

Annex B

Human Readable Feature Catalogue

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IHO



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1. Meta Feature Types

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2. Geo Feature Types

2.1. Catalogue of Nautical Product

Definition: The availability of paper charts, ENC's 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			IN	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				ProductionDetails, DistributionDetails	theAuthority	0, *

association	Price of Nautical Product				PriceInformation	theCatalogueOfNauticalProduct	0, *
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Feature Bindings:

Type	Association Name	Association Ends					
		Class	Role	Mult	Class	Role	Mult
Asso	Product Package	CatalogueOfNauticalProduct	elementContainer	1, 1	CatalogueElements	theCatalogueElements	1, *

2.2. Catalogue Elements

Definition:

CamelCase: CatalogueElements

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
Time Interval of Product			C	0, 1
Issue Date			(S) DA	1, 1
Expiration Date			(S) DA	0, 1
Time Reference		1 : localTime 2 : UTC	(S) EN	1, 1
Issuance Cycle			(S) C	0, 1
Time Interval of Cycle			(S) C	0, 1
Type of Time Interval Unit		1 : time 2 : day 3 : month 4 : year	(S) EN	1, 1
Value of Time			(S) IN	1, 1
Periodic Date Range			(S) C	0, 1
Start Date			(S) DA	1, 1
End Date			(S) DA	1, 1
Classification			TE	0, 1
Copyright			TE	1, 1
Edition Date			DA	1, 1

Edition Number			IN	1, 1
Horizontal Datum Reference			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
Country			(S) TE	1, 1

Feature Bindings:

Type	Association Name	Association Ends					
		Class	Role	Mult	Class	Role	Mult
Asso	Product Package	CatalogueElements	theCatalogueElements	1, *	CatalogueOfNauticalProduct	elementContainer	1, 1

2.3. Abstract Chart Products

Definition:

CamelCase: AbstractChartProducts

Alias:

Super type: CatalogueElements

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

2.4. Electronic Chart

Definition: Nautical charts made in electronic form.

CamelCase: ElectronicChart

Alias:

Super type: AbstractChartProducts

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 Product Format	()	1 : GML 2 : ISO/IEC 8211 3 : PDF 4 : HTML 5 : ePub 6 : paper 7 : HDF-5 8 : other	EN	1, 1
Version			(S) TE	1, 1

Feature Bindings:

Type	Association Name	Association Ends					
		Class	Role	Mult	Class	Role	Mult
Asso	Insert Association	ElectronicChart	boundary	0, 1	ElectronicChart	boundary	0, 1
Asso	Insert Association	ElectronicChart	boundary	0, 1	ElectronicChart	insert	0, *

2.5. Paper Chart

Definition: Nautical product in drawing format printed on paper.

CamelCase: PaperChart

Alias:

Super type: AbstractChartProducts

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
Print Agency			(S) TE	0, 1
ISBN			TE	0, 1

Feature Bindings:

Type	Association Name	Association Ends					
		Class	Role	Mult	Class	Role	Mult
Asso	Insert Association	PaperChart	boundary	0, 1	PaperChart	boundary	0, 1
Asso	Insert Association	PaperChart	boundary	0, 1	PaperChart	insert	0, *

2.6. Nautical Product

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

CamelCase: NauticalProduct

Alias:

Super type: CatalogueElements

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 Product Format	()	1 : GML 2 : ISO/IEC 8211 3 : PDF 4 : HTML 5 : ePub 6 : paper 7 : HDF-5 8 : 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

3. Carto Feature Types

-

4. Information Types

4.1. Contact Details

Definition: Contact information of nautical product suppliers.

CamelCase: ContactDetails

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 Instructions			TE	1, 1

4.2. Production Details

Definition: Contact information of nautical product publishing organizations.

CamelCase: ProductionDetails

Alias:

Super type: ContactDetails

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 Instructions			TE	1, 1

4.3. Distribution Details

Definition: Contact information of nautical product suppliers.

CamelCase: DistributionDetails

Alias:

Super type: ContactDetails

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 Instructions			TE	1, 1

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
Contract Period			(S) TE	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 Services

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

CamelCase: telecommunicationServices

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, Carabinerie, 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	sunday	The first day of the week.
2	monday	The second day of the week.
3	tuesday	The third day of the week.
4	wednesday	The fourth day of the week.
5	thursday	The fifth day of the week.
6	friday	The sixth day of the week.
7	saturday	The last day of the week.

5.21. Organization Name

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

CamelCase: organizationName

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	industry 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 Instructions

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

CamelCase: contactInstructions

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 nautical 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: date

Remarks: No remarks.

5.43. Edition Number

Definition: Edition number of nautical product data.

CamelCase: editionNumber

Alias:

Value type: integer

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. Individual Name

Definition: Name of the person in charge.

CamelCase: individualName

Alias:

Value type: text

Remarks: No remarks.

5.50. ISBN

Definition: International Standard Book Number.

