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Model Detail

NOTE:

Enterprise Architect has its limitations for generating documentation. As a consequence:

1. Multiplicity and "sequential" don't make sense for enumerations (listed values) but are printed anyway. Ignore those columns for enumerations and codelists.

For enumeration/codelist attributes, their bindings to some features allow only a subset of the possible enumerates. This cannot be indicated in the UML diagrams. It is documented by *value set* constraints in the text tables in this report (this is work in progress, at present available mostly for S-122 context features). Conventions for *value set* notes are described below. See the relevant DCEG for accurate information about which values can be used for any particular attribute binding.

2. Attributes cannot have multiple datatypes, whence the "union" convenience types like *PointOrCurve* (union of *GM_Point* and *GM_OrientableCurve*), *PointCurveSurface*, etc. Encoding formats and feature catalogues should use whatever mechanism they would normally use to implement this, ignoring the convenience types if appropriate.

Note also:

- Structure/equipment associations for navigational aids are not modeled. There are so many features involved that they would make the UML model and diagrams much more complicated. See the S-101 DCEG for details on structure/equipment associations.
- In a few cases, the camel case ID in the GI Registry is different from the class/attribute name in the UML model, and is mentioned separately. However the GI registry is not in sync with the S-101 DCEG as of May 2014 as of May 2014, so there are some classes and attributes even among the context features whose official camel case IDs were not known. (As of July 2014, TSMAD appears to be using the working copy of the S-101 DCEG as its most recent dictionary for feature concepts and the HYDRO register is behind the times.)

Allowed values of *enumeration* and *codelist* attributes:

- **VS:** value set (the set of allowed codes for an enumerated attribute for the binding to a particular feature class). The allowed codes may be different for the same attribute when bound to different features.
- **SNNN.VS:** The value set in Product Specification *SNNN*. If the *SNNN* prefix is missing the value set is the same everywhere.
- **SNNN.T.VS:** The value set in group *T* in product specification *SNNN*. For example, S-122 context features classes are divided into groups "skin of the Earth", "environmental", "administrative and legal", etc. Some feature classes appear in more than one group. The set of permitted values may be different depending on the group. In this case the *T* component indicates the group, e.g., in the S-122 context features model, *LandRegion.categoryOfLandRegion* has a value set *S122.ENV.VS* listing permitted value codes in the Environmental Features group of S-122 and a value set *S101.VS* listing permitted value codes in S-101.
- **sub <X> ...:** the set of allowed values is for sub-attribute <X>.

MPADomain

Type:	<u>Package</u>
Package:	MPA Domain Model
Notes:	Marine Protected Area

ContactDetails

proposed revision of contact details

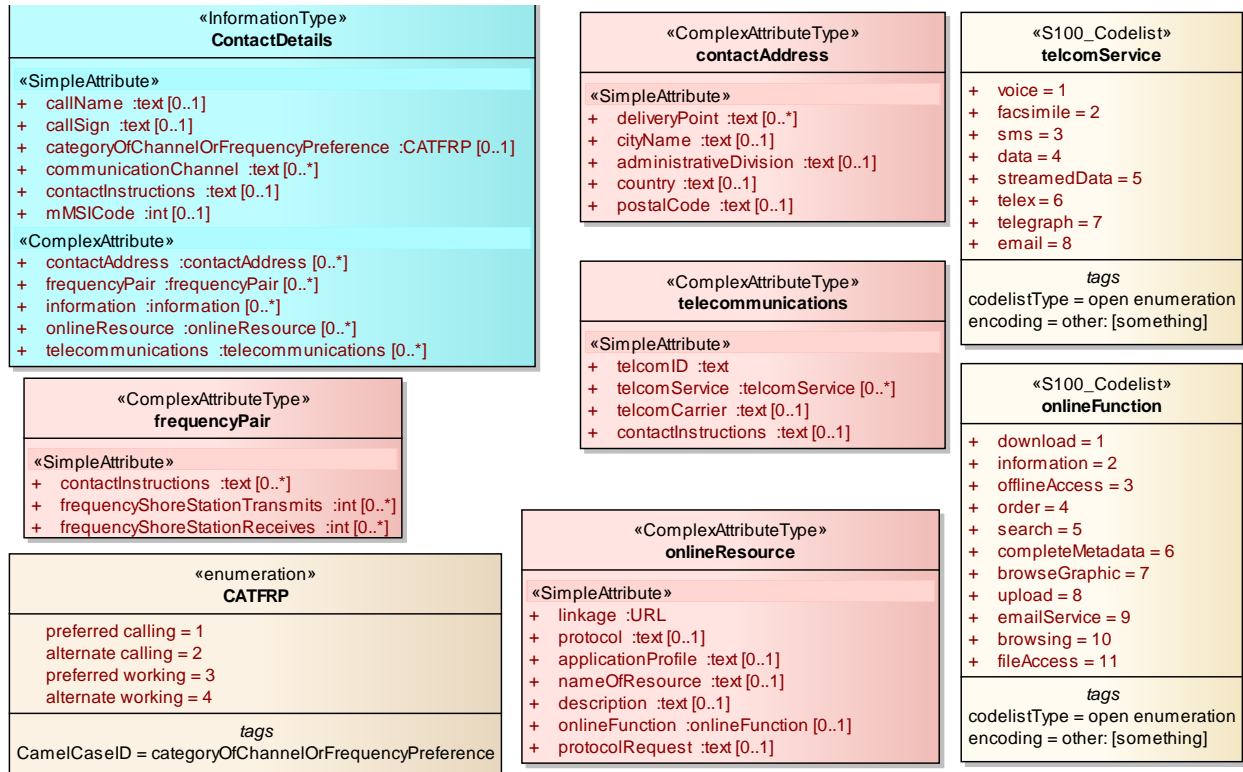


Figure: 1 (ContactDetails)

ApplicabilityAssociations

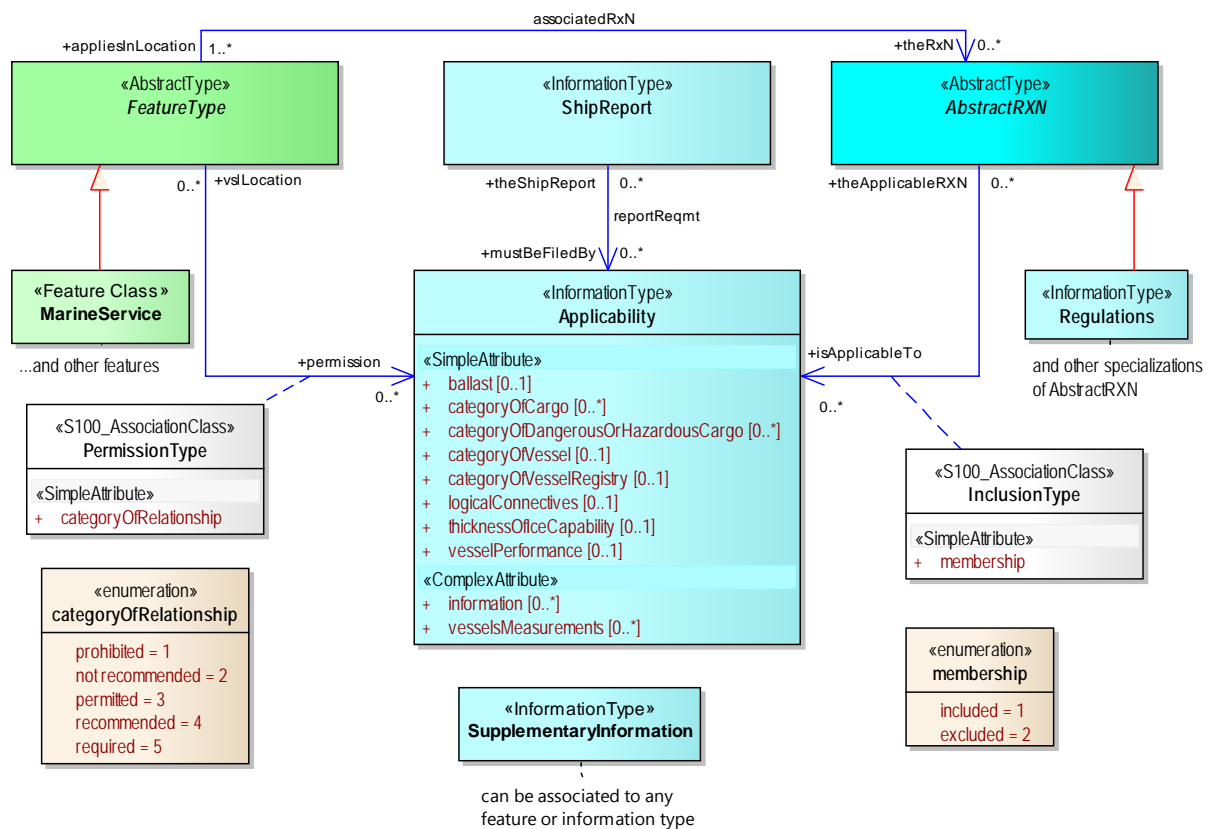


Figure: 2 (ApplicabilityAssociations)

FeatureTypes

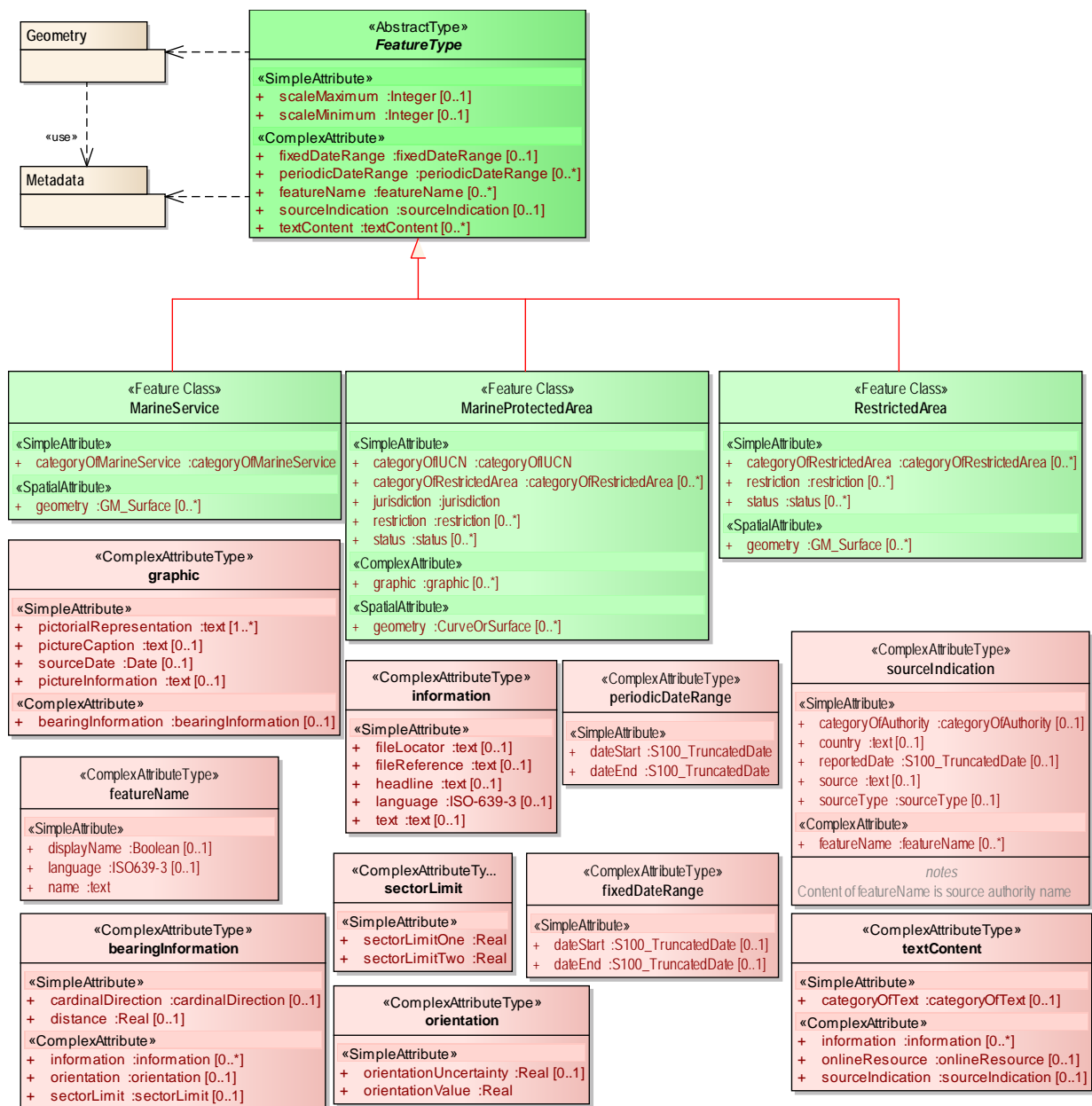


Figure: 3 (FeatureTypes)

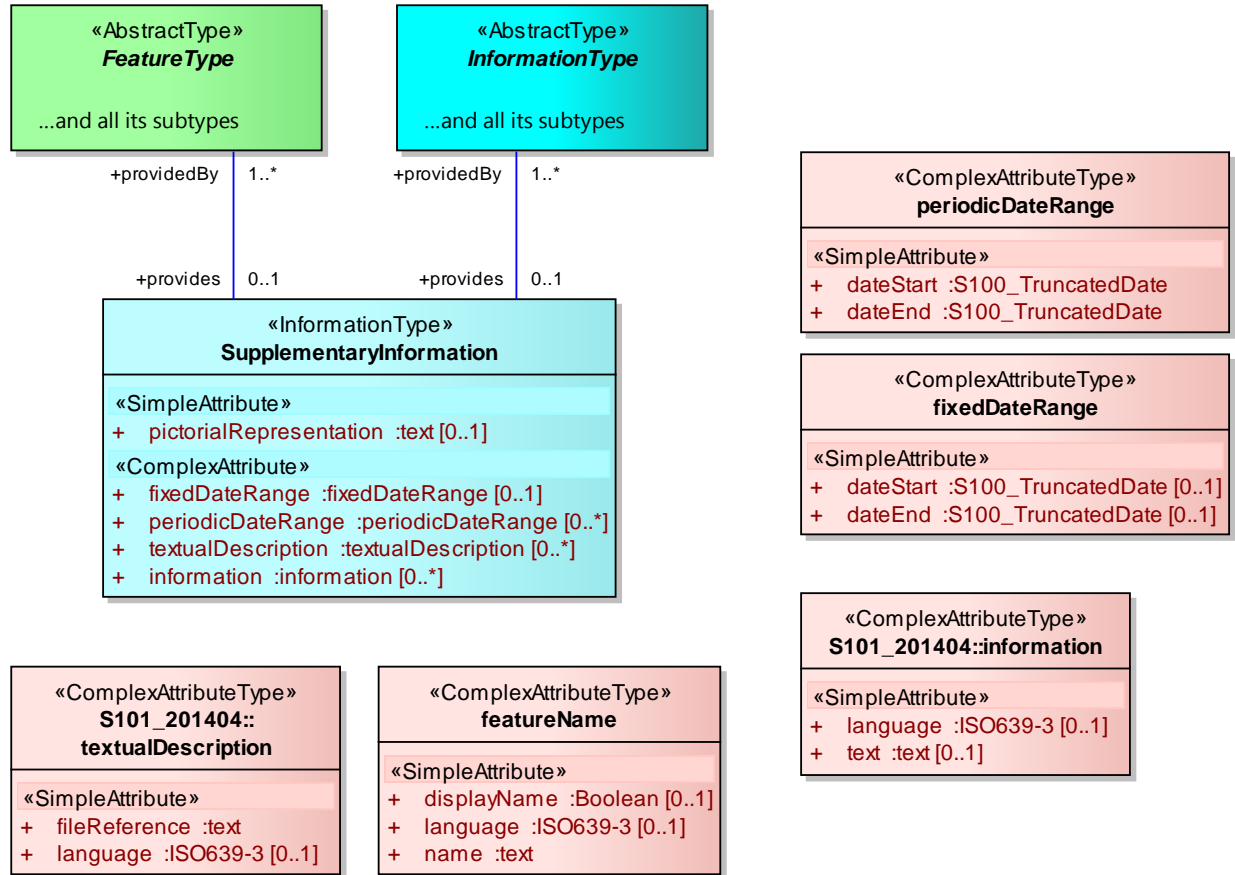


Figure: 4 (SuppInfo)

