height of the highest point of a vessel's structure (e.g. radar aerial, funnel, cranes, masthead) above her waterline. (UKHO NP100/2009)	5	
'displacement tonnage' Aliases: (none)	A measurement of the weight of the vessel, usually used for warships. (Merchant ships are usually measured based on the volume of cargo space; see tonnage). Displacement is expressed either in long tons of 2,240 pounds or metric tonnes of 1,000 kg. Since the two units are very close in size (2,240 pounds = 1,016 kg and 1,000 kg = 2,205 pounds), it is common not to distinguish between them. To preserve secrecy, nations sometimes misstate a warship's displacement. (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)	6	
'displacement tonnage, light' Aliases: (none)	The weight of the ship excluding cargo, fuel, ballast, stores, passengers, and crew, but with water in the boilers to steaming level. (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)	7	

Label	Definition	Code	Remarks
'displacement tonnage, loaded' Aliases: (none)	The weight of the ship including cargo, passengers, fuel, water, stores, dunnage and such other items necessary for use on a voyage, which brings the vessel down to her load draft. (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)	8	
'deadweight tonnage' Aliases: (none)	The difference between displacement, light and displacement, loaded. A measure of the ship's total carrying capacity. (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)	9	
'gross tonnage' Aliases: (none)	The entire internal cubic capacity of the ship expressed in tons of 100 cubic feet to the ton, except certain spaces with are exempted such as: peak and other tanks for water ballast, open forecastle bridge and poop, access of hatchways, certain light and air spaces, domes of skylights, condenser, anchor gear, steering gear, wheel house, galley and cabin for passengers. (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)	10	
'net tonnage' Aliases: (none)	Obtained from the gross tonnage by deducting crew and navigating spaces and allowances for propulsion machinery. (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)	11	
'Panama Canal/Universal Measurement System net tonnage' Aliases: (none)	the Panama Canal/Universal Measurement System (PC/UMS) is based on net tonnage, modified for Panama Canal purposes. PC/UMS is based on a mathematical formula to calculate a vessel's total volume; a PC/UMS net ton is equivalent to 100 cubic feet of capacity. (Adapted from http://en.wikipedia.org/wiki/Tonnage 4 Oct 2010)	12	
'Suez Canal net tonnage' Aliases: (none)	the Suez Canal Net Tonnage (SCNT) is derived with a number of modifications from the former net register tonnage of the Moorsom System and was established by the International Commission of Constantinople in its Protocol of 18 December 1873. It is still in use, as amended by the Rules of Navigation of the Suez Canal Authority, and is registered in the Suez Canal Tonnage Certificate. (Adapted from http://en.wikipedia.org/wiki/Tonnage 4 Oct 2010)	13	
'Suez Canal gross tonnage' Aliases: (none)	Suez Canal Gross Tonnage (SCGT) is derived with a number of modifications from the former net register tonnage of the Moorsom System and was established by the International Commission of Constantinople in its Protocol of 18 December 1873. It is still in use, as amended by the Rules of Navigation of the Suez Canal Authority, and is registered in the Suez Canal Tonnage Certificate.	14	

3.103 Vessels characteristics unit

Name: Vessels characteristics unit

Definition: the unit used for vessel characteristics attribute

Code: 'vesselsCharacteristicsUnit'

Remarks:

Aliases: VSLUNT

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'metre' Aliases: (none)	The metre (or meter) is the base unit of length in the International System of Units (SI). It is defined as the distance travelled by light in vacuum in 1/299,792,458 of a second.	1	
'foot' Aliases: (none)	A foot (plural: feet) is a non-SI unit of length in a number of different systems including English units, Imperial units, and United States customary units. The most commonly used foot today is the international foot. There are three feet in a yard and 12 inches in a foot.	2	

Label	Definition	Code	Remarks
'metric ton' Aliases: (none)	The tonne or metric ton (U.S.), often redundantly referred to as a metric tonne, is a unit of mass equal to 1,000 kg (2,205 lb) or approximately the mass of one cubic metre of water at four degrees Celsius. It is sometimes abbreviated as mt in the United States, but this conflicts with other SI symbols. The tonne is not a unit in the International System of Units (SI), but is accepted for use with the SI. In SI units and prefixes, the tonne is a megagram (Mg). The Imperial and US customary units comparable to the tonne are both spelled ton in English, though they differ in mass. Pronunciation of tonne (the word used in the UK) and ton is usually identical, but is not too confusing unless accuracy is important as the tonne and UK long ton differ by only 1.6%.	3	
'ton' Aliases: (none)	Long ton (weight ton or imperial ton) is the name for the unit called the "ton" in the avoirdupois or Imperial system of measurements, as used in the United Kingdom and several other Commonwealth countries. It has been mostly replaced by the tonne, and in the United States by the short ton. One long ton is equal to 2,240 pounds (1,016 kg) or 35 cubic feet (0.9911 m ³) of salt water with a density of 64 lb/ft ³ (1.025 g/ml). It has some limited use in the United States, most commonly in measuring the displacement of ships, and was the unit prescribed for warships by the Washington Naval Treaty—for example battleships were limited to a mass of 35,000 long tons (36,000 t; 39,000 ST).	4	
'short ton' Aliases: (none)	The short ton is a unit of weight equal to 2,000 pounds (907.18474 kg). In the United States it is often called simply ton without distinguishing it from the metric ton (tonne, 1,000 kilograms) or the long ton (2,240 pounds / 1,016.0469088 kilograms); rather, the other two are specifically noted. There are, however, some U.S. applications for which unspecified tons normally means long tons (for example, Navy ships) or metric tons (world grain production figures). Both the long and short ton are defined as 20 hundredweights, but a hundredweight is 100 pounds (45.359237 kg) in the U.S. system (short or net hundredweight) and 112 pounds (50.80234544 kg) in the Imperial system (long or gross hundredweight).	5	
'gross ton' Aliases: (none)	Gross tonnage (GT) is a function of the volume of all ship's enclosed spaces (from keel to funnel) measured to the outside of the hull framing. There is a sliding scale factor. So GT is a kind of capacity-derived index that is used to rank a ship for purposes of determining manning, safety and other statutory requirements and is expressed simply as GT, which is a unitless entity, even though its derivation is tied to the cubic meter unit of volumetric capacity. Tonnage measurements are now governed by an IMO Convention (International Convention on Tonnage Measurement of Ships, 1969 (London-Rules)), which applies to all ships built after July 1982. In accordance with the Convention, the correct term to use now is GT, which is a function of the moulded volume of all enclosed spaces of the ship.	6	
'net ton' Aliases: (none)	Net tonnage (NT) is based on a calculation of the volume of all cargo spaces of the ship. It indicates a vessel's earning space and is a function of the moulded volume of all cargo spaces of the ship.	7	
'Panama Canal/Universal Measurement System net tonnage' Aliases: (none)	The Panama Canal/Universal Measurement System (PC/UMS) is based on net tonnage, modified for Panama Canal purposes. PC/UMS is based on a mathematical formula to calculate a vessel's total volume; a PC/UMS net ton is equivalent to 100 cubic feet of capacity.	8	
'Suez Canal Net Tonnage' Aliases: (none)	The Suez Canal Net Tonnage (SCNT) is derived with a number of modifications from the former net register tonnage of the Moorsom System and was established by the International Commission of Constantinople in its Protocol of 18 December 1873. It is still in use, as amended by the Rules of Navigation of the Suez Canal Authority, and is registered in the Suez Canal Tonnage Certificate.	9	
'none'	Can be used for net and gross tonnages, including Panama Canal/Universal	10	

Label	Definition	Code	Remarks
Aliases: (none)	Measurement System net tonnage and The Suez Canal Net Tonnage.		
'cubic metres' Aliases: (none)	Cubic metres	11	
'Suez Canal Gross Tonnage' Aliases: (none)	The Suez Canal Gross Tonnage (SCGT) is derived with a number of modifications from the former net register tonnage of the Moorsom System and was established by the International Commission of Constantinople in its Protocol of 18 December 1873. It is still in use, as amended by the Rules of Navigation of the Suez Canal Authority, and is registered in the Suez Canal Tonnage Certificate.	12	

3.104 Vessels characteristics value

Name: Vessels characteristics value

Definition: The value of a particular characteristic such as a dimension or tonnage of a vessel

Code: 'vesselsCharacteristicsValue'

Remarks:

Aliases: VSLVAL

Value Type: real

3.105 Vessel performance

Name: Vessel performance

Definition: A description of the required handling characteristics of a vessel including hull design, main and auxilliary machinery, cargo handling equipment, navigation equipment and manoeuvring behaviour.

Code: 'vesselPerformance'

Remarks:

Aliases: PRFMNC

Value Type: text

3.106 Quality of horizontal measurement

Name: Quality of horizontal measurement

Definition: The degree of reliability attributed to a position

Code: 'qualityOfHorizontalMeasurement'

Remarks:

Aliases: QUAPOS

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'surveyed' Aliases: (none)	the position(s) was(were) determined by the operation of making measurements for determining the relative position of points on, above or beneath the earth's surface. Survey implies a regular, controlled survey of any date.	1	
'unsurveyed' Aliases: (none)	survey data is does not exist or is very poor.	2	
'inadequately surveyed' Aliases: (none)	position data is of a very poor quality.	3	
'approximate' Aliases: (none)	a position that is considered to be less than third-order accuracy, but is generally considered to be within 30.5 metres of its correct geographic location. Also may apply to an object whose position does not remain fixed.	4	
'position doubtful'	an object whose position has been reported but which is considered to be	5	

Label	Definition	Code	Remarks
Aliases: (none)	doubtful.		
'unreliable' Aliases: (none)	an object's position obtained from questionable or unreliable data.	6	
'reported (not surveyed)' Aliases: (none)	an object whose position has been reported and its position confirmed by some means other than a formal survey such as an independent report of the same object.	7	
'reported (not confirmed)' Aliases: (none)	an object whose position has been reported and its position has not been confirmed.	8	
'estimated' Aliases: (none)	the most probable position of an object determined from incomplete data or data of questionable accuracy.	9	
'precisely known' Aliases: (none)	a position that is of a known value, such as the position of an anchor berth or other defined object.	10	
'calculated' Aliases: (none)	a position that is computed from data.	11	

3.107 Maximum display scale

Name: Maximum display scale

Definition: The largest intended viewing scale for the data.

Code: 'maximumDisplayScale'

Remarks:

Aliases: (none)

Value Type: integer

Constraints

string Length	text Pattern	range	precision
(not specified)	(none)	lowerBound 1	(not specified)
		upperBound (none)	
		closure geSemiInterval	

For real values, precision is the number of digits after the decimal point.

3.108 Minimum display scale

Name: Minimum display scale

Definition: The smallest intended viewing scale for the data.

