**1. Meta Feature Types**

**2. Geo Feature Types**

**2.1. Catalogue Element**

**Definition:** Line items that make up the list of nautical products.

**CamelCase:** CatalogueElement

**Alias:**

**Super type:**

**Feature use type:** geographic

**Primitive:** surface

**Remarks:** No remarks.

**Attribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Classification |  |  | TE | 0, 1 |
| Copyright |  |  | TE | 1, 1 |
| Edition Date |  |  | IN | 1, 1 |
| Edition Number |  |  | TE | 1, 1 |
| Horizontal Datum Reference |  |  | TE | 0, 1 |
| Horizontal Datum Value |  |  | TE | 0, 1 |
| Issue Date |  |  | DA | 1, 1 |
| Marine Resource Name |  |  | UN | 0, 1 |
| Maximum Display Scale |  |  | IN | 0, 1 |
| Minimum Display Scale |  |  | IN | 0, 1 |
| Product Type |  | 1 : paper nautical chart  2 : ENC  3 : raster nautical chart  4 : INT Chart  5 : nautical publication  6 : S-100 compliant product  7 : electronic application for safety navigation  8 : special purpose charts  9 : e-Navigation service  10 : others | EN | 1, 1 |
| Purpose |  | 1 : new dataset  2 : new edition  3 : update  4 : re-issue  5 : cancellation | EN | 0, 1 |
| Sounding Datum |  |  | EN | 0, 1 |
| Update Data |  |  | DA | 0, 1 |
| Update Number |  |  | IN | 0, 1 |
| Vertical Datum | (VERDAT) |  | EN | 0, 1 |
| Feature Name |  |  | C | 0, \* |
| Display Name |  |  | (S) BO | 0, 1 |
| Language |  |  | (S) TE | 0, 1 |
| Name |  |  | (S) TE | 1, 1 |
| Graphic |  |  | C | 0, \* |
| Pictorial Representation |  |  | (S) TE | 1, \* |
| Country |  |  | (S) TE | 1, 1 |

**2.2. Catalogue Of Nautical Product**

**Definition:** The availability of paper charts, ENCs and other nautical products, applications for navigational purposes, online services and e-Navigation services.

**CamelCase:** CatalogueOfNauticalProduct

**Alias:**

**Super type:**

**Feature use type:** geographic

**Primitive:** noGeometry

**Remarks:** No remarks.

**Attribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Edition Number |  |  | TE | 1, 1 |
| Issue Date |  |  | DA | 1, 1 |
| Marine Resource Name |  |  | UN | 0, 1 |
| Feature Name |  |  | C | 1, \* |
| Source Date |  |  | (S) DA | 0, 1 |

**Information Bindings:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Type** | **Association Name** | **Association Ends** | | | | | |
| **Class** | **Role** | **Mult** | **Class** | **Role** | **Mult** |
| association | Issuing Authority |  |  |  | **ContactDetail** |  | 0, 1 |
| association | Price of Nautical Product |  |  |  | **PriceInformation** |  | 0, \* |

**Feature Bindings:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Type** | **Association Name** | **Association Ends** | | | | | |
| **Class** | **Role** | **Mult** | **Class** | **Role** | **Mult** |
| Asso | Product Package |  |  |  | **CatalogueElement** | catalogueOfElement | 1, \* |

**2.3. Nautical Product**

**Definition:** All nautical products other than charts made in the form of drawings.

**CamelCase:** NauticalProduct

**Alias:**

**Super type:** CatalogueElement

**Feature use type:** geographic

**Primitive:** surface

**Remarks:** No remarks.

**Attribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Dataset Name |  |  | TE | 0, 1 |
| ISBN |  |  | TE | 0, 1 |
| Keyword |  |  | TE | 0, 1 |
| Publication Number |  |  | TE | 1, 1 |
| Service Design |  |  | TE | 0, 1 |
| Service Status |  | 1 : provisional  2 : released  3 : deprecated  4 : deleted | EN | 0, 1 |
| Type Of Nautical Product |  | 1 : GML  2 : ISO/IEC 8211  3 : PDF  4 : HTML  5 : ePub  6 : paper  7 : other | EN | 1, 1 |
| Version |  |  | TE | 0, 1 |
| Online Resource |  |  | C | 0, 1 |
| Application Profile |  |  | (S) TE | 0, 1 |
| Linkage |  |  | (S) UL | 1, 1 |
| Name |  |  | (S) TE | 1, 1 |

**2.4. Abstract Chart Product**

**Definition:** Nautical product produced in drawing form.

**CamelCase:** AbstractChartProduct

**Alias:**

**Super type:** CatalogueElement

**Feature use type:** geographic

**Primitive:** surface

**Remarks:** No remarks.

**Attribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Chart Number |  |  | TE | 1, 1 |
| Compilation Scale |  |  | TE | 1, \* |
| Distribution Status |  | 1 : production  2 : withdrawn | EN | 0, 1 |
| Original Chart Number |  |  | TE | 0, 1 |
| Producer Code |  |  | TE | 1, 1 |
| Producer Nation |  |  | TE | 0, 1 |
| Specific Usage |  | 1 : overview  2 : general  3 : coastal  4 : approach  5 : harbour  6 : berthing | EN | 0, 1 |

**2.5. Electronic Chart**

**Definition:** Nautical charts made in electronic form.

**CamelCase:** ElectronicChart

**Alias:**

**Super type:** AbstractChartProduct

**Feature use type:** geographic

**Primitive:** surface

**Remarks:** No remarks.

**Attribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Dataset Name |  |  | TE | 0, \* |
| Tnp Update |  |  | BO | 0, 1 |
| Type Of Electronic Chart |  | 1 : GML  2 : ISO/IEC 8211  3 : PDF  4 : HTML  5 : ePub  6 : paper  7 : other | EN | 1, 1 |
| Version |  |  | (S) TE | 1, 1 |