InfoTypesAbbreviated

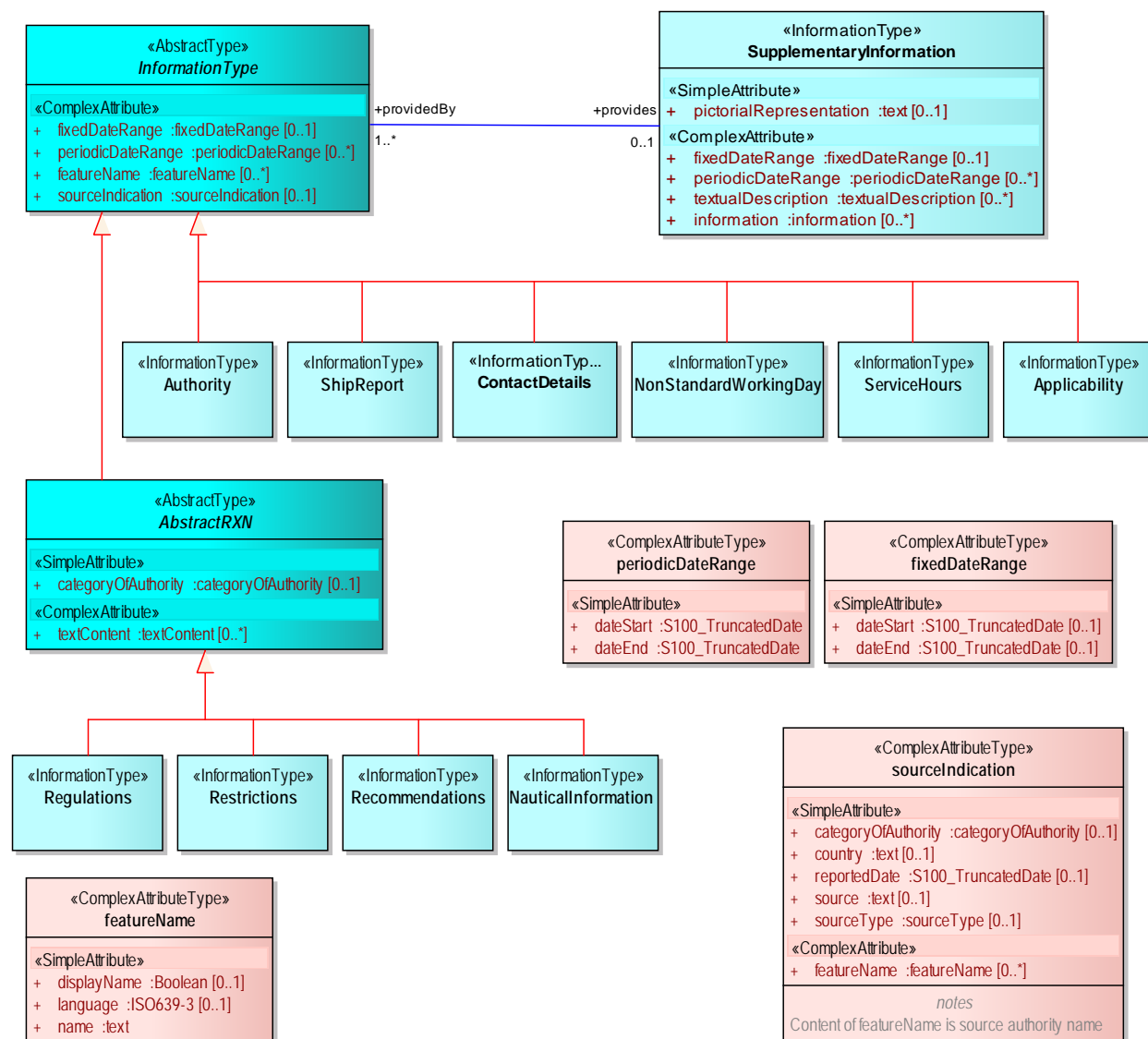


Figure: 5 (InfoTypesAbbreviated)

InfoTypesShowingAttributes

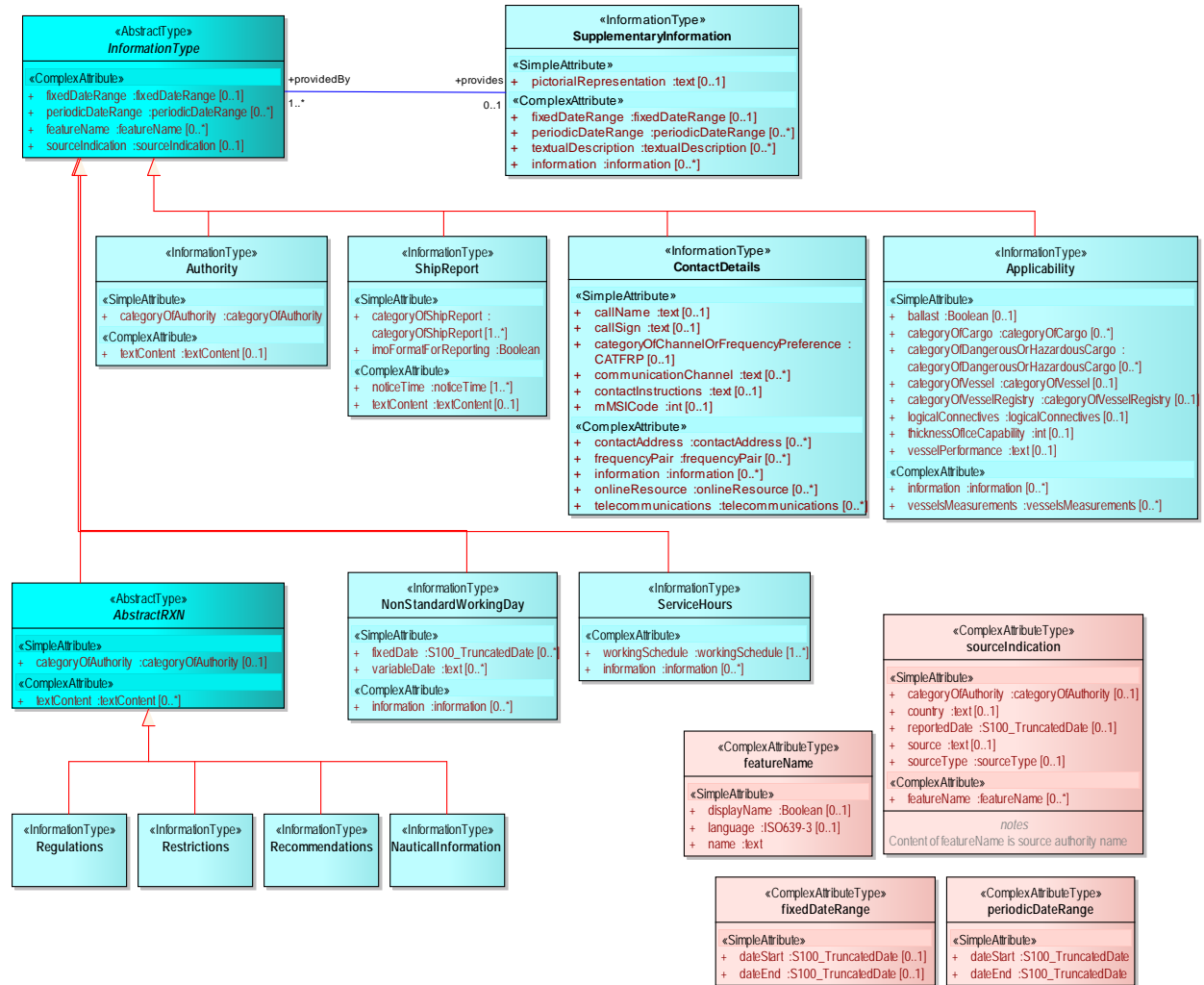


Figure: 6 (InfoTypesShowingAttributes)

MPAMainEnumsAndCodeLists

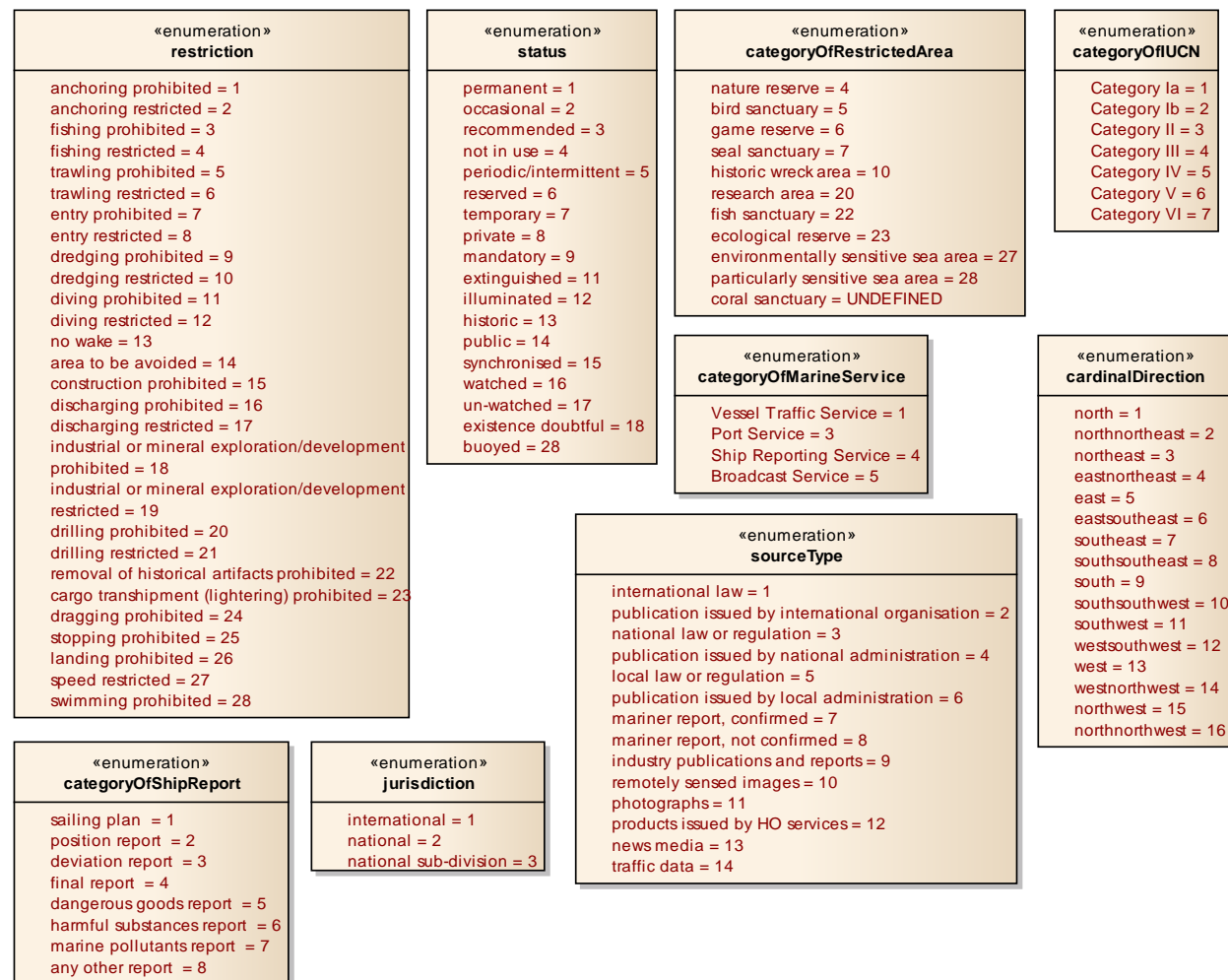


Figure: 7 (MPAMainEnumsAndCodelists)

MPAAuthoritiesAndContacts

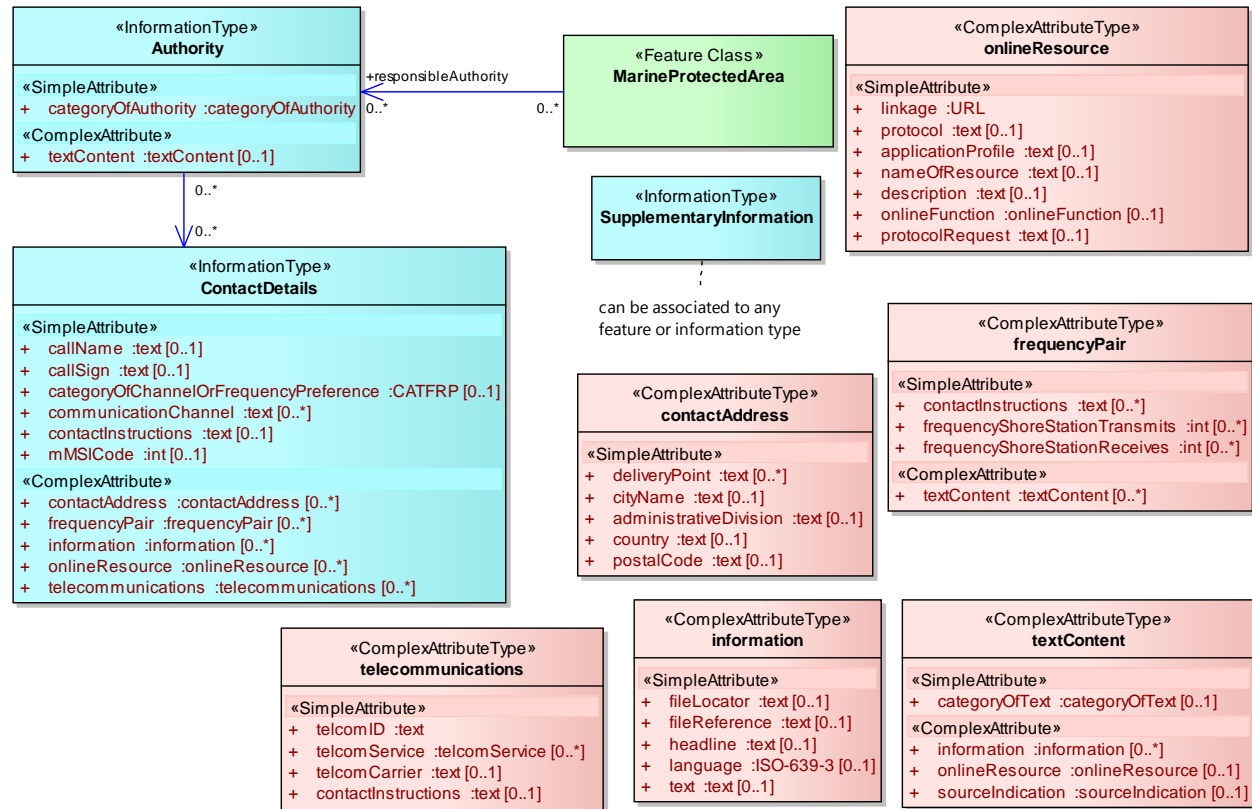


Figure: 8 (MPAAuthoritiesAndContacts)