Code: 'minimumDisplayScale'

Remarks:

Aliases: (none)

Value Type: integer

Constraints

string Length	text Pattern	range	precision
(not specified)	(none)	lowerBound 1	(not specified)

string Length	text Pattern	range		precision
		upperBound	(none)	
		closure	geSemiInterval	

For real values, precision is the number of digits after the decimal point.

3.109 Orientation value

Name: Orientation value

Definition: The angular distance measured from true north to the major axis of the object.

Code: 'orientationValue'

Remarks:

Aliases: ORIENT

Value Type: real

Unit of measure name: degrees definition: degrees of arc symbol: °

Quantity specification: planeAngle

Constraints

string Length	text Pattern	range		precision
(not specified)	(none)	lowerBound	0.0	1
		upperBound	360.0	
		closure	closedInterval	

For real values, precision is the number of digits after the decimal point.

3.110 Pictorial representation

Name: Pictorial representation

Definition: Indicates whether a pictorial representation of the object is available.

Code: 'pictorialRepresentation'

Remarks: The 'pictorial representation' could be a drawing or a photo. The string encodes the file name of an external graphic file (pixel/vector).

Aliases: PICREP

Value Type: text

3.111 Sector bearing

Name: Sector bearing

Definition: A sector is the part of a circle between two straight lines drawn from the centre to the circumference. Sector bearing specifies the limit of the sector. (Adapted from S-57 Edition 3.1, Appendix A – Chapter 2, Page 2.184, November 2000).

Code: 'sectorBearing'

Remarks: -The values given to the common limits of adjacent sectors should be identical. - The orientation of the bearing is from seaward to the central feature. This conforms with the method used in “List of Lights” publications. - A generic term such as “to shore” cannot be used; a specific bearing must be encoded. Where a light sector limit is defined as “to the shore”, it should be encoded using a value that ensures that, when the limit is drawn, it will fall entirely on land.

Aliases: (none)

Value Type: real

Unit of measure name: degrees definition: degrees of arc symbol: °

Quantity specification: planeAngle

Constraints

string Length	text Pattern	range		precision
(not specified)	(none)	lowerBound	0	2
		upperBound	360.00	
		closure	closedInterval	

For real values, precision is the number of digits after the decimal point.

3.112 Source date

Name: Source date

Definition: The production date of the source, e.g., the date of measurement.

Code: 'sourceDate'

Remarks:

Aliases: SORDAT

Value Type: text

3.113 Date variable

Name: Date variable

Definition: A day which is not fixed in the Gregorian calendar.

Code: 'dateVariable'

Remarks:

Aliases: (none)

Value Type: text

3.114 Water level trend

Name: Water level trend

Definition: The tendency of water level to change in a particular direction.

Code: 'waterLevelTrend'

Remarks:

Aliases: (none)

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'decreasing' Aliases: (none)	Becoming smaller in magnitude.	1	
'increasing' Aliases: (none)	Becoming larger in magnitude.	2	
'steady' Aliases: (none)	Constant.	3	

3.115 Action or activity

Name: Action or activity

Definition: The action or activity of a vessel

Code: 'actionOrActivity'

Remarks: codeListType=open enumeration; encoding=other: [something]

Aliases: ACTION

Value Type: S100_CodeList

Listed Values

Label	Definition	Code	Remarks
'navigating with a pilot' Aliases: (none)	Carrying a qualified pilot as part of the vessel navigation team.	1	
'entering port' Aliases: (none)	Navigating a vessel into a port	2	
'leaving port' Aliases: (none)	Navigating a vessel out of a port.	3	
'berthing' Aliases: (none)	Attaching a vessel to a wharf or jetty	4	
'slipping' Aliases: (none)	Detaching a vessel from a wharf or jetty.	5	
'anchoring' Aliases: (none)	Attaching a vessel to the seabed by means of an anchor and cable.	6	
'weighing anchor' Aliases: (none)	Detaching a vessel from the seabed by recovering an anchor and cable.	7	
'transiting' Aliases: (none)	Navigating a vessel along a route or through a narrow gap, such as under a bridge or through a lock.	8	
'overtaking' Aliases: (none)	Navigating a vessel past another traveling broadly in the same direction.	9	
'reporting' Aliases: (none)	Providing details such as the name, location or intentions of a vessel	10	
'working cargo' Aliases: (none)	Loading or unloading cargo	11	
'landing' Aliases: (none)	Placing crew or passengers on shore	12	
'diving' Aliases: (none)	Placing a swimmer with an air supply below the sea surface.	13	
'fishing' Aliases: (none)	Hunting or catching fish	14	
'discharging overboard' Aliases: (none)	Releasing anything into the sea; often ballast water; or spoil from dredging elsewhere.	15	
'passing' Aliases: (none)	Navigating a vessel past another traveling broadly in the opposite direction.	16	

3.116 Category of RxN

Name: Category of RxN

Definition: The principal subject matter of regulations, restrictions, recommendations or nautical information

Code: 'categoryOfRXN'

Remarks: codeListType=open enumeration; encoding=other: [something]

Aliases: CATRXN

Value Type: S100_CodeList

Listed Values

Label	Definition	Code	Remarks
'navigation' Aliases: (none)	pertaining to navigation	1	
'communication' Aliases: (none)	pertaining to communication	2	
'environmental protection' Aliases: (none)	pertaining to environmental protection	3	
'wildlife protection' Aliases: (none)	pertaining to wildlife protection	4	
'security' Aliases: (none)	pertaining to security	5	
'customs' Aliases: (none)	pertaining to customs	6	
'cargo operation' Aliases: (none)	pertaining to cargo operation	7	
'refuge' Aliases: (none)	pertaining to a place of safety or refuge	8	
'health' Aliases: (none)	pertaining to health	9	
'natural resources or exploitation' Aliases: (none)	natural resources or exploitation	10	
'port' Aliases: (none)	pertaining to a port	11	
'finance' Aliases: (none)	pertaining to finance	12	
'agriculture' Aliases: (none)	pertaining to agriculture	13	

3.117 Category of schedule

Name: Category of schedule

Definition: Describes the type of schedule, e.g., opening, closure, etc.

Code: 'categoryOfSchedule'

Remarks: codeListType=open enumeration; encoding=other: [something]

Aliases: (none)

Value Type: S100_CodeList

Listed Values

Label	Definition	Code	Remarks
'normal operation'	The service, office, is open, fully manned, and operating normally, or the area is	1	

Label	Definition	Code	Remarks
Aliases: (none)	accessible as usual.		
'closure' Aliases: (none)	The service, office, or area is closed.	2	
'unmanned operation' Aliases: (none)	The service is available but not manned.	3	

3.118 Category of vessel

Name: Category of vessel

Definition: Classification of vessels by function or use.

Code: 'categoryOfVessel'

Remarks: codeListType=open enumeration; encoding=other: [something]

Aliases: (none)

Value Type: S100_CodeList

Listed Values

Label	Definition	Code	Remarks
'general cargo vessel' Aliases: (none)	a vessel designed to carry general cargo	1	
'container carrier' Aliases: (none)	a vessel designed to carry ISO containers	2	
'tanker' Aliases: (none)	a vessel designed to carry bulk liquid or gas, including LPG and LNG	3	
'bulk carrier' Aliases: (none)	a vessel designed to carry bulk solid material	4	
'passenger vessel' Aliases: (none)	a vessel designed to carry passengers; often a cruise ship	5	
'roll-on roll-off' Aliases: (none)	a vessel designed to allow road vehicles to be driven on and off; often a ferry	6	
'refrigerated cargo vessel' Aliases: (none)	a vessel designed to carry refrigerated cargo	7	
'fishing vessel' Aliases: (none)	a vessel designed to catch or hunt fish	8	
'service' Aliases: (none)	a vessel which provides a service such as a tug, anchor handler, survey or supply vessel	9	
'warship' Aliases: (none)	a vessel designed for the conduct of military operations	10	
'towed or pushed composite unit' Aliases: (none)	either a tug and tow, or any combination of a tug providing propulsion to barges or vessels secured ahead or alongside	11	
'tug and tow' Aliases: (none)	a combination of tug(s) and non-powered tow(s)	12	
'light recreational' Aliases: (none)	A pleasure boat or watercraft, or an excursion vessel used for short cruises such as whale watching	13	
'semi-submersible offshore'	An installation which is designed to float at all times and which is normally anchored in position when deployed in the offshore gas and oil industry.	14	

Label	Definition	Code	Remarks
installation' Aliases: (none)			
'jack-up exploration or project installation' Aliases: (none)	An exploration or project installation with legs which can be raised and lowered. The legs are raised when the installation is repositioned. When stationary the legs are lowered to the sea floor and the working platform is raised clear of the sea surface	15	
'livestock carrier' Aliases: (none)	A vessel designed to carry large quantities of live animals.	16	
'sport fishing' Aliases: (none)	A vessel used in fishing for pleasure or competition.	17	

3.119 Online function

Name: Online function

Definition: Code for function performed by the online resource

Code: 'onlineFunction'

Remarks: codeListType=open enumeration; encoding=other: [something]

Aliases: ONLFUN

Value Type: S100_CodeList

Listed Values

Label	Definition	Code	Remarks
'download' Aliases: (none)	Online instructions for transferring data from one storage device or system to another.	1	Source ISO 19115-1:2014
'information' Aliases: (none)	Online information about the resource.	2	Source ISO 19115-1:2014
'offline access' Aliases: (none)	Online instructions for requesting the resource from the provider.	3	Source ISO 19115-1:2014
'order' Aliases: (none)	Online order process for obtaining the resource.	4	Source ISO 19115-1:2014
'search' Aliases: (none)	Online search interface for seeking out information about the resource.	5	Source ISO 19115-1:2014
'complete metadata' Aliases: (none)	Complete metadata provided.	6	Source ISO 19115-1:2014
'browse graphic' Aliases: (none)	Browse graphic provided.	7	Source ISO 19115-1:2014
'upload' Aliases: (none)	Online resource upload capability provided.	8	Source ISO 19115-1:2014
'email service' Aliases: (none)	Online email service provided.	9	Source ISO 19115-1:2014
'browsing' Aliases: (none)	Online browsing provided.	10	Source ISO 19115-1:2014
'file access' Aliases: (none)	Online file access provided.	11	Source ISO 19115-1:2014

3.120 Telecommunication service

Name: Telecommunication service

Definition: Classification of methods of communication over a distance by electrical, electronic, or electromagnetic means.

