

# INTERNATIONAL HYDROGRAPHIC ORGANIZATION



## MARINE PROTECTED AREA PRODUCT SPECIFICATION

### IHO Publication S-122

#### Appendix D-2 GML Data Format Documentation

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Schema **S122.xsd**

## Elements

[Applicability](#)  
[Authority](#)  
[ContactDetails](#)  
[DataCoverage](#)  
[DataQuality](#)  
[Dataset](#)  
  
[FeatureType](#)  
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[MarineProtectedArea](#)  
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[SpatialQuality](#)  
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[TextPlacement](#)  
[VesselTrafficServiceArea](#)

## Complex types

[AbstractRXNTType](#)  
[ApplicabilityType](#)  
[AuthorityType](#)  
[bearingInformationType](#)  
[contactAddressType](#)  
[ContactDetailsType](#)  
  
[CurveOrSurface](#)  
[DataCoverageType](#)  
[DataQualityType](#)  
[DatasetType](#)  
[featureNameType](#)  
[FeatureType](#)  
[fixedDateRangeType](#)  
[frequencyPairType](#)  
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[GM\\_Curve](#)  
  
[GM\\_Point](#)  
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[horizontalPositionalUncertainty](#)  
[IMemberType](#)  
[InclusionType](#)  
[informationType](#)  
[InformationTypeType](#)  
[MarineProtectedAreaType](#)  
[MemberType](#)  
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[NauticalInformationType](#)  
[NonStandardWorkingDayType](#)  
[noticeTimeType](#)  
[onlineResourceType](#)  
[orientationType](#)  
[periodicDateRangeType](#)  
[PermissionType](#)  
[PointCurveSurface](#)  
[PointOrCurve](#)  
[PointOrSurface](#)  
[QualityOfNonBathymetricDataType](#)  
[QualityOfTemporalVariationType](#)  
[radiocommunicationsType](#)  
[RecommendationsType](#)  
[RegulationsType](#)  
[RestrictedAreaNavigationalType](#)

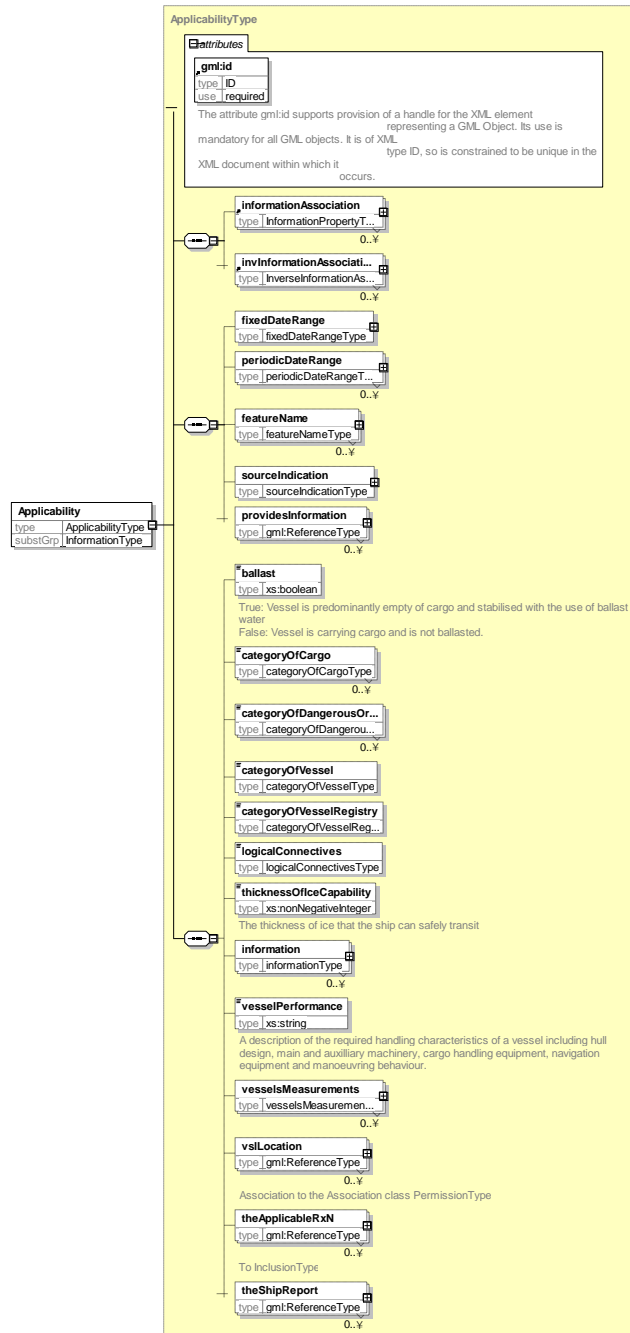
## Simple types

[actionOrActivityType](#)  
[cardinalDirectionType](#)  
[categoryOfAuthorityType](#)  
[categoryOfCargoType](#)  
[categoryOfCommPrefType](#)  
[categoryOfDangerousOrHazardousCargoType](#)  
[categoryOfMarineProtectedAreaType](#)  
[categoryOfRelationshipType](#)  
[categoryOfRestrictedAreaType](#)  
[categoryOfRXNTType](#)  
[categoryOfScheduleType](#)  
[categoryOfShipReportType](#)  
[categoryOfTemporalVariationType](#)  
[categoryOfTextType](#)  
[categoryOfVesselRegistryType](#)  
  
[categoryOfVesselTrafficServiceType](#)  
  
[categoryOfVesselType](#)  
[comparisonOperatorType](#)  
[dataAssessmentType](#)  
[dayOfWeekType](#)  
  
[Decimal0.0To360.0](#)  
[ISO3166-alpha2](#)  
[ISO639-2](#)  
[ISO639-3](#)  
[jurisdictionType](#)  
[logicalConnectivesType](#)  
[membershipType](#)  
[multiplicityOfLightsType](#)  
[NonNegativeDecimal](#)  
[NonNegativeDecimal.1](#)  
[onlineFunctionType](#)  
[operationType](#)  
[QUAPOSType](#)  
[restrictionType](#)  
[sourceTypeType](#)  
[statusType](#)  
[telecommunicationServiceType](#)  
[textJustificationType](#)  
  
[textTypeType](#)  
  
[timeReferenceType](#)  
[vesselsCharacteristicsType](#)  
[vesselsCharacteristicsUnitType](#)

[RestrictedAreaRegulatoryType](#)  
[e](#)  
[RestrictionsType](#)  
[rxnCodeType](#)  
[S100\\_TruncatedDate](#)  
[scheduleByDoWType](#)  
[ServiceHoursType](#)  
[ShipReportType](#)  
[sourceIndicationType](#)  
[SpatialQuality](#)  
[SpatialQualityPoints](#)  
[surveyDateRangeType](#)  
[telecommunicationsType](#)  
[textContentType](#)  
[TextPlacement](#)  
[tmIntervalsByDoW](#)  
[vesselsMeasurementsType](#)  
[VesselTrafficServiceAreaType](#)

element **Applicability**

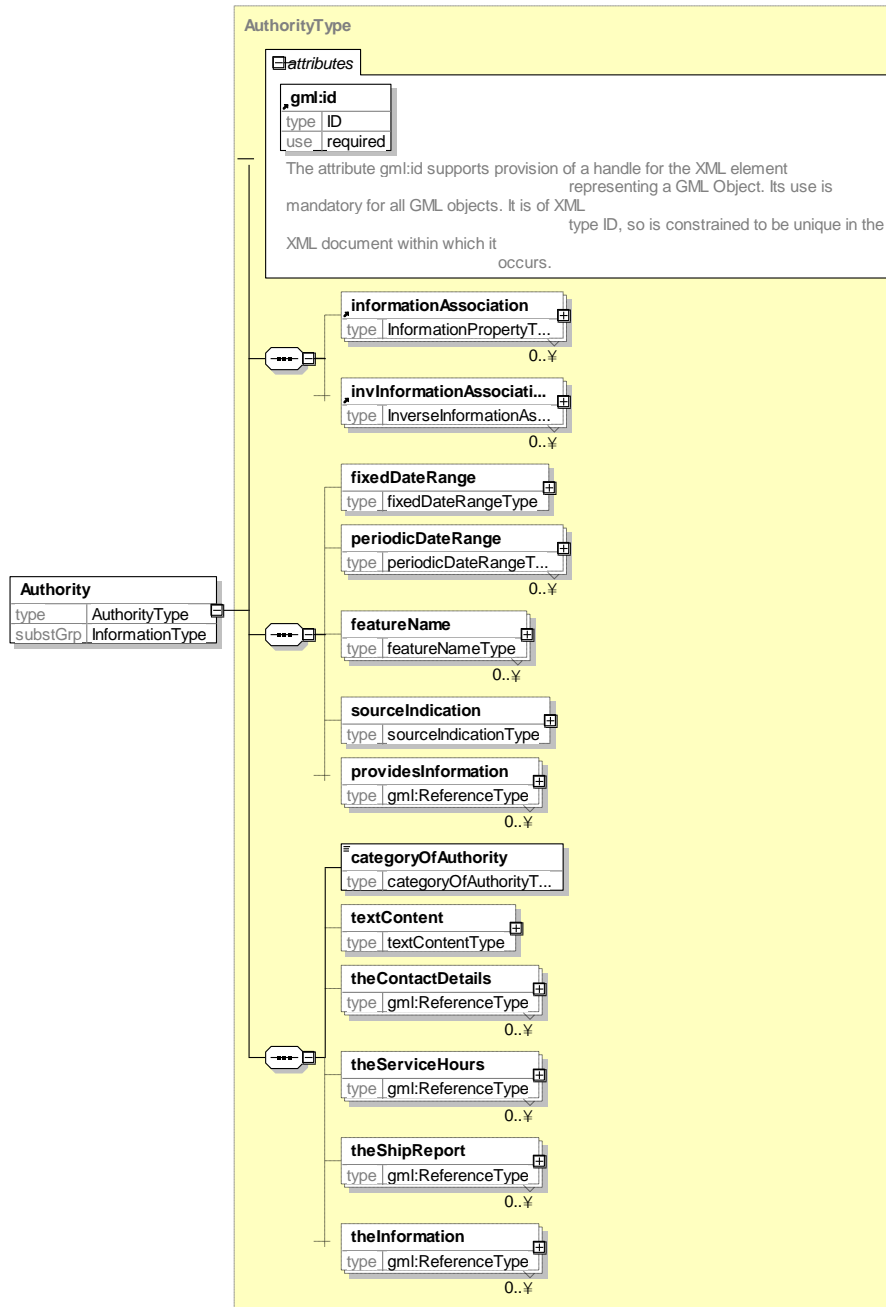
diagram

type [ApplicabilityType](#)substitution group [InformationType](#)

children [informationAssociation](#) [invInformationAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [ballast](#) [categoryOfCargo](#) [categoryOfDangerousOrHazardousCargo](#) [categoryOfVessel](#) [categoryOfVesselRegistry](#) [logicalConnectives](#) [thicknessOfIceCapability](#) [information](#) [vesselPerformance](#) [vesselsMeasurements](#) [vsilLocation](#) [theApplicableRxn](#) [theShipReport](#)