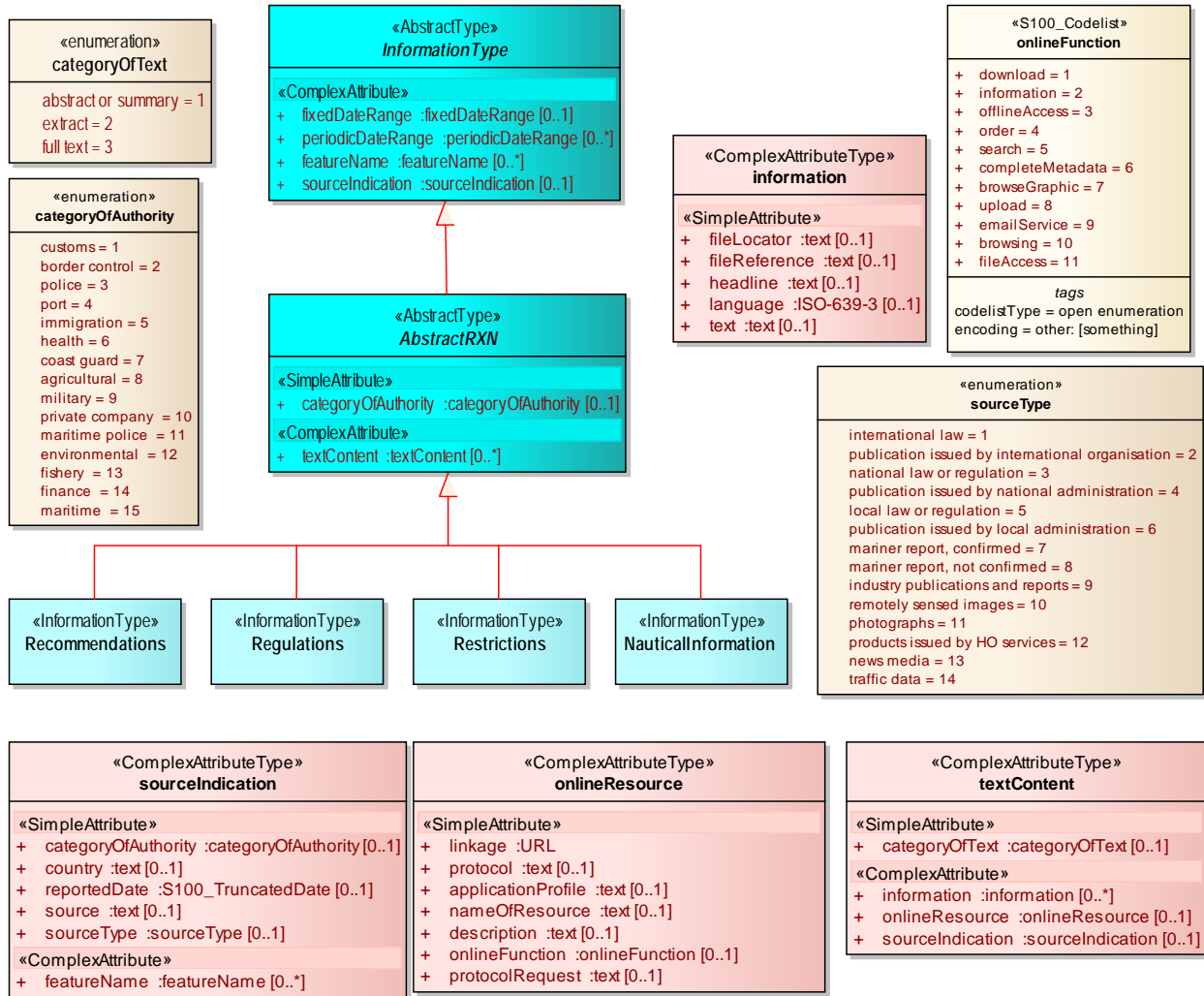


Figure: 9 (RXNTypes)

Reporting

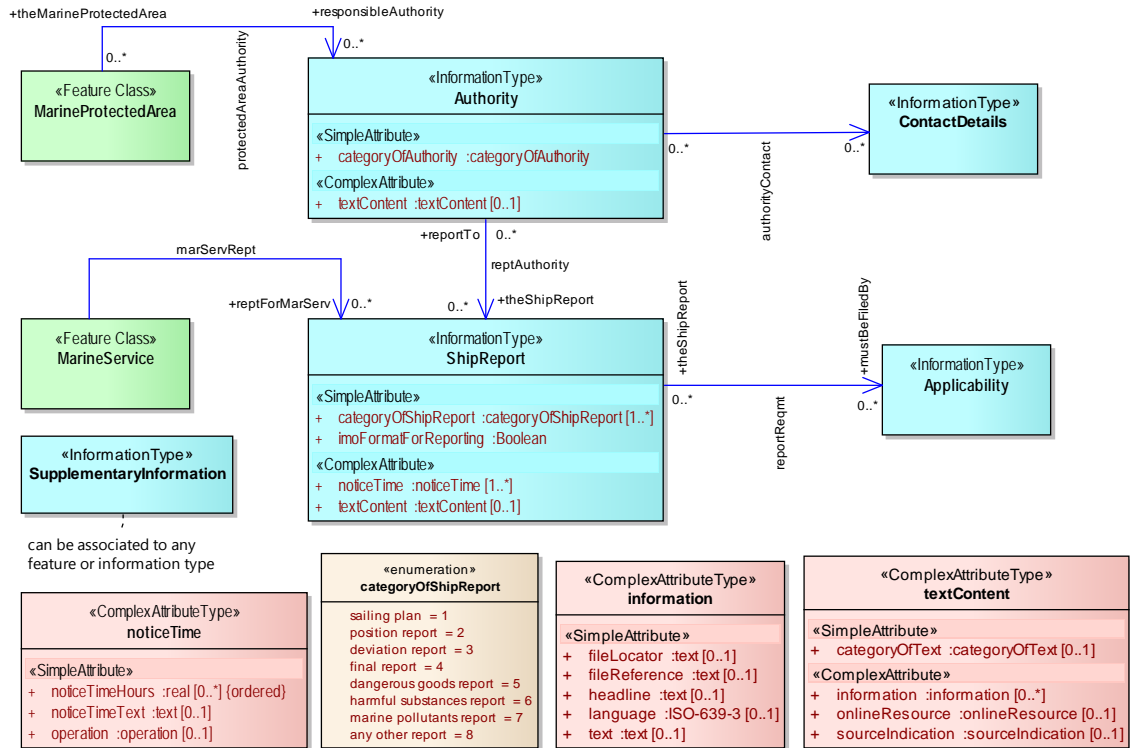


Figure: 10 (Reporting)

RulesForFeatures

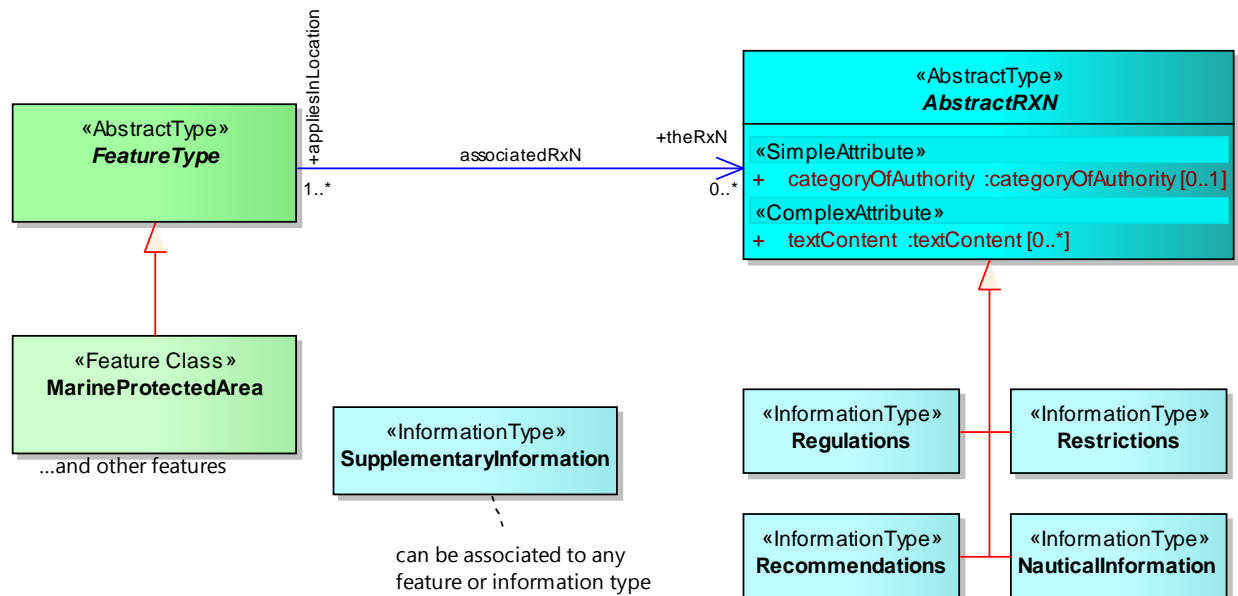


Figure: 11 (RulesForFeatures)

ShipCharacteristicSubsets

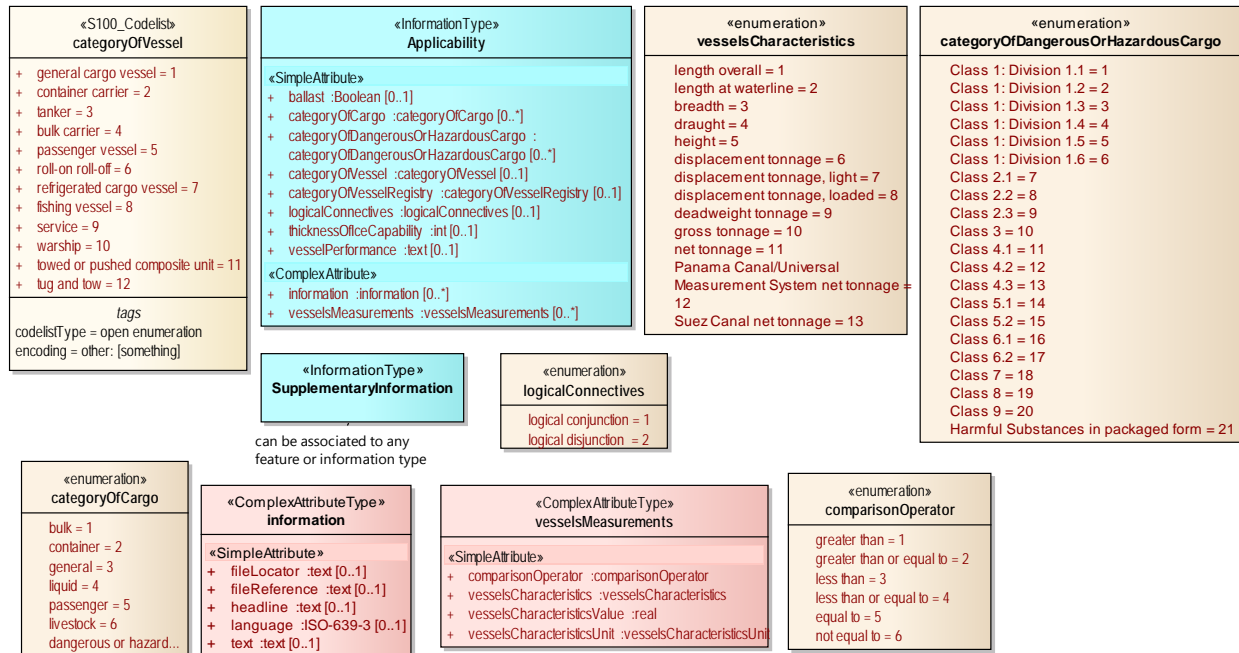


Figure: 12 (ShipCharacteristicSubsets)

WorkingTimes

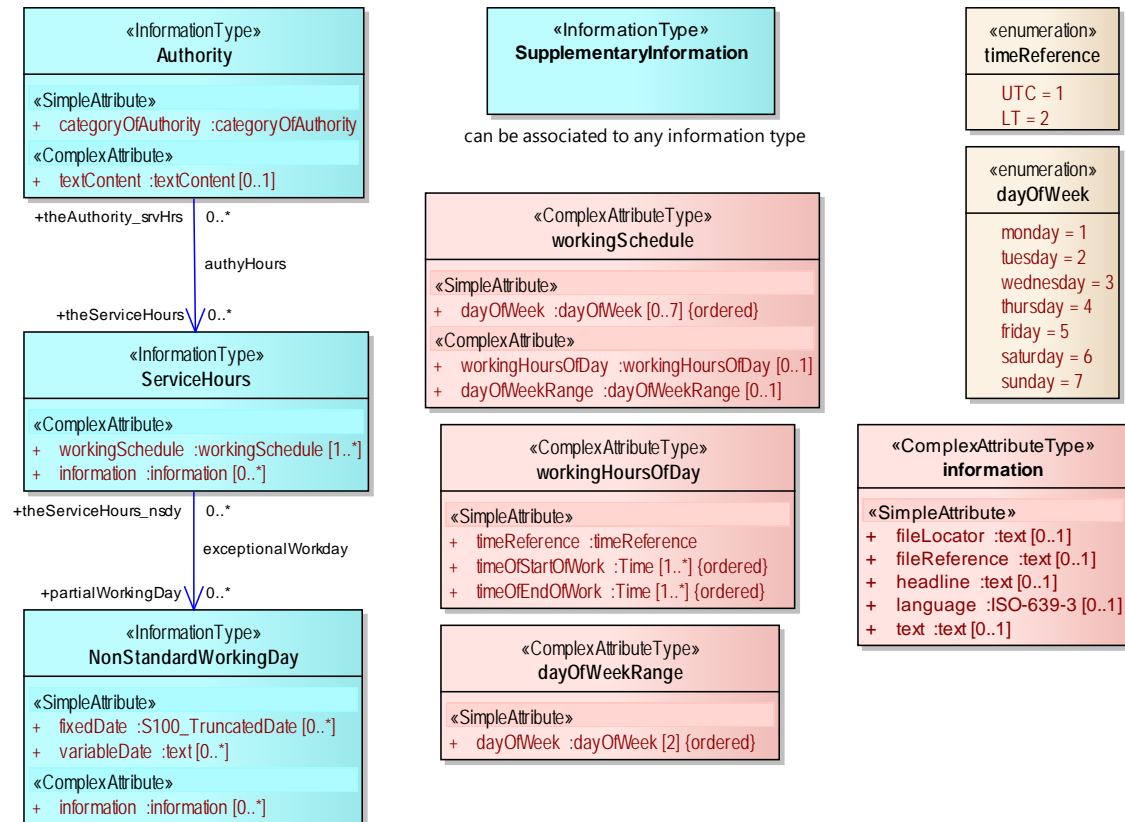


Figure: 13 (WorkingTimes)