Code: 'telecommunicationService'

Remarks: codeListType=open enumeration; encoding=other: [something]

Aliases: (none)

Value Type: S100_CodeList

Listed Values

Label	Definition	Code	Remarks
'voice' Aliases: (none)	The transfer or exchange of information by using sounds that are being made by mouth and throat when speaking	1	
'facsimile' Aliases: (none)	a system of transmitting and reproducing graphic matter (as printing or still pictures) by means of signals sent over telephone lines	2	
'SMS' Aliases: (none)	Short Message Service, a form of text messaging communication on phones and mobile phones	3	
'data' Aliases: (none)	facts or information used usually to calculate, analyze, or plan something	4	
'streamedData' Aliases: (none)	Streamed data is data that that is constantly received by and presented to an end-user while being delivered by a provider.	5	
'telex' Aliases: (none)	a system of communication in which messages are sent over long distances by using a telephone system and are printed by using a special machine (called a teletypewriter)	6	
'telegraph' Aliases: (none)	an apparatus, system, or process for communication at a distance by electric transmission over wire	7	
'email' Aliases: (none)	Messages and other data exchanged between individuals using computers in a network.	8	

3.121 Text justification

Name: Text justification

Definition: The anchor point of a text string

Code: 'textJustification'

Remarks:

Aliases: (none)

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'left' Aliases: (none)	The anchor point is at the start of the text string.	1	
'centred' Aliases: (none)	The anchor point is at the centre of the text string.	2	
'right' Aliases: (none)	The anchor point is at the end of the text string.	3	

3.122 Text type

Name: Text type

Definition: The attribute from which a text string is derived.

Code: 'textType'

Remarks:

Aliases: (none)

Value Type: enumeration

Listed Values

Label	Definition	Code	Remarks
'feature name' Aliases: (none)	The attribute from which a text string is derived.	1	

4 Complex Attributes

4.1 Bearing information

Name: Bearing information

Definition: A bearing is the direction one object is from another object.

Code: 'bearingInformation'

Remarks:

Aliases: BRGINF

Sub-Attributes				
Sub-attribute	Type	Mult.	Permitted Values	sequential
cardinalDirection	enumeration	0..1	1: N 2: NNE 3: NE 4: ENE 5: E 6: ESE 7: SE 8: SSE 9: S 10: SSW 11: SW 12: WSW 13: W 14: WNW 15: NW 16: NNW	false
distance	real	0..1		false
sectorBearing	real	0..2		true
information	complex	0..*		false
orientation	complex	0..1		false

4.2 Contact address

Name: Contact address

Definition: Direction or superscription of a letter, package, etc., specifying the name of the place to which it is directed, and optionally a contact person or organisation who should receive it.

Code: 'contactAddress'

Remarks:

Aliases: (none)

Sub-Attributes				
Sub-attribute	Type	Mult.	Permitted Values	sequential
deliveryPoint	text	0..*		false
cityName	text	0..1		false
administrativeDivision	text	0..1		false
countryName	text	0..1		false
postalCode	text	0..1		false

4.3 Feature name

Name: Feature name

Definition: The complex attribute provides the name of an entity, defines the national language of the name, and provides the option to display the name at various system display settings.

Code: 'featureName'

Remarks:

Aliases: (none)

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
displayName	boolean	0..1		false
language	text	0..1		false
name	text	1..1		false

4.4 Fixed date range

Name: Fixed date range

Definition: The complex attribute describes single fixed period, as the date range between its sub-attributes.

Code: 'fixedDateRange'

Remarks: the sub-attributes date start and date end must be encoded using 4 digits for the calendar year (YYYY) and, optionally, 2 digits for the month (MM) (e.g. April = 04) and 2 digits for the day (DD). When no specific month and/or day is required/known, the values are replaced with dashes (-).

Aliases: (none)

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
dateEnd	S100_TruncatedDate	0..1		false
dateStart	S100_TruncatedDate	0..1		false

4.5 Frequency pair

Name: Frequency pair

Definition: A pair of frequencies for transmitting and receiving radio signals. The shore station transmits and receives on the frequencies indicated.

Code: 'frequencyPair'

Remarks:

Aliases: FRQPAR

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
frequencyShoreStationTransmits	integer	0..*		true
frequencyShoreStationReceives	integer	0..*		true
contactInstructions	text	0..*		true

4.6 Graphic

Name: Graphic

Definition: Pictorial information such as a photograph, sketch, or other graphic, optionally accompanied by descriptive information about the graphic and the location relative to its subject from which it was made.

Code: 'graphic'

Remarks:

Aliases: (none)

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
pictorialRepresentation	text	1..*		false
pictureCaption	text	0..1		false
sourceDate	text	0..1		false
pictureInformation	text	0..1		false
bearingInformation	complex	0..1		false

4.7 Horizontal position uncertainty

Name: Horizontal position uncertainty

Definition: The best estimate of the accuracy of a position.

Code: 'horizontalPositionUncertainty'

Remarks: The expected input is the maximum of the two-dimensional error. The error is assumed to be positive and negative.

Aliases: (none)

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
uncertaintyFixed	real	1..1		false

4.8 Information

Name: Information

Definition: Textual information about the feature. The information may be provided as a string of text or as a file name of a single external text file that contains the text.

Code: 'information'

Remarks: this complex attribute should be used, for example, to hold the information that is shown on paper charts by cautionary and explanatory notes.

Aliases: (none)

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
fileLocator	text	0..1		false
fileReference	text	0..1		false
headline	text	0..1		false
language	text	0..1		false
text	text	0..1		false

4.9 Notice time

Name: Notice time

Definition: Span of time, prior to the time the service is needed, for preparations to be made to fulfil the requirement.

Code: 'noticeTime'

Remarks:

Aliases: NTCTIM

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
noticeTimeHours	real	0..*		true
noticeTimeText	text	0..1		false
operation	enumeration	0..1	1: largest value 2: smallest value	false

4.10 Online resource

Name: Online resource

Definition: Information about online sources from which a resource or data can be obtained.

Code: 'onlineResource'

Remarks: The complex attribute describes the access to online resources according to ISO 19115.

Aliases: ONLRES

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
linkage	URL	1..1		false
protocol	text	0..1		false
applicationProfile	text	0..1		false
nameOfResource	text	0..1		false
onlineResourceDescription	text	0..1		false
onlineFunction	S100_CodeList	0..1	1: download 2: information 3: offline access 4: order 5: search 6: complete metadata 7: browse graphic 8: upload 9: email service 10: browsing 11: file access	false
protocolRequest	text	0..1		false

4.11 Orientation

Name: Orientation

Definition: The angular distance measured from true north to the major axis of the feature.

Code: 'orientation'

Remarks:

Aliases: (none)

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
orientationUncertainty	real	0..1		false
orientationValue	real	1..1		false

4.12 Schedule by day of week

Name: Schedule by day of week

Definition: The nature and timings of a daily schedule by days of the week.

Code: 'scheduleByDayOfWeek'

Remarks:

Aliases: (none)

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
categoryOfSchedule	S100_CodeList	0..1	1: normal operation 2: closure 3: unmanned operation	false
timeIntervalsByDayOfWeek	complex	1..*		false

4.13 Periodic date range

Name: Periodic date range

Definition: The complex attribute describes the active period for a seasonal feature (e.g. a buoy), as the dates between its sub-attributes

Code: 'periodicDateRange'

Remarks: The sub-attributes date start and date end should be encoded using 4 digits for the calendar year (YYYY), 2 digits for the month (MM) (for example April = 04) and 2 digits for the day (DD). When no specific year is required (that is, the feature is removed at the same time each year) the following two cases may be considered: - same day each year: ----MMDD - same month each year: ----MM-- This conforms to ISO 8601:2004.

Aliases: (none)

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
dateEnd	S100_TruncatedDate	1..1		false
dateStart	S100_TruncatedDate	1..1		false

4.14 Radiocommunications

Name: Radiocommunications

Definition: Detailed radiocommunications description with channels, frequencies, preferences and time schedules

Code: 'radiocommunications'

Remarks:

Aliases: RDOCOM

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
categoryOfCommPref	enumeration	0..1	1: preferred calling	false

Sub-attribute	Type	Mult.	Permitted Values	sequential
			2: alternate calling 3: preferred working 4: alternate working	
categoryOfMaritimeBroadcast	enumeration	0..*	1: navigational warning 2: meteorological warning 3: ice report 4: SAR information 5: pirate attack warning 6: meteorological forecast 7: pilot service message 8: AIS information 9: LORAN message 10: SATNAV message 11: gale warning 12: storm warning 13: tropical revolving storm warning 14: NAVAREA warning 15: coastal warning 16: local warning 17: low water level warning/negative tidal surge 18: icing warning 19: tsunami broadcast	false
categoryOfRadioMethods	enumeration	0..*	1: Low Frequency (LF) voice traffic 2: Medium Frequency (MF) voice traffic 3: High Frequency (HF) voice traffic 4: Very High Frequency (VHF) voice traffic 5: High Frequency Narrow Band Direct Printing 6: NAVTEX 7: SafetyNET 8: NBDP Telegraphy (Narrow Band Direct Printing Telegraphy) 9: facsimile 10: NAVIP 11: Low Frequency (LF) digital traffic 12: Medium Frequency (MF) digital traffic 13: High Frequency (HF) digital traffic 14: Very High Frequency (VHF) digital traffic 15: Low Frequency (LF) telegraph traffic 16: Medium Frequency (MF) telegraph traffic 17: High Frequency (HF) telegraph traffic	false

Sub-attribute	Type	Mult.	Permitted Values	sequential
			18: Medium Frequency (MF) Digital Selective Call traffic 19: High Frequency (HF) Digital Selective Call traffic 20: Very High Frequency (VHF) Digital Selective Call traffic	
communicationChannel	text	0..*		false
contactInstructions	text	0..1		false
frequencyPair	complex	0..*		false
signalFrequency	integer	0..*		false
transmissionContent	text	0..1		false
timeIntervalsByDayOfWeek	complex	0..*		false

4.15 RxN Code

Name: RxN Code

Definition: A summary of the impact of the most common types of regulation, restriction, recommendation and nautical information on a vessel.

Code: 'rxnCode'

Remarks: This attribute converts the subject, topic, and effects of regulations, etc., from plain text or natural language into a set of categories.

Aliases: (none)

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
categoryOfRxN	S100_CodeList	0..1	1: navigation 2: communication 3: environmental protection 4: wildlife protection 5: security 6: customs 7: cargo operation 8: refuge 9: health 10: natural resources or exploitation 11: port 12: finance 13: agriculture	false
actionOrActivity	S100_CodeList	0..1	1: navigating with a pilot 2: entering port 3: leaving port 4: berthing 5: slipping 6: anchoring 7: weighing anchor 8: transiting 9: overtaking 10: reporting 11: working cargo	false

Sub-attribute	Type	Mult.	Permitted Values	sequential
			12: landing 13: diving 14: fishing 15: discharging overboard 16: passing	
headline	text	0..1		false

4.16 Source indication

Name: Source indication

Definition: Information about the source document, publication, or reference from which object data or textual material included or referenced in a dataset are derived

Code: 'sourceIndication'

Remarks:

Aliases: SORIND

Sub-Attributes				
Sub-attribute	Type	Mult.	Permitted Values	sequential
categoryOfAuthority	enumeration	0..1	1: customs 2: border control 3: police 4: port 5: immigration 6: health 7: coast guard 8: agricultural 9: military 10: private company 11: maritime police 12: environmental 13: fishery 14: finance 15: maritime	false
countryName	text	0..1		false
reportedDate	S100_TruncatedDate	0..1		false
source	text	0..1		false
sourceType	enumeration	0..1	1: law or regulation 2: official publication 7: mariner report, confirmed 8: mariner report, not confirmed 9: industry publications and reports 10: remotely sensed images 11: photographs 12: products issued by HO services 13: news media 14: traffic data	false

Sub-attribute	Type	Mult.	Permitted Values	sequential
featureName	complex	0..*		true

4.17 Survey date range

Name: Survey date range

Definition: The complex attribute describes the period of the hydrographic survey, as the time between its sub-attributes.

