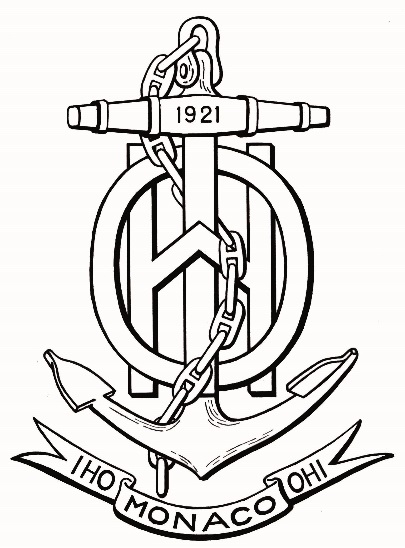
**INTERNATIONAL HYDROGRAPHIC ORGANIZATION**



**IHO UNIVERSAL HYDROGRAPHIC DATA MODEL**

**Special Publication No. 127**

**Marine Traffic Management Product Specification**

**Version 1.0.0**

**Appendix C-1**

**Feature Catalogue**

Published by the

International Hydrographic Bureau

**MONACO**

|  |
| --- |
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# 1 Catalogue header information

Name: Feature Catalogue for S-127  
Scope: Global coverage of maritime areas  
Field of Application: Marine Traffic Management  
Version Number: 1.0.0-20181129  
Version date: 2018-11-29

Producer information:  
Individual name:   
Organisation name: International Hydrographic Organization  
Phone:   
Address:

| **deliveryPoint** | **city** | **administrativeArea** | **postalCode** | **country** | **electronicMailAddress** |
| --- | --- | --- | --- | --- | --- |
| International Hydrographic Organization, 4 quai Antoine 1er, B.P. 445 |  |  | MC 98011 MONACO CEDEX |  |  |

Online resource information:   
Hours of Service:   
Contact Instructions: Contact IHO NIPWG Chair  
Position Name:   
Contact Information: (none)  
Role: publisher  
Classification: unclassified

# 2 Definition Sources

No definition sources in catalogue

# 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** |
| --- | --- | --- | --- |
| '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, Carabinierie, 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 |  |
| '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 |  |
| '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' Aliases: (none) | broadcasts about tsunamis, including watches, advisories, and other types of messages relating to tsunamis or potential tsunamis | 19 |  |

## 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 Printing Telegraphy)' Aliases: (none) | A communications system consisting of teletypewriters connected to a telephonic network to send and receive Narrow Band Direct Printing. (Adapted American Heritage Dictionary) | 8 |  |
| '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 |  |
| '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) | *Definition required* | 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 routeing measure

Name: Category of routeing measure  
Definition: Classification of routeing measures by type.  
Code: 'categoryOfRouteingMeasure'  
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' Aliases: (none) | 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 and shipborne barges identified in the International Maritime Goods Code as marine pollutants (Annex III of MARPOL 73/78). | 7 |  |
| '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 |  |
| '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 |  |
| '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 | | upperBound | 360 | | closure | closedInterval | | 0 |

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: FRQRXV  
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 | | upperBound | (none) | | closure | gtSemiInterval | | 1 |

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 | | upperBound | (none) | | closure | gtSemiInterval | | 1 |

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 | | upperBound | (none) | | closure | geSemiInterval | | 1 |

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: MBRSHP  
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** |
| --- | --- | --- | --- |
| '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 | | upperBound | 360.000 | | closure | closedInterval | | 3 |

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' Aliases: (none) | A pilot service carried out by a citizen whose local knowledge is uncertain. | 8 |  |

## 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 |  |
| '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 transhipment (lightering) prohibited' Aliases: (none) | an area in which cargo transhipment (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 |  |
| '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 | | upperBound | (none) | | closure | gtSemiInterval | | (not specified) |

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' Aliases: (none) | publication not having the force of law, issued by an international organisation or a national or local administration | 2 |  |
| '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 |  |
| '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 | | upperBound | (none) | | closure | gtSemiInterval | | 0 |

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 | | upperBound | (none) | | closure | leSemiInterval | | 1 |

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 | | upperBound | (none) | | closure | leSemiInterval | | 2 |

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 | | upperBound | (none) | | closure | gtSemiInterval | | 0 |

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 | | upperBound | (none) | | closure | gtSemiInterval | | 0 |

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 |  |
| '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 |  |
| '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 m3) of salt water with a density of 64 lb/ft³ (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' Aliases: (none) | Can be used for net and gross tonnages, including Panama Canal/Universal Measurement System net tonnage and The Suez Canal Net Tonnage. | 10 |  |
| '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' Aliases: (none) | an object whose position has been reported but which is considered to be doubtful. | 5 |  |
| '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 | | upperBound | (none) | | closure | geSemiInterval | | (not specified) |

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 | | upperBound | (none) | | closure | geSemiInterval | | (not specified) |

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 | | upperBound | 360.0 | | closure | closedInterval | | 1 |

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 | | upperBound | 360.00 | | closure | closedInterval | | 2 |

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' Aliases: (none) | The service, office, is open, fully manned, and operating normally, or the area is accessible as usual. | 1 |  |
| '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 installation' Aliases: (none) | 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 |  |
| '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 2: alternate calling 3: preferred working 4: alternate working | false |
| 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 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 | false |
| 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 12: landing 13: diving 14: fishing 15: discharging overboard 16: passing | false |
| 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 |
| 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 11: cubic metres 12: Suez Canal Gross Tonnage | false |

# 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\_nsdy 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: vslLocation 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 |
| 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 21 : Harmful Substances in packaged form | 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 |
| 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 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..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 |
| 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** |
| --- | --- | --- | --- | --- |
| 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: 'IspsCodeSecurityLevel'  
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 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 transhipment (lightering) prohibited 24 : dragging prohibited 25 : stopping prohibited 26 : landing prohibited 27 : speed restricted 39 : swimming prohibited | false |
| 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 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 | false |
| 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 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)

## 9.18 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..\* | 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 transhipment (lightering) prohibited 24 : dragging prohibited 39 : swimming prohibited | false |
| 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 |
| 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 |
| 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 |