FeatureType

«AbstractType»

Type: Class

Alias:

Package: MPADomain

Subclass Of:

Notes: Generalized feature type which carry all the common attributes

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
scaleMaximum Alias: SCAMAX	[0..1] Seq:False	Integer		positive
scaleMinimum Alias: SCAMIN	[0..1] Seq:False	Integer		positive
fixedDateRange Alias:	[0..1] Seq:False	fixedDateRange		
periodicDateRange Alias:	[0..*] Seq:False	periodicDateRange		

featureName <i>Alias:</i>	[0..*] <i>Seq:False</i>	featureName		
sourceIndication <i>Alias:</i>	[0..1] <i>Seq:False</i>	sourceIndication		
textContent <i>Alias:</i>	[0..*] <i>Seq:False</i>	textContent		

Associations (see also the associations of the super-class(es), if any)

Label and Type	Source	Target	Notes
additionalInformation <i>Association</i>	FeatureType <i>Role: providedBy</i> <i>Multiplicity: 1..*</i>	SupplementaryInformation <i>Role: provides</i> <i>Multiplicity: 0..1</i>	
associatedRXN <i>Association</i>	FeatureType <i>Role: appliesInLocation</i> <i>Multiplicity: 1..*</i>	AbstractRXN <i>Role: theRXN</i> <i>Multiplicity: 0..*</i>	
PermissionType <i>AssociationClass</i>	FeatureType <i>Role: vsLocation</i> <i>Multiplicity: 0..*</i>	Applicability <i>Role: permission</i> <i>Multiplicity: 0..*</i>	

InformationType

«AbstractType»

Type: Class

Alias:

Package: MPADomain

Subclass Of:

Notes: Generalized information type which carry all the common attributes

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
fixedDateRange <i>Alias:</i>	[0..1] <i>Seq:False</i>	fixedDateRange		
periodicDateRange <i>Alias:</i>	[0..*] <i>Seq:False</i>	periodicDateRange		
featureName <i>Alias:</i>	[0..*] <i>Seq:False</i>	featureName		
sourceIndication <i>Alias:</i>	[0..1] <i>Seq:False</i>	sourceIndication		

Associations (see also the associations of the super-class(es), if any)

Label and Type	Source	Target	Notes
generalAdditionalInformation <i>Association</i>	InformationType <i>Role: providedBy</i> <i>Multiplicity: 1..*</i>	SupplementaryInformation <i>Role: provides</i> <i>Multiplicity: 0..1</i>	

AbstractRXN

«AbstractType»

Type: Class

Alias:

Package: MPADomain

Subclass Of: InformationType

Notes: An abstract superclass for the Quartet information types

Inherited Attributes: featureName [0..*] (InformationType); fixedDateRange [0..1] (InformationType); periodicDateRange [0..*] (InformationType); sourceIndication [0..1] (InformationType); .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
categoryOfAuthority Alias: CATAUT	[0..1] Seq:False	categoryOfAuth ority		
textContent Alias:	[0..*] Seq:False	textContent		

Associations (see also the associations of the super-class(es), if any)

Label and Type	Source	Target	Notes
associatedRxn Association	FeatureType Role: appliesInLocation Multiplicity:1..*	AbstractRXN Role: theRxn Multiplicity: 0..*	
InclusionType AssociationClass	AbstractRXN Role: theApplicableRXN Multiplicity:0..*	Applicability Role: isApplicableTo Multiplicity: 0..*	

MarineProtectedArea

«Feature Class»

Type: Class

Alias: MPAARE

Package: MPADomain

Subclass Of: FeatureType

Notes: Marine Protected Area: Any area of the intertidal or sub tidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment. (IUCN – The World Conservation Union. 1998. Resolution 17.38 of the 17th General Assembly of the IUCN. Gland, Switzerland and Cambridge, UK.)

Inherited Attributes: featureName [0..*] (FeatureType); fixedDateRange [0..1] (FeatureType); periodicDateRange [0..*] (FeatureType); scaleMaximum [0..1] (FeatureType); scaleMinimum [0..1] (FeatureType); sourceIndication [0..1] (FeatureType); textContent [0..*] (FeatureType); .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
categoryOfIUCN Alias: CATIUC	[1] Seq:False	categoryOfIUC N		(International Union for Conservation of Nature and Natural Resources) VS (1, 2, 3, 4, 5, 6, 7)

categoryOfRestrictedArea <i>Alias: CATREA</i>	[0..*] <i>Seq:False</i>	categoryOfRestrictedArea		VS (4, 5, 6, 7, 10, 20, 22, 23, 27, 28, CORALSANCTUARY)
jurisdiction <i>Alias: JRSDTN</i>	[1] <i>Seq:False</i>	jurisdiction		VS (1, 2, 3)
restriction <i>Alias: RESTRN</i>	[0..*] <i>Seq:False</i>	restriction		VS (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28)
status <i>Alias: STATUS</i>	[0..*] <i>Seq:False</i>	status		VS (1, 2, 4, 5, 6, 7, 8, 9, 13, 14, 18, 28)
graphic <i>Alias:</i>	[0..*] <i>Seq:False</i>	graphic		
geometry <i>Alias:</i>	[0..*] <i>Seq:False</i>	CurveOrSurface		

Associations (see also the associations of the super-class(es), if any)

Label and Type	Source	Target	Notes
protectedAreaAuthority <i>Association</i>	MarineProtectedArea <i>Role:</i> theMarineProtectedArea <i>Multiplicity:</i> 0..*	Authority <i>Role:</i> responsibleAuthority <i>Multiplicity:</i> 0..*	

MarineService

«Feature Class»

Type: Class

Alias: MRNSRV

Package: MPADomain

Subclass Of: FeatureType

Notes: A service implemented by a relevant authority for shipping, e.g. traffic control, information, assistance.

Inherited Attributes: featureName [0..*] (FeatureType); fixedDateRange [0..1] (FeatureType); periodicDateRange [0..*] (FeatureType); scaleMaximum [0..1] (FeatureType); scaleMinimum [0..1] (FeatureType); sourceIndication [0..1] (FeatureType); textContent [0..*] (FeatureType); .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
categoryOfMarineService <i>Alias:</i>	[1] <i>Seq:False</i>	categoryOfMarineService		VS (4)
geometry <i>Alias:</i>	[0..*] <i>Seq:False</i>	GM_Surface		

Associations (see also the associations of the super-class(es), if any)

Label and Type	Source	Target	Notes
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Label and Type	Source	Target	Notes
marServRept <i>Association</i>	MarineService <i>Role: theMarineService</i> <i>Multiplicity:</i>	ShipReport <i>Role: reptForMarServ</i> <i>Multiplicity: 0..*</i>	

RestrictedArea

«Feature Class»

Type: Class

Alias: RESARE

Package: MPADomain

Subclass Of: FeatureType

Notes: A specified area of land or water designated by an appropriate authority within which access to navigation is restricted in accordance with certain specified conditions.

Inherited Attributes: featureName [0..*] (FeatureType); fixedDateRange [0..1] (FeatureType); periodicDateRange [0..*] (FeatureType); scaleMaximum [0..1] (FeatureType); scaleMinimum [0..1] (FeatureType); sourceIndication [0..1] (FeatureType); textContent [0..*] (FeatureType); .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
categoryOfRestrictedArea <i>Alias: CATREA</i>	[0..*] <i>Seq:False</i>	categoryOfRestrictedArea		VS (4, 5, 6, 7, 10, 20, 22, 23, 27, 28, CORALSANCTUARY)
restriction <i>Alias: RESTRN</i>	[0..*] <i>Seq:False</i>	restriction		VS (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28)
status <i>Alias: STATUS</i>	[0..*] <i>Seq:False</i>	status		VS (1, 2, 3, 4, 5, 6, 7, 9, 18, 28)
geometry <i>Alias:</i>	[0..*] <i>Seq:False</i>	GM_Surface		

Applicability

«InformationType»

Type: Class

Alias: APPLIC

Package: MPADomain

Subclass Of: InformationType

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

Inherited Attributes: featureName [0..*] (InformationType); fixedDateRange [0..1] (InformationType); periodicDateRange [0..*] (InformationType); sourceIndication [0..1] (InformationType); .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
ballast <i>Alias: BALAST</i>	[0..1] <i>Seq:False</i>	Boolean		True: Vessel is predominantly empty of cargo and stabilised with the use of ballast water False: Vessel is carrying cargo and is not ballasted.
categoryOfCargo <i>Alias: CATCGO</i>	[0..*] <i>Seq:False</i>	categoryOfCargo		
categoryOfDangerousOrHazardousCargo <i>Alias: CATDHC</i>	[0..*] <i>Seq:False</i>	categoryOfDangerousOrHazardousCargo		
categoryOfVessel <i>Alias: CATVSL</i>	[0..1] <i>Seq:False</i>	categoryOfVessel		
categoryOfVesselRegistry <i>Alias: CATRGY</i>	[0..1] <i>Seq:False</i>	categoryOfVesselRegistry		
logicalConnectives <i>Alias: LOGCON</i>	[0..1] <i>Seq:False</i>	logicalConnectives		
thicknessOfIceCapability <i>Alias: ICECAP</i>	[0..1] <i>Seq:False</i>	int		The thickness of ice that the ship can safely transit Unit: centimetres Resolution: 1 Format: xxx Example: 080 for ice which has a thickness of 80 cm
information <i>Alias:</i>	[0..*] <i>Seq:False</i>	information		
vesselPerformance <i>Alias: PRFMNC</i>	[0..1] <i>Seq:False</i>	text		A description of the required handling characteristics of a vessel including hull design, main and auxilliary machinery, cargo handling equipment, navigation equipment and manoeuvring behaviour.
vesselsMeasurements <i>Alias: VSLMSM</i>	[0..*] <i>Seq:False</i>	vesselsMeasurements		

Associations (see also the associations of the super-class(es), if any)

Label and Type	Source	Target	Notes
InclusionType <i>AssociationClass</i>	AbstractRXN <i>Role: theApplicableRXN</i> <i>Multiplicity:0..*</i>	Applicability <i>Role: isApplicableTo</i> <i>Multiplicity: 0..*</i>	
PermissionType <i>AssociationClass</i>	FeatureType <i>Role: vsILocation</i> <i>Multiplicity:0..*</i>	Applicability <i>Role: permission</i> <i>Multiplicity: 0..*</i>	
reportReqmt <i>Association</i>	ShipReport <i>Role: theShipReport</i> <i>Multiplicity:0..*</i>	Applicability <i>Role: mustBeFiledBy</i> <i>Multiplicity: 0..*</i>	

Authority

«InformationType»

Type: Class

Alias: AUTORI

Package: MPADomain

Subclass Of: InformationType

Notes: A person or organisation having political or administrative power and control. (Oxford Dictionary of English)

Inherited Attributes: featureName [0..*] (InformationType); fixedDateRange [0..1] (InformationType); periodicDateRange [0..*] (InformationType); sourceIndication [0..1] (InformationType); .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
categoryOfAuthority Alias: CATAUT	[1] Seq:False	categoryOfAuth ority		
textContent Alias:	[0..1] Seq:False	textContent		

Associations (see also the associations of the super-class(es), if any)

Label and Type	Source	Target	Notes
authorityContact Association	Authority Role: theAuthority Multiplicity:0..*	ContactDetails Role: theContactDetails Multiplicity: 0..*	
authyHours Association	Authority Role: theAuthority_srvHrs Multiplicity:0..*	ServiceHours Role: theServiceHours Multiplicity: 0..*	
protectedAreaAutho rity Association	MarineProtectedArea Role: theMarineProtectedArea Multiplicity:0..*	Authority Role: responsibleAuthority Multiplicity: 0..*	
reptAuthority Association	Authority Role: reportTo Multiplicity:0..*	ShipReport Role: theShipReport Multiplicity: 0..*	

ContactDetails

«InformationType»

Type: Class

Alias: CONDET

Package: MPADomain

Subclass Of: InformationType

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

Inherited Attributes: featureName [0..*] (InformationType); fixedDateRange [0..1] (InformationType); periodicDateRange [0..*] (InformationType); sourceIndication [0..1] (InformationType); .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)*Multiplicity and Type columns should be ignored for enumerations and codelists.*

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
callName <i>Alias: CALNAM</i>	[0..1] <i>Seq:False</i>	text		The designated call name of a station, e.g. radio station, radar station, pilot. This is the name used when calling a radio station by radio i.e. "Singapore Pilots".
callSign <i>Alias: CALSGN</i>	[0..1] <i>Seq:False</i>	text		The designated call-sign of a radio station.
categoryOfChannelOrFrequencyPreference <i>Alias: CATFRP</i>	[0..1] <i>Seq:False</i>	CATFRP		
communicationChannel <i>Alias: COMCHA</i>	[0..*] <i>Seq:False</i>	text		A channel number assigned to a specific radio frequency, frequencies or frequency band.
contactAddress <i>Alias:</i>	[0..*] <i>Seq:False</i>	contactAddress		
contactInstructions <i>Alias:</i>	[0..1] <i>Seq:False</i>	text		supplemental instructions on how or when to contact the individual, organisation, or service
frequencyPair <i>Alias:</i>	[0..*] <i>Seq:False</i>	frequencyPair		
information <i>Alias:</i>	[0..*] <i>Seq:False</i>	information		
mMSICode <i>Alias: MMSICO</i>	[0..1] <i>Seq:False</i>	int		The Maritime Mobile Service Identity (MMSI) Code is formed of a series of nine digits which are transmitted over the radio path in order to uniquely identify ship stations, ship earth stations, coast stations, coast earth stations, and group calls. These identities are formed in such a way that the identity or part thereof can be used by telephone and telex subscribers connected to the general telecommunications network principally to call ships automatically.
onlineResource <i>Alias:</i>	[0..*] <i>Seq:False</i>	onlineResource		Information about online sources from which a resource or data can be obtained (ISO 19115, adapted)
telecommunications <i>Alias:</i>	[0..*] <i>Seq:False</i>	telecommunications		information for contact by means of a telecommunications service. Distinctions: emailAddress, internetAddress, callName, callSign, COMCHA

Associations (see also the associations of the super-class(es), if any)

Label and Type	Source	Target	Notes
authorityContact <i>Association</i>	Authority <i>Role: theAuthority</i> <i>Multiplicity: 0..*</i>	ContactDetails <i>Role: theContactDetails</i> <i>Multiplicity: 0..*</i>	

NauticalInformation**«InformationType»***Type:* Class*Alias:* NATINF*Package:* MPADomain*Subclass Of:* AbstractRXN*Notes:* Nautical information about a related area or facility.