Code: 'surveyDateRange'

Remarks:

Aliases: (none)

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
dateEnd	S100_TruncatedDate	1..1		false
dateStart	S100_TruncatedDate	0..1		false

4.18 Telecommunications

Name: Telecommunications

Definition: A means or channel of communicating at a distance by electrical or electromagnetic means such as telegraphy, telephony, or broadcasting.

Code: 'telecommunications'

Remarks:

Aliases: TELCOM

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
categoryOfCommPref	enumeration	0..1	1: preferred calling 2: alternate calling 3: preferred working 4: alternate working	false
telecommunicationIdentifier	text	1..1		false
telcomCarrier	text	0..1		false
contactInstructions	text	0..1		false
telecommunicationService	S100_CodeList	0..*	1: voice 2: facsimile 3: SMS 4: data 5: streamedData 6: telex 7: telegraph 8: email	false
scheduleByDayOfWeek	complex	0..1		false

4.19 Text content

Name: Text content

Definition: Textual material, or a pointer to a resource providing textual material. May be accompanied by basic information about its source and relationship to the source.

Code: 'textContent'

Remarks: textContent is intended to allow text passages from other publications to be included in, or referenced by, instances of feature or information types. Exactly one of sub-attributes onlineResource or information must be completed in one instance of textContent.

Product specifications may restrict the use or content of onlineResource for security. For example, a product specification may forbid populating onlineResource. Product specification authors must consider whether applications using the data product may be prevented from accessing off-system resources by security policies.

Aliases: TXTCON

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
categoryOfText	enumeration	0..1	1: abstract or summary 2: extract 3: full text	false
information	complex	0..*		false
onlineResource	complex	0..1		false
sourceIndication	complex	0..1		false

4.20 Time intervals by day of week

Name: Time intervals by day of week

Definition: Time intervals by days of the week.

Code: 'timeIntervalsByDayOfWeek'

Remarks:

Aliases: (none)

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
dayOfWeek	enumeration	0..7	1: Sunday 2: Monday 3: Tuesday 4: Wednesday 5: Thursday 6: Friday 7: Saturday	true
dayOfWeekIsRange	boolean	0..1		false
timeOfDayStart	time	0..*		true
timeOfDayEnd	time	0..*		true

4.21 Underkeel allowance

Name: Underkeel allowance

Definition: A fixed figure, or a figure derived by calculation, which is added to draught in order to maintain the minimum underkeel clearance taking into account the vessel's static and dynamic characteristics, sea state, information from real time sensors and weather forecast, the reliability of the chart and variance from predicted height of tide or water level.

Code: 'underkeelAllowance'

Remarks:

Aliases: UKALNS

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
underkeelAllowanceFixed	real	0..1		false
underkeelAllowanceVariableBeamBased	real	0..1		false
underkeelAllowanceVariableDraughtBased	real	0..1		false
operation	enumeration	0..1	1: largest value 2: smallest value	false

4.22 Vessels measurements

Name: Vessels measurements

Definition: Terms and definitions specifically related to vessels

Code: 'vesselsMeasurements'

Remarks:

Aliases: VSLMSM

Sub-Attributes

Sub-attribute	Type	Mult.	Permitted Values	sequential
comparisonOperator	enumeration	1..1	1: greater than 2: greater than or equal to 3: less than 4: less than or equal to 5: equal to 6: not equal to	false
vesselsCharacteristics	enumeration	1..1	1: length overall 2: length at waterline 3: breadth 4: draught 5: height 6: displacement tonnage 7: displacement tonnage, light 8: displacement tonnage, loaded 9: deadweight tonnage 10: gross tonnage 11: net tonnage 12: Panama Canal/Universal Measurement System net tonnage 13: Suez Canal net tonnage 14: Suez Canal gross tonnage	false
vesselsCharacteristicsValue	real	1..1		false
vesselsCharacteristicsUnit	enumeration	1..1	1: metre 2: foot 3: metric ton 4: ton 5: short ton 6: gross ton 7: net ton 8: Panama Canal/Universal Measurement System net tonnage 9: Suez Canal Net Tonnage 10: none	false

Sub-attribute	Type	Mult.	Permitted Values	sequential
			11: cubic metres 12: Suez Canal Gross Tonnage	

5 Roles

5.1 Component of

Name: Component of

Definition: A pointer to the aggregate in a whole-part relationship.

Code: 'componentOf'

Remarks: Definition may need to be discussed with S-101 team and GI registry manager

Aliases: (none)

5.2 Consists of

Name: Consists of

Definition: A pointer to a part in a whole-part relationship

Code: 'consistsOf'

Remarks: Definition may need to be discussed with S-101 team and GI registry manager

Aliases: (none)

5.3 The applicable RxN

Name: The applicable RxN

Definition: The applicable regulation, restriction, recommendation or nautical information

Code: 'theApplicableRxN'

Remarks:

Aliases: (none)

5.4 Applies in location

Name: Applies in location

Definition: The location in which the information item applies

Code: 'appliesInLocation'

Remarks:

Aliases: (none)

5.5 Authority (reference)

Name: Authority (reference)

Definition: A pointer to an Authority object

Code: 'theAuthority'

Remarks:

Aliases: (none)

5.6 Authority service hours

Name: Authority service hours

Definition: The authority for which service hours are given

Code: 'theAuthority_srvHrs'

Remarks:

Aliases: (none)

5.7 Contact details (reference)

Name: Contact details (reference)

Definition: A pointer to an Contact Details object

Code: 'theContactDetails'

Remarks:

Aliases: (none)

5.8 Control authority

Name: Control authority

Definition: The controlling organization or authority for a geographically located service

Code: 'controlAuthority'

Remarks:

Aliases: (none)

5.9 Controlled service

Name: Controlled service

Definition: The service controlled by an organisation or authority

Code: 'controlledService'

Remarks:

Aliases: (none)

5.10 Defined for

Name: Defined for

Definition: A pointer to a specific spatial type(s).

Code: 'definedFor'

Remarks:

Aliases: (none)

5.11 Defines

Name: Defines

Definition: A pointer to an information type providing spatial quality information.

Code: 'defines'

Remarks:

Aliases: (none)

5.12 Identifies

Name: Identifies

Definition: A pointer to a specific feature(s).

Code: 'identifies'

Remarks:

Aliases: (none)

5.13 Information provided for

Name: Information provided for

Definition: A pointer to a specific feature(s) for which further information is required.

Code: 'informationProvidedFor'

Remarks:

Aliases: (none)

5.14 Is applicable to

Name: Is applicable to

Definition: The object or class of objects to which the regulation, restriction, recommendation, or nautical information applies

Code: 'isApplicableTo'

Remarks:

Aliases: (none)

5.15 Location service hours

Name: Location service hours

Definition: The location for which service hours are given

Code: 'location_srvHrs'

Remarks:

Aliases: (none)

5.16 The information

Name: The information

Definition: Information related to an organisation

Code: 'theInformation'

Remarks:

Aliases: (none)

5.17 The organisation

Name: The organisation

Definition: The organisation to which information relates

Code: 'theOrganisation'

Remarks:

Aliases: (none)

5.18 Partial working day

Name: Partial working day

Definition: The work hours for a non-standard workday

Code: 'partialWorkingDay'

Remarks:

Aliases: (none)

5.19 Permission

Name: Permission

Definition: The permissions for a location

Code: 'permission'

Remarks:

Aliases: (none)

5.20 Must be filed by

Name: Must be filed by

Definition: The class (generally, qualifying vessels) which must file the report

Code: 'mustBeFiledBy'

Remarks:

Aliases: (none)

5.21 Positions

Name: Positions

Definition: A pointer to a specific cartographically positioned location for text.

Code: 'positions'

Remarks:

Aliases: (none)

5.22 Provides information

Name: Provides information

Definition: A pointer to an object that provides more information about the referencing feature or information type.

Code: 'providesInformation'

Remarks:

Aliases: (none)

5.23 Report for location

Name: Report for location

Definition: The feature pertaining to a report

Code: 'reptForLocation'

Remarks: Encodable only as a generic association in 3.0.0 datasets as it is an information->feature link. Example: reference to a controlled area which requires a report to be filed upon entry and departure

Aliases: (none)

5.24 Report to

Name: Report to

Definition: The organisation or place to which a report is sent.

Code: 'reportTo'

Remarks:

Aliases: (none)

5.25 The RxN

Name: The RxN

Definition: The regulation, restriction, recommendation, or nautical information

Code: 'theRxN'

Remarks:

Aliases: (none)

5.26 Service Hours (reference)

Name: Service Hours (reference)

Definition: Service hours for an authority ore service provider

Code: 'theServiceHours'

Remarks:

Aliases: (none)

5.27 The service hours for a non-standard workday

Name: The service hours for a non-standard workday

Definition: The usual service hours to which an exception applies

Code: 'theServiceHours_nsdY'

Remarks:

Aliases: (none)

5.28 Service place

Name: Service place

Definition: Pointer to service or facility

Code: 'servicePlace'

Remarks: Distinction: serviceArea (area served by a provider)

Aliases: (none)

5.29 Service area

Name: Service area

Definition: The area served by a service provider.

Code: 'serviceArea'

Remarks: Distinction: servicePlace (the facility for which contact information is provided)

Aliases: (none)

5.30 Service provider

Name: Service provider

Definition: Pointer to a feature from where a provider supplies a service.

Code: 'serviceProvider'

Remarks:

Aliases: (none)

5.31 The ship report

Name: The ship report

Definition: The report to be filed by a vessel

Code: 'theShipReport'

Remarks:

Aliases: (none)

5.32 Traffic service report

Name: Traffic service report

Definition: The report for a traffic service

Code: 'reptForTrafficServ'

Remarks:

Aliases: (none)

5.33 Vessel location

Name: Vessel location

Definition: The location to which the permission statement applies

Code: 'vslLocation'

Remarks: Implementations must use between Applicability and PermissionType objects, not to feature instance. The PermissionType->feature link is via a generic inverse association

Aliases: (none)

6 Information Associations

6.1 Additional information

Name: Additional information

Definition: A feature association for the binding between at least one instance of a geo feature and an instance of an information type.