**2.6. Paper Chart**

**Definition:** Nautical product in drawing format printed on paper.

**CamelCase:** PaperChart

**Alias:**

**Super type:** AbstractChartProduct

**Feature use type:** geographic

**Primitive:** surface

**Remarks:** No remarks.

**Attribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Frame Dimension |  |  | TE | 0, 1 |
| Main Panel |  |  | BO | 1, 1 |
| Type Of Paper |  |  | TE | 0, 1 |
| Print Information |  |  | C | 0, 1 |
| Year |  |  | (S) IN | 1, 1 |

**3. Carto Feature Types**

**4. Information Types**

**4.1. Contact Detail**

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

**CamelCase:** ContactDetail

**Alias:**

**Super type:**

**Remarks:** No remarks.

**Attribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Contact Address |  |  | C | 1, \* |
| Administrative Division |  |  | (S) TE | 0, 1 |
| City Name |  |  | (S) TE | 1, 1 |
| Country |  |  | (S) TE | 1, 1 |
| Delivery Point |  |  | (S) TE | 0, \* |
| Contact Instruction |  |  | TE | 1, 1 |

**4.2. Distribution Detail**

**Definition:** Contact information of nautical product suppliers.

**CamelCase:** DistributionDetail

**Alias:**

**Super type:** ContactDetail

**Remarks:** No remarks.

**4.3. Production Detail**

**Definition:** Contact information of nautical product publishing organizations.

**CamelCase:** ProductionDetail

**Alias:**

**Super type:** ContactDetail

**Remarks:** No remarks.

**4.4. Price Information**

**Definition:** Pricing information of nautical product.

**CamelCase:** PriceInformation

**Alias:**

**Super type:**

**Remarks:** No remarks.

**Attribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Price |  |  | (S) RE | 1, 1 |

**5. Simple Attributes**

**5.1. 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.

**CamelCase:** telecommunicationIdentifier

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.2. 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.

**CamelCase:** telecomCarrier

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.3. Comment**

**Definition:** Comment regarding an entity obvious from context.

**CamelCase:** comment

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.4. Other Data Type Description**

**Definition:** The description of other data type.

**CamelCase:** otherDataTypeDescription

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.5. File Location**

**Definition:** The location of a fragment of text or other information in a support file.

**CamelCase:** fileLocation

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.6. File Name**

**Definition:** The name of an entity of data.

**CamelCase:** fileName

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.7. Reported Date**

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

**CamelCase:** reportedDate

**Alias:**

**Value type:** date

**Remarks:** No remarks.

**5.8. Source**

**Definition:** The publication, document, or reference work from which information comes or is acquired.

**CamelCase:** source

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.9. ISSN**

**Definition:** International Standard Serial Number.

**CamelCase:** issn

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.10. Character Encoding**

**Definition:** Encoding an element of a code set used for representing information.

**CamelCase:** characterEncoding

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.11. Time of Day Start**

**Definition:** The time corresponding to the start of an active period.

**CamelCase:** timeOfDayStart

**Alias:**

**Value type:** time

**Remarks:** No remarks.

**5.12. Time of Day End**

**Definition:** The time corresponding to the end of an active period.

**CamelCase:** timeOfDayEnd

**Alias:**

**Value type:** time

**Remarks:** No remarks.

**5.13. Day of Week is Range**

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

**CamelCase:** dayOfWeekIsRange

**Alias:**

**Value type:** boolean

**Remarks:** No remarks.

**5.14. Digital Signature Value**

**Definition:** It means electronic signature value.

**CamelCase:** digitalSignatureValue

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.15. Digital Signature**

**Definition:** Information in an electronic form attached to or logically combined with an electronic document to indicate that the signer has signed the electronic document.

**CamelCase:** digitalSignature

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | dsa | American digital signature standards. |

**5.16. Telecommunication Service**

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

**CamelCase:** telecommunicationService

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | voice | The transfer or exchange of information by using sounds that are being made by mouth and throat when speaking. |
| 2 | facsimile | Sometimes called telecopying or telefax (the latter short for telefacsimile ), is the telephonic transmission of scanned printed material (both text and images), normally to a telephone number connected to a printer or other output device. |
| 3 | sms | Short Message Service is a form of text messaging communication on phones and mobile phones. |
| 4 | data | Materials that serve as the basis for initiation. |
| 5 | streamed data | Data that is constantly received by and presented to an end-user while being delivered by a provider. |
| 6 | telex | 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). |
| 7 | telegraph | An apparatus, system or process for communication at a distance by electric transmission over wire. |
| 8 | email | Messages and other data exchanged between individuals using computers in a network. |

**5.17. Support File Purpose**

**Definition:** Purpose of the file to be described in addition to the nautical product data.

**CamelCase:** supportFilePurpose

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | new | New support file purpose. |
| 2 | replacement | The act of furnishing an equivalent person or thing in the place of another. |
| 3 | deletion | Item in the process of being removed or deleted. |

**5.18. Support File Format**

**Definition:** File format to describe in addition to nautical product data.

**CamelCase:** supportFileFormat

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | ASCII | American Standard Code for Information Interchange. American character standard code system established in 1968. |
| 2 | JPEG2000 | Raster image compression technology based on wavelet transformation. |
| 3 | HTML | Hypertext Markup Language. A type of basic web language used to create web documents. |
| 4 | XML | Extensible Markup Language. A language created by remarkably improving HTML to create Internet web pages. |
| 5 | XSLT | Extensible Stylesheet Language Transformations. XML-based language used to convert XML documents into other XML documents. |
| 6 | VIDEO | A digital recording of an image or set of images (such as a movie or animation). |
| 7 | TIFF | Tagged Image File Format. |
| 8 | PDF/A or U/A | ISO-standardized version of the Portable Document Format (PDF) specialized for use in the archiving and long-term preservation of electronic documents or U/A. |
| 9 | LUA | A lightweight, extensible programming language. |
| 10 | other | Other support file purpose. |