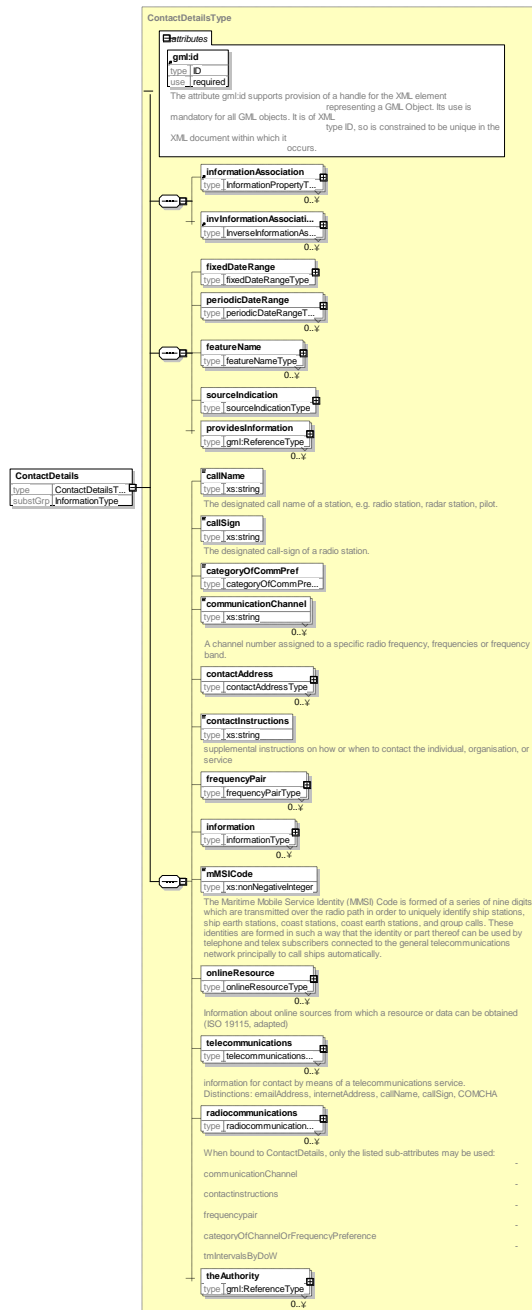
element **Authority**

diagram

type [AuthorityType](#)substitution  
group [InformationType](#)children [informationAssociation](#) [invInformationAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [categoryOfAuthority](#) [textContent](#) [theContactDetails](#) [theServiceHours](#) [theShipReport](#) [theInformation](#)

element **ContactDetails**

diagram

type **ContactDetailsType**substitution  
group **InformationType**

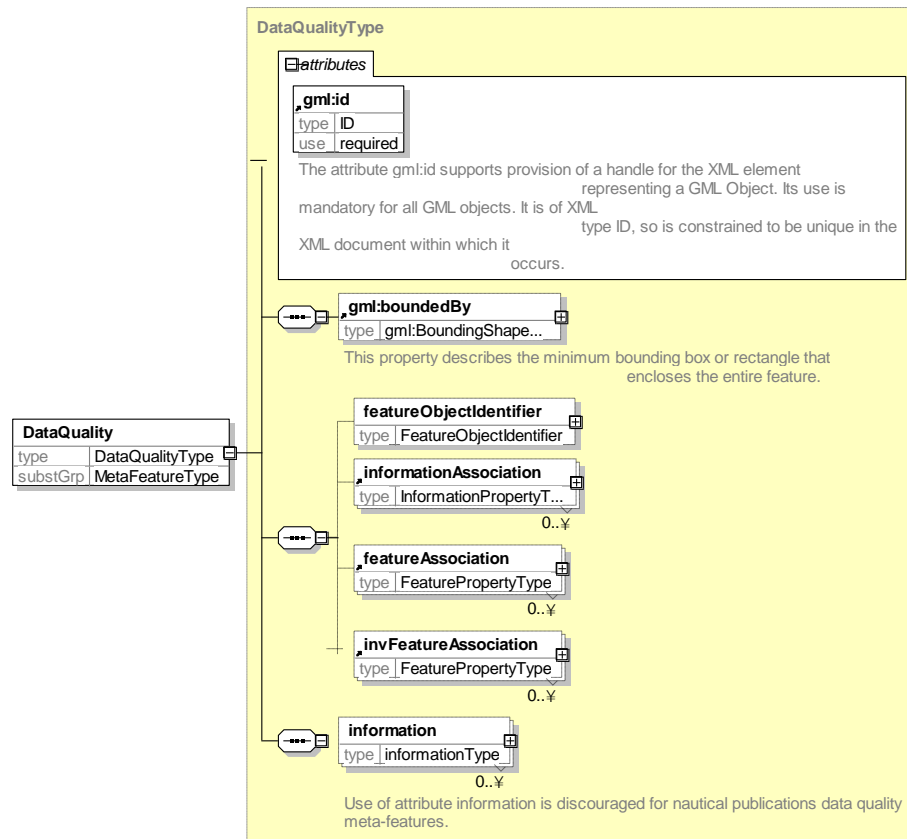
children **informationAssociation** **invInformationAssociation** **fixedDateRange** **periodicDateRange** **featureName** **sourceIndication** **providesInformation** **callName** **callSign** **categoryOfCommPref** **communicationChannel** **contactAddress** **contactInstructions** **frequencyPair** **information** **mMSICode** **onlineResource** **telecommunications** **radiocommunications** **theAuthority**





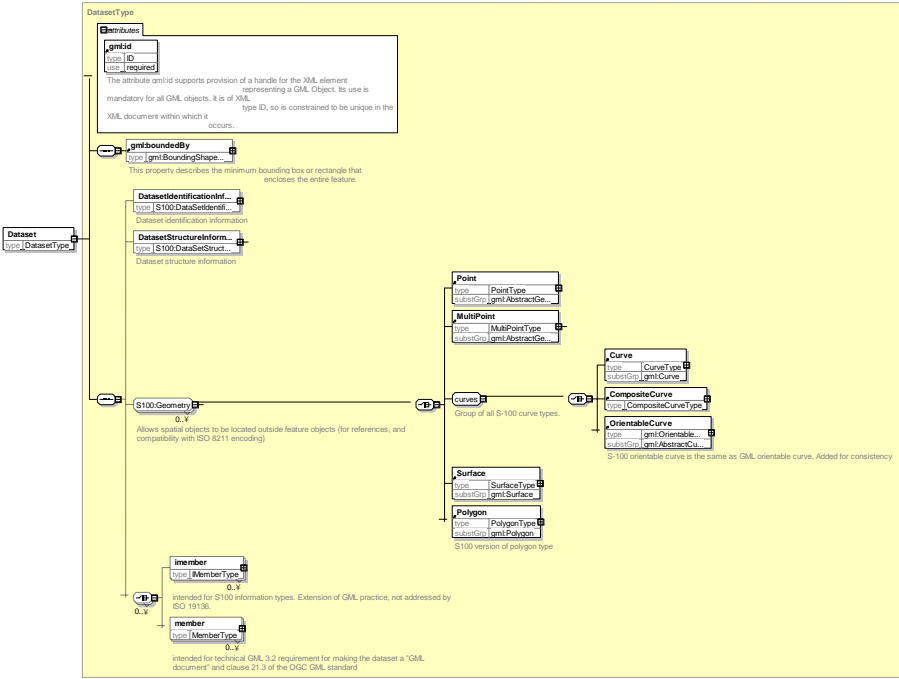
element **DataQuality**

diagram

type [DataQualityType](#)substitution  
group [MetaFeatureType](#)children **gml:boundedBy** **featureObjectIdentifier** **informationAssociation** **featureAssociation**  
**invFeatureAssociation** [information](#)

element **Dataset**

diagram

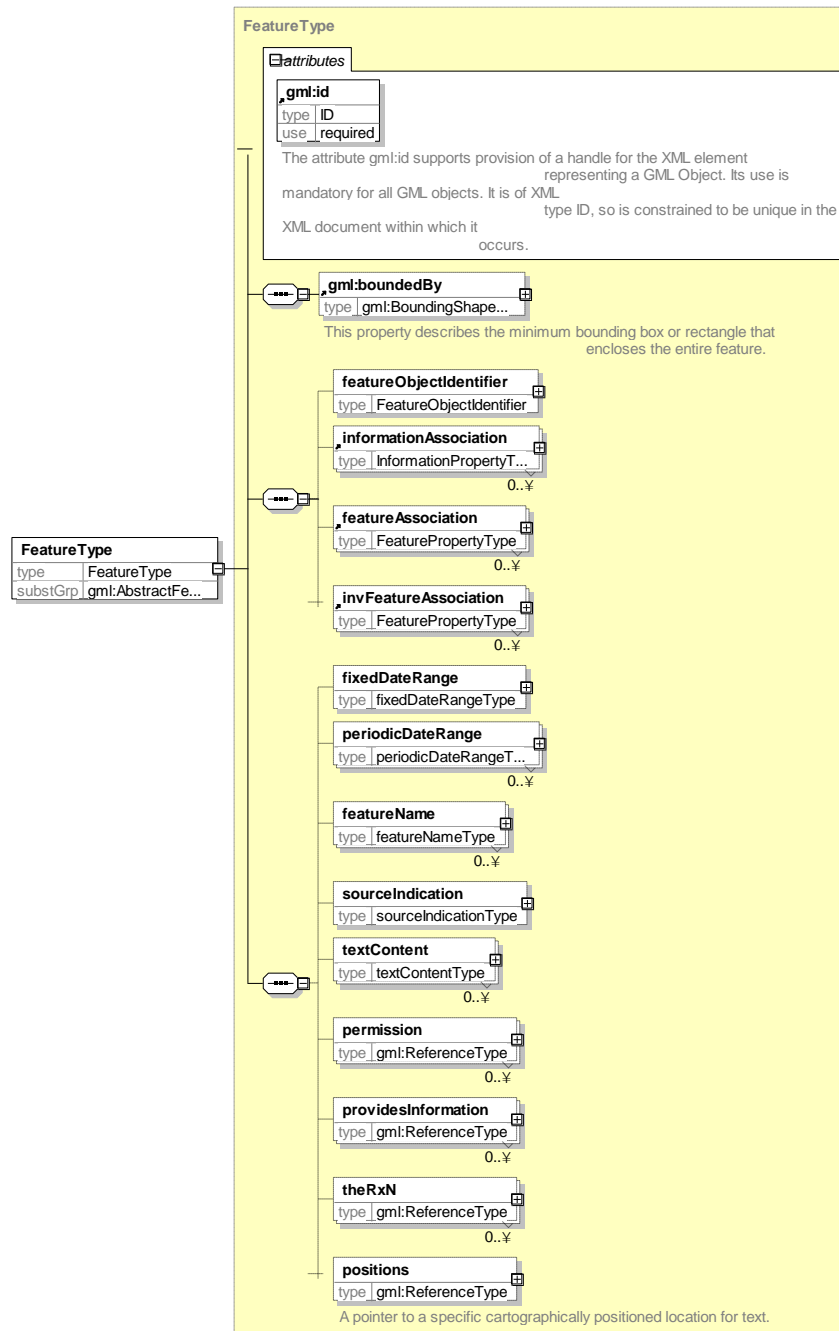


type [DatasetType](#)