Code: 'AdditionalInformation'

Remarks: Role informationProvidedFor encodable only as a generic inverse association in feature objects in 3.0.0 datasets

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role: providesInformation informationProvidedFor

6.2 Authority contact

Name: Authority contact

Definition: Contact information for an authority

Code: 'AuthorityContact'

Remarks:

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role: theAuthority theContactDetails

6.3 Authority hours

Name: Authority hours

Definition: Service hours for an authority

Code: 'AuthorityHours'

Remarks:

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role: theAuthority_srvHrs theServiceHours

6.4 Associated RxN

Name: Associated RxN

Definition: Association between a geographic location and a regulation, restriction, recommendation, or nautical information

Code: 'AssociatedRxN'

Remarks: Role appliesInLocation encodable only as a generic inverse association in 3.0.0 datasets as it is an information->feature link

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role: appliesInLocation theRxN

6.5 Exceptional workday

Name: Exceptional workday

Definition: Exception to the usual working day

Code: 'ExceptionalWorkday'

Remarks:

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role: theServiceHours_nsd partialWorkingDay

6.6 Inclusion type

Name: Inclusion type

Definition: Association class specifying the relationship between the subset of vessels described by an APPLIC data object and a regulation (restriction, recommendation, or nautical information).

Code: 'InclusionType'

Remarks:

Aliases: (none)

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
membership	enumeration	1..1	1 : included 2 : excluded	false

Role: theApplicableRxN isApplicableTo

6.7 Permission type

Name: Permission type

Definition: Association class for associations describing whether the subsets of vessels determined by the ship characteristics specified in APPLIC may (or must, etc.) transit, enter, or use a feature.

Code: 'PermissionType'

Remarks:

Aliases: (none)

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfRelationship	enumeration	1..1	1 : prohibited 2 : not recommended 3 : permitted 4 : recommended 5 : required 6 : not required	false

Role: vsLocation permission

6.8 Related organisation

Name: Related organisation

Definition: Related organisation

Code: 'RelatedOrganisation'

Remarks:

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role: theInformation theOrganisation

6.9 Reporting authority

Name: Reporting authority

Definition: The authority with which a report must be filed

Code: 'ReptAuthority'

Remarks:

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role: reportTo theShipReport

6.10 Reporting requirement

Name: Reporting requirement

Definition: Association between types of reports and classes of vessels which must file report of the type described

Code: 'ReportReqmt'

Remarks:

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role: theShipReport mustBeFiledBy

6.11 Service contact

Name: Service contact

Definition: Contact details for a service or facility

Code: 'SrvContact'

Remarks:

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role: servicePlace theContactDetails

6.12 Service control

Name: Service control

Definition: Association between a geographically located service and the organisation that controls it

Code: 'SrvControl'

Remarks: This is an information association linking a location where a service is provided with an information type describing the provider. Contrast to ServiceProvisionArea, which is a feature association linking the area served with another feature describing the provider. Role controlledService encodable only as a generic inverse association in 3.0.0 datasets as it is an information->feature link

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role: controlledService controlAuthority

6.13 Spatial Association

Name: Spatial Association

Definition: An association for the binding between a spatial type and its spatial quality information.

Code: 'SpatialAssociation'

Remarks:

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role: definedFor defines

6.14 Location hours

Name: Location hours

Definition: Working hours for a service or facility described by a geographic location

Code: 'LocationHours'

Remarks: This association links a geo feature to a Service Hours object. Distinction: authyHours, which links an information type (Authority) to a Service Hours object.

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role: location_srvHrs theServiceHours

6.15 Traffic service report

Name: Traffic service report

Definition: Association between traffic control service and reports required of vessels pertaining to that area

Code: 'TrafficServRept'

Remarks: Role reptForLocation encodable only as a generic inverse association in 3.0.0 datasets as it is an information->feature link

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role: reptForLocation reptForTrafficServ

7 Feature Associations

7.1 Service provision area

Name: Service provision area

Definition: Association linking the location from which a service is provided and the area(s) served.

Code: 'ServiceProvisionArea'

Remarks: This is a feature association linking a provider described by a geographic feature with the area served (another geographic feature). Contrast to SrvControl, which is an information association linking the area served to an information object describing the provider.

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role(s): serviceProvider serviceArea

7.2 Pilotage district association

Name: Pilotage district association

Definition: A feature association for the binding between a pilotage district and its component pilot boarding places.

Code: 'PilotageDistrictAssociation'

Remarks:

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role(s): componentOf consistsOf

7.3 Text association

Name: Text association

Definition: A feature association for the binding between a geo feature and the cartographically positioned location for text.

Code: 'TextAssociation'

Remarks:

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role(s): identifies positions

7.4 Traffic control service aggregation

Name: Traffic control service aggregation

Definition: A feature association for the binding between a traffic control service and auxiliary features.

Code: 'TrafficControlServiceAggregation'

Remarks:

Aliases: (none)

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Role(s): componentOf consistsOf

8 Information Types

8.1 Information Type

Name: Information Type Abstract type: true

Definition: Generalized information type which carries all the common attributes

Code: 'InformationType'

Remarks:

Aliases: (none)

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
fixedDateRange	complex	0..1		false
periodicDateRange	complex	0..*		false
featureName	complex	0..*		false
sourceIndication	complex	0..*		false

Information bindings

(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..*	AdditionalInformation	providesInformation	NauticalInformation

8.2 AbstractRxN

Name: AbstractRxN Abstract type: true

Definition: An abstract superclass for information types that encode rules, recommendations, and general information in text or graphic form.

Code: 'AbstractRxN'

Remarks: Subtypes of AbstractRxN carry the same attributes, but differ in the nature of information they encode. There are currently four such subtypes: Regulations, Restrictions, Recommendations, and NauticalInformation.

Aliases: (none) Supertype: InformationType

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfAuthority	enumeration	0..1	1 : customs 2 : border control 3 : police 4 : port 5 : immigration 6 : health 7 : coast guard 8 : agricultural 9 : military 10 : private company 11 : maritime police 12 : environmental 13 : fishery 14 : finance 15 : maritime	false
textContent	complex	0..*		false

Attribute	Type	Mult.	Permitted Values	Sequential
graphic	complex	0..*		false
rxnCode	complex	0..*		false

Information bindings
(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..*	InclusionType	isApplicableTo	Applicability
association	0..*	RelatedOrganisation	theOrganisation	AbstractRxN

8.3 Applicability

Name: Applicability

Definition: Describes the relationship between vessel characteristics and: (i) the applicability of an associated information object or feature to the vessel; or, (ii) the use of a facility, place, or service by the vessel; or, (iii) passage of the vessel through an area.

Code: 'Applicability'

Remarks:

Aliases: APPLIC Supertype: InformationType

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
inBallast	boolean	0..1		false
categoryOfCargo	enumeration	0..*	1 : bulk 2 : container 3 : general 4 : liquid 5 : passenger 6 : livestock 7 : dangerous or hazardous 8 : heavy lift 9 : ballast	false
categoryOfDangerousOrHazardousCargo	enumeration	0..*	1 : IMDG Code Class 1 Div. 1.1 2 : IMDG Code Class 1 Div. 1.2 3 : IMDG Code Class 1 Div. 1.3 4 : IMDG Code Class 1 Div. 1.4 5 : IMDG Code Class 1 Div. 1.5 6 : IMDG Code Class 1 Div. 1.6 7 : IMDG Code Class 2 Div. 2.1 8 : IMDG Code Class 2 Div. 2.2 9 : IMDG Code Class 2 Div. 2.3 10 : IMDG Code Class 3 11 : IMDG Code Class 4 Div. 4.1 12 : IMDG Code Class 4 Div. 4.2 13 : IMDG Code Class 4 Div. 4.3 14 : IMDG Code Class 5 Div. 5.1 15 : IMDG Code Class 5 Div. 5.2 16 : IMDG Code Class 6 Div. 6.1 17 : IMDG Code Class 6 Div. 6.2 18 : IMDG Code Class 7 19 : IMDG Code Class 8 20 : IMDG Code Class 9	false

Attribute	Type	Mult.	Permitted Values	Sequential
			21 : Harmful Substances in packaged form	
categoryOfVessel	S100_CodeList	0..1	1 : general cargo vessel 2 : container carrier 3 : tanker 4 : bulk carrier 5 : passenger vessel 6 : roll-on roll-off 7 : refrigerated cargo vessel 8 : fishing vessel 9 : service 10 : warship 11 : towed or pushed composite unit 12 : tug and tow 13 : light recreational 14 : semi-submersible offshore installation 15 : jack-up exploration or project installation 16 : livestock carrier 17 : sport fishing	false
categoryOfVesselRegistry	enumeration	0..1	1 : domestic 2 : foreign	false
logicalConnectives	enumeration	0..1	1 : logical conjunction 2 : logical disjunction	false
thicknessOfIceCapability	integer	0..1		false
vesselPerformance	text	0..1		false
information	complex	0..*		false
vesselsMeasurements	complex	0..*		false

Information bindings
(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..*	InclusionType	theApplicableRxN	AbstractRxN
association	0..*	ReportReqmt	theShipReport	ShipReport
association	0..*	PermissionType	vslLocation	InformationType

8.4 Authority

Name: Authority

Definition: A person or organization that has the legally delegated or invested authority, capacity, or power to perform a designated function or exert administrative control.

Code: 'Authority'

Remarks:

Aliases: AUTORI Supertype: InformationType

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfAuthority	enumeration	1..1	1 : customs 2 : border control 3 : police	false

Attribute	Type	Mult.	Permitted Values	Sequential
			4 : port 5 : immigration 6 : health 7 : coast guard 8 : agricultural 9 : military 10 : private company 11 : maritime police 12 : environmental 13 : fishery 14 : finance 15 : maritime	
textContent	complex	0..1		false

Information bindings
(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..*	AuthorityContact	theContactDetails	ContactDetails
association	0..*	ReptAuthority	theShipReport	ShipReport
association	0..*	RelatedOrganisation	theInformation	AbstractRxN
association	0..*	AuthorityHours	theServiceHours	ServiceHours

8.5 Contact details

Name: Contact details

Definition: information on how to reach a person or organisation by postal, internet, telephone, telex and radio systems

Code: 'ContactDetails'

Remarks:

Aliases: CONDET Supertype: InformationType

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
callName	text	0..1		false
callSign	text	0..1		false
categoryOfCommPref	enumeration	0..1	1 : preferred calling 2 : alternate calling 3 : preferred working 4 : alternate working	false
communicationChannel	text	0..*		false
contactAddress	complex	0..*		false
contactInstructions	text	0..1		false
frequencyPair	complex	0..*		false
information	complex	0..*		false
language	text	0..1		false
mMSICode	text	0..1		false
onlineResource	complex	0..*		false

Attribute	Type	Mult.	Permitted Values	Sequential
telecommunications	complex	0..*		false

Information bindings
(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..*	AuthorityContact	theAuthority	Authority

8.6 Nautical information

Name: Nautical information

Definition: Nautical information about a related area or facility.