Constraint: If **Regulations.textContent** is populated, there cannot be **textualDescription** or **information** attributes directly bound to the **Regulations..** A similar constraint applies to the information types **Recommendations, Restrictions, and NauticalInformation.**

Inherited Attributes: categoryOfAuthority [0..1] (AbstractRXN); textContent [0..*] (AbstractRXN); featureName [0..*] (InformationType); fixedDateRange [0..1] (InformationType); periodicDateRange [0..*] (InformationType); sourceIndication [0..1] (InformationType); .

NonStandardWorkingDay**«InformationType»***Type:* Class*Alias:* NSWKDY*Package:* MPADomain*Subclass Of:* InformationType

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

Inherited Attributes: featureName [0..*] (InformationType); fixedDateRange [0..1] (InformationType); periodicDateRange [0..*] (InformationType); sourceIndication [0..1] (InformationType); .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
fixedDate <i>Alias: FIXDAT</i>	[0..*] <i>Seq:False</i>	S100_Truncate dDate		The date when a festival or national holiday recurs on the same day each year in the Gregorian calendar.
variableDate <i>Alias: VARDAT</i>	[0..*] <i>Seq:False</i>	text		A day which is not fixed in the Gregorian calendar. Examples: The fourth Thursday in November; new moon day of Kartika (Diwali); Easter Sunday.
information	[0..*]	information		

Alias:	Seq:False		
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Associations (see also the associations of the super-class(es), if any)

Label and Type	Source	Target	Notes
exceptionalWorkday Association	ServiceHours Role: theServiceHours_nsd Multiplicity:0..*	NonStandardWorkingDay Role: partialWorkingDay Multiplicity: 0..*	

Recommendations

«InformationType»

Type: Class

Alias: RCMDTS

Package: MPADomain

Subclass Of: AbstractRXN

Notes: Recommendations for a related area or facility.

Constraint: If **Regulations.textContent** is populated, there cannot be **textualDescription** or **information** attributes directly bound to the **Regulations..** A similar constraint applies to the information types **Recommendations, Restrictions, and NauticalInformation.**

Inherited Attributes: categoryOfAuthority [0..1] (AbstractRXN); textContent [0..*] (AbstractRXN); featureName [0..*] (InformationType); fixedDateRange [0..1] (InformationType); periodicDateRange [0..*] (InformationType); sourceIndication [0..1] (InformationType); .

Regulations

«InformationType»

Type: Class

Alias: REGLTS

Package: MPADomain

Subclass Of: AbstractRXN

Notes: Regulations for a related area or facility.

Constraint: If **Regulations.textContent** is populated, there cannot be **textualDescription** or **information** attributes directly bound to the **Regulations..** A similar constraint applies to the information types **Recommendations, Restrictions, and NauticalInformation.**

Inherited Attributes: categoryOfAuthority [0..1] (AbstractRXN); textContent [0..*] (AbstractRXN); featureName [0..*] (InformationType); fixedDateRange [0..1] (InformationType); periodicDateRange [0..*] (InformationType); sourceIndication [0..1] (InformationType); .

Restrictions

«InformationType»

Type: Class

Alias: RESDES

Package: MPADomain

Subclass Of: AbstractRXN

Notes: Restrictions for a related area or facility.

Constraint: If **Regulations.textContent** is populated, there cannot be **textualDescription** or **information** attributes directly bound to the **Regulations..** A similar constraint applies to the information types **Recommendations**, **Restrictions**, and **NauticalInformation**.

Inherited Attributes: categoryOfAuthority [0..1] (AbstractRXN); textContent [0..*] (AbstractRXN); featureName [0..*] (InformationType); fixedDateRange [0..1] (InformationType); periodicDateRange [0..*] (InformationType); sourceIndication [0..1] (InformationType); .

ServiceHours

«InformationType»

Type: Class

Alias: SRVHRS

Package: MPADomain

Subclass Of: InformationType

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

Inherited Attributes: featureName [0..*] (InformationType); fixedDateRange [0..1] (InformationType); periodicDateRange [0..*] (InformationType); sourceIndication [0..1] (InformationType); .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
workingSchedule <i>Alias:</i>	[1..*] <i>Seq:False</i>	workingSchedule		
information <i>Alias:</i>	[0..*] <i>Seq:False</i>	information		

Associations (see also the associations of the super-class(es), if any)

Label and Type	Source	Target	Notes
authyHours <i>Association</i>	Authority <i>Role:</i> theAuthority_srvHrs <i>Multiplicity:</i> 0..*	ServiceHours <i>Role:</i> theServiceHours <i>Multiplicity:</i> 0..*	
exceptionalWorkday <i>Association</i>	ServiceHours <i>Role:</i> theServiceHours_nsd <i>Multiplicity:</i> 0..*	NonStandardWorkingDay <i>Role:</i> partialWorkingDay <i>Multiplicity:</i> 0..*	

ShipReport

«InformationType»

Type: Class

Alias: SHPREP

Package: MPADomain

Subclass Of: InformationType

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

Inherited Attributes: featureName [0..*] (InformationType); fixedDateRange [0..1] (InformationType); periodicDateRange [0..*] (InformationType); sourceIndication [0..1] (InformationType); .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
categoryOfShipReport <i>Alias: CATREP</i>	[1..*] <i>Seq:False</i>	categoryOfShipReport		VS (1, 2, 3, 4, 5, 6, 7, 8)
imoFormatForReporting <i>Alias: IMOREP</i>	[1] <i>Seq:False</i>	Boolean		
noticeTime <i>Alias: NTCTIM</i>	[1..*] <i>Seq:False</i>	noticeTime		
textContent <i>Alias: TXTCON</i>	[0..1] <i>Seq:False</i>	textContent		

Associations (see also the associations of the super-class(es), if any)

Label and Type	Source	Target	Notes
marServRept <i>Association</i>	MarineService <i>Role: theMarineService</i> <i>Multiplicity:</i>	ShipReport <i>Role: reptForMarServ</i> <i>Multiplicity: 0..*</i>	
reportReqmt <i>Association</i>	ShipReport <i>Role: theShipReport</i> <i>Multiplicity:0..*</i>	Applicability <i>Role: mustBeFiledBy</i> <i>Multiplicity: 0..*</i>	
reptAuthority <i>Association</i>	Authority <i>Role: reportTo</i> <i>Multiplicity:0..*</i>	ShipReport <i>Role: theShipReport</i> <i>Multiplicity: 0..*</i>	

SupplementaryInformation

«InformationType»

Type: Class

Alias:

Package: MPADomain

Subclass Of:

Notes: Information type used to provide additional information populated in S-57 ENC's using INFORM, TXTDSC, and PICREP. This information type is associated to the relevant Geo feature (or another information type) using the association role **additionalInformation**.

Remark: This is a clone of the S-101 information type of the same name, and the attributes information and textualDescription will be replaced with the new model of textual information after that is harmonized with TSMAD.

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
pictorialRepresentation <i>Alias: PICREP</i>	[0..1] <i>Seq:False</i>	text		
fixedDateRange <i>Alias:</i>	[0..1] <i>Seq:False</i>	fixedDateRange		
periodicDateRange <i>Alias:</i>	[0..*] <i>Seq:False</i>	periodicDateRange		
textualDescription <i>Alias:</i>	[0..*] <i>Seq:False</i>	textualDescription		
information <i>Alias:</i>	[0..*] <i>Seq:False</i>	information		

Associations (see also the associations of the super-class(es), if any)

Label and Type	Source	Target	Notes
additionalInformation <i>Association</i>	FeatureType <i>Role: providedBy</i> <i>Multiplicity: 1..*</i>	SupplementaryInformation <i>Role: provides</i> <i>Multiplicity: 0..1</i>	
generalAdditionalInformation <i>Association</i>	InformationType <i>Role: providedBy</i> <i>Multiplicity: 1..*</i>	SupplementaryInformation <i>Role: provides</i> <i>Multiplicity: 0..1</i>	

InclusionType

«S100_AssociationClass»

Type: AssociationClass

Alias: INCTYP

Package: MPADomain

Subclass Of:

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

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
membership <i>Alias: MBRSHP</i>	[1] <i>Seq:False</i>	membership		Whether vessels of the specified characteristics are included in the associated regulation (restriction, etc.) or specifically exempted from it.

PermissionType

«S100_AssociationClass»

Type: AssociationClass

Alias: PERMIS

Package: MPADomain

Subclass Of:

Notes: Association class for associations describing whether the subsets of vessels determined by the ship

characteristics specified in APPLIC may (or must, etc.) transit, enter, or use a feature.

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
categoryOfRelationship <i>Alias:</i>	[1] <i>Seq:False</i>	categoryOfRelationship		This attribute expresses the level of insistence for or against an action or activity by a vessel of the subset described by the APPLIC object at one end in relation to the feature at the other end of the association.

bearingInformation

«ComplexAttributeType»

Type: Class

Alias: BRGINF

Package: MPADomain

Subclass Of:

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

At least one of the sub-attributes must be present.

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
cardinalDirection <i>Alias:</i>	[0..1] <i>Seq:False</i>	cardinalDirection		
distance <i>Alias:</i>	[0..1] <i>Seq:False</i>	Real		
information <i>Alias:</i>	[0..*] <i>Seq:False</i>	information		
orientation <i>Alias:</i>	[0..1] <i>Seq:False</i>	orientation		
sectorLimit <i>Alias:</i>	[0..1] <i>Seq:False</i>	sectorLimit		

contactAddress

«ComplexAttributeType»

Type: Class

Alias:

Package: MPADomain

Subclass Of:

Notes: 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. (Oxford English

Dictionary, 2nd Ed., adapted).

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
deliveryPoint <i>Alias: DELPNT</i>	[0..*] <i>Seq:False</i>	text		Details of where post can be delivered such as the apartment, name and/or number of a street, building or PO Box.
cityName <i>Alias: CITYNM</i>	[0..1] <i>Seq:False</i>	text		The name of a town or city.
administrativeDivision <i>Alias: ADMDIV</i>	[0..1] <i>Seq:False</i>	text		Administrative division is a generic term for an administrative region within a country at a level below that of the sovereign state.
country <i>Alias: CONTRY</i>	[0..1] <i>Seq:False</i>	text		The name of a nation. (Adapted from The American Heritage Dictionaries)
postalCode <i>Alias: POSCOD</i>	[0..1] <i>Seq:False</i>	text		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.

dayOfWeekRange

«ComplexAttributeType»

Type: Class

Alias: DYWKRN

Package: MPADomain

Subclass Of:

Notes:

Remarks: A range of days of the week, expressed as a complex type whose sub-attributes are the days of the week that begin and end the range. There is only 1 sub-attribute, which gives the day of the week. The multiplicity of this attribute must be exactly 2. The first instance gives the beginning day of the range and the second the ending day (both are included in the range).

Though a range of days of the week that cross the week boundaries is possible (e.g., “Thursday to Monday”) the use of ranges that cross week boundaries is discouraged.

Example: To code the range “Monday through Friday” use the sequence: DYOFWK=1, DYOFWK=5.

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
dayOfWeek <i>Alias: DYOFWK</i>	[2] <i>Seq:True</i>	dayOfWeek		

featureName

«ComplexAttributeType»

Type: Class

Alias:

Package: MPADomain

Subclass Of:

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

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
displayName Alias:	[0..1] Seq:False	Boolean		A statement expressing if a feature name is to be displayed in certain display settings or not. Indication: Boolean. A True value is an indication that the name is intended to be displayed. 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 <i>True</i>).
language Alias:	[0..1] Seq:False	ISO639-3		The language is encoded by a character code following ISO 639-3
name Alias:	[1] Seq:False	text		The individual name of a feature.

fixedDateRange

«ComplexAttributeType»

Type: Class

Alias:

Package: MPADomain

Subclass Of:

Notes: Describes a single fixed period, as the date range between its sub-attributes.

Remarks: Sub-attributes date end and date start must have the calendar year encoded using 4 digits for the calendar year (CCYY). Month (MM) and day (DD) are optional.

(This definition merges the planned S-100 temporal model with the current S-101 DCEG definition of fixed date range.)

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
dateStart <i>Alias: DATSTA</i>	[0..1] <i>Seq:False</i>	S100_Truncate dDate		The start date or time of the interval.
dateEnd <i>Alias: DATSTA</i>	[0..1] <i>Seq:False</i>	S100_Truncate dDate		The end date or time of the interval.

frequencyPair

«ComplexAttributeType»

Type: Class

Alias: FRQPAR

Package: MPADomain

Subclass Of:

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

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
contactInstructions <i>Alias:</i>	[0..*] <i>Seq:False</i>	text		
frequencyShoreStationTransmits <i>Alias:</i>	[0..*] <i>Seq:False</i>	int		The shore station transmitter frequency expressed in kHz to one decimal place. Units: kHz, Resolution: 0.1, Format: XXXXXX Examples: 4379.1 kHz becomes 043791 13162.8 kHz becomes 131628
frequencyShoreStationReceives <i>Alias:</i>	[0..*] <i>Seq:False</i>	int		The shore station receiver frequency expressed in kHz to one decimal place. Units: kHz, Resolution: 0.1, Format: XXXXXX Examples: 4379.1 kHz becomes 043791 13162.8 kHz becomes 131628
textContent <i>Alias:</i>	[0..*] <i>Seq:False</i>	textContent		

graphic

«ComplexAttributeType»

Type: Class

Alias: GRAPHIC

Package: MPADomain

Subclass Of:

Notes:

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)*Multiplicity and Type columns should be ignored for enumerations and codelists.*

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
pictorialRepresentation <i>Alias:</i>	[1..*] <i>Seq:False</i>	text		
pictureCaption <i>Alias:</i>	[0..1] <i>Seq:False</i>	text		Short description of the purpose of the image.
sourceDate <i>Alias:</i>	[0..1] <i>Seq:False</i>	Date		
pictureInformation <i>Alias:</i>	[0..1] <i>Seq:False</i>	text		A set of information to provide credits to picture creator, copyright owner etc.
bearingInformation <i>Alias:</i>	[0..1] <i>Seq:False</i>	bearingInformation		

information**«ComplexAttributeType»***Type:* Class*Alias:**Package:* MPADomain*Subclass Of:*

Notes: Provides textual information that cannot be provided using other allowable attributes for the feature, in a defined language. The information may be provided as a string in sub-attribute **text**, or by encoding the file name of a single external text file that contains the text in sub-attribute **file reference**.

Remarks:

- The sub-attribute **text** should be used, for example, to hold the information that is shown on paper charts by cautionary and explanatory notes. No formatting of text is possible within the sub-attribute **text**. If formatted text is required then an associated text file referenced by the sub-attribute **file reference** must be used.
- 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**.

Inherited Attributes: .**Constraint:**

count(text + fileReference) > 0

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)*Multiplicity and Type columns should be ignored for enumerations and codelists.*

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
fileLocator <i>Alias: FILLOC</i>	[0..1] <i>Seq:False</i>	text		The string encodes the location of a fragment of text or other information in a support file. Remarks: <ul style="list-style-type: none"> Application schemas must describe how the associated file is identified.