children **gml:boundedBy** [DatasetIdentificationInformation](#) [DatasetStructureInformation](#) **Point** **MultiPoint** **Curve** **CompositeCurve** **OrientableCurve** **Surface** **Polygon** [inmember](#) [member](#)

element **FeatureType**

diagram



type

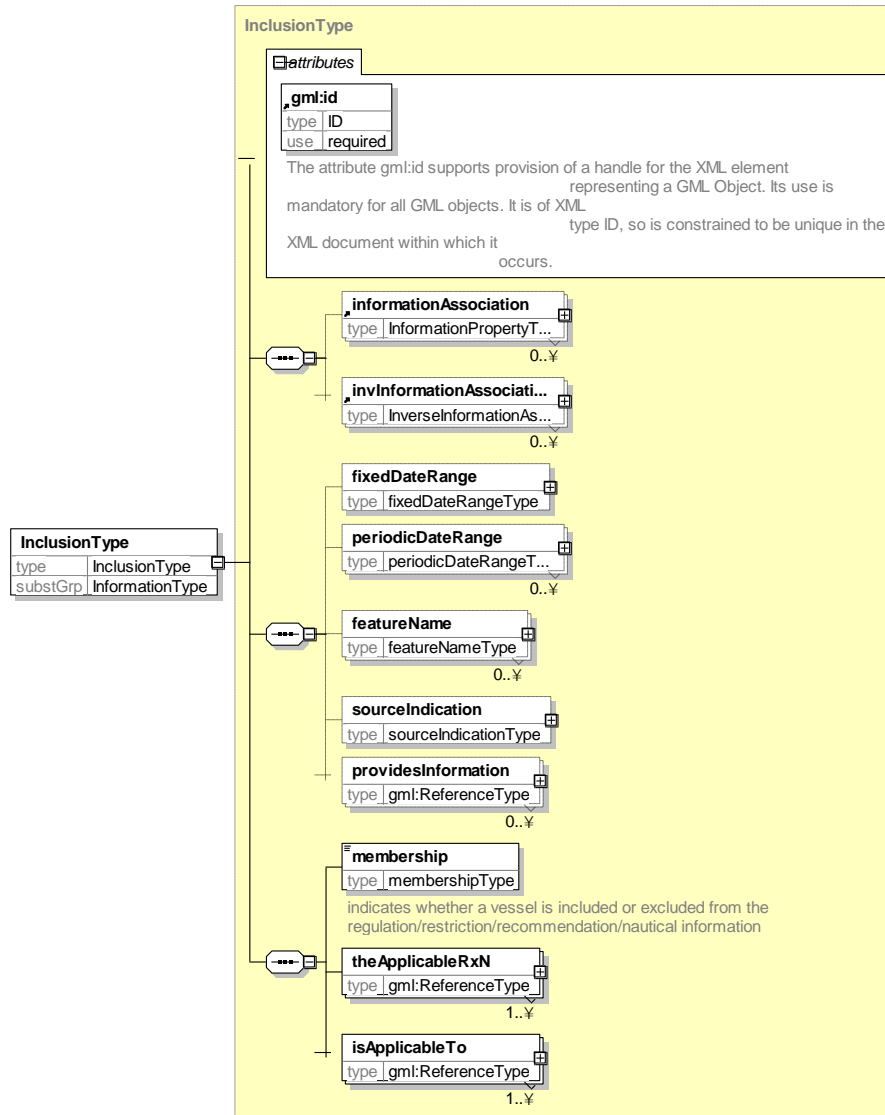
[FeatureType](#)substitution  
group**gml:AbstractFeature**

children

**gml:boundedBy** **featureObjectIdentifier** **informationAssociation** **featureAssociation** **invFeatureAssociation** [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [textContent](#) [permission](#) [providesInformation](#) [theRxn](#) [positions](#)

element **InclusionType**

diagram

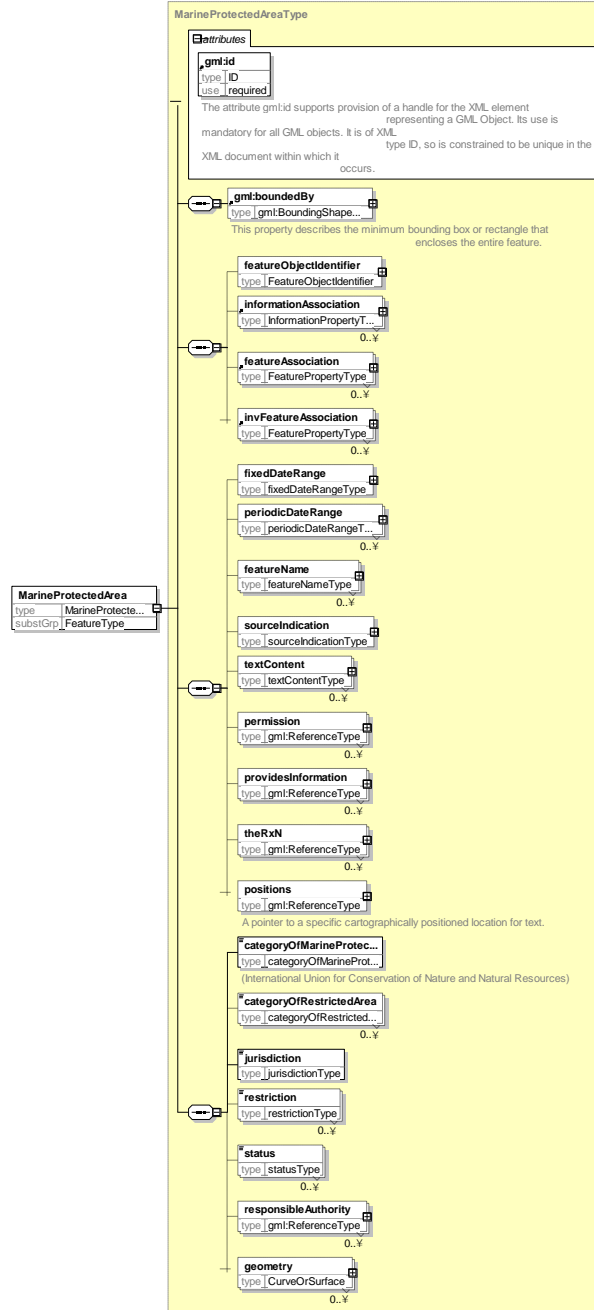
type [InclusionType](#)substitution  
group [InformationType](#)children [informationAssociation](#) [invInformationAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [membership](#) [theApplicableRxN](#) [isApplicableTo](#)

element **InformationType**

diagram	<p><b>InformationTypeType</b></p> <p><b>Attributes</b></p> <p><b>gml:id</b> type ID use required</p> <p>The attribute gml:id supports provision of a handle for the XML element representing a GML Object. Its use is mandatory for all GML objects. It is of XML type ID, so is constrained to be unique in the XML document within which it occurs.</p> <p><b>InformationType</b> type InformationTypeType</p> <p><b>informationAssociation</b> type InformationPropertyT... 0..Y</p> <p><b>invInformationAssociati...</b> type InverseInformationAs... 0..Y</p> <p><b>fixedDateRange</b> type fixedDateRangeType</p> <p><b>periodicDateRange</b> type periodicDateRangeT... 0..Y</p> <p><b>featureName</b> type featureNameType 0..Y</p> <p><b>sourceIndication</b> type sourceIndicationType</p> <p><b>providesInformation</b> type gml:ReferenceType 0..Y</p>
type	<a href="#">InformationTypeType</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociati...</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a>

element **MarineProtectedArea**

diagram

type [MarineProtectedAreaType](#)substitution  
group [FeatureType](#)

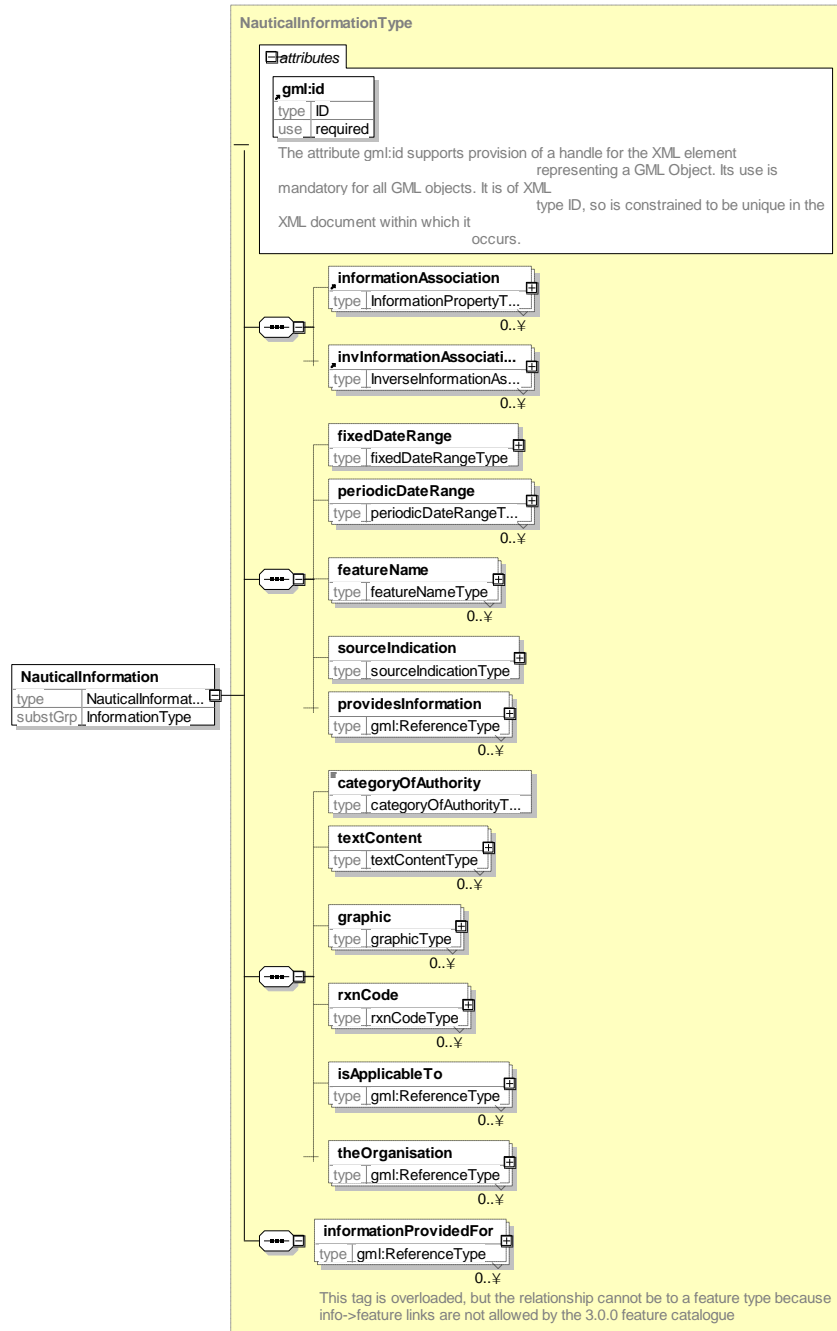
children [gml:boundedBy](#) [featureObjectIdentifier](#) [informationAssociation](#) [featureAssociation](#) [invFeatureAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [textContent](#) [permission](#) [providesInformation](#) [theRxN](#) [positions](#) [categoryOfMarineProtectedArea](#) [categoryOfRestrictedArea](#) [jurisdiction](#) [restriction](#) [status](#) [responsibleAuthority](#) [geometry](#)