Code: 'NauticalInformation'

Remarks: The association ref and role are overloaded since the feature association to this object has the same name, but the informationType element distinguishes it. The info->feature association is not allowed in edition 3.0.0. As a result, the multiplicity of informationProvidedFor role must be 0 because an instance may be associated with either feature or information type.

Aliases: NATINF Supertype: AbstractRxN

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Information bindings
(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..*	AdditionalInformation	informationProvidedFor	InformationType

8.7 Non-standard working day

Name: Non-standard working day

Definition: Days when many services are not available. Often days of festivity or recreation or public holidays when normal working hours are limited, especially a national or religious festival, etc.

Code: 'NonStandardWorkingDay'

Remarks:

Aliases: NSWKDY Supertype: InformationType

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
dateFixed	S100_TruncatedDate	0..*		false
dateVariable	text	0..*		false
information	complex	0..*		false

Information bindings
(Bindings are also inherited from super-types, if any.)
(No local bindings, but may inherit bindings from super-types, if any)

8.8 Service Hours

Name: Service Hours

Definition: The time when a service is available and known exceptions.

Code: 'ServiceHours'

Remarks:

Aliases: SRVHRS Supertype: InformationType

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
scheduleByDayOfWeek	complex	1..*		false
information	complex	0..*		false

Information bindings

(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..*	ExceptionalWorkday	partialWorkingDay	NonStandardWorkingDay
association	0..*	AuthorityHours	theAuthority_srvHrs	Authority

8.9 Ship Report

Name: Ship Report

Definition: Describes how a ship should report to a maritime authority, including when to report, what to report and whether the format conforms to the IMO standard.

Code: 'ShipReport'

Remarks:

Aliases: SHPREP Supertype: InformationType

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfShipReport	enumeration	1..*	1 : sailing plan 2 : position report 3 : deviation report 4 : final report 5 : dangerous goods report 6 : harmful substances report 7 : marine pollutants report 8 : any other report	false
imoFormatForReporting	boolean	1..1		false
noticeTime	complex	1..*		false
textContent	complex	0..1		false

Information bindings

(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..*	ReportReqmt	mustBeFiledBy	Applicability
association	0..*	ReptAuthority	reportTo	Authority

8.10 Recommendations

Name: Recommendations

Definition: Recommendations for a related area or facility.

Code: 'Recommendations'

Remarks:

Aliases: RCMDTS Supertype: AbstractRxN

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

8.11 Regulations

Name: Regulations

Definition: Regulations for a related area or facility.

Code: 'Regulations'

Remarks:

Aliases: REGLTS Supertype: AbstractRxN

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

8.12 Restrictions

Name: Restrictions

Definition: Restrictions for a related area or facility.

Code: 'Restrictions'

Remarks:

Aliases: RESDES Supertype: AbstractRxN

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

8.13 Spatial Quality

Name: Spatial Quality

Definition: *Definition required*

Code: 'SpatialQuality'

Remarks: To be defined by DQWG?

Aliases: (none)

Attribute Bindings				
Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfTemporalVariation	enumeration	0..1	1 : Extreme Event 4 : Likely to Change 5 : Unlikely to Change	false
qualityOfHorizontalMeasurement	enumeration	0..1	1 : surveyed 2 : unsurveyed 3 : inadequately surveyed 4 : approximate 5 : position doubtful 6 : unreliable 7 : reported (not surveyed) 8 : reported (not confirmed) 9 : estimated 10 : precisely known 11 : calculated	false
horizontalPositionUncertainty	complex	0..1		false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

8.14 Spatial Quality Points

Name: Spatial Quality Points

Definition: *Definition required*

Code: 'SpatialQualityPoints'

Remarks: to be finalized by DQWG

Aliases: (none) Supertype: SpatialQuality

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

9 Feature Types

9.1 Feature Type

Name: Feature Type Abstract type: true

Definition: Generalized feature type which carries all the common attributes

Code: 'FeatureType'

Remarks:

Aliases: (none)

Feature use type: geographic

Permitted primitives: noGeometry

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
fixedDateRange	complex	0..1		false
periodicDateRange	complex	0..*		false
featureName	complex	0..*		false
sourceIndication	complex	0..1		false
textContent	complex	0..1		false

Information bindings

(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..*	PermissionType	permission	Applicability
association	0..*	AssociatedRxN	theRxN	AbstractRxN
association	0..*	AdditionalInformation	providesInformation	NauticalInformation

Feature bindings

(Bindings are also inherited from super-types, if any.)

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..1	TextAssociation	positions	TextPlacement

9.2 Organisation contact area

Name: Organisation contact area Abstract type: true

Definition: A feature often associated with contact information for an organization that exercises a management role or offers a service in the location.

Code: 'OrganisationContactArea'

Remarks: It is not a requirement that every instance of the feature be associated with a management, reporting, or service organization.

Aliases: (none) Supertype: FeatureType

Feature use type: geographic

Permitted primitives: noGeometry

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Information bindings

(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..*	SrvContact	theContactDetails	ContactDetails

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.3 Supervised area

Name: Supervised area Abstract type: true

Definition: A location which may be supervised by a responsible or controlling authority.

Code: 'SupervisedArea'

Remarks: It is not a requirement that every feature instance be associated with an authority. Note that having AbstractService as well as SupervisedArea allows the subclasses to link to CONDET both directly and via AUTORI, which may not be desirable because it gives encoders two ways to reach almost the same result.

Aliases: (none) Supertype: OrganisationContactArea

Feature use type: geographic

Permitted primitives: noGeometry

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Information bindings

(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..1	SrvControl	controlAuthority	Authority

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.4 Reportable Service Area

Name: Reportable Service Area Abstract type: true

Definition: A service area that generally has requirements for submission of information, including communications not strictly considered "reporting."

Code: 'ReportableServiceArea'

Remarks: It is not a requirement for every instance to require a report. The service can stretch from providing information and guidelines on reporting formalities and when, what and how to report in a specific port to a full exchange of information in a Single Window ship reporting system.

Aliases: (none) Supertype: SupervisedArea

Feature use type: geographic

Permitted primitives: noGeometry

Attribute Bindings

(No local bindings, but will inherit bindings from super-types if any)

Information bindings

(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..*	TrafficServRept	reptForTrafficServ	ShipReport

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.5 Caution area

Name: Caution area

Definition: Generally, an area where the mariner has to be made aware of circumstances influencing the safety of navigation.

Code: 'CautionArea'

Remarks:

Aliases: CTNARE Supertype: FeatureType

Feature use type: geographic

Permitted primitives: point surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
condition	enumeration	0..1	1 : under construction 3 : under reclamation 5 : planned construction	false
status	enumeration	0..1	5 : periodic/intermittent 7 : temporary	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.6 Concentration of shipping hazard area

Name: Concentration of shipping hazard area

Definition: An area where hazards, caused by concentrations of shipping, may occur. Hazards are risks to shipping, which stem from sources other than shoal water or obstructions.

Code: 'ConcentrationOfShippingHazardArea'

Remarks:

Aliases: CONSHA Supertype: FeatureType

Feature use type: geographic

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
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Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfConcentrationOfShippingHazardArea	enumeration	0..*	1 : concentration of merchant shipping 2 : concentration of recreational vessels 3 : concentration of fishing vessels 4 : concentration of military vessels	false
status	enumeration	0..*	1 : permanent 2 : occasional 5 : periodic/intermittent 7 : temporary 16 : watched 17 : un-watched	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.7 ISPS code security level

Name: ISPS code security level

Definition: The area to which an International Ship and Port Facility Security (ISPS) level applies.

Code: 'IspCodeSecurityLevel'

Remarks: The International Ship and Port Facility Security (ISPS) Code is an amendment to the Safety of Life at Sea (SOLAS) Convention (1974/1988) on minimum security arrangements for ships, ports and government agencies. Having come into force in 2004, it prescribes responsibilities to governments, shipping companies, shipboard personnel, and port/facility personnel to detect security threats and take preventive measures against security incidents affecting ships or port facilities used in international trade.

Aliases: SECLVL Supertype: OrganisationContactArea

Feature use type: geographic

Permitted primitives: curve surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
ispsLevel	enumeration	1..1	1 : ISPS Level 1 2 : ISPS Level 2 3 : ISPS Level 3	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.8 Local Port Service Area

Name: Local Port Service Area

Definition: A service established to provide port information without interaction between the customer and the service provider. This information could be inter alia berthing information, availability of port services, shipping schedules, meteorological and hydrological data.

Code: 'LocalPortServiceArea'

Remarks:

Aliases: LPSARE Supertype: ReportableServiceArea

Feature use type: geographic

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
serviceAccessProcedure	text	0..1		false
requirementsForMaintenanceOfListeningWatch	text	1..1		false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
aggregation	0..*	TrafficControlServiceAggregation	consistsOf	RadioCallingInPoint
aggregation	0..*	TrafficControlServiceAggregation	consistsOf	RadarRange
aggregation	0..*	TrafficControlServiceAggregation	consistsOf	SignalStationWarning
aggregation	0..*	TrafficControlServiceAggregation	consistsOf	SignalStationTraffic

9.9 Military practice area

Name: Military practice area

Definition: An area within which naval, military or aerial exercises are carried out. Also called an 'exercise area'.

Code: 'MilitaryPracticeArea'

Remarks:

Aliases: MIPARE Supertype: SupervisedArea

Feature use type: geographic

Permitted primitives: point surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfMilitaryPracticeArea	enumeration	0..*	2 : torpedo exercise area 3 : submarine exercise area 4 : firing danger area 5 : mine-laying practice area 6 : small arms firing range	false
nationality	text	0..1		false
restriction	enumeration	0..*	1 : anchoring prohibited 2 : anchoring restricted 3 : fishing prohibited	false

Attribute	Type	Mult.	Permitted Values	Sequential
			4 : fishing restricted 5 : trawling prohibited 6 : trawling restricted 7 : entry prohibited 8 : entry restricted 9 : dredging prohibited 10 : dredging restricted 11 : diving prohibited 12 : diving restricted 13 : no wake 15 : construction prohibited 16 : discharging prohibited 17 : discharging restricted 18 : industrial or mineral exploration/development prohibited 19 : industrial or mineral exploration/development restricted 20 : drilling prohibited 21 : drilling restricted 22 : removal of historical artifacts prohibited 23 : cargo transshipment (lightering) prohibited 24 : dragging prohibited 25 : stopping prohibited 26 : landing prohibited 27 : speed restricted 39 : swimming prohibited	
status	enumeration	0..*	1 : permanent 2 : occasional 5 : periodic/intermittent 6 : reserved 7 : temporary 16 : watched 17 : un-watched	false

Information bindings

(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..1	LocationHours	theServiceHours	ServiceHours

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.10 Pilot boarding place

Name: Pilot boarding place

Definition: The meeting place to which the pilot comes out.