**5.19. 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.

**CamelCase:** categoryOfAuthority

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | customs | The agency or establishment for collecting duties, tolls. |
| 2 | border control | The administration to prevent or detect and prosecute violations of rules and regulations at international boundaries. |
| 3 | police | The department of government, or civil force, charged with maintaining public order. |
| 4 | port | 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. |
| 5 | immigration | The authority controlling people entering a country. |
| 6 | health | The authority with responsibility for checking the validity of the health declaration of a vessel and for declaring free pratique. |
| 7 | coast guard | Organization keeping watch on shipping and coastal waters according to governmental law; normally the authority with responsibility for search and rescue. |
| 8 | agricultural | The authority with responsibility for preventing infection of the agriculture of a country and for the protection of the agricultural interests of a country. |
| 9 | military | A military authority which provides control of access to or approval for transit through designated areas or airspace. |
| 10 | private company | A private or publicly owned company or commercial enterprise which exercises control of facilities, for example a calibration area. |
| 11 | maritime police | A governmental or military force with jurisdiction in territorial waters. Examples could include Gendarmerie Maritime, Carabinierie, and Guardia Civil. |
| 12 | environmental | An authority with responsibility for the protection of the environment. |
| 13 | fishery | An authority with responsibility for the control of fisheries. |
| 14 | finance | An authority with responsibility for the control and movement of money. |
| 15 | maritime | A national or regional authority charged with administration of maritime affairs. |
| 16 | hydrographic office | State agency in charge of marine surveys. |
| 17 | RENC | Regional ENC Coordination Centre Entities set up by the IHO. |
| 18 | VARs | Value Added Resellers (VARs), who are able to offer comprehensive end-use services that bring together various navigational products into one package. |

**5.20. Day of Week**

**Definition:** Any one of seven days in a week.

**CamelCase:** dayOfWeek

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | monday | The second day of the week. |
| 2 | tuesday | The third day of the week. |
| 3 | wednesday | The fourth day of the week. |
| 4 | thursday | The fifth day of the week. |
| 5 | friday | The sixth day of the week. |
| 6 | saturday | The sixth day of the week. |
| 7 | sunday | The first day of the week. |

**5.21. Organzation Name**

**Definition:** Name of international organization in charge of nautical products.

**CamelCase:** organzationName

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.22. Time Reference**

**Definition:** Information about time reference.

**CamelCase:** timeReference

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | localTime | The official time in a local region. |
| 2 | UTC | Greenwich Mean Time updated with leap seconds. |

**5.23. Category of Comm Pref**

**Definition:** Category of preferred communication method.

**CamelCase:** categoryOfCommPref

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | preferred calling | The first choice channel or frequency to be used when calling a radio station. |
| 2 | alternate calling | 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. |
| 3 | preferred working | The first choice channel or frequency to be used when working with a radio station. |
| 4 | alternate working | 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. |

**5.24. Category of Schedule**

**Definition:** Kinds of operation method.

**CamelCase:** categoryOfSchedule

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | normal operation | The service, office, is open, fully manned, and operating normally, or the area is accessible as usual. |
| 2 | closure | The service, office, or area is closed. |
| 3 | unmanned operation | The service is available but not manned. |

**5.25. Source Type**

**Definition:** Type of the source.

**CamelCase:** sourceType

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | law or regulation | Treaty, convention, or international agreement; law or regulation issued by a national or other authority. |
| 2 | official publication | Publication not having the force of law, issued by an international organisation or a national or local administration. |
| 7 | mariner report, confirmed | Reported by mariner(s) and confirmed by another source. |
| 8 | mariner report, not confirmed | Reported by mariner(s) but not confirmed. |
| 9 | industrty publications and reports | Shipping and other industry publications, including graphics, charts and web sites. |
| 10 | remotely sensed images | Information obtained from satellite images. |
| 11 | photographs | Information obtained from photographs. |
| 12 | products issued by HO service | Information obtained from products issued by Hydrographic Offices. |
| 13 | news media | Information obtained from news media. |
| 14 | traffic data | Information obtained from the analysis of traffic data. |

**5.26. Administrative Division**

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

**CamelCase:** administrativeDivision

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.27. Application Profile**

**Definition:** Name of an application profile that can be used with the online resource.

**CamelCase:** applicationProfile

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.28. Category Of Text**

**Definition:** Classification of completeness of textual information in relation to the source material from which it is derived.

**CamelCase:** categoryOfText

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | abstract or summary | A statement summarizing the important points of a text. |
| 2 | extract | An excerpt or excerpts from a text. |
| 3 | full text | The whole text. |

**5.29. Chart Number**

**Definition:** Number of chart.

**CamelCase:** chartNumber

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.30. City Name**

**Definition:** The name of a town or city.

**CamelCase:** cityName

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.31. Classification**

**Definition:** The act of distributing things into classes or categories of the same type.

**CamelCase:** classification

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.32. Compilation Scale**

**Definition:** The scale of something that is compiled.

**CamelCase:** compilationScale

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.33. Contact Instruction**

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

**CamelCase:** contactInstruction

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.34. Copyright**

**Definition:** A document granting exclusive right to publish and sell literary or musical or artistic work.

**CamelCase:** copyright

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.35. Country**

**Definition:** The name of a nation.

**CamelCase:** country

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.36. Currency**

**Definition:** The metal or paper medium of exchange that is presently used.

**CamelCase:** currency

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.37. Dataset Name**

**Definition:** A logical entity of data consisting of several elements (fields) grouped under one criterion.

**CamelCase:** datasetName

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.38. Date**

**Definition:** The specified day of the month.

**CamelCase:** date

**Alias:**

**Value type:** date

**Remarks:** No remarks.

**5.39. 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.

**CamelCase:** deliveryPoint

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.40. Display Name**

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

**CamelCase:** displayName

**Alias:**

**Value type:** boolean

**Remarks:** Where it is allowable to encode multiple instances of feature name for a single feature instance, only one feature name instance can indicate that the name is to be displayed (display name set to True).

**5.41. Distribution Status**

**Definition:** Supply status of nauticla products.

**CamelCase:** distributionStatus

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | production | The act or process of producing something. |
| 2 | withdrawn | The action to withdraw a time stamp (Used when a time stamp has been reported incorrectly). |

**5.42. Edition Date**

**Definition:** Edition date of the voyage product data.

**CamelCase:** editionDate

**Alias:**

**Value type:** integer

**Remarks:** No remarks.

**5.43. Edition Number**

**Definition:** Edition number of nautical product data.

**CamelCase:** editionNumber

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.44. File Locator**

**Definition:** The location of a fragment of text or other information in a support file.

**CamelCase:** fileLocator

**Alias:**

**Value type:** text

**Remarks:** Application schemas must describe how the associated file is identified. The associated file will commonly be named in a file reference co-attribute of the same complex attribute. Each DCEG must specify requirements for the format of the associated file and the semantics of file locator. For example, the value of file locator may be an HTML ID in an HTML file, line number in a text file) or a bookmark in a PDF file.