element **MetaFeatureType**

diagram	<p><b>MetaFeatureType</b></p> <p><b>Attributes</b></p> <p><b>gml:id</b> type ID use required</p> <p>The attribute gml:id supports provision of a handle for the XML element representing a GML Object. Its use is mandatory for all GML objects. It is of XML type ID, so is constrained to be unique in the XML document within which it occurs.</p> <p><b>gml:boundedBy</b> type gml:BoundingShape...</p> <p>This property describes the minimum bounding box or rectangle that encloses the entire feature.</p> <p><b>featureObjectIdentifier</b> type FeatureObjectIdentifier</p> <p><b>informationAssociation</b> type InformationPropertyType... 0..1</p> <p><b>featureAssociation</b> type FeaturePropertyType 0..1</p> <p><b>invFeatureAssociation</b> type FeaturePropertyType 0..1</p> <p><b>MetaFeatureType</b> type MetaFeatureType substGrp gml:AbstractFe...</p>
type	<a href="#">MetaFeatureType</a>
substitution group	<b>gml:AbstractFeature</b>
children	<b>gml:boundedBy featureObjectIdentifier informationAssociation featureAssociation invFeatureAssociation</b>

element **NauticalInformation**

diagram



type

[NauticalInformationType](#)substitution  
group[InformationType](#)

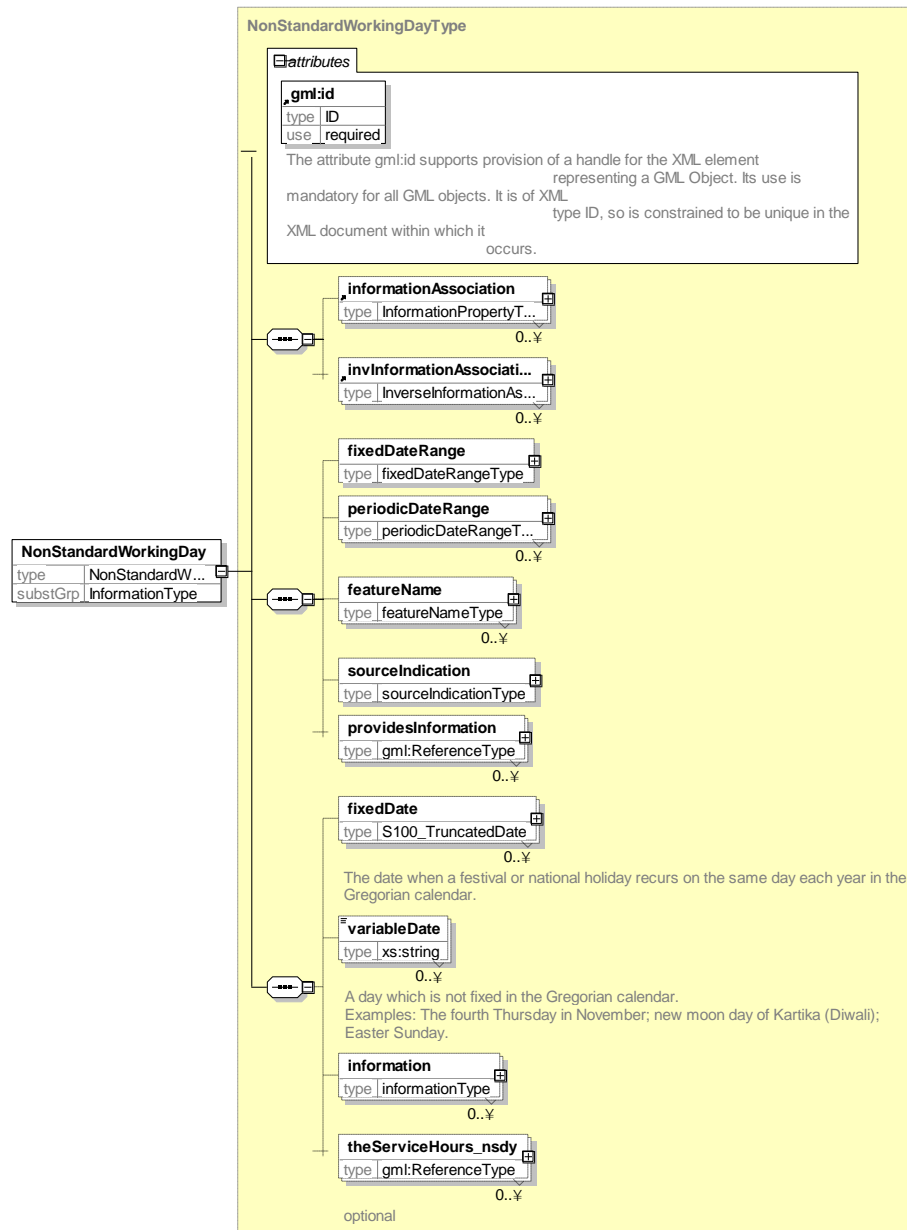
children

[informationAssociation](#) [invInformationAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [categoryOfAuthority](#) [textContent](#) [graphic](#) [rxnCode](#) [isApplicableTo](#) [theOrganisation](#) [informationProvidedFor](#)



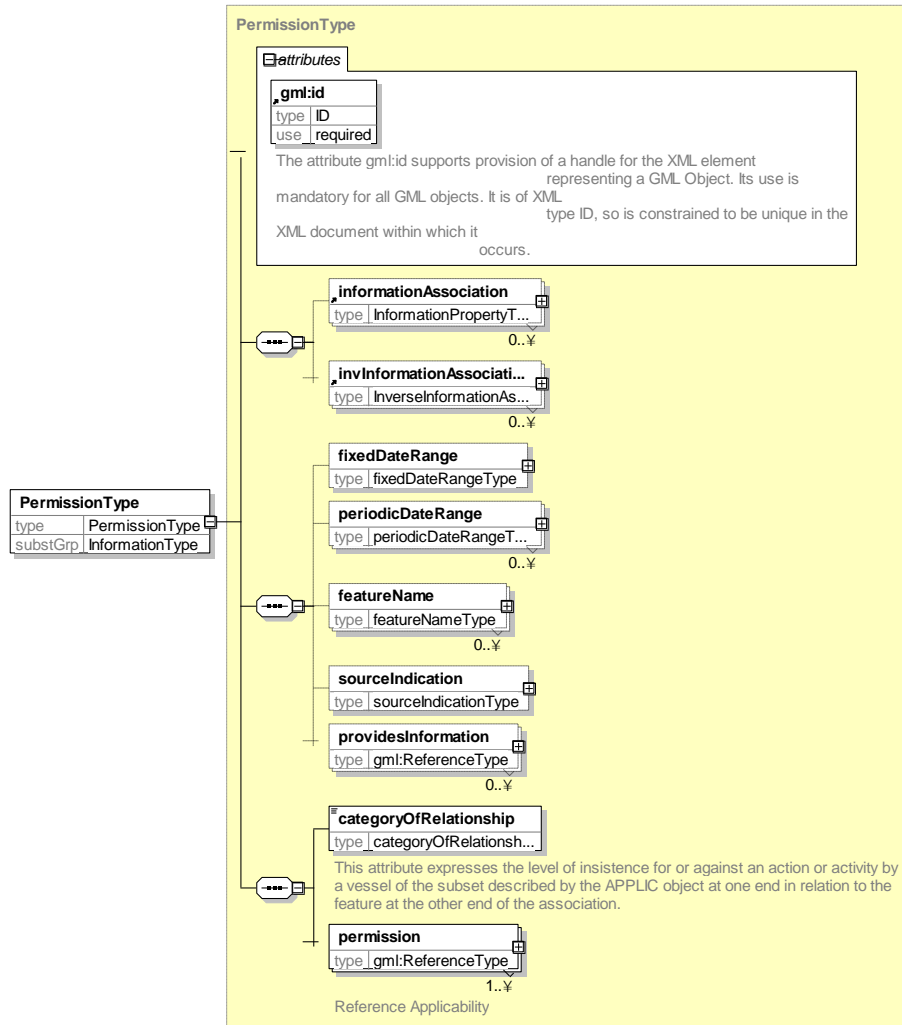
element **NonStandardWorkingDay**

diagram

type [NonStandardWorkingDayType](#)substitution  
group [InformationType](#)children **informationAssociation** **invInformationAssociation** [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [fixedDate](#) [variableDate](#) [information](#) [theServiceHours\\_nsd](#)