Code: 'PilotBoardingPlace'

Remarks:

Aliases: PILBOP Supertype: OrganisationContactArea

Feature use type: geographic

Permitted primitives: point surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
callSign	text	0..1		false
categoryOfPilotBoardingPlace	enumeration	0..1	1 : boarding by pilot-cruising vessel 2 : boarding by helicopter 3 : pilot comes out from shore	false
categoryOfPreference	enumeration	0..1	1 : primary 2 : alternate	false
categoryOfVessel	S100_CodeList	0..1	1 : general cargo vessel 2 : container carrier 3 : tanker 4 : bulk carrier 5 : passenger vessel 6 : roll-on roll-off 7 : refrigerated cargo vessel 8 : fishing vessel 9 : service 10 : warship 11 : towed or pushed composite unit 12 : tug and tow 13 : light recreational 14 : semi-submersible offshore installation 15 : jack-up exploration or project installation 16 : livestock carrier 17 : sport fishing	false
communicationChannel	text	0..*		false
destination	text	0..1		false
pilotMovement	enumeration	0..1	1 : embarkation 2 : disembarkation 3 : pilot change	false
pilotVessel	text	0..1		false
status	enumeration	0..*	1 : permanent 2 : occasional 5 : periodic/intermittent 6 : reserved 9 : mandatory 16 : watched 17 : un-watched 28 : buoyed	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
aggregation	0..1	PilotageDistrictAssociation	componentOf	PilotageDistrict
association	0..*	ServiceProvisionArea	serviceProvider	PilotService

9.11 Pilot service

Name: Pilot service

Definition: The service provided by a person who directs the movements of a vessel through pilot waters, usually a person who has demonstrated extensive knowledge of channels, aids to navigation, dangers to navigation, etc., in a particular area and is licensed for that area.

Code: 'PilotService'

Remarks: The name of this object may be the same as the Pilot District of the associated PILBOPs.

Aliases: PLTSRV Supertype: ReportableServiceArea

Feature use type: geographic

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfPilot	enumeration	0..*	1 : pilot 2 : deep sea 3 : harbour 4 : bar 5 : river 6 : channel 7 : lake	false
pilotQualification	enumeration	0..1	1 : government pilot 2 : pilot approved by government 3 : state pilot 4 : federal pilot 5 : company pilot 6 : local pilot 7 : citizen with sufficient local knowledge 8 : citizen with doubtful local knowledge	false
pilotRequest	text	0..1		false
remotePilot	boolean	1..1		false
noticeTime	complex	0..1		false

Information bindings

(Bindings are also inherited from super-types, if any.)

Assoc. Type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..1	LocationHours	theServiceHours	ServiceHours

Feature bindings

(Bindings are also inherited from super-types, if any.)

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..1	ServiceProvisionArea	serviceArea	PilotageDistrict
association	0..*	ServiceProvisionArea	serviceArea	PilotBoardingPlace

9.12 Pilotage district

Name: Pilotage district

Definition: An area within which a pilotage direction exists. Such directions are regulated by a competent harbour authority which dictates circumstances under which they apply.

Code: 'PilotageDistrict'

Remarks:

Aliases: (none) Supertype: FeatureType

Feature use type: geographic

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
communicationChannel	text	0..*		false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
aggregation	0..*	PilotageDistrictAssociation	consistsOf	PilotBoardingPlace
association	0..*	ServiceProvisionArea	serviceProvider	PilotService

9.13 Piracy risk area

Name: Piracy risk area

Definition: An area where there is a raised risk of piracy or armed robbery.

Code: 'PiracyRiskArea'

Remarks:

Aliases: PIRARE Supertype: ReportableServiceArea

Feature use type: geographic

Permitted primitives: point surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
restriction	enumeration	1..*	1 : anchoring prohibited 2 : anchoring restricted 3 : fishing prohibited 4 : fishing restricted 5 : trawling prohibited 6 : trawling restricted 7 : entry prohibited 8 : entry restricted 9 : dredging prohibited 10 : dredging restricted 11 : diving prohibited 12 : diving restricted 14 : area to be avoided	false

Attribute	Type	Mult.	Permitted Values	Sequential
			18 : industrial or mineral exploration/development prohibited 19 : industrial or mineral exploration/development restricted 20 : drilling prohibited 21 : drilling restricted 24 : dragging prohibited 25 : stopping prohibited 26 : landing prohibited 27 : speed restricted 31 : berthing prohibited 32 : berthing restricted 33 : making fast prohibited 34 : making fast restricted	
status	enumeration	0..*	1 : permanent 2 : occasional 5 : periodic/intermittent 7 : temporary	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.14 Place of refuge

Name: Place of refuge

Definition: A place where a ship in need of assistance can take action to enable it to stabilize its condition and reduce the hazards to navigation, and to protect human life and the environment.

Code: 'PlaceOfRefuge'

Remarks:

Aliases: (none) Supertype: ReportableServiceArea

Feature use type: geographic

Permitted primitives: point surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
communicationChannel	text	0..*		false
status	enumeration	0..*	1 : permanent 2 : occasional 3 : recommended 4 : not in use 5 : periodic/intermittent 6 : reserved 7 : temporary 8 : private 9 : mandatory 28 : buoyed	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.15 Radar range

Name: Radar range

Definition: Indicates the coverage of a sea area by a radar surveillance station. Inside this area a vessel may request shore-based radar assistance, particularly in poor visibility.

Code: 'RadarRange'

Remarks: Many large ports have a radar surveillance system covering their approaches to provide guidance for vessels, particularly in poor visibility. The maximum range of the system forms an arc or series of overlapping arcs (IHO Chart Specifications, M-4).

Aliases: RADRNG Supertype: FeatureType

Feature use type: geographic

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
communicationChannel	text	0..*		false
status	enumeration	0..*	1 : permanent 2 : occasional 4 : not in use 7 : temporary	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..1	TrafficControlServiceAggregation	componentOf	VesselTrafficServiceArea
association	0..1	TrafficControlServiceAggregation	componentOf	LocalPortServiceArea
association	0..1	TrafficControlServiceAggregation	componentOf	ShipReportingServiceArea

9.16 Radio calling-in point

Name: Radio calling-in point

Definition: On passing a radio callin-in point or crossing a defined line vessels are required to report on VHF to a Traffic Control Centre. The attribute 'orientation' (ORIENT) encodes the orientation of the traffic flow at that point.

Code: 'RadioCallingInPoint'

Remarks: Radio calling-in points are established in certain busy waterways and port approaches to assist traffic control.

Aliases: Radio reporting points; RDOCAL Supertype: FeatureType

Feature use type: geographic

Permitted primitives: point curve

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
callSign	text	0..1		false
communicationChannel	text	0..*		false
categoryOfCargo	enumeration	0..*	1 : bulk 2 : container 3 : general 4 : liquid 5 : passenger 6 : livestock 7 : dangerous or hazardous 8 : heavy lift 9 : ballast	false
categoryOfVessel	S100_CodeList	0..*	1 : general cargo vessel 2 : container carrier 3 : tanker 4 : bulk carrier 5 : passenger vessel 6 : roll-on roll-off 7 : refrigerated cargo vessel 8 : fishing vessel 9 : service 10 : warship 11 : towed or pushed composite unit 12 : tug and tow 13 : light recreational 14 : semi-submersible offshore installation 15 : jack-up exploration or project installation 16 : livestock carrier 17 : sport fishing	false
orientationValue	real	0..2		false
status	enumeration	0..*	1 : permanent 3 : recommended 4 : not in use 5 : periodic/intermittent 6 : reserved 7 : temporary 9 : mandatory	false
trafficFlow	enumeration	1..1	1 : inbound 2 : outbound 3 : one-way 4 : two-way	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings
(Bindings are also inherited from super-types, if any.)

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..1	TrafficControlServiceAggregation	componentOf	VesselTrafficServiceArea
association	0..1	TrafficControlServiceAggregation	componentOf	LocalPortServiceArea
association	0..1	TrafficControlServiceAggregation	componentOf	ShipReportingServiceArea

9.17 Restricted area navigational

Name: Restricted area navigational

Definition: A specified area of land or water designated by an appropriate authority within which access or navigation is restricted in accordance with certain specified conditions. A navigational restricted area is an area where the restrictions have a direct impact on the navigation of a vessel in the area.

Code: 'RestrictedAreaNavigational'

Remarks:

Aliases: (none) Supertype: SupervisedArea

Feature use type: geographic

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfRestrictedArea	enumeration	0..*	1 : offshore safety zone 4 : nature reserve 5 : bird sanctuary 6 : game reserve 7 : seal sanctuary 8 : degaussing range 9 : military area 10 : historic wreck area 12 : navigational aid safety zone 14 : minefield 19 : waiting area 20 : research area 22 : fish sanctuary 23 : ecological reserve 25 : swinging area 27 : environmentally sensitive sea area 28 : particularly sensitive sea area 29 : disengagement area 30 : port security area 31 : coral sanctuary 32 : recreation area	false
restriction	enumeration	1..*	1 : anchoring prohibited 2 : anchoring restricted 7 : entry prohibited 8 : entry restricted 13 : no wake 14 : area to be avoided 25 : stopping prohibited 26 : landing prohibited 27 : speed restricted	false
status	enumeration	0..*	1 : permanent 2 : occasional 3 : recommended 4 : not in use	false

Attribute	Type	Mult.	Permitted Values	Sequential
			5 : periodic/intermittent 6 : reserved 7 : temporary 9 : mandatory 18 : existence doubtful 28 : buoyed	

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.18 Restricted area regulatory

Name: Restricted area regulatory

Definition: A specified area of land or water designated by an appropriate authority within which access or navigation is restricted in accordance with certain specified conditions. A regulatory restricted area is an area where the restrictions have no direct impact on the navigation of a vessel in the area, but impact on the activities that can take place within the area.

Code: 'RestrictedAreaRegulatory'

Remarks:

Aliases: (none) Supertype: SupervisedArea

Feature use type: geographic

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfRestrictedArea	enumeration	0..*	1 : offshore safety zone 4 : nature reserve 5 : bird sanctuary 6 : game reserve 7 : seal sanctuary 8 : degaussing range 9 : military area 10 : historic wreck area 12 : navigational aid safety zone 14 : minefield 19 : waiting area 20 : research area 22 : fish sanctuary 23 : ecological reserve 25 : swinging area 27 : environmentally sensitive sea area 28 : particularly sensitive sea area 29 : disengagement area 30 : port security area 31 : coral sanctuary 32 : recreation area	false
restriction	enumeration	0..*		false

Attribute	Type	Mult.	Permitted Values	Sequential
			3 : fishing prohibited 4 : fishing restricted 5 : trawling prohibited 6 : trawling restricted 9 : dredging prohibited 10 : dredging restricted 11 : diving prohibited 12 : diving restricted 15 : construction prohibited 16 : discharging prohibited 17 : discharging restricted 18 : industrial or mineral exploration/development prohibited 19 : industrial or mineral exploration/development restricted 20 : drilling prohibited 21 : drilling restricted 22 : removal of historical artifacts prohibited 23 : cargo transshipment (lightering) prohibited 24 : dragging prohibited 39 : swimming prohibited	
status	enumeration	0..*	1 : permanent 2 : occasional 3 : recommended 4 : not in use 5 : periodic/intermittent 6 : reserved 7 : temporary 9 : mandatory 18 : existence doubtful 28 : buoyed	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.19 Routeing measure

Name: Routeing measure

Definition: An area or line designating the limits or central line of a routeing measure (or part of a routeing measure). Routeing measures include traffic separation schemes, deep-water routes, two-way routes, archipelagic sea lanes, and fairway systems.