CamelCase: ISBN

Alias:

Value type: text

Remarks: No remarks.

5.51. Issue Date

Definition: Creation date of nautical product data

CamelCase: issueDate

Alias:

Value type: date

Remarks: No remarks.

5.52. Expiration Date

Definition: Expiration date of nautical product data

CamelCase: expirationDate

Alias:

Value type: date

Remarks: No remarks.

5.53. Start Date

Definition: Start date of nautical product data's payment

CamelCase: startDate

Alias:

Value type: date

Remarks: No remarks.

5.54. End Date

Definition: End date of nautical product data's payment

CamelCase: endDate

Alias:

Value type: date

Remarks: No remarks.

5.55. Keyword

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

CamelCase: keyword

Alias:

Value type: text

Remarks: No remarks.

5.56. 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.

5.57. 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.

5.58. Main Panel

Definition: Panel showing the default chart.

CamelCase: mainPanel

Alias:

Value type: boolean

Remarks: No remarks.

5.59. Marine Resource Name

Definition: Name of marine resource.

CamelCase: marineResourceName

Alias:

Value type: URN

Remarks: No remarks.

5.60. Maximum Display Scale

Definition: The largest intended viewing scale for the data.

CamelCase: maximumDisplayScale

Alias:

Value type: integer

Remarks: No remarks.

5.61. Minimum Display Scale

Definition: The smallest intended viewing scale for the data.

CamelCase: minimumDisplayScale

Alias:

Value type: integer

Remarks: No remarks.

5.62. Name

Definition: The individual name of a feature.

CamelCase: name

Alias:

Value type: text

Remarks: No remarks.

5.63. Name Of Resource

Definition: Name of the online resource.

CamelCase: nameOfResource

Alias:

Value type: text

Remarks: No remarks.

5.64. Online Description

Definition: Description of online resources.

CamelCase: onlineDescription

Alias:

Value type: text

Remarks: No remarks.

5.65. 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.

5.66. 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).

5.67. Picture Caption

Definition: Short description of the purpose of the image.

CamelCase: pictureCaption

Alias:

Value type: text

Remarks: No remarks.

5.68. 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.

5.69. Position Name

Definition: Title of person in charge.

CamelCase: positionName

Alias:

Value type: text

Remarks: No remarks.

5.70. 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.

5.71. Price

Definition: The property of having material worth.

CamelCase: price

Alias:

Value type: real

Remarks: No remarks.

5.72. Print Agency

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

CamelCase: printAgency

Alias:

Value type: text

Remarks: No remarks.

5.73. Contract Period

Definition:

CamelCase: contractPeriod

Alias:

Value type: text

Remarks: No remarks.

5.74. Print Nation

Definition: Country with printed nautical paper chart.

CamelCase: printNation

Alias:

Value type: text

Remarks: No remarks.

5.75. Value of Time

Definition:

CamelCase: valueOfTime

Alias:

Value type: integer

Remarks: No remarks.

5.76. Type of Time Interval Unit

Definition: Type of Time Interval Unit

CamelCase: typeOfTimeIntervalUnit

Alias:

Value type: enumeration

Remarks: No remarks.

Listed Values:

Code	Label	Definition
1	time	
2	day	
3	month	
4	year	

5.77. 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.

5.78. Print Week

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

CamelCase: printWeek

Alias:

Value type: integer

Remarks: No remarks.

5.79. Print Year

Definition: Publication year of the nautical paper chart.

CamelCase: printYear

Alias:

Value type: text

Remarks: No remarks.

5.80. 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.

5.81. Producer Nation

Definition: Country of publication of nautical products.

CamelCase: producerNation

Alias:

Value type: text

Remarks: No remarks.

5.82. 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.

5.83. Protocol

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

CamelCase: protocol

Alias:

Value type: text

Remarks: No remarks.

5.84. 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.

5.85. Publication Number

Definition: Publication number of the nautical product.

CamelCase: publicationNumber

Alias:

Value type: text

Remarks: No remarks.

5.86. 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.

5.87. Re Print Edition

Definition: Reprinted version of nautical paper chart.

CamelCase: rePrintEdition

Alias:

Value type: text

Remarks: No remarks.

5.88. Re Print Nation

Definition: Reprinted country name of nautical paper chart.

CamelCase: rePrintNation

Alias:

Value type: text

Remarks: No remarks.

5.89. Service Design

Definition: Information on the design of nautical services.

CamelCase: serviceDesign

Alias:

Value type: text

Remarks: No remarks.

5.90. Service Status

Definition: Types of status of nautical 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.

5.91. 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 meteorological 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-Pere, 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	The 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 country's realization of the European Vertical Reference System (EVRS) with land-uplift epoch 2000, which is connected to the Normaal Amsterdams Peil (NAP).

5.92. Source Date

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

CamelCase: sourceDate

Alias:

Value type: date

Remarks: No remarks.