**5.45. File Reference**

**Definition:** The file name of an externally referenced text file.

**CamelCase:** fileReference

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.46. Frame Dimension**

**Definition:** The magnitude of something in a particular direction of frame.

**CamelCase:** frameDimension

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.47. Headline**

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

**CamelCase:** headline

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.48. Horizontal Datum Reference**

**Definition:** Reference of geodetic points such as the longitude and latitude of the earth indicating horizontal position

**CamelCase:** horizontalDatumReference

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.49. Horizontal Datum Value**

**Definition:** Horizontal reference surface or the reference coordinate system used for geodetic control in the calculation of coordinates of points on the earth.

**CamelCase:** horizontalDatumValue

**Alias:**

**Value type:** text

**Remarks:** All necessary information for conversion of geographic coordinates from most of the Geodetic Datums in the above list to WGS-84 is contained in the 'User's Handbook on Datum Transformations involving WGS-84', prepared by the US Defense Mapping Agency and which is available from the IHB as IHO Publication S-60 (English and French Versions), along with an associated standard datum transformation software on floppy disk called 'MADTRAN'.

**5.50. Individual Name**

**Definition:** Name of the person in charge.

**CamelCase:** individualName

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.51. ISBN**

**Definition:** International Standard Book Number.

**CamelCase:** ISBN

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.52. Issue Date**

**Definition:** Creation date of nauticla product data

**CamelCase:** issueDate

**Alias:**

**Value type:** date

**Remarks:** No remarks.

**5.53. Keyword**

**Definition:** The words that is used as a pattern to decode an encrypted message.

**CamelCase:** keyword

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.54. Language**

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

**CamelCase:** language

**Alias:**

**Value type:** text

**Remarks:** The language is encoded by a 3 character code following ISO 639-2/T.

**5.55. Linkage**

**Definition:** Location (address) for on-line access using a URL/URI address or similar addressing scheme.

**CamelCase:** linkage

**Alias:**

**Value type:** URL

**Remarks:** No remarks.

**5.56. Main Panel**

**Definition:** Panel showing the default chart.

**CamelCase:** mainPanel

**Alias:**

**Value type:** boolean

**Remarks:** No remarks.

**5.57. Marine Resource Name**

**Definition:** Name of marine resource.

**CamelCase:** marineResourceName

**Alias:**

**Value type:** URN

**Remarks:** No remarks.

**5.58. Maximum Display Scale**

**Definition:** The largest intended viewing scale for the data.

**CamelCase:** maximumDisplayScale

**Alias:**

**Value type:** integer

**Remarks:** No remarks.

**5.59. Minimum Display Scale**

**Definition:** The smallest intended viewing scale for the data.

**CamelCase:** minimumDisplayScale

**Alias:**

**Value type:** integer

**Remarks:** No remarks.

**5.60. Name**

**Definition:** The individual name of a feature.

**CamelCase:** name

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.61. Name Of Resource**

**Definition:** Name of the online resource.

**CamelCase:** nameOfResource

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.62. Online Description**

**Definition:** Description of online resources.

**CamelCase:** onlineDescription

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.63. Original Chart Number**

**Definition:** A chart which has been drawn up as a result of direct survey.

**CamelCase:** originalChartNumber

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.64. Pictorial Representation**

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

**CamelCase:** pictorialRepresentation

**Alias:**

**Value type:** text

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

**5.65. Picture Caption**

**Definition:** Short description of the purpose of the image.

**CamelCase:** pictureCaption

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.66. Picture Information**

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

**CamelCase:** pictureInformation

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.67. Position Name**

**Definition:** Title of person in charge.

**CamelCase:** positionName

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.68. 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.

**CamelCase:** postalCode

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.69. Price**

**Definition:** The property of having material worth.

**CamelCase:** price

**Alias:**

**Value type:** real

**Remarks:** No remarks.

**5.70. Print Agency**

**Definition:** Name of the publishing institution of the paper chart for navigation.

**CamelCase:** printAgency

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.71. Print Nation**

**Definition:** Country with printed nautical paper chart.

**CamelCase:** printNation

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.72. Print Size**

**Definition:** Size of nautical paper charts.

**CamelCase:** printSize

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | A0 | The first size as output size on nautical paper chart. |
| 2 | A1 | The second size as output size on nautical paper chart. |
| 3 | A2 | The third size as output size on nautical paper chart. |
| 4 | A3 | The fourth size as output size on nautical paper chart. |
| 5 | A4 | The fifth size as output size on nautical paper chart. |
| 6 | A5 | The sixth size as output size on nautical paper chart. |
| 7 | A6 | The seventh size as output size on nautical paper chart. |
| 8 | A7 | The eighth size as output size on nautical paper chart. |

**5.73. Print Week**

**Definition:** The week in which nautical paper charts were published.

**CamelCase:** printWeek

**Alias:**

**Value type:** integer

**Remarks:** No remarks.

**5.74. Print Year**

**Definition:** Publication year of the nautical paper chart.

**CamelCase:** printYear

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.75. Producer Code**

**Definition:** It means the publishing agency code, which is managed by the International Hydrographic Organization(IHO).

**CamelCase:** producerCode

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.76. Producer Nation**

**Definition:** Country of publication of nautical products.

**CamelCase:** producerNation

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.77. Product Type**

**Definition:** Types of nautical products such as paper charts for navigation, electronic charts, and raster charts.

**CamelCase:** productType

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | paper nautical chart | Nautical chart printed on paper. |
| 2 | ENC | All information related to the sailing of the ship. |
| 3 | raster nautical chart | Raster information which is displayed visually. |
| 4 | INT Chart | A nautical chart with limits and scale in conformity with an internationally agreed scheme of such charts; carries the INT number of that sheet; conforms to the Chart Specifications of the IHO. |
| 5 | nautical publication | Used to relate additional nautical information or publications to the data. |
| 6 | S-100 compliant product | Data produced according to S-100-based product standards. |
| 7 | electronic application for safety navigation | Electronic applications or products for safe navigation. |
| 8 | special purpose charts | Nautical charts designed for special purposes. |
| 9 | e-Navigation service | Intelligent navigation support service developed according to the IMO marine service technology standard. |
| 10 | others | Other nautical products. |

**5.78. Protocol**

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

**CamelCase:** protocol

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.79. 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.