				<p>The associated file will commonly be named in a file reference co-attribute of the same complex attribute.</p> <ul style="list-style-type: none"> 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.
fileReference <i>Alias: FILREF</i>	[0..1] <i>Seq:False</i>	text		<p>The string encodes the file name of a single external text file that contains the text.</p> <p>Remarks: The 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.</p>
headline <i>Alias: HEADLN</i>	[0..1] <i>Seq:False</i>	text		<p>Words set at the head of a passage or page to introduce or categorize</p>
language <i>Alias:</i>	[0..1] <i>Seq:False</i>	ISO-639-3		<p>ISO 639-3 value</p>
text <i>Alias: INFORM</i>	[0..1] <i>Seq:False</i>	text		<p>A non-formatted digital text string.</p> <p>Remarks: The attribute should be used, for example, to hold the information that is shown on paper charts by short cautionary and explanatory notes. Therefore text populated in text must not exceed 300 characters. Text may be in English or in a national language defined by the attribute language. No formatting of text is possible within the sub-attribute text. If formatted text, or text strings exceeding 300 characters, is required, then the attribute file reference must be used.</p>

noticeTime

«ComplexAttributeType»

Type: Class

Alias: NTCTIM

Package: MPADomain

Subclass Of:

Notes:

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
noticeTimeHours <i>Alias: NTCHRS</i>	[0..*] <i>Seq:True</i>	real		sequential
noticeTimeText <i>Alias: NTCTXT</i>	[0..1] <i>Seq:False</i>	text		
operation <i>Alias: OPERAT</i>	[0..1] <i>Seq:False</i>	operation		

onlineResource

«ComplexAttributeType»

Type: Class

Alias: ONLRES

Package: MPADomain

Subclass Of:

Notes: Information about online sources from which a resource or data can be obtained (ISO 19115, adapted).

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
linkage <i>Alias: internetAddress, LINKGE</i>	[1] <i>Seq:False</i>	URL		location (address) for on-line access using a URL/URI address or similar addressing scheme. (Adapted from ISO 19115:2014.)
protocol <i>Alias: PROTCL</i>	[0..1] <i>Seq:False</i>	text		connection protocol to be used. Example: ftp, http get KVP, http POST, etc. (ISO 19115)
applicationProfile <i>Alias: APPPRF</i>	[0..1] <i>Seq:False</i>	text		name of an application profile that can be used with the online resource (ISO 19115)
nameOfResource <i>Alias: NAMRES</i>	[0..1] <i>Seq:False</i>	text		name of the online resource (ISO 19115, adapted)
description <i>Alias: DESCRP</i>	[0..1] <i>Seq:False</i>	text		detailed text description of what the online resource is/does (ISO 19115)
onlineFunction	[0..1]	onlineFunction		code for function performed by the

Alias: <i>ONLFUN</i>	Seq:False			online resource (ISO 19115)
protocolRequest Alias: <i>PROTRQ</i>	[0..1] Seq:False	text		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. (ISO 19115, adapted)

orientation

«ComplexAttributeType»

Type: Class

Alias:

Package: MPADomain

Subclass Of:

Notes:

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
orientationUncertainty Alias:	[0..1] Seq:False	Real		
orientationValue Alias:	[1] Seq:False	Real		

periodicDateRange

«ComplexAttributeType»

Type: Class

Alias:

Package: MPADomain

Subclass Of:

Notes: This complex attribute describes the active period for a seasonal feature or information type.

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
dateStart Alias:	[1] Seq:False	S100_Truncate dDate		The start date or time of the interval.
dateEnd Alias:	[1] Seq:False	S100_Truncate dDate		The end date or time of the interval.

sectorLimit

«ComplexAttributeType»*Type:* Class*Alias:**Package:* MPADomain*Subclass Of:**Notes:**Inherited Attributes:* .**Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)***Multiplicity and Type columns should be ignored for enumerations and codelists.*

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
sectorLimitOne <i>Alias:</i> SECTR2	[1] <i>Seq:</i> False	Real		
sectorLimitTwo <i>Alias:</i> SECTR2	[1] <i>Seq:</i> False	Real		

sourceIndication**«ComplexAttributeType»***Type:* Class*Alias:**Package:* MPADomain*Subclass Of:**Notes:* Content of featureName is source authority name*Inherited Attributes:* .**Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)***Multiplicity and Type columns should be ignored for enumerations and codelists.*

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
categoryOfAuthority <i>Alias:</i>	[0..1] <i>Seq:</i> False	categoryOfAuth ority		
country <i>Alias:</i>	[0..1] <i>Seq:</i> False	text		
featureName <i>Alias:</i>	[0..*] <i>Seq:</i> False	featureName		
reportedDate <i>Alias:</i>	[0..1] <i>Seq:</i> False	S100_Truncate dDate		
source <i>Alias:</i>	[0..1] <i>Seq:</i> False	text		The publication, document, or reference work from which information comes or is acquired.
sourceType <i>Alias:</i>	[0..1] <i>Seq:</i> False	sourceType		Type of source

telecommunications**«ComplexAttributeType»***Type:* Class

Alias: TELCOM

Package: MPADomain

Subclass Of:

Notes: A means or channel of communication at a distance by electrical or electromagnetic means such as telegraphy, telephony, or broadcasting

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
telcomID <i>Alias: TELEID</i>	[1] <i>Seq:False</i>	text		Identifier used for contact by means of a telecommunications service, such as a telephone number
telcomService <i>Alias: TELSRV</i>	[0..*] <i>Seq:False</i>	telcomService		Type of telecommunications service
telcomCarrier <i>Alias: TELCRR</i>	[0..1] <i>Seq:False</i>	text		The name of provider or type of carrier for a telecommunications service
contactInstructions <i>Alias: CONINS</i>	[0..1] <i>Seq:False</i>	text		instructions on how and when to contact an individual or organisation

textContent

«ComplexAttributeType»

Type: Class

Alias: TXTCON

Package: MPADomain

Subclass Of:

Notes: 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.

Inherited Attributes: .

Constraint:

count(information + onlineresource) > 0

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
categoryOfText <i>Alias: CATTXT</i>	[0..1] <i>Seq:False</i>	categoryOfText		
information <i>Alias:</i>	[0..*] <i>Seq:False</i>	information		

onlineResource <i>Alias:</i>	[0..1] <i>Seq:</i> False	onlineResource		
sourceIndication <i>Alias:</i>	[0..1] <i>Seq:</i> False	sourceIndication		

vesselsMeasurements

«ComplexAttributeType»

Type: Class

Alias: VSLMSM

Package: MPADomain

Subclass Of:

Notes:

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
comparisonOperator <i>Alias: COMPOP</i>	[1] <i>Seq:</i> False	comparisonOperator		
vesselsCharacteristics <i>Alias: VSLCAR</i>	[1] <i>Seq:</i> False	vesselsCharacteristics		
vesselsCharacteristicsValue <i>Alias: VSLVAL</i>	[1] <i>Seq:</i> False	real		
vesselsCharacteristicsUnit <i>Alias: VSLUNT</i>	[1] <i>Seq:</i> False	vesselsCharacteristicsUnit		

workingHoursOfDay

«ComplexAttributeType»

Type: Class

Alias: WKHRDY

Package: MPADomain

Subclass Of:

Notes: Remarks: If there are a number of working time periods in a day Sub-attributes TIMSTW and TIMENW must be repeated and be in mutual correspondence.

For example, Work time: 0800-1200, 1400-2000 must be encoded as:

TIMSTW=0800 TIMSTW=1400 and TIMENW=1200 TIMENW=2000

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
timeReference <i>Alias: TIMREF</i>	[1] <i>Seq:</i> False	timeReference		
timeOfStartOfWork <i>Alias: TIMSTW</i>	[1..*] <i>Seq:</i> True	Time		
timeOfEndOfWork	[1..*]	Time		

Alias: TIMENW	Seq:True		
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workingSchedule

«ComplexAttributeType»

Type: Class

Alias: WKSHED

Package: MPADomain

Subclass Of:

Notes: Constraints: Duplicates or overlaps are not permitted

Remarks: Product specifications may need to allow WKSHED to be repeated in order to allow encoding of schedules which vary for different days of the week.

Inherited Attributes: .

Attributes (for feature and information types) OR Listed Values (for enumerations and codelists)

Multiplicity and Type columns should be ignored for enumerations and codelists.

Attr. Name / Enum. Label	Mult.	Type	Code	Definition / Constraints / Notes
dayOfWeek Alias: DYOFWK	[0..7] Seq:True	dayOfWeek		sequential
workingHoursOfDay Alias:	[0..1] Seq:False	workingHoursOf fDay		
dayOfWeekRange Alias:	[0..1] Seq:False	dayOfWeekRan ge		

categoryOfAuthority

«enumeration»

Alias: CATAUT

Package: MPADomain

Subclass Of:

Notes:

Listed Values

Label	Code	Notes / Definition
customs Alias:	1	The agency or establishment for collecting duties, tolls. (Merriam-Websters online Dictionary 23rd February 2006, amended).
border control Alias:	2	The administration to prevent or detect and prosecute violations of rules and regulations at international boundaries (adapted from Merriam-Websters online Dictionary 23rd February 2006).
police Alias:	3	The department of government, or civil force, charged with maintaining public order. (Adapted from OED)

port <i>Alias:</i>	4	Person or corporation, owners of, or entrusted with or invested with the power of managing a port. May be called a Harbour Board, Port Trust, Port Commission, Harbour Commission, Marine Department (NP 100 8th Edition 14 Oct 2004)
immigration <i>Alias:</i>	5	The authority controlling people entering a country.
health <i>Alias:</i>	6	The authority with responsibility for checking the validity of the health declaration of a vessel and for declaring free pratique.
coast guard <i>Alias:</i>	7	Organisation keeping watch on shipping and coastal waters according to governmental law; normally the authority with responsibility for search and rescue.
agricultural <i>Alias:</i>	8	The authority with responsibility for preventing infection of the agriculture of a country and for the protection of the agricultural interests of a country
military <i>Alias:</i>	9	A military authority which provides control of access to or approval for transit through designated areas or airspace.
private company <i>Alias:</i>	10	a private or publicly owned company or commercial enterprise which exercises control of facilities, for example a callibration area.
maritime police <i>Alias:</i>	11	a governmental or military force with jurisdiction in territorial waters. Examples could include Gendarmerie Maritime, Carabinerie, and Guardia Civil.
environmental <i>Alias:</i>	12	an authority with responsibility for the protection of the environment.
fishery <i>Alias:</i>	13	an authority with responsibility for the control of fisheries.
finance <i>Alias:</i>	14	an authority with responsibility for the control and movement of money.
maritime <i>Alias:</i>	15	a national or regional authority charged with administration of maritime affairs.

categoryOfCargo

«enumeration»

Alias: CATCGO

Package: MPADomain

Subclass Of:

Notes: Remarks:

If item 7 is used, the nature of dangerous or hazardous cargoes can be amplified with category of dangerous or hazardous cargo.

Listed Values

Label	Code	Notes / Definition
bulk <i>Alias:</i>	1	Normally dry cargo which is transported to and from the vessel on conveyors or grabs
container <i>Alias:</i>	2	One of a number of standard sized cargo carrying units, secured using standard corner attachments and bars
general <i>Alias:</i>	3	Break bulk cargo normally loaded by crane
liquid <i>Alias:</i>	4	Any cargo loaded by pipeline
passenger <i>Alias:</i>	5	A fee paying traveller
livestock <i>Alias:</i>	6	Live animals carried in bulk
dangerous or hazardous <i>Alias:</i>	7	Dangerous or hazardous cargo as described by the IMO International Maritime Dangerous Goods code

categoryOfMarineService**«enumeration»***Alias:* CATMSV*Package:* MPADomain*Subclass Of:**Notes:*Listed Values

Label	Code	Notes / Definition
Vessel Traffic Service <i>Alias:</i>	1	A service implemented by a relevant authority primarily designed to improve safety and efficiency of traffic flow and the protection of the environment (International Hydrographic Dictionary, S32)
Port Service <i>Alias:</i>	3	A service provided for the control and operation of a place with terminal and transfer facilities for loading and discharging cargo or passengers (adapted from International Hydrographic Dictionary S32/ port)
Ship Reporting Service <i>Alias:</i>	4	A service established by a relevant authority consisting of one or more reporting points or lines at which ships are required to report their identity, course, speed and other data to the monitoring authority.
Broadcast Service <i>Alias:</i>	5	A service consisting of a radio transmission to provide relevant information to the mariner, e.g. natural conditions, safety, traffic information

categoryOfRelationship

«enumeration»

Alias: CATREL

Package: MPADomain

Subclass Of:

Notes: This attribute expresses the level of insistence for or against an action or activity

Listed Values

Label	Code	Notes / Definition
prohibited <i>Alias:</i>	1	use of facility, waterway or service is forbidden
not recommended <i>Alias:</i>	2	use of facility, waterway or service is not recommended
permitted <i>Alias:</i>	3	use of facility, waterway, or service is permitted but not required
recommended <i>Alias:</i>	4	use of facility, waterway, or service is recommended
required <i>Alias:</i>	5	use of facility, waterway, or service is required

categoryOfShipReport

«enumeration»

Alias: CATREP

Package: MPADomain

Subclass Of:

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

Listed Values

Label	Code	Notes / Definition
sailing plan <i>Alias:</i>	1	before or as near as possible to the time of departure from a port within a system or when entering the area covered by a system [for instance A, B, J, X etc]
position report <i>Alias:</i>	2	when necessary to ensure effective operation of the system

deviation report <i>Alias:</i>	3	when the ship's position varies significantly from the position that would have been predicted from previous reports, when changing the reported route, or as decided by the master
final report <i>Alias:</i>	4	on arrival at the destination or on leaving the area covered by the system
dangerous goods report <i>Alias:</i>	5	when an incident takes place involving the loss or likely loss overboard of packaged dangerous goods, including those in freight containers, portable tanks, road and rail vehicles and shipborne barges, into the sea
harmful substances report <i>Alias:</i>	6	when an incident takes place involving the discharge or probable discharge of oil (Annex I of MARPOL 73/78) or noxious liquid substances in bulk (Annex II of MARPOL 73/78)
marine pollutants report <i>Alias:</i>	7	in the case of the loss or likely loss overboard of harmful substances in packaged form, including those in freight containers, portable tanks, road and rail vehicles and shipborne barges identified in the International Maritime Goods Code as marine pollutants (Annex III of MARPOL 73/78).
any other report <i>Alias:</i>	8	any other report should be made in accordance with the system procedures as notified in accordance with paragraph 9 of the general principles

categoryOfText

«enumeration»

Alias: CATTXT

Package: MPADomain

Subclass Of:

Notes:

Listed Values

Label	Code	Notes / Definition
abstract or summary <i>Alias:</i>	1	A statement summarizing the important points of a text.
extract <i>Alias:</i>	2	An excerpt or excerpts from a text.
full text <i>Alias:</i>	3	The whole text

comparisonOperator

«enumeration»

Alias: COMPOP

Package: MPADomain

Subclass Of:

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

Listed Values

Label	Code	Notes / Definition
greater than <i>Alias:</i>	1	The value of the left value is greater than that of the right. (http://en.wikipedia.org/wiki/Logical_connective)
greater than or equal to <i>Alias:</i>	2	The value of the left expression is greater than or equal to that of the right. (http://en.wikipedia.org/wiki/Logical_connective)
less than <i>Alias:</i>	3	The value of the left expression is less than that of the right. (http://en.wikipedia.org/wiki/Logical_connective)
less than or equal to <i>Alias:</i>	4	The value of the left expression is less than or equal to that of the right. (http://en.wikipedia.org/wiki/Logical_connective)
equal to <i>Alias:</i>	5	The two values are equivalent. (adapted http://en.wikipedia.org/wiki/Logical_connective)
not equal to <i>Alias:</i>	6	The two values are not equivalent. (adapted http://en.wikipedia.org/wiki/Logical_connective)

dayOfWeek

«enumeration»

Alias: DYOFWK

Package: MPADomain

Subclass Of:

Notes:

Listed Values

Label	Code	Notes / Definition
monday <i>Alias:</i>	1	monday the day of the week before Tuesday and following Sunday
tuesday <i>Alias:</i>	2	the day of the week before Wednesday and following Monday
wednesday <i>Alias:</i>	3	wednesday the day of the week before Thursday and following Tuesday

thursday <i>Alias:</i>	4	thursday the day of the week before Friday and following Wednesday
friday <i>Alias:</i>	5	friday the day of the week before Saturday and following Thursday
saturday <i>Alias:</i>	6	saturday the day of the week before Sunday and following Friday (together with Sunday forming part of the weekend)
sunday <i>Alias:</i>	7	sunday the day of the week before Monday and following Saturday (together with Saturday forms part of the weekend)

jurisdiction

«enumeration»

Alias: JRSDTN

Package: MPADomain

Subclass Of:

Notes: The jurisdiction applicable to an administrative area.