5.93. 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.

5.94. 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.

5.95. Tnp Update

Definition: Information on update of nautical notification.

CamelCase: tnpUpdate

Alias:

Value type: boolean

Remarks: No remarks.

5.96. Type Of Product Format

Definition: Types of product format.

CamelCase: typeOfProductFormat

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	HDF-5	Grid file format.
8	other	Other type of nautical product.

5.97. Type Of Paper

Definition: Types of paper chart.

CamelCase: typeOfPaper

Alias:

Value type: text

Remarks: No remarks.

5.98. Update Date

Definition: Update date information.

CamelCase: updateDate

Alias:

Value type: date

Remarks: No remarks.

5.99. Update Number

Definition: Update number of nautical product data.

CamelCase: updateNumber

Alias:

Value type: integer

Remarks: No remarks.

5.100. Version

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

CamelCase: version

Alias:

Value type: text

Remarks: No remarks.

5.101. 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 meteorological 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-Pere, 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	The 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 country's realization of the European Vertical Reference System (EVRS) with land-uplift epoch 2000, which is connected to the Normaal Amsterdams Peil (NAP).

5.102. Week

Definition: Any period of seven consecutive days.

CamelCase: week

Alias:

Value type: integer

Remarks: No remarks.

5.103. 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. Issuance Cycle

Definition:

CamelCase: issuanceCycle

Alias:

Remarks: No remarks.

SubAttribute Bindings:

S-10x Attribute	S-57 Acronym	Allowable Encoding Value	Type	Multiplicity
Time Interval of Cycle			C	0, 1
End Date			(S) DA	1, 1

6.2. Periodic Date Range

Definition:

CamelCase: periodicDateRange

Alias:

Remarks: No remarks.

SubAttribute Bindings:

S-10x Attribute	S-57 Acronym	Allowable Encoding Value	Type	Multiplicity
Start Date			DA	1, 1
End Date			DA	1, 1

6.3. Time Interval of Cycle

Definition:

CamelCase: timeIntervalOfCycle

Alias:

Remarks: No remarks.

SubAttribute Bindings:

S-10x Attribute	S-57 Acronym	Allowable Encoding Value	Type	Multiplicity
Type of Time Interval Unit		1 : time 2 : day 3 : month 4 : year	EN	1, 1
Value of Time			IN	1, 1

6.4. Time Interval of Product

Definition:

CamelCase: timeIntervalOfProduct

Alias:

Remarks: No remarks.

SubAttribute Bindings:

S-10x Attribute	S-57 Acronym	Allowable Encoding Value	Type	Multiplicity
Issue Date			DA	1, 1
Expiration Date			DA	0, 1
Time Reference		1 : localTime 2 : UTC	EN	1, 1
End Date			(S) DA	1, 1

6.5. 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		1 : localTime 2 : UTC	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 : sunday 2 : monday 3 : tuesday 4 : wednesday 5 : thursday 6 : friday 7 : saturday	EN	0, 7 (ordered)

6.6. 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

6.7. 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

6.8. 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

6.9. 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

6.10. 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

6.11. 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

6.12. 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, *

6.13. 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

6.14. 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
Contract Period			TE	1, 1

6.15. 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

6.16. 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

6.17. 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

6.18. 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

6.19. 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
Name			TE	1, 1
Version			TE	1, 1

6.20. 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		1 : law or regulation 2 : official publication 7 : mariner report, confirmed 8 : mariner report, not	EN	1, 1

		confirmed 9 : industry publications and reports 10 : remotely sensed images 11 : photographs 12 : products issued by HO service 13 : news media 14 : traffic data		
Name			(S) TE	1, 1

6.21. 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			IN	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

6.22. Telecommunications

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: telecommunications

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 Instructions			TE	0, *
Telecommunication Carrier			TE	0, *
Telecommunication Identifier			TE	0, *
Telecommunication Services		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

6.23. 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. The Catalogue of Element

Definition: Catalogue of Elements.

CamelCase: theCatalogueElements

Alias:

Remarks: No remarks.

7.5. The Price Information

Definition: Information of price.

CamelCase: thePriceInformation

Alias:

Remarks: No remarks.

7.6. The Catalogue of Nautical Product

Definition: Types of nautical products.

CamelCase: theCatalogueOfNauticalProduct

Alias:

Remarks: No remarks.

7.7. Insert

Definition:

CamelCase: insert

Alias:

Remarks: No remarks.

7.8. Boundary

Definition:

CamelCase: boundary

Alias:

Remarks: No remarks.

8. Information Associations

8.1. Issuing Authority

Definition: In ECDIS, the official agency which issues nautical chart and updates including ENC's 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: The Catalogue of Nautical Product

Role: The 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: The Catalogue of Element

9.2. Insert Association

Definition:

CamelCase: InsertAssociation

Alias:

Remarks: No remarks.

Role: Insert

Role: Boundary

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