**CamelCase:** protocolRequest

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.80. Publication Number**

**Definition:** Publication number of the nautical product.

**CamelCase:** publicationNumber

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.81. Purpose**

**Definition:** Types related to publication, such as new publication and update of nautical products.

**CamelCase:** purpose

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | new dataset | Dataset having no previous example. |
| 2 | new edition | Edition having no previous example. |
| 3 | update | News that updates your information. |
| 4 | re-issue | New base data that combines updates to base data. |
| 5 | cancellation | The data of cancelling. |

**5.82. Re Print Edition**

**Definition:** Reprinted version of nautical paper chart.

**CamelCase:** rePrintEdition

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.83. Re Print Nation**

**Definition:** Reprinted country name of nautical paper chart.

**CamelCase:** rePrintNation

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.84. Service Design**

**Definition:** Information on the design of nautical services.

**CamelCase:** serviceDesign

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.85. Service Status**

**Definition:** Types of status of nauticla services.

**CamelCase:** serviceStatus

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | provisional | Under terms not final or fully worked out or agreed upon. |
| 2 | released | Merchandise issued for sale or public showing. |
| 3 | deprecated | Data that is deprecated in importance and is no longer used and will disappear in the future. |
| 4 | deleted | Item that has been removed or deleted. |

**5.86. Sounding Datum**

**Definition:** Geodetic points for measuring the depth from the sea level to the sea floor.

**CamelCase:** soundingDatum

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | mean low water springs | (MLWS) - the average height of the low waters of spring tides. |
| 2 | mean lower low water springs | (MLLWS) - the average height of lower low water springs at a place. |
| 3 | mean sea level | (MSL) - the average height of the surface of the sea at a tide station for all stages of the tide over a 19-year period, usually determined from hourly height readings measured from a fixed predetermined reference level. |
| 4 | lowest low water | an arbitrary level conforming to the lowest tide observed at a place, or some what lower. |
| 5 | mean low water | (MLW) - the average height of all low waters at a place over a 19-year period. |
| 6 | lowest low water springs | an arbitrary level conforming to the lowest water level observed at a place at spring tides during a period of time shorter than 19 years. |
| 7 | approximate mean low water springs | an arbitrary level, usually within ' 0.3m from that of mean low water springs (MLWS). |
| 8 | Indian spring low water | (ISLW) - an arbitrary tidal datum approximating the level of the mean of the lower low water at spring tides. |
| 9 | low water springs | an arbitrary level, approximating that of mean low water springs (MLWS). |
| 10 | approximate lowest astronomical tide | an arbitrary level, usually within ' 0.3m from that of lowest astronomical tide (LAT). |
| 11 | nearly lowest low water | an arbitrary level approximating the lowest water level observed at a place, usually equivalent to the Indian spring low water (ISLW). |
| 12 | mean lower low water | (MLLW) - the average height of the lower low waters at a place over a 19-year period. |
| 13 | low water | an approximation of mean low water adopted as the reference level for a limited area, irrespective of better determinations at a later date. |
| 14 | approximate mean low water | an arbitrary level, usually within ' 0.3m from that of mean low water (MLW). |
| 15 | approximate mean lower low water | an arbitrary level, usually within ' 0.3m from that of mean lower low water (MLLW). |
| 16 | mean high water | (MHW) - the average height of all high waters at a place over a 19-year period. |
| 17 | mean high water springs | (MHWS) - the average height of the high waters of spring tides. |
| 18 | high water | the highest level reached at a place by the water surface in one tidal cycle. |
| 19 | approximate mean sea level | an arbitrary level, usually within ' 0.3m from that of mean sea level (MSL). |
| 20 | high water springs | an arbitrary level, approximating that of mean high water springs (MHWS). |
| 21 | mean higher high water | (MHHW) - the average height of higher high waters at a place over a 19-year period. |
| 22 | equinoctial spring low water | the level of low water springs near the time of an equinox. |
| 23 | lowest astronomical tide | (LAT) - the lowest tide level which can be predicted to occur under average meterological conditions and under any combination of astronomical conditions. |
| 24 | local datum | an arbitrary datum defined by a local harbour authority, from which levels and tidal heights are measured by this authority. |
| 25 | international great lakes datum 1985 | (IGLD 1985) - a vertical reference system with its zero based on the mean water level at Rimouski/Pointe-au-P??re, Quebec, over the period 1970 to 1988. |
| 26 | mean water level | the average of all hourly water levels over the available period of record. |
| 27 | lower low water large tide | (LLWLT) - the average of the lowest low waters, one from each of 19 years of observations. |
| 28 | Higher High Water Large Tide | Tthe average of the highest high waters, one from each of 19 years of observations. |
| 29 | nearly highest high water | an arbitrary level approximating the highest water level observed at a place, usually equivalent to the high water springs. |
| 30 | highest Astronomical Tide | The highest tidal level which can be predicted to occur under average meteorological conditions and under any combination of astronomical conditions. |
| 44 | baltic Sea Chart Datum 2000 | (BSCD2000) - the datum refers to each Baltic countrys realization of the European Vertical Reference System (EVRS) with land-uplift epoch 2000, which is connected to the Normaal Amsterdams Peil (NAP). |

**5.87. Source Date**

**Definition:** The production date of the source; for example the date of measurement.

**CamelCase:** sourceDate

**Alias:**

**Value type:** date

**Remarks:** No remarks.

**5.88. Specific Usage**

**Definition:** Scale range divided according to the purpose of navigation in nautical charts such as paper charts and electronic charts.