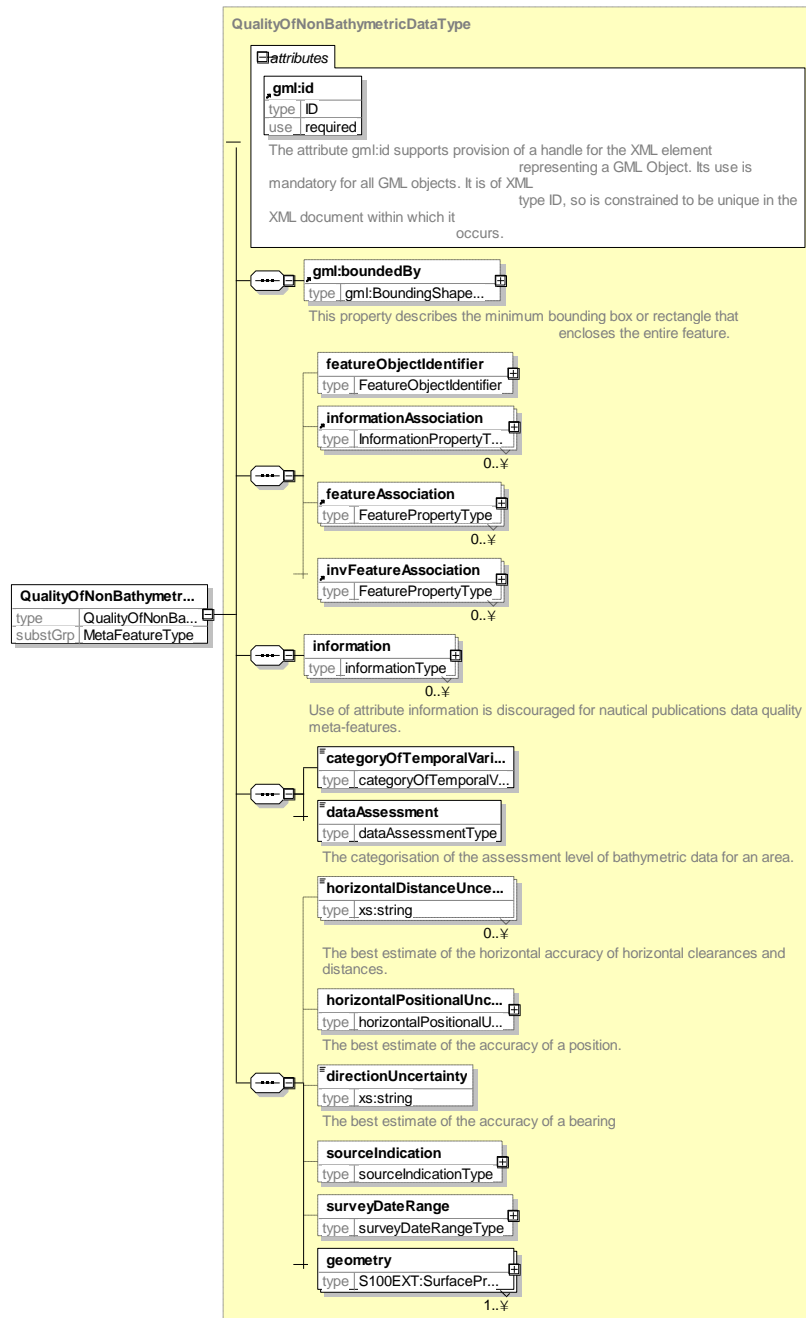
element **PermissionType**

diagram

type [PermissionType](#)substitution  
group [InformationType](#)children [informationAssociation](#) [invInformationAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [categoryOfRelationship](#) [permission](#)

element **QualityOfNonBathymetricData**

diagram

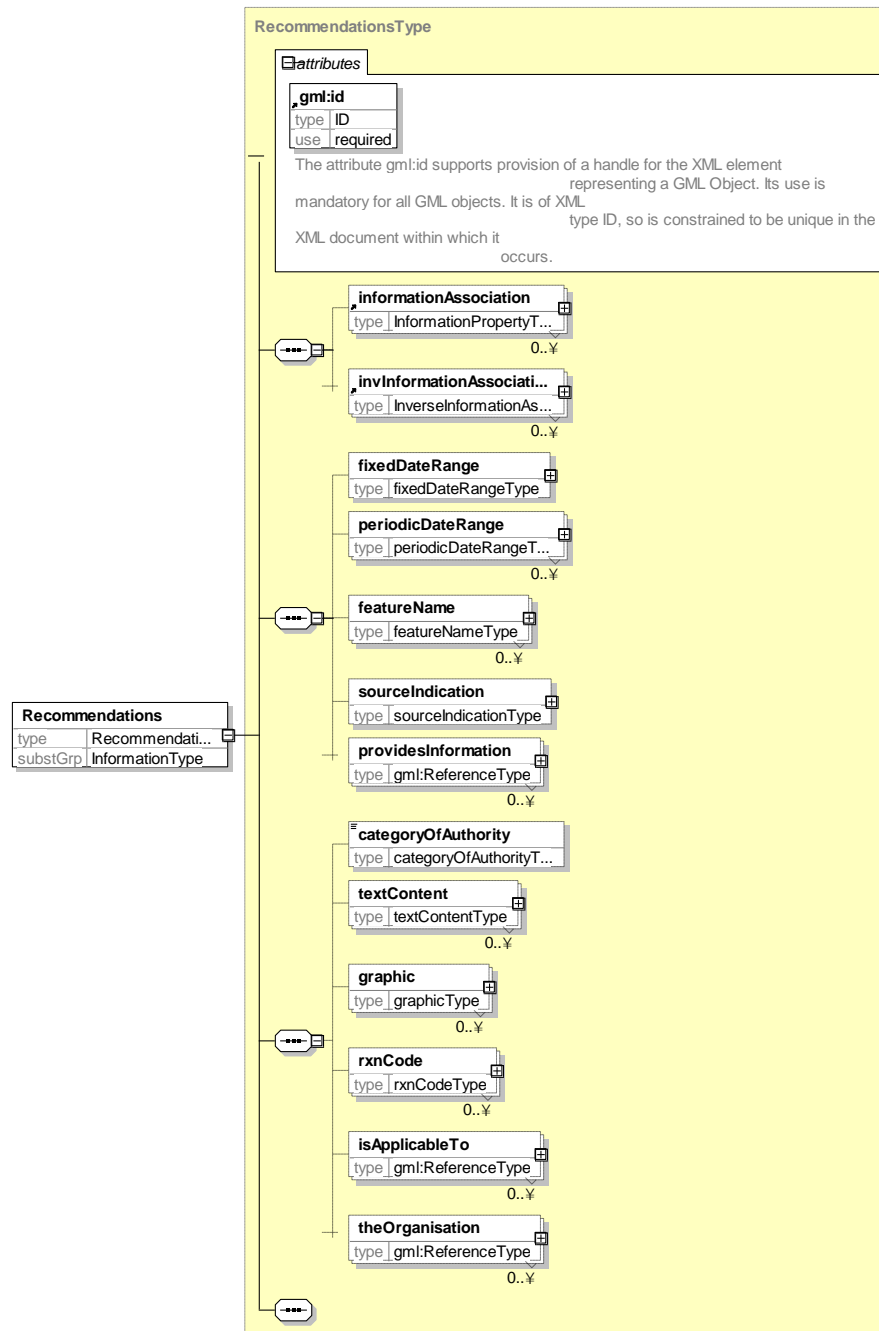
type [QualityOfNonBathymetricDataType](#)substitution  
group [MetaFeatureType](#)children **gml:boundedBy** **featureObjectIdentifier** **informationAssociation** **featureAssociation** **invFeatureAssociation** [information](#) [categoryOfTemporalVariation](#) [dataAssessment](#) [horizontalDistanceUncertainty](#) [horizontalPositionalUncertainty](#) [directionUncertainty](#) [sourceIndication](#) [surveyDateRange](#) [geometry](#)

element **QualityOfTemporalVariationType**

diagram	<p><b>QualityOfTemporalVariationType</b></p> <p><b>attributes</b></p> <p><b>gml:id</b> type ID use required</p> <p>The attribute gml:id supports provision of a handle for the XML element representing a GML Object. Its use is mandatory for all GML objects. It is of XML type ID, so is constrained to be unique in the XML document within which it occurs.</p> <p><b>gml:boundedBy</b> type gml:BoundingShape... 0..1</p> <p>This property describes the minimum bounding box or rectangle that encloses the entire feature.</p> <p><b>featureObjectIdentifier</b> type FeatureObjectIdentifier 0..1</p> <p><b>informationAssociation</b> type InformationPropertyType... 0..1</p> <p><b>featureAssociation</b> type FeaturePropertyType 0..1</p> <p><b>invFeatureAssociation</b> type FeaturePropertyType 0..1</p> <p><b>information</b> type informationType 0..1</p> <p>Use of attribute information is discouraged for nautical publications data quality meta-features.</p> <p><b>categoryOfTemporalVari...</b> type categoryOfTemporalV... 0..1</p> <p><b>dataAssessment</b> type dataAssessmentType 0..1</p> <p>The categorisation of the assessment level of bathymetric data for an area.</p>
type	<a href="#">QualityOfTemporalVariationType</a>
substitution group	<a href="#">MetaFeatureType</a>
children	<b>gml:boundedBy</b> <b>featureObjectIdentifier</b> <b>informationAssociation</b> <b>featureAssociation</b> <b>invFeatureAssociation</b> <a href="#">information</a> <a href="#">categoryOfTemporalVariation</a> <a href="#">dataAssessment</a>

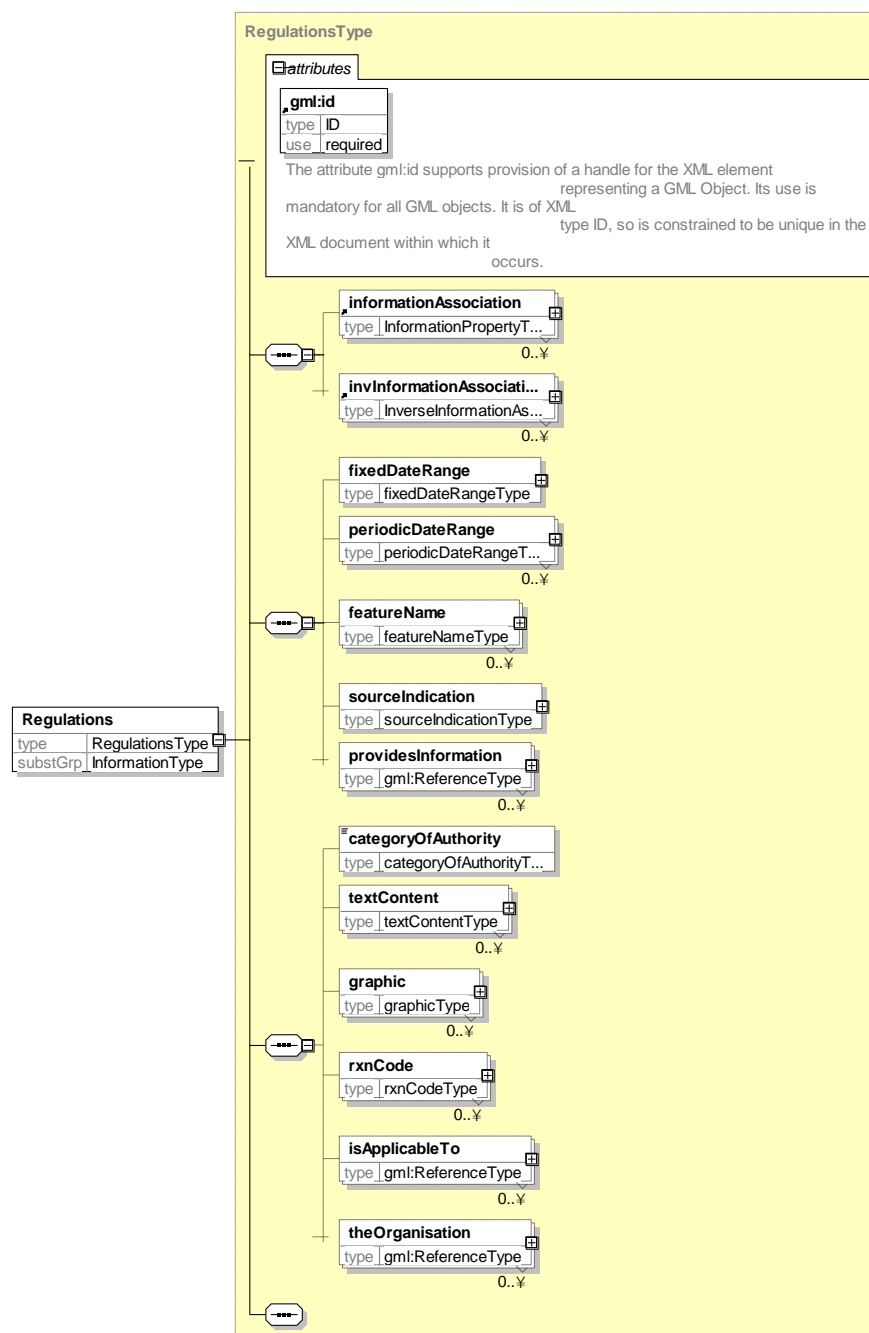
element **Recommendations**

diagram

type [RecommendationsType](#)substitution  
group [InformationType](#)children [informationAssociation](#) [invInformationAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [categoryOfAuthority](#) [textContent](#) [graphic](#) [rxnCode](#) [isApplicableTo](#) [theOrganisation](#)

element **Regulations**

diagram



type

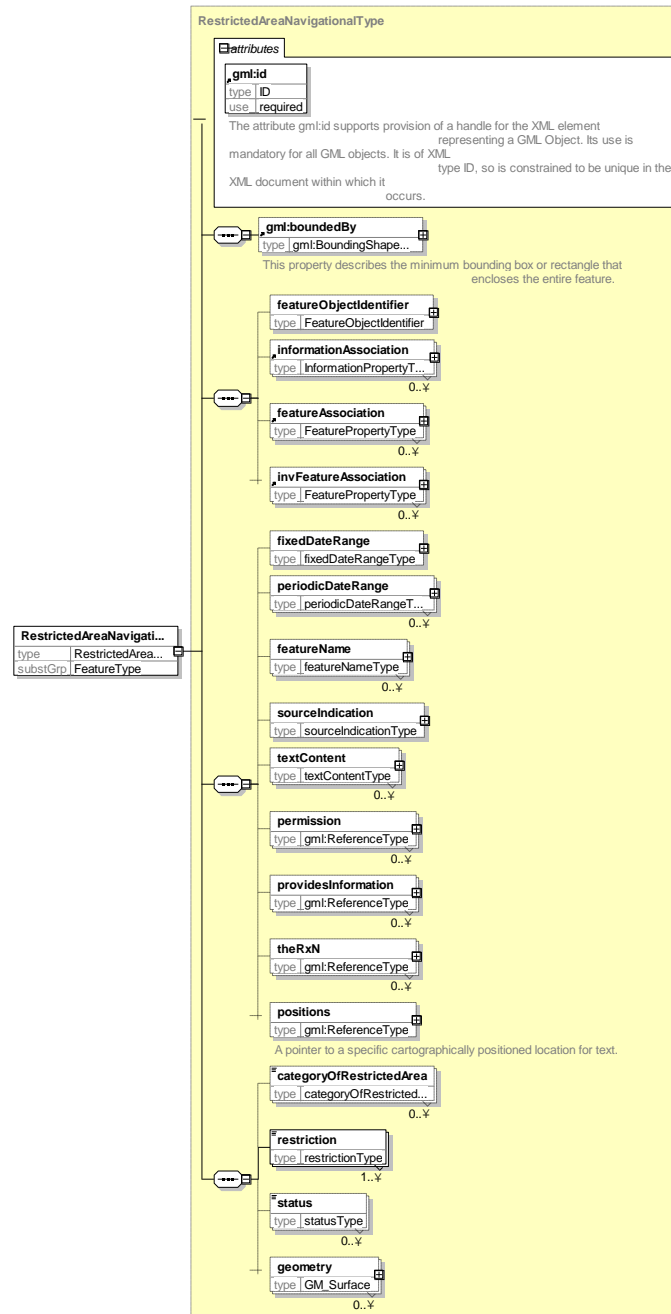
[RegulationsType](#)substitution  
group[InformationType](#)

children

[informationAssociation](#) [invInformationAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [categoryOfAuthority](#) [textContent](#) [graphic](#) [rxnCode](#) [isApplicableTo](#) [theOrganisation](#)

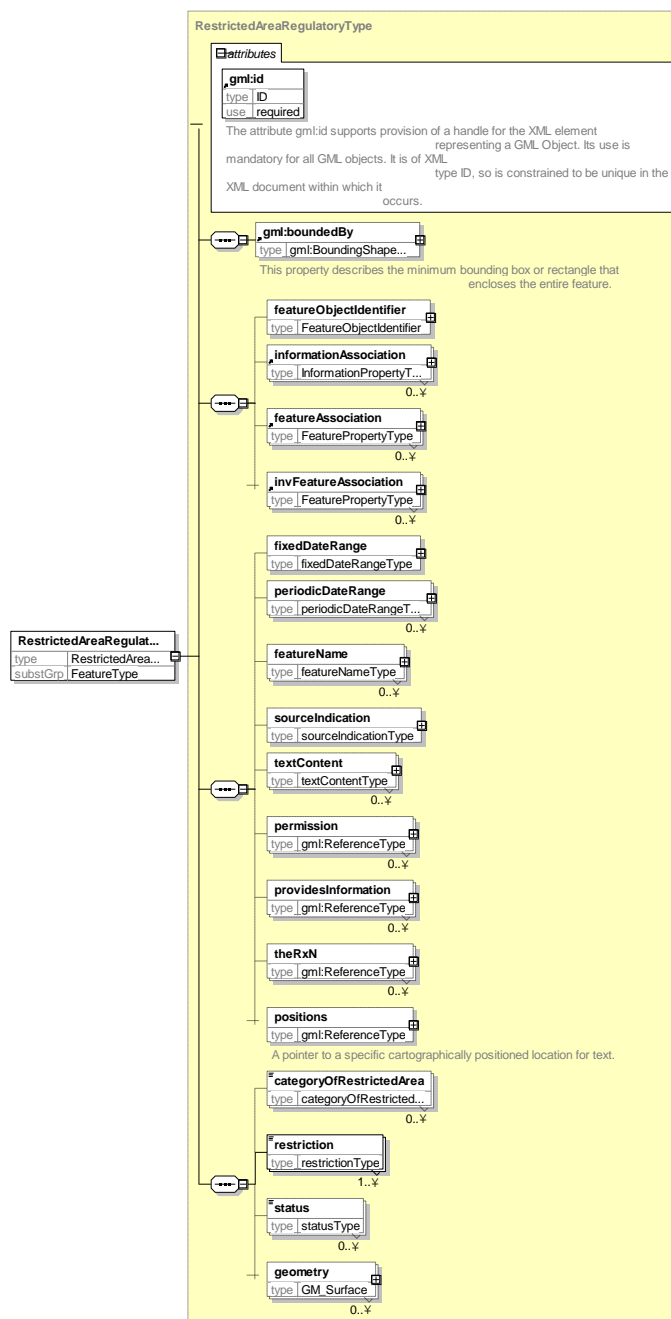
element **RestrictedAreaNavigational**

diagram

type [RestrictedAreaNavigationalType](#)substitution  
group [FeatureType](#)children [gml:boundedBy](#) [featureObjectIdentifier](#) [informationAssociation](#) [featureAssociation](#) [invFeatureAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [textContent](#) [permission](#) [providesInformation](#) [theRxn](#) [positions](#) [categoryOfRestrictedArea](#) [restriction](#) [status](#) [geometry](#)

element **RestrictedAreaRegulatory**

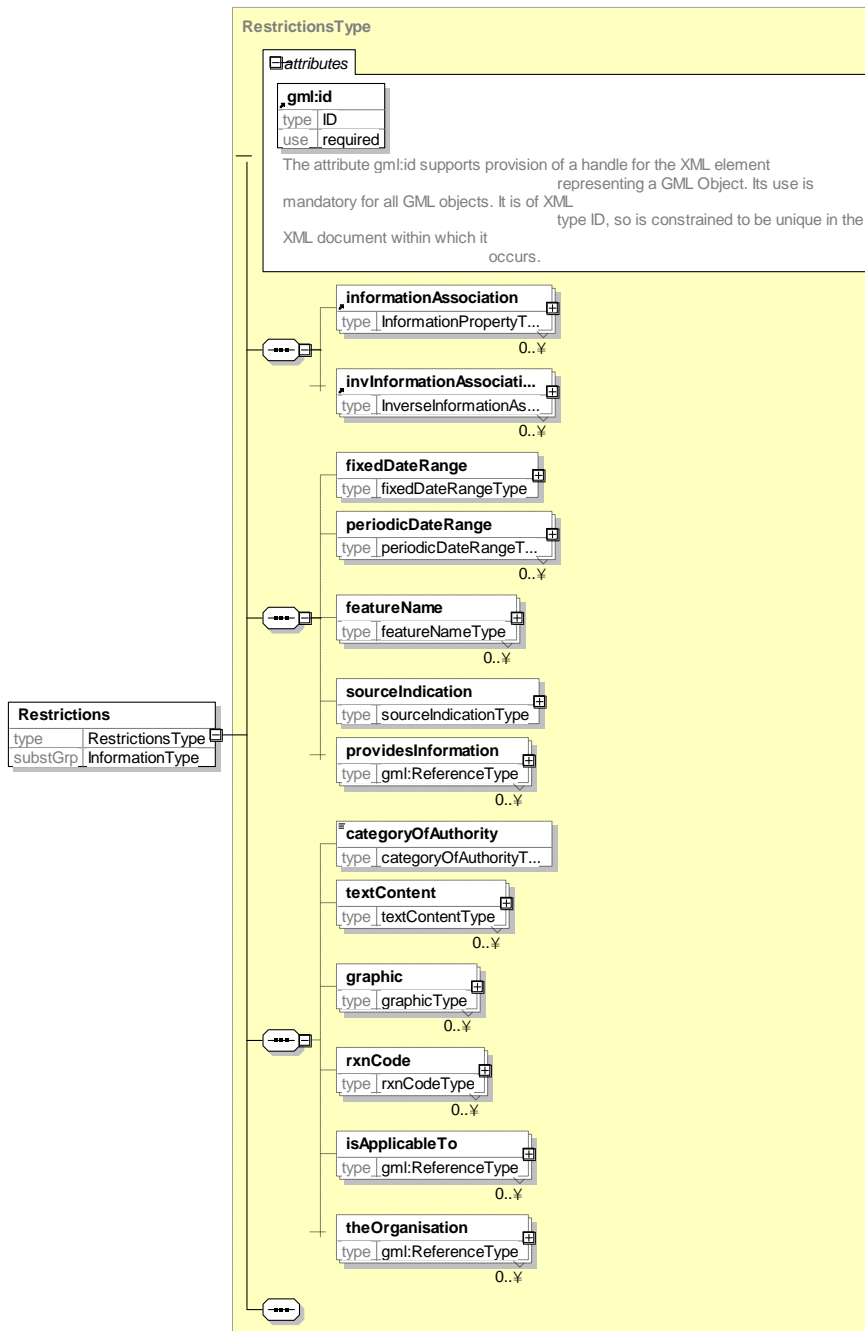
diagram

type [RestrictedAreaRegulatoryType](#)substitution  
group [FeatureType](#)children [gml:boundedBy](#) [featureObjectIdentifier](#) [informationAssociation](#) [featureAssociation](#) [invFeatureAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [textContent](#) [permission](#) [providesInformation](#) [theRxn](#) [positions](#) [categoryOfRestrictedArea](#) [restriction](#) [status](#) [geometry](#)



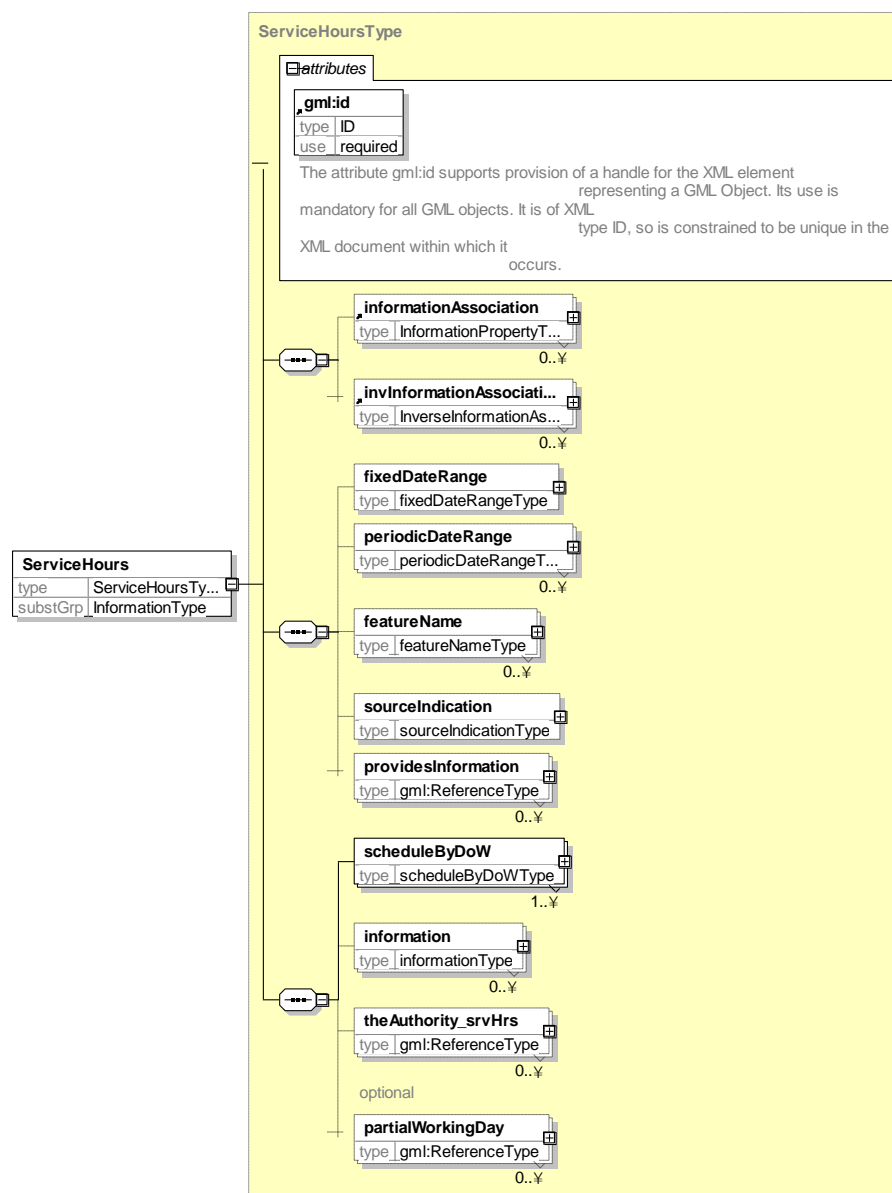
element **Restrictions**

diagram

type [RestrictionsType](#)substitution  
group [InformationType](#)children [informationAssociation](#) [invInformationAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [categoryOfAuthority](#) [textContent](#) [graphic](#) [rxnCode](#) [isApplicableTo](#) [theOrganisation](#)

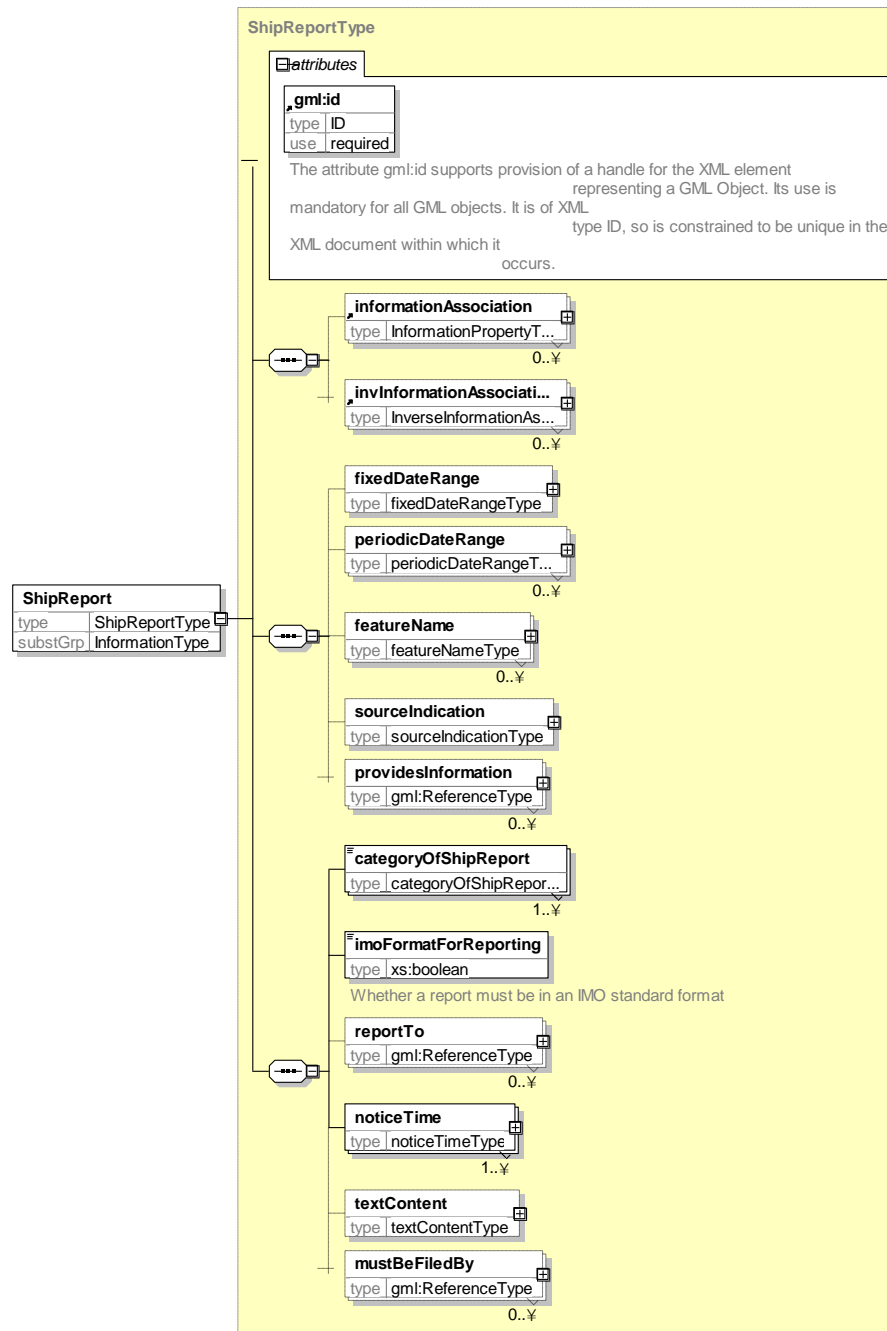
element **ServiceHours**

diagram

type [ServiceHoursType](#)substitution  
group [InformationType](#)children [informationAssociation](#) [invInformationAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [scheduleByDoW](#) [information](#) [theAuthority\\_srvHrs](#) [partialWorkingDay](#)

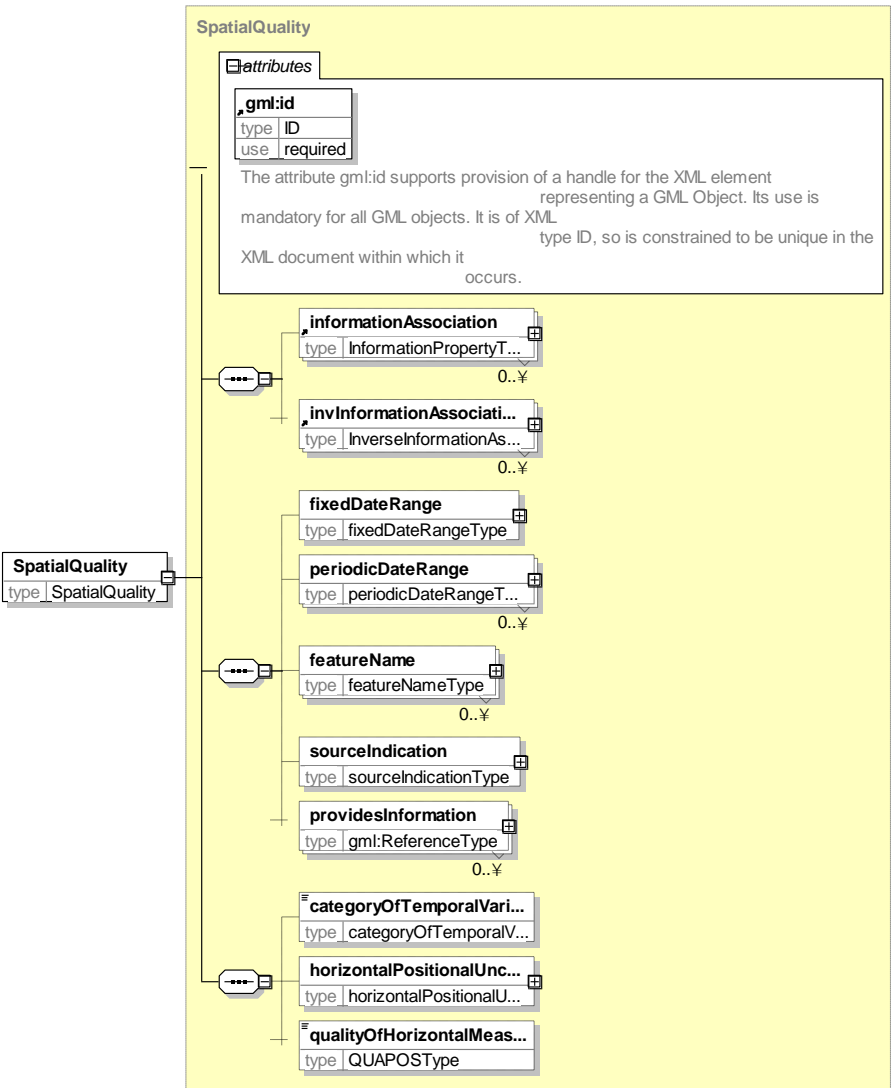
element **ShipReport**

diagram

type [ShipReportType](#)substitution  
group [InformationType](#)children [informationAssociation](#) [invInformationAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [categoryOfShipReport](#) [imoFormatForReporting](#) [reportTo](#) [noticeTime](#) [textContent](#) [mustBeFiledBy](#)

element **SpatialQuality**

diagram

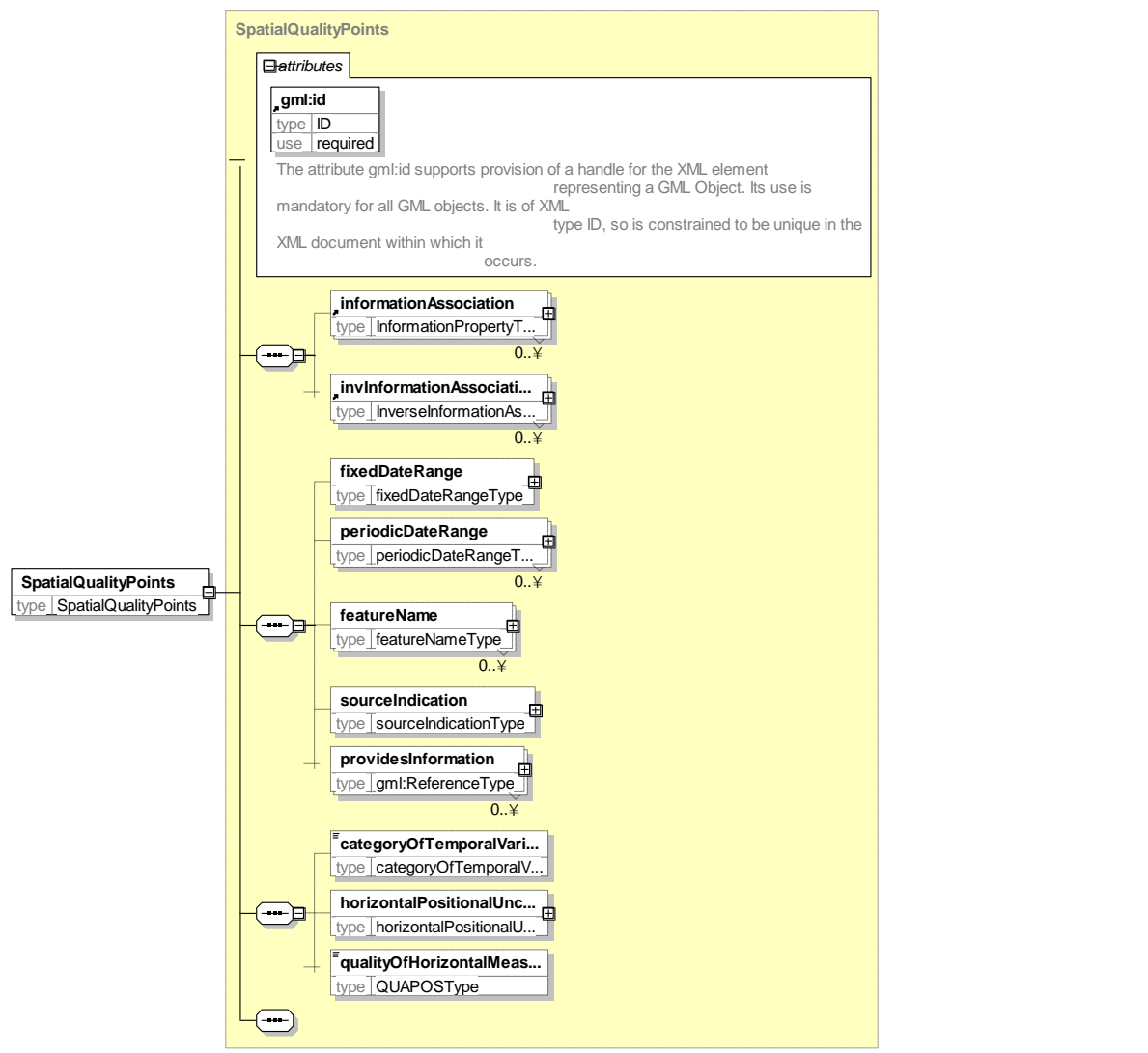


type [SpatialQuality](#)

children [informationAssociation](#) [invInformationAssociation](#) [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [categoryOfTemporalVariation](#) [horizontalPositionalUncertainty](#) [qualityOfHorizontalMeasurement](#)

element **SpatialQualityPoints**

diagram



type

[SpatialQualityPoints](#)

children

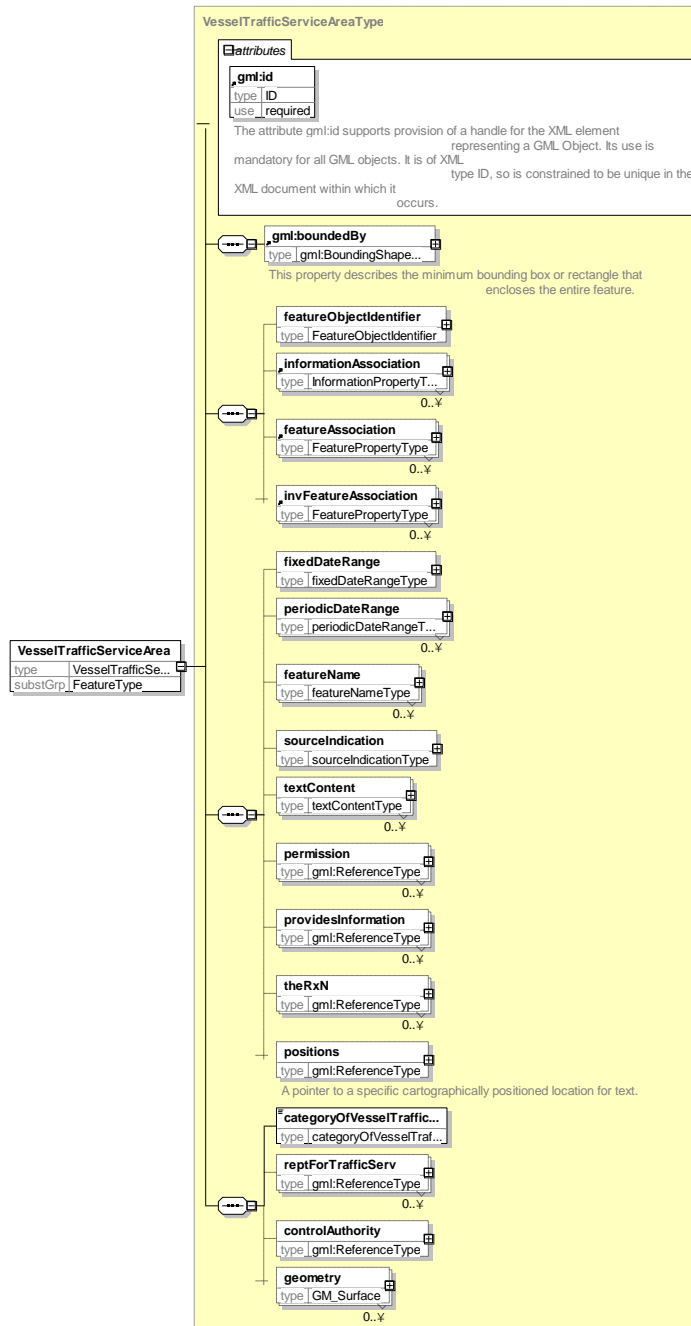
**informationAssociation** **invInformationAssociation** [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [categoryOfTemporalVariation](#) [horizontalPositionalUncertainty](#) [qualityOfHorizontalMeasurement](#)

element **TextPlacement**

diagram	<p><b>TextPlacement</b></p> <ul style="list-style-type: none"> <li><b>flipBearing</b> type: xs:decimal The bearing at which text is re-located to the opposite side of a feature when screen display is oriented away from true north.</li> <li><b>scaleMinimum</b> type: xs:integer</li> <li><b>textJustification</b> type: textJustificationType The anchor point of a text string.</li> <li><b>text</b> type: xs:string A non-formatted digital text string.</li> <li><b>textType</b> type: textTypeType</li> <li><b>geometry</b> type: GM_Point 1..1</li> </ul>
type	<a href="#">TextPlacement</a>
children	<a href="#">flipBearing</a> <a href="#">scaleMinimum</a> <a href="#">textJustification</a> <a href="#">text</a> <a href="#">textType</a> <a href="#">geometry</a>

element **VesselTrafficServiceArea**

diagram

type [VesselTrafficServiceAreaType](#)substitution  
group [FeatureType](#)children **gml:boundedBy** **featureObjectIdentifier** **informationAssociation** **featureAssociation** **invFeatureAssociation** [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [textContent](#) [permission](#) [providesInformation](#) [theRxN](#) [positions](#) [categoryOfVesselTrafficService](#) [reptForTrafficServ](#) [controlAuthority](#) [geometry](#)

complexType **AbstractRXNType**

diagram	<p><b>AbstractRXNType</b></p> <p>An abstract superclass for information types that encode rules, recommendations, and