Code: 'RouteingMeasure'

Remarks: (1) categoryOfNavigationLine permitted only if categoryOfRouteingMeasure is 4 (recommended route). (2)

categoryOfTrafficSeparationScheme permitted only if categoryOfRouteingMeasure = 5 (traffic separation scheme)

Aliases: (none) Supertype: FeatureType

Feature use type: geographic

Permitted primitives: surface curve

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfRouteingMeasure	enumeration	1..1	1 : archipelagic sea lane 2 : deep water route 3 : fairway system 4 : recommended route 5 : traffic separation scheme 6 : two-way route	false
categoryOfTrafficSeparationScheme	enumeration	0..1	1 : IMO - Adopted 2 : not IMO - adopted	false
categoryOfNavigationLine	enumeration	0..1	1 : clearing line 2 : transit line 3 : leading line bearing a recommended track	false

Information bindings

(Bindings are also inherited from super-types, if any.)
(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)
(No local bindings, but will inherit super-type bindings if any)

9.20 Ship Reporting Service Area

Name: Ship Reporting Service Area

Definition: A service established by a relevant authority consisting of one or more reporting points or lines at which ships are required to report their identity, course, speed and other data to the monitoring authority.

Code: 'ShipReportingServiceArea'

Remarks:

Aliases: (none) Supertype: ReportableServiceArea

Feature use type: geographic

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
serviceAccessProcedure	text	0..1		false
requirementsForMaintenanceOfListeningWatch	text	1..1		false

Information bindings

(Bindings are also inherited from super-types, if any.)
(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
aggregation	0..*	TrafficControlServiceAggregation	consistsOf	RadioCallingInPoint

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
aggregation	0..*	TrafficControlServiceAggregation	consistsOf	RadarRange
aggregation	0..*	TrafficControlServiceAggregation	consistsOf	SignalStationWarning
aggregation	0..*	TrafficControlServiceAggregation	consistsOf	SignalStationTraffic

9.21 Signal Station Warning

Name: Signal Station Warning

Definition: A warning signal station is a place on shore from which warning signals are made to ships at sea.

Code: 'SignalStationWarning'

Remarks:

Aliases: (none) Supertype: FeatureType

Feature use type: geographic

Permitted primitives: point surface

Attribute Bindings				
Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfSignalStationWarning	enumeration	1..*	1 : danger 2 : maritime obstruction 3 : cable 4 : military practice 5 : distress 6 : weather 7 : storm 8 : ice 9 : time 10 : tide 11 : tidal stream 12 : tide gauge 13 : tide scale 14 : diving 15 : water level gauge	false
communicationChannel	text	0..*		false
status	enumeration	0..*	1 : permanent 2 : occasional 4 : not in use 5 : periodic/intermittent 7 : temporary 8 : private 12 : illuminated 14 : public 15 : synchronized 16 : watched 17 : un-watched	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..1	TrafficControlServiceAggregation	componentOf	VesselTrafficServiceArea
association	0..1	TrafficControlServiceAggregation	componentOf	LocalPortServiceArea
association	0..1	TrafficControlServiceAggregation	componentOf	ShipReportingServiceArea

9.22 Signal Station Traffic

Name: Signal Station Traffic

Definition: A traffic signal station is a place on shore from which signals are made to regulate the movement of traffic.

Code: 'SignalStationTraffic'

Remarks: A signal station is a place on shore from which signals are made to ships at sea (IHO Dictionary, S-32, 5th Edition).

Aliases: (none) Supertype: OrganisationContactArea

Feature use type: geographic

Permitted primitives: point surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfSignalStationTraffic	enumeration	1..*	1 : port control 2 : port entry and departure 3 : International Port Traffic 4 : berthing 5 : dock 6 : lock 7 : flood barrage 8 : bridge passage 9 : dredging 10 : traffic control light 13 : oncoming traffic indication	false
communicationChannel	text	0..*		false
status	enumeration	0..*	1 : permanent 2 : occasional 4 : not in use 5 : periodic/intermittent 7 : temporary 8 : private 12 : illuminated 14 : public 15 : synchronized 16 : watched 17 : un-watched	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..1	TrafficControlServiceAggregation	componentOf	VesselTrafficServiceArea

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
association	0..1	TrafficControlServiceAggregation	componentOf	LocalPortServiceArea
association	0..1	TrafficControlServiceAggregation	componentOf	ShipReportingServiceArea

9.23 Underkeel clearance allowance area

Name: Underkeel clearance allowance area

Definition: An area for which an authority has stated underkeel allowance requirements.

Code: 'UnderkeelClearanceAllowanceArea'

Remarks:

Aliases: UKAARE Supertype: FeatureType

Feature use type: geographic

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
underkeelAllowance	complex	0..1		false
waterLevelTrend	enumeration	0..1	1 : decreasing 2 : increasing 3 : steady	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.24 Underkeel clearance management area

Name: Underkeel clearance management area

Definition: An area for which an authority permits use of dynamic underkeel clearance information or provides dynamic information related to underkeel clearances.

Code: 'UnderkeelClearanceManagementArea'

Remarks:

Aliases: UKMARE Supertype: ReportableServiceArea

Feature use type: geographic

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
dynamicResource	enumeration	1..1	1 : static 2 : mandatory external dynamic 3 : optional external dynamic 4 : onboard dynamic	false

Information bindings

(Bindings are also inherited from super-types, if any.)
(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)
(No local bindings, but will inherit super-type bindings if any)

9.25 Vessel Traffic Service Area

Name: Vessel Traffic Service Area

Definition: The area of any service implemented by a relevant authority primarily designed to improve safety and efficiency of traffic flow and the protection of the environment. It may range from simple information messages, to extensive organisation of the traffic involving national or regional schemes.

Code: 'VesselTrafficServiceArea'

Remarks:

Aliases: VTSARE Supertype: ReportableServiceArea

Feature use type: geographic

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfVesselTrafficService	enumeration	0..*	1 : Information Service 2 : Traffic Organisation Service 3 : Navigational Assistance Service	false
serviceAccessProcedure	text	0..1		false
requirementsForMaintenanceOfListeningWatch	text	1..1		false

Information bindings

(Bindings are also inherited from super-types, if any.)
(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
aggregation	0..*	TrafficControlServiceAggregation	consistsOf	RadioCallingInPoint
aggregation	0..*	TrafficControlServiceAggregation	consistsOf	RadarRange
aggregation	0..*	TrafficControlServiceAggregation	consistsOf	SignalStationWarning
aggregation	0..*	TrafficControlServiceAggregation	consistsOf	SignalStationTraffic

9.26 Waterway area

Name: Waterway area

Definition: An area in which uniform general information of the waterway exists.

Code: 'WaterwayArea'

Remarks: The current (January 2018) definition is the same as Waterway Area (wtware) in the Inland ENC domain.

Aliases: WATARE Supertype: SupervisedArea

Feature use type: geographic

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
dynamicResource	enumeration	1..1	1 : static 2 : mandatory external dynamic 3 : optional external dynamic 4 : onboard dynamic	false
siltationRate	text	0..1		false
status	enumeration	0..*	1 : permanent 2 : occasional 3 : recommended 4 : not in use 5 : periodic/intermittent 6 : reserved 7 : temporary 8 : private 9 : mandatory 28 : buoyed	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.27 Data quality

Name: Data quality Abstract type: true

Definition: Abstract feature type for data quality meta-features.

Code: 'DataQuality'

Remarks:

Aliases: (none)

Feature use type: meta

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
information	complex	0..*		false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.28 Quality of temporal variation

Name: Quality of temporal variation Abstract type: true
 Definition: Abstract type for meta-feature which can describe temporal variation.
 Code: 'QualityOfTemporalVariation'
 Remarks:
 Aliases: (none) Supertype: DataQuality
 Feature use type: meta
 Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
categoryOfTemporalVariation	enumeration	0..1	1 : Extreme Event 4 : Likely to Change 5 : Unlikely to Change	false

Information bindings

(Bindings are also inherited from super-types, if any.)
 (No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)
 (No local bindings, but will inherit super-type bindings if any)

9.29 Data coverage

Name: Data coverage
 Definition: A geographical area that describes the coverage and extent of spatial objects.
 Code: 'DataCoverage'
 Remarks:
 Aliases: (none)
 Feature use type: meta
 Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
maximumDisplayScale	integer	1..1		false
minimumDisplayScale	integer	1..1		false

Information bindings

(Bindings are also inherited from super-types, if any.)
 (No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)
 (No local bindings, but will inherit super-type bindings if any)

9.30 Quality of Non-Bathymetric Data

Name: Quality of Non-Bathymetric Data
 Definition: An area within which a uniform assessment of the quality of the non-bathymetric data exists

Code: 'QualityOfNonBathymetricData'

Remarks:

Aliases: (none) Supertype: QualityOfTemporalVariation

Feature use type: meta

Permitted primitives: surface

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
orientationUncertainty	real	0..1		false
horizontalDistanceUncertainty	real	0..1		false
horizontalPositionUncertainty	complex	0..1		false
sourceIndication	complex	0..1		false
surveyDateRange	complex	0..1		false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but will inherit super-type bindings if any)

9.31 Text Placement

Name: Text Placement

Definition: The Text Placement feature is used in association with the Feature Name attribute or a light description to optimise text positioning in ECDIS.

Code: 'TextPlacement'

Remarks:

Aliases: (none)

Feature use type: cartographic

Permitted primitives: point

Attribute Bindings

Attribute	Type	Mult.	Permitted Values	Sequential
flipBearing	integer	0..1		false
scaleMinimum	integer	0..1		false
textJustification	enumeration	1..1	1 : left 2 : centred 3 : right	false
text	text	0..1		false
textType	enumeration	0..1	1 : feature name	false

Information bindings

(Bindings are also inherited from super-types, if any.)

(No local bindings, but may inherit bindings from super-types, if any)

Feature bindings
(Bindings are also inherited from super-types, if any.)

Assoc. type	Mult.	Name of association	Role of assoc. target	Name of target class
association	1..1	TextAssociation	identifies	FeatureType