**CamelCase:** specificUsage

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | overview | A general summary of a subject. |
| 2 | general | Break bulk cargo normally loaded by crane. |
| 3 | coastal | A place located on or near or bordering on a coast. |
| 4 | approach | Ideas or actions intended to deal with a problem or situation. |
| 5 | harbour | A reporting point of a harbour. |
| 6 | berthing | A signal station for the control of vessels when berthing. |

**5.89. Text**

**Definition:** A non-formatted digital text string.

**CamelCase:** text

**Alias:**

**Value type:** text

**Remarks:** Should be used, for example, to hold the information that is for short cautionary or explanatory notes. Therefore, text populated in text must not exceed 300 characters. Text may be in English, or in a national language. No formatting of text is possible within text. If formatted text, or text strings exceeding 300 characters, is required, then an alternate concept should be used.

**5.90. Tnp Update**

**Definition:** Information on update of nautical notification.

**CamelCase:** tnpUpdate

**Alias:**

**Value type:** boolean

**Remarks:** No remarks.

**5.91. Type Of Electronic Chart**

**Definition:** Types of nautical charts made in electronic form.

**CamelCase:** typeOfElectronicChart

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | GML | Geography Markup Language. An XML-based geographic information encoding language developed by the Open GIS Consortium (OGC) to enhance the interoperability of geographic information. |
| 2 | ISO/IEC 8211 | Specification for a data descriptive file for information interchange. |
| 3 | PDF | Portable Document Format. A file format developed by Adobe in 1993 to present documents, including text formatting and images, in a manner independent of application software, hardware, and operating systems. |
| 4 | HTML | Hypertext Markup Language. A type of basic web language used to create web documents. |
| 5 | ePub | E-book file format. |
| 6 | paper | For printing hydrographic charts, heavyweight, single layer paper is used. Such paper is generally made wholly or partly from rags and simulates hand-made paper. It is strong, moisture resistant and manufactured to withstand surface erasure. |
| 7 | other | Other type of electronic chart. |

**5.92. Type Of Nautical Product**

**Definition:** Types of nautical products.

**CamelCase:** typeOfNauticalProduct

**Alias:**

**Value type:** enumeration

**Remarks:** No remarks.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | GML | Geography Markup Language. An XML-based geographic information encoding language developed by the Open GIS Consortium (OGC) to enhance the interoperability of geographic information. |
| 2 | ISO/IEC 8211 | Specification for a data descriptive file for information interchange. |
| 3 | PDF | Portable Document Format. A file format developed by Adobe in 1993 to present documents, including text formatting and images, in a manner independent of application software, hardware, and operating systems. |
| 4 | HTML | Hypertext Markup Language. A type of basic web language used to create web documents. |
| 5 | ePub | E-book file format. |
| 6 | paper | For printing hydrographic charts, heavyweight, single layer paper is used. Such paper is generally made wholly or partly from rags and simulates hand-made paper. It is strong, moisture resistant and manufactured to withstand surface erasure. |
| 7 | other | Other type of nautical product. |

**5.93. Type Of Paper**

**Definition:** Types of paper chart.

**CamelCase:** typeOfPaper

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.94. Update Data**

**Definition:** Update data information.

**CamelCase:** updateData

**Alias:**

**Value type:** date

**Remarks:** No remarks.

**5.95. Update Number**

**Definition:** Update number of nautical product data.

**CamelCase:** updateNumber

**Alias:**

**Value type:** integer

**Remarks:** No remarks.

**5.96. Version**

**Definition:** An interpretation of a matter from a particular viewpoint.

**CamelCase:** version

**Alias:**

**Value type:** text

**Remarks:** No remarks.

**5.97. Vertical Datum**

**Definition:** The reference level used for expressing the vertical measurements of points on the earth's surface. Also called datum level, reference plane, levelling datum, datum for sounding reduction, datum for heights.

**CamelCase:** verticalDatum

**Alias:** VERDAT

**Value type:** enumeration

**Remarks:** When the vertical datum is unknown, such as water areas above locks, the value 'local datum' is to be used, and further details may be encoded using 'INFORM'. The +0.3m approximation quoted in the 'approximate' levels is somehow arbitrary and follows the British example of their definition for 'approximate LAT'.

**Listed Values:**

|  |  |  |
| --- | --- | --- |
| **Code** | **Label** | **Definition** |
| 1 | mean low water springs | (MLWS) - the average height of the low waters of spring tides. |
| 2 | mean lower low water springs | (MLLWS) - the average height of lower low water springs at a place. |
| 3 | mean sea level | (MSL) - the average height of the surface of the sea at a tide station for all stages of the tide over a 19-year period, usually determined from hourly height readings measured from a fixed predetermined reference level. |
| 4 | lowest low water | an arbitrary level conforming to the lowest tide observed at a place, or some what lower. |
| 5 | mean low water | (MLW) - the average height of all low waters at a place over a 19-year period. |
| 6 | lowest low water springs | an arbitrary level conforming to the lowest water level observed at a place at spring tides during a period of time shorter than 19 years. |
| 7 | approximate mean low water springs | an arbitrary level, usually within ' 0.3m from that of mean low water springs (MLWS). |
| 8 | Indian spring low water | (ISLW) - an arbitrary tidal datum approximating the level of the mean of the lower low water at spring tides. |
| 9 | low water springs | an arbitrary level, approximating that of mean low water springs (MLWS). |
| 10 | approximate lowest astronomical tide | an arbitrary level, usually within ' 0.3m from that of lowest astronomical tide (LAT). |
| 11 | nearly lowest low water | an arbitrary level approximating the lowest water level observed at a place, usually equivalent to the Indian spring low water (ISLW). |
| 12 | mean lower low water | (MLLW) - the average height of the lower low waters at a place over a 19-year period. |
| 13 | low water | an approximation of mean low water adopted as the reference level for a limited area, irrespective of better determinations at a later date. |
| 14 | approximate mean low water | an arbitrary level, usually within ' 0.3m from that of mean low water (MLW). |
| 15 | approximate mean lower low water | an arbitrary level, usually within ' 0.3m from that of mean lower low water (MLLW). |
| 16 | mean high water | (MHW) - the average height of all high waters at a place over a 19-year period. |
| 17 | mean high water springs | (MHWS) - the average height of the high waters of spring tides. |
| 18 | high water | the highest level reached at a place by the water surface in one tidal cycle. |
| 19 | approximate mean sea level | an arbitrary level, usually within ' 0.3m from that of mean sea level (MSL). |
| 20 | high water springs | an arbitrary level, approximating that of mean high water springs (MHWS). |
| 21 | mean higher high water | (MHHW) - the average height of higher high waters at a place over a 19-year period. |
| 22 | equinoctial spring low water | the level of low water springs near the time of an equinox. |
| 23 | lowest astronomical tide | (LAT) - the lowest tide level which can be predicted to occur under average meterological conditions and under any combination of astronomical conditions. |
| 24 | local datum | an arbitrary datum defined by a local harbour authority, from which levels and tidal heights are measured by this authority. |
| 25 | international great lakes datum 1985 | (IGLD 1985) - a vertical reference system with its zero based on the mean water level at Rimouski/Pointe-au-P??re, Quebec, over the period 1970 to 1988. |
| 26 | mean water level | the average of all hourly water levels over the available period of record. |
| 27 | lower low water large tide | (LLWLT) - the average of the lowest low waters, one from each of 19 years of observations. |
| 28 | Higher High Water Large Tide | Tthe average of the highest high waters, one from each of 19 years of observations. |
| 29 | nearly highest high water | an arbitrary level approximating the highest water level observed at a place, usually equivalent to the high water springs. |
| 30 | highest Astronomical Tide | The highest tidal level which can be predicted to occur under average meteorological conditions and under any combination of astronomical conditions. |
| 44 | baltic Sea Chart Datum 2000 | (BSCD2000) - the datum refers to each Baltic countrys realization of the European Vertical Reference System (EVRS) with land-uplift epoch 2000, which is connected to the Normaal Amsterdams Peil (NAP). |