Listed Values

Label	Code	Notes / Definition
international <i>Alias:</i>	1	involving more than one country; covering more than one national area.
national <i>Alias:</i>	2	an area administered or controlled by a single nation.
national sub-division <i>Alias:</i>	3	an area smaller than the nation in which it lies.

logicalConnectives

«enumeration»

Alias: LOGCON

Package: MPADomain

Subclass Of:

Notes:

Listed Values

Label	Code	Notes / Definition
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logical conjunction <i>Alias:</i>	1	all the conditions described by the other attributes of the object, or sub-attributes of the same complex attribute, are true
logical disjunction <i>Alias:</i>	2	at least one of the conditions described by the other attributes of the object, or sub-attributes of the same complex attributes, is true

membership

«enumeration»

Alias: MBRSHP

Package: MPADomain

Subclass Of:

Notes: Definition required

Listed Values

Label	Code	Notes / Definition
included <i>Alias:</i>	1	Vessels with these characteristics are included in the regulation/restriction/recommendation/nautical information.
excluded <i>Alias:</i>	2	Vessels with these characteristics are excluded from the regulation/restriction/recommendation/nautical information.

sourceType

«enumeration»

Alias: SORTYP

Package: MPADomain

Subclass Of:

Notes:

Listed Values

Label	Code	Notes / Definition
international law <i>Alias:</i>	1	treaty, convention, or international agreement; or European Union law
publication issued by international organisation <i>Alias:</i>	2	Publication issued by an international administration
national law or regulation <i>Alias:</i>	3	legislation by a national government

publication issued by national administration <i>Alias:</i>	4	publication issued by a national administration
local law or regulation <i>Alias:</i>	5	law made by a national sub-division such as a state, province, or local government
publication issued by local administration <i>Alias:</i>	6	publication issued by a local administration, such as local government or port authority
mariner report, confirmed <i>Alias:</i>	7	Reported by mariner(s) and confirmed by another source
mariner report, not confirmed <i>Alias:</i>	8	reported by mariner(s) but not confirmed
industry publications and reports <i>Alias:</i>	9	shipping and other industry publication, including graphics, charts and web sites
remotely sensed images <i>Alias:</i>	10	information obtained from satellite images
photographs <i>Alias:</i>	11	information obtained from photographs
products issued by HO services <i>Alias:</i>	12	information obtained from products issued by Hydrographic Offices
news media <i>Alias:</i>	13	information obtained from news media
traffic data <i>Alias:</i>	14	information obtained from the analysis of traffic data

timeReference

«enumeration»

Alias: TIMREF

Package: MPADomain

Subclass Of:

Notes:

Listed Values

Label	Code	Notes / Definition
UTC <i>Alias:</i>	1	Coordinated Universal Time
LT <i>Alias:</i>	2	Local time

categoryOfVessel

«S100_Codelist»

Alias: CATVSL

Package: MPADomain

Subclass Of:

Notes: The role or type of vessel

Tag: codelistType open enumeration

Tag: encoding other: [something]

Listed Values

Label	Code	Notes / Definition
general cargo vessel <i>Alias:</i>	1	a vessel designed to carry general cargo
container carrier <i>Alias:</i>	2	a vessel designed to carry ISO containers
tanker <i>Alias:</i>	3	a vessel designed to carry bulk liquid or gas, including LPG and LNG
bulk carrier <i>Alias:</i>	4	a vessel designed to carry bulk solid material
passenger vessel <i>Alias:</i>	5	a vessel designed to carry passengers; often a cruise ship
roll-on roll-off <i>Alias:</i>	6	a vessel designed to allow road vehicles to be driven on and off; often a ferry
refrigerated cargo vessel <i>Alias:</i>	7	a vessel designed to carry refrigerated cargo
fishing vessel <i>Alias:</i>	8	a vessel designed to catch or hunt fish
service <i>Alias:</i>	9	a vessel which provides a service such as a tug, anchor handler, survey or supply vessel
warship <i>Alias:</i>	10	a vessel designed for the conduct of military operations
towed or pushed composite unit <i>Alias:</i>	11	either a tug and tow, or any combination of a tug providing propulsion to barges or vessels secured ahead or alongside
tug and tow <i>Alias:</i>	12	a combination of tug(s) and non-powered tow(s)

onlineFunction

«S100_Codelist»

Alias: ONLFUN

Package: MPADomain

Subclass Of:

Notes:

Tag: codelistType open enumeration

Tag: encoding other: [something]

Listed Values

Label	Code	Notes / Definition
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download <i>Alias:</i>	1	online instructions for transferring data from one storage device or system to another. (ISO 19115:2014)
information <i>Alias:</i>	2	online information about the resource (ISO 19115:2014)
offlineAccess <i>Alias:</i>	3	online instructions for requesting the resource from the provider (ISO 19115:2014)
order <i>Alias:</i>	4	online order process for obtaining the resource (ISO 19115:2014).
search <i>Alias:</i>	5	online search interface for seeking out information about the resource (ISO 19115:2014).
completeMetadata <i>Alias:</i>	6	complete metadata provided (ISO 19115:2014).
browseGraphic <i>Alias:</i>	7	browse graphic provided (ISO 19115:2014).
upload <i>Alias:</i>	8	online resource upload capability provided (ISO 19115:2014).
emailService <i>Alias:</i>	9	online email service provided (ISO 19115:2014)
browsing <i>Alias:</i>	10	online browsing provided (ISO 19115:2014)
fileAccess <i>Alias:</i>	11	online file access provided (ISO 19115:2014).

telcomService

«S100_Codelist»

Alias:

Package: MPADomain

Subclass Of:

Notes: methods to communicate between involved parties over a distance

Tag: codelistType open enumeration

Tag: encoding other: [something]

Listed Values

Label	Code	Notes / Definition
voice <i>Alias:</i>	1	The transfer or exchange of information by using sounds that are being made by mouth and throat when speaking
facsimile <i>Alias:</i>	2	a system of transmitting and reproducing graphic matter (as printing or still pictures) by means of signals sent over telephone lines
sms <i>Alias:</i>	3	Short Message Service, a form of text messaging communication on phones and mobile phones

data <i>Alias:</i>	4	facts or information used usually to calculate, analyze, or plan something
streamedData <i>Alias:</i>	5	Streamed data is data that that is constantly received by and presented to an end-user while being delivered by a provider.
telex <i>Alias:</i>	6	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)
telegraph <i>Alias:</i>	7	an apparatus, system, or process for communication at a distance by electric transmission over wire
email <i>Alias:</i>	8	Messages and other data exchanged between individuals using computers in a network.

vesselsCharacteristicsUnit

Alias: VSLUNT

Package: MPADomain

Subclass Of:

Notes:

Listed Values

Label	Code	Notes / Definition
metre <i>Alias:</i>	1	The metre (or meter) is the base unit of length in the International System of Units (SI). It is defined as the distance travelled by light in vacuum in 1/299,792,458 of a second.
foot <i>Alias:</i>	2	A foot (plural: feet) is a non-SI unit of length in a number of different systems including English units, Imperial units, and United States customary units. The most commonly used foot today is the international foot. There are three feet in a yard and 12 inches in a foot.

metric ton <i>Alias:</i>	3	The tonne or metric ton (U.S.), often redundantly referred to as a metric tonne, is a unit of mass equal to 1,000 kg (2,205 lb) or approximately the mass of one cubic metre of water at four degrees Celsius. It is sometimes abbreviated as mt in the United States, but this conflicts with other SI symbols. The tonne is not a unit in the International System of Units (SI), but is accepted for use with the SI. In SI units and prefixes, the tonne is a megagram (Mg). The Imperial and US customary units comparable to the tonne are both spelled ton in English, though they differ in mass. Pronunciation of tonne (the word used in the UK) and ton is usually identical, but is not too confusing unless accuracy is important as the tonne and UK long ton differ by only 1.6%.
ton <i>Alias:</i>	4	Long ton (weight ton or imperial ton) is the name for the unit called the "ton" in the avoirdupois or Imperial system of measurements, as used in the United Kingdom and several other Commonwealth countries. It has been mostly replaced by the tonne, and in the United States by the short ton. One long ton is equal to 2,240 pounds (1,016 kg) or 35 cubic feet (0.9911 m ³) of salt water with a density of 64 lb/ft ³ (1.025 g/ml). It has some limited use in the United States, most commonly in measuring the displacement of ships, and was the unit prescribed for warships by the Washington Naval Treaty—for example battleships were limited to a mass of 35,000 long tons (36,000 t; 39,000 ST).
short ton <i>Alias:</i>	5	The short ton is a unit of weight equal to 2,000 pounds (907.18474 kg). In the United States it is often called simply ton without distinguishing it from the metric ton (tonne, 1,000 kilograms) or the long ton (2,240 pounds / 1,016.0469088 kilograms); rather, the other two are specifically noted. There are, however, some U.S. applications for which unspecified tons normally means long tons (for example, Navy ships) or metric tons (world grain production figures). Both the long and short ton are defined as 20 hundredweights, but a hundredweight is 100 pounds (45.359237 kg) in the U.S. system (short or net hundredweight) and 112 pounds (50.80234544 kg) in the Imperial system (long or gross hundredweight).

gross ton <i>Alias:</i>	6	<p>Gross tonnage (GT) is a function of the volume of all ship's enclosed spaces (from keel to funnel) measured to the outside of the hull framing. There is a sliding scale factor. So GT is a kind of capacity-derived index that is used to rank a ship for purposes of determining manning, safety and other statutory requirements and is expressed simply as GT, which is a unitless entity, even though its derivation is tied to the cubic meter unit of volumetric capacity.</p> <p>Tonnage measurements are now governed by an IMO Convention (International Convention on Tonnage Measurement of Ships, 1969 (London-Rules)), which applies to all ships built after July 1982. In accordance with the Convention, the correct term to use now is GT, which is a function of the moulded volume of all enclosed spaces of the ship.</p>
net ton <i>Alias:</i>	7	<p>Net tonnage (NT) is based on a calculation of the volume of all cargo spaces of the ship. It indicates a vessel's earning space and is a function of the moulded volume of all cargo spaces of the ship.</p>
Panama Canal/Universal Measurement System net tonnage <i>Alias:</i>	8	<p>The Panama Canal/Universal Measurement System (PC/UMS) is based on net tonnage, modified for Panama Canal purposes. PC/UMS is based on a mathematical formula to calculate a vessel's total volume; a PC/UMS net ton is equivalent to 100 cubic feet of capacity.</p>
Suez Canal Net Tonnage <i>Alias:</i>	9	<p>The Suez Canal Net Tonnage (SCNT) is derived with a number of modifications from the former net register tonnage of the Moorsom System and was established by the International Commission of Constantinople in its Protocol of 18 December 1873. It is still in use, as amended by the Rules of Navigation of the Suez Canal Authority, and is registered in the Suez Canal Tonnage Certificate.</p>
none <i>Alias:</i>	10	<p>Can be used for net and gross tonnages, including Panama Canal/Universal Measurement System net tonnage and The Suez Canal Net Tonnage.</p>

cardinalDirection

Alias: CARDIR

Package: MPADomain

Subclass Of:

Notes: Principal and intermediate compass points.

Listed Values

Label	Code	Notes / Definition
north <i>Alias:</i>	1	
northnortheast <i>Alias:</i>	2	
northeast <i>Alias:</i>	3	
eastnortheast <i>Alias:</i>	4	
east <i>Alias:</i>	5	
eastsoutheast <i>Alias:</i>	6	
southeast <i>Alias:</i>	7	
southsoutheast <i>Alias:</i>	8	
south <i>Alias:</i>	9	
southsouthwest <i>Alias:</i>	10	
southwest <i>Alias:</i>	11	
westsouthwest <i>Alias:</i>	12	
west <i>Alias:</i>	13	
westnorthwest <i>Alias:</i>	14	
northwest <i>Alias:</i>	15	
northnorthwest <i>Alias:</i>	16	

categoryOfDangerousOrHazardousCargo

Alias: CATDHC

Package: MPADomain

Subclass Of:

Notes:

Listed Values

Label	Code	Notes / Definition
Class 1: Division 1.1 <i>Alias:</i>	1	Explosives, Division 1: substances and articles which have a mass explosion hazard
Class 1: Division 1.2 <i>Alias:</i>	2	Explosives, Division 2: substances and articles which have a projection hazard but not a mass explosion hazard

Class 1: Division 1.3 <i>Alias:</i>	3	Explosives, Division 3: substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard
Class 1: Division 1.4 <i>Alias:</i>	4	Explosives, Division 4: substances and articles which present no significant hazard
Class 1: Division 1.5 <i>Alias:</i>	5	Explosives, Division 5: very insensitive substances which have a mass explosion hazard
Class 1: Division 1.6 <i>Alias:</i>	6	Explosives, Division 6: extremely insensitive articles which do not have a mass explosion hazard
Class 2.1 <i>Alias:</i>	7	Gases, flammable gases
Class 2.2 <i>Alias:</i>	8	Gases, non-flammable, non-toxic gases
Class 2.3 <i>Alias:</i>	9	Gases, toxic gases
Class 3 <i>Alias:</i>	10	flammable liquids
Class 4.1 <i>Alias:</i>	11	flammable solids, self-reactive substances and desensitized explosives
Class 4.2 <i>Alias:</i>	12	substances liable to spontaneous combustion
Class 4.3 <i>Alias:</i>	13	substances which, in contact with water, emit flammable gases
Class 5.1 <i>Alias:</i>	14	oxidizing substances
Class 5.2 <i>Alias:</i>	15	organic peroxides
Class 6.1 <i>Alias:</i>	16	toxic substances
Class 6.2 <i>Alias:</i>	17	infectious substances
Class 7 <i>Alias:</i>	18	Radioactive material
Class 8 <i>Alias:</i>	19	Corrosive substances
Class 9 <i>Alias:</i>	20	Miscellaneous dangerous substances and articles
Harmful Substances in packaged form <i>Alias:</i>	21	Harmful substances are those substances which are identified as marine pollutants in the International Maritime Dangerous Goods Code (IMDG Code). Packaged form is defined as the forms of containment specified for harmful substances in the IMDG Code. (MARPOL (73/78) Annex III)