**5.98. Week**

**Definition:** Any period of seven consecutive days.

**CamelCase:** week

**Alias:**

**Value type:** integer

**Remarks:** No remarks.

**5.99. Year**

**Definition:** A period of one revolution of the earth around the sun.

**CamelCase:** year

**Alias:**

**Value type:** integer

**Remarks:** No remarks.

**6. Complex Attributes**

**6.1. Time Intervals by Day of Week**

**Definition:** The regular weekly operation times of a service or schedule.

**CamelCase:** timeIntervalsByDayOfWeek

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Time Reference |  |  | EN | 1, 1 |
| Time of Day Start |  |  | TI | 1, \* (ordered) |
| Time of Day End |  |  | TI | 1, \* (ordered) |
| Day of Week is Range |  |  | BO | 0, 1 |
| Day of Week |  | 1 : monday  2 : tuesday  3 : wednesday  4 : thursday  5 : friday  6 : saturday  7 : sunday | EN | 0, 7 (ordered) |

**6.2. Support File Specification**

**Definition:** Specification of information on additional files used in addition to nautical products.

**CamelCase:** supportFileSpecification

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Date |  |  | DA | 1, 1 |
| Version |  |  | TE | 1, 1 |
| Name |  |  | TE | 1, 1 |

**6.3. Schedule by Day of Week**

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

**CamelCase:** scheduleByDayOfWeek

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Time Intervals by Day of Week |  |  | C | 1, \* |
| Category of Schedule |  | 1 : normal operation  2 : closure  3 : unmanned operation | EN | 1, 1 |

**6.4. Default Locale**

**Definition:** Locale of an option that is selected automatically unless an alternative is specified.

**CamelCase:** defaultLocale

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Language |  |  | TE | 1, 1 |
| Character Encoding |  |  | TE | 0, 1 |
| Country |  |  | TE | 1, 1 |

**6.5. 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.

**CamelCase:** contactAddress

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Administrative Division |  |  | TE | 0, 1 |
| City Name |  |  | TE | 1, 1 |
| Country |  |  | TE | 1, 1 |
| Delivery Point |  |  | TE | 0, \* |
| Postal Code |  |  | TE | 0, 1 |

**6.6. Feature Name**

**Definition:** 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.

**CamelCase:** featureName

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Display Name |  |  | BO | 0, 1 |
| Language |  |  | TE | 0, 1 |
| Name |  |  | TE | 1, 1 |

**6.7. 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.

**CamelCase:** graphic

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Pictorial Representation |  |  | TE | 1, \* |
| Picture Caption |  |  | TE | 0, 1 |
| Picture Information |  |  | TE | 0, \* |
| Source Date |  |  | DA | 0, 1 |

**6.8. 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.

**CamelCase:** information

**Alias:**

**Remarks:** At least one of the sub-attributes file reference or text must be populated.The sub-attribute file reference is generally used for long text strings or those that require formatting, however, there is no restriction on the type of text (except for lexical level) that can be held in files referenced by sub-attribute file reference.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| File Locator |  |  | TE | 0, 1 |
| File Reference |  |  | TE | 0, 1 |
| Headline |  |  | TE | 1, 1 |
| Language |  |  | TE | 1, 1 |
| Text |  |  | TE | 0, \* |

**6.9. Online Resource**

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

**CamelCase:** onlineResource

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Application Profile |  |  | TE | 0, 1 |
| Linkage |  |  | UL | 1, 1 |
| Name Of Resource |  |  | TE | 0, 1 |
| Online Description |  |  | TE | 0, 1 |
| Protocol |  |  | TE | 0, 1 |
| Protocol Request |  |  | TE | 0, 1 |

**6.10. Payment**

**Definition:** A sum of money paid or a claim discharged.

**CamelCase:** payment

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Currency |  |  | TE | 1, 1 |
| Price |  |  | RE | 1, 1 |

**6.11. Print Information**

**Definition:** Information on the printing of nautical paper charts.

**CamelCase:** printInformation

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Print Agency |  |  | TE | 0, 1 |
| Print Nation |  |  | TE | 0, 1 |
| Print Size |  | 1 : A0  2 : A1  3 : A2  4 : A3  5 : A4  6 : A5  7 : A6  8 : A7 | EN | 1, 1 |
| Print Week |  |  | IN | 0, 1 |
| Print Year |  |  | TE | 0, 1 |
| Re Print Edition |  |  | TE | 0, 1 |
| Re Print Nation |  |  | TE | 0, 1 |

**6.12. Producing Agency**

**Definition:** Publishing agency of nautical products.

**CamelCase:** producingAgency

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Contact Address |  |  | C | 1, \* |
| Administrative Division |  |  | (S) TE | 0, 1 |
| City Name |  |  | (S) TE | 1, 1 |
| Country |  |  | (S) TE | 1, 1 |
| Delivery Point |  |  | (S) TE | 0, \* |
| Category of Schedule |  | 1 : normal operation  2 : closure  3 : unmanned operation | (S) EN | 1, 1 |

**6.13. Product Specification**

**Definition:** Product standard name referenced when manufacturing nautical products.

**CamelCase:** productSpecification

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Date |  |  | DA | 1, 1 |
| ISSN |  |  | TE | 0, 1 |
| Name |  |  | TE | 1, 1 |
| Version |  |  | TE | 1, 1 |

**6.14. Reference To NM**

**Definition:** Reference information of notice to mariners.

**CamelCase:** referenceToNM

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Week |  |  | IN | 1, 1 |
| Year |  |  | IN | 1, 1 |

**6.15. Service Specification**

**Definition:** Product standard name referenced when developing nautical product service.

**CamelCase:** serviceSpecification

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Date |  |  | DA | 1, 1 |
| ISSN |  |  | TE | 0, 1 |
| Name |  |  | TE | 1, 1 |
| Version |  |  | TE | 1, 1 |

**6.16. 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.

**CamelCase:** sourceIndication

**Alias:**

**Remarks:** Content of featureName is source authority name.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Category of Authority |  | 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  16 : hydrographic office  17 : RENC  18 : VARs | EN | 1, \* |
| Country |  |  | TE | 0, 1 |
| Reported Date |  |  | DA | 1, 1 |
| Source |  |  | TE | 1, 1 |
| Source Type |  |  | EN | 1, 1 |
| Name |  |  | (S) TE | 1, 1 |

**6.17. Support File**

**Definition:** Information on additional files used in addition to nautical products.

**CamelCase:** supportFile

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| File Name |  |  | TE | 1, 1 |
| File Location |  |  | TE | 1, 1 |
| Support File Purpose |  | 1 : new  2 : replacement  3 : deletion | EN | 1, 1 |
| Edition Number |  |  | TE | 0, 1 |
| Issue Date |  |  | DA | 0, 1 |
| Support File Specification |  |  | C | 1, 1 |
| Date |  |  | (S) DA | 1, 1 |
| Version |  |  | (S) TE | 1, 1 |
| Name |  |  | (S) TE | 1, 1 |
| Support File Format |  | 1 : ASCII  2 : JPEG2000  3 : HTML  4 : XML  5 : XSLT  6 : VIDEO  7 : TIFF  8 : PDF/A or U/A  9 : LUA  10 : other | EN | 1, 1 |
| Other Data Type Description |  |  | TE | 0, 1 |
| Country |  |  | (S) TE | 1, 1 |

**6.18. Telecommunication**

**Definition:** Any transmission, emission, or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, radio, visual or other electromagnetic systems.

**CamelCase:** telecommunication

**Alias:**

**Remarks:** No remarks.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Category of Comm Pref |  | 1 : preferred calling  2 : alternate calling  3 : preferred working  4 : alternate working | EN | 1, 1 |
| Contact Instruction |  |  | TE | 0, \* |
| Telecommunication Carrier |  |  | TE | 0, \* |
| Telecommunication Identifier |  |  | TE | 0, \* |
| Telecommunication Service |  | 1 : voice  2 : facsimile  3 : sms  4 : data  5 : streamed data  6 : telex  7 : telegraph  8 : email | EN | 0, \* |
| Category of Schedule |  | 1 : normal operation  2 : closure  3 : unmanned operation | (S) EN | 1, 1 |

**6.19. 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.

**CamelCase:** textContent

**Alias:**

**Remarks:** 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.

**SubAttribute Bindings:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S-10x Attribute** | **S-57 Acronym** | **Allowable Encoding Value** | **Type** | **Multiplicity** |
| Category Of Text |  | 1 : abstract or summary  2 : extract  3 : full text | EN | 1, 1 |
| Information |  |  | C | 0, \* |
| File Locator |  |  | (S) TE | 0, 1 |
| Name |  |  | (S) TE | 1, 1 |

**7. Roles**

**7.1. The Authority**

**Definition:** A person or organisation having political or administrative power and control.

**CamelCase:** theAuthority

**Alias:**

**Remarks:** No remarks.

**7.2. The Contact Details**

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

**CamelCase:** theContactDetails

**Alias:**

**Remarks:** No remarks.

**7.3. Element Container**

**Definition:** Container of element.

**CamelCase:** elementContainer

**Alias:**

**Remarks:** No remarks.

**7.4. Catalogue of Element**

**Definition:** Catalogue of Elements.

**CamelCase:** catalogueOfElement

**Alias:**

**Remarks:** No remarks.

**7.5. Price Information**

**Definition:** Information of price.

**CamelCase:** priceInformation

**Alias:**

**Remarks:** No remarks.

**7.6. Catalogue of Nautical Product**

**Definition:** Types of nautical products.

**CamelCase:** catalogueOfNauticalProduct

**Alias:**

**Remarks:** No remarks.

**8. Information Associations**

**8.1. Issuing Authority**

**Definition:** In ECDIS, the official agency which issues nautical chart and updates including ENCs and ENC updates.

**CamelCase:** issuingAuthority

**Alias:**

**Remarks:** No remarks.

**Role:** The Authority

**Role:** The Contact Details

**8.2. Price of Nautical Product**

**Definition:** The price of nautical product.

**CamelCase:** priceOfNauticalProduct

**Alias:**

**Remarks:** No remarks.

**Role:** Catalogue of Nautical Product

**Role:** Price Information

**9. Feature Associations**

**9.1. Product Package**

**Definition:** Package of the various substances which are transported, stored or exploited.

**CamelCase:** productPackage

**Alias:**

**Remarks:** No remarks.

**Role:** Element Container

**Role:** Catalogue of Element