Alias: CATIUC
Package: MPADomain
Subclass Of:
Notes:

Listed Values

Label	Code	Notes / Definition
Category Ia <i>Alias:</i>	1	<p>Strict Nature Reserve: protected area managed mainly for science</p> <p>Area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring. (International Union for Conservation of Nature and Natural Resources publication “Guidelines for Protected Area Management Categories”, IUCN, 1994)</p>
Category Ib <i>Alias:</i>	2	<p>Wilderness Area: protected area managed mainly for wilderness protection</p> <p>Large area of unmodified or slightly modified land, and/or sea retaining its natural character and influence, without permanent or significant habitation, which is protected and managed so as to preserve its natural condition. (International Union for Conservation of Nature and Natural Resources publication “Guidelines for Protected Area Management Categories”, IUCN, 1994)</p>
Category II <i>Alias:</i>	3	<p>National Park: protected area managed mainly for ecosystem protection and recreation</p> <p>Natural area of land and/or sea, designated to (a) protect the ecological integrity of one or more ecosystems for present and future generations, (b) exclude exploitation or occupation inimical to the purposes of designation of the area and (c) provide a foundation for spiritual, scientific, educational, recreational and visitor opportunities, all of which must be environmentally and culturally compatible. (International Union for Conservation of Nature and Natural Resources publication “Guidelines for Protected Area Management Categories”, IUCN, 1994)</p>

Category III <i>Alias:</i>	4	<p>Natural Monument: protected area managed mainly for conservation of specific natural features</p> <p>Area containing one, or more, specific natural or natural/cultural feature which is of outstanding or unique value because of its inherent rarity, representative or aesthetic qualities or cultural significance. (International Union for Conservation of Nature and Natural Resources publication “Guidelines for Protected Area Management Categories”, IUCN, 1994)</p>
Category IV <i>Alias:</i>	5	<p>Habitat/Species Management Area: protected area managed mainly for conservation through management intervention</p> <p>Area of land and/or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of specific species. (International Union for Conservation of Nature and Natural Resources publication “Guidelines for Protected Area Management Categories”, IUCN, 1994)</p>
Category V <i>Alias:</i>	6	<p>Protected Landscape/Seascape: protected area managed mainly for landscape/seascape conservation and recreation</p> <p>Area of land, with coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area. (International Union for Conservation of Nature and Natural Resources publication “Guidelines for Protected Area Management Categories”, IUCN, 1994)</p>
Category VI <i>Alias:</i>	7	<p>Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems</p> <p>Area containing predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to meet community needs. (International Union for Conservation of Nature and Natural Resources publication “Guidelines for Protected Area Management Categories”, IUCN, 1994)</p>

categoryOfRestrictedArea

Alias: CATREA

Package: MPADomain

Subclass Of:

Notes: Definition required

Listed Values

Label	Code	Notes / Definition
nature reserve <i>Alias:</i>	4	A tract of land or water managed so as to preserve it's flora, fauna, physical features, etc.
bird sanctuary <i>Alias:</i>	5	A place where birds are bred and protected.
game reserve <i>Alias:</i>	6	A place where wild animals or birds hunted for sport or food are kept undisturbed for private use.
seal sanctuary <i>Alias:</i>	7	A place where seals are protected.
historic wreck area <i>Alias:</i>	10	An area around certain wrecks of historical importance to protect the wrecks from unauthorized interference by diving, salvage or deposition (including anchoring).
research area <i>Alias:</i>	20	an area where marine research takes place.
fish sanctuary <i>Alias:</i>	22	A place where fish are protected.
ecological reserve <i>Alias:</i>	23	A tract of land or water managed so as to preserve the relation of plants and living creatures to each other and to their surroundings.
environmentally sensitive sea area <i>Alias:</i>	27	A generic term which may be used to describe a wide range of areas, considered sensitive for a variety of environmental reasons.
particularly sensitive sea area <i>Alias:</i>	28	An area that needs special protection through action by IMO because of its significance for regional ecological, socio-economic or scientific reasons and because it may be vulnerable to damage by international shipping activities.
coral sanctuary <i>Alias:</i>	UNDEFINED	A place where coral is protected. To be proposed to TSMAD

CATFRP

Alias: categoryOfChannelOrFrequencyPreference

Package: MPADomain

Subclass Of:

Notes:

Tag: CamelCaseID categoryOfChannelOrFrequencyPreference

Listed Values

Label	Code	Notes / Definition
preferred calling <i>Alias:</i>	1	the first choice channel or frequency to be used when calling a radio station
alternate calling <i>Alias:</i>	2	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
preferred working <i>Alias:</i>	3	the first choice channel or frequency to be used when working with a radio station
alternate working <i>Alias:</i>	4	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

categoryOfVesselRegistry*Alias:* CATRGY*Package:* MPADomain*Subclass Of:*

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

Listed Values

Label	Code	Notes / Definition
domestic <i>Alias:</i>	1	The vessel is registered or enrolled under the same national flag as the port, harbour, territorial sea, exclusive economic zone, or administrative area in which the object that possesses this attribute applies or is located.
foreign <i>Alias:</i>	2	The vessel is registered or enrolled under a national flag different from the port, harbour, territorial sea, exclusive economic zone, or other administrative area in which the object that possesses this attribute applies or is located.

operation*Alias:* OPERAT*Package:* MPADomain*Subclass Of:*

Notes: Remarks: OPERAT is intended to be used in conjunction with other attributes (or sub-attributes of a complex attribute) to indicate how their values must be combined in order to describe a condition. Null attributes are ignored.

Example: Complex attribute underkeelAllowance with UKCFIX=2.5, UKCVAR=10.00, OPERAT=1 indicates that the under-keel allowance required is the greater of 2.5 metres or 10% of the ship's draught.

Listed Values

Label	Code	Notes / Definition
largest value <i>Alias:</i>	1	The numerically largest value computed from the applicable attributes or sub-attributes
smallest value <i>Alias:</i>	2	The numerically smallest value computed from the applicable attributes or sub-attributes

restriction

Alias: RESTRN

Package: MPADomain

Subclass Of:

Notes: Definition required.

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

The complete information about the restriction(s), actually held in handbooks or other publications, may be encoded by an associated instance of the information type **Supplementary Information** (see clause X.X) attribute *textual description*. A short explanation may be given by the use of the complex attribute *information*.

Listed Values

Label	Code	Notes / Definition
anchoring prohibited <i>Alias:</i>	1	An area within which anchoring is not permitted.
anchoring restricted <i>Alias:</i>	2	a specified area designated by appropriate authority, within which anchoring is restricted in accordance with certain specified conditions.
fishing prohibited <i>Alias:</i>	3	An area within which fishing is not permitted.
fishing restricted <i>Alias:</i>	4	a specified area designated by appropriate authority, within which fishing is restricted in accordance with certain specified conditions.
trawling prohibited <i>Alias:</i>	5	An area within which trawling is not permitted.
trawling restricted <i>Alias:</i>	6	a specified area designated by appropriate authority, within which trawling is restricted in accordance with certain specified conditions.

entry prohibited <i>Alias:</i>	7	An area within which navigation and/or anchoring is prohibited.
entry restricted <i>Alias:</i>	8	a specified area designated by appropriate authority, within which navigation is restricted in accordance with certain specified conditions.
dredging prohibited <i>Alias:</i>	9	An area within which dredging is not permitted.
dredging restricted <i>Alias:</i>	10	a specified area designated by appropriate authority, within which dredging is restricted in accordance with certain specified conditions.
diving prohibited <i>Alias:</i>	11	An area within which diving is not permitted.
diving restricted <i>Alias:</i>	12	a specified area designated by appropriate authority, within which diving is restricted in accordance with certain specified conditions.
no wake <i>Alias:</i>	13	Mariners must adjust the speed of their vessels to reduce the wave or wash which may cause erosion or disturb moored vessels.
area to be avoided <i>Alias:</i>	14	An IMO declared routeing measure comprising an area within defined limits in which either navigation is particularly hazardous or it is exceptionally important to avoid casualties and which should be avoided by all ships, or certain classes of ships.
construction prohibited <i>Alias:</i>	15	The erection of permanent or temporary fixed structures or artificial islands is prohibited.
discharging prohibited <i>Alias:</i>	16	An area in which discharging or dumping is prohibited.
discharging restricted <i>Alias:</i>	17	A specified area designated by appropriate authority, within which discharging or dumping is restricted in accordance with certain specified conditions.
industrial or mineral exploration/development prohibited <i>Alias:</i>	18	An area in which industrial or mineral exploration and development are prohibited.
industrial or mineral exploration/development restricted <i>Alias:</i>	19	A specified area designated by appropriate authority, within which industrial or mineral exploration and development is restricted in accordance with certain specified conditions.
drilling prohibited <i>Alias:</i>	20	An area in which excavating a hole on the seabed with a drill is prohibited.
drilling restricted <i>Alias:</i>	21	A specified area designated by appropriate authority, within which excavating a hole on the seabed with a drill is restricted in accordance with certain specified conditions.

removal of historical artifacts prohibited <i>Alias:</i>	22	An area in which the removal of historical artifacts is prohibited.
cargo transshipment (lightering) prohibited <i>Alias:</i>	23	An area in which cargo transshipment (lightering) is prohibited.
dragging prohibited <i>Alias:</i>	24	An area in which the dragging or anything along the seabed, e.g., bottom trawling, is prohibited.
stopping prohibited <i>Alias:</i>	25	An area in which a vessel is prohibited from stopping.
landing prohibited <i>Alias:</i>	26	An area in which landing is prohibited.
speed restricted <i>Alias:</i>	27	An area in which speed is restricted.
swimming prohibited <i>Alias:</i>	28	An area in which swimming is prohibited.

status

Alias: STATUS

Package: MPADomain

Subclass Of:

Notes: Definition required

Listed Values

Label	Code	Notes / Definition
permanent <i>Alias:</i>	1	Intended to last or function indefinitely
occasional <i>Alias:</i>	2	Acting on special occasions; happening irregularly
recommended <i>Alias:</i>	3	Presented as worthy of confidence, acceptance, use, etc.
not in use <i>Alias:</i>	4	Use has ceased, but the facility still exists intact; disused.
periodic/intermittent <i>Alias:</i>	5	Recurring at intervals
reserved <i>Alias:</i>	6	Set apart for some specific use
temporary <i>Alias:</i>	7	Meant to last only for a time
private <i>Alias:</i>	8	Administered by an individual or corporation, rather than a State or a public body.
mandatory <i>Alias:</i>	9	Compulsory; enforced.
extinguished <i>Alias:</i>	11	No longer lit
illuminated <i>Alias:</i>	12	Lit by floodlights, strip lights, etc.

historic <i>Alias:</i>	13	Famous in history; of historical interest
public <i>Alias:</i>	14	Belonging to, available to, used or shared by, the community as a whole and not restricted to private use.
synchronised <i>Alias:</i>	15	Occur at a time, coincide in point of time, be contemporary or simultaneous
watched <i>Alias:</i>	16	Looked at or observed over a period of time especially so as to be aware of any movement or change.
un-watched <i>Alias:</i>	17	Usually automatic in operation, without any permanently-stationed personnel to superintend it.
existence doubtful <i>Alias:</i>	18	A feature that has been reported but has not been definitely determined to exist.
buoyed <i>Alias:</i>	28	Marked by buoys

vesselsCharacteristics

Alias: VSLCAR
Package: MPADomain
Subclass Of:
Notes:

Listed Values

Label	Code	Notes / Definition
length overall <i>Alias:</i>	1	The maximum length of the ship (L.O.A.). (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)
length at waterline <i>Alias:</i>	2	The ship's length measured at the waterline (L.W.L.). (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)
breadth <i>Alias:</i>	3	The width or beam of the vessel. (Adapted from http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)
draught <i>Alias:</i>	4	The depth of water necessary to float a vessel fully loaded. (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)
height <i>Alias:</i>	5	The height of the highest point of a vessel's structure (e.g. radar aerial, funnel, cranes, masthead) above her waterline. (UKHO NP100/2009)

displacement tonnage <i>Alias:</i>	6	A measurement of the weight of the vessel, usually used for warships. (Merchant ships are usually measured based on the volume of cargo space; see tonnage). Displacement is expressed either in long tons of 2,240 pounds or metric tonnes of 1,000 kg. Since the two units are very close in size (2,240 pounds = 1,016 kg and 1,000 kg = 2,205 pounds), it is common not to distinguish between them. To preserve secrecy, nations sometimes misstate a warship's displacement. (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)
displacement tonnage, light <i>Alias:</i>	7	The weight of the ship excluding cargo, fuel, ballast, stores, passengers, and crew, but with water in the boilers to steaming level. (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)
displacement tonnage, loaded <i>Alias:</i>	8	The weight of the ship including cargo, passengers, fuel, water, stores, dunnage and such other items necessary for use on a voyage, which brings the vessel down to her load draft. (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)
deadweight tonnage <i>Alias:</i>	9	The difference between displacement, light and displacement, loaded. A measure of the ship's total carrying capacity. (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)
gross tonnage <i>Alias:</i>	10	The entire internal cubic capacity of the ship expressed in tons of 100 cubic feet to the ton, except certain spaces which are exempted such as: peak and other tanks for water ballast, open forecastle bridge and poop, access of hatchways, certain light and air spaces, domes of skylights, condenser, anchor gear, steering gear, wheel house, galley and cabin for passengers. (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)
net tonnage <i>Alias:</i>	11	Obtained from the gross tonnage by deducting crew and navigating spaces and allowances for propulsion machinery. (http://en.wikipedia.org/wiki/Ship_measurements ; 24 July 2010)
Panama Canal/Universal Measurement System net tonnage <i>Alias:</i>	12	the Panama Canal/Universal Measurement System (PC/UMS) is based on net tonnage, modified for Panama Canal purposes. PC/UMS is based on a mathematical formula to calculate a vessel's total volume; a PC/UMS net ton is equivalent to 100 cubic feet of capacity. (Adapted from http://en.wikipedia.org/wiki/Tonnage 4 Oct 2010)

Suez Canal net tonnage <i>Alias:</i>	13	<p>the Suez Canal Net Tonnage (SCNT) is derived with a number of modifications from the former net register tonnage of the Moorsom System and was established by the International Commission of Constantinople in its Protocol of 18 December 1873. It is still in use, as amended by the Rules of Navigation of the Suez Canal Authority, and is registered in the Suez Canal Tonnage Certificate.</p> <p>(Adapted from http://en.wikipedia.org/wiki/Tonnage 4 Oct 2010)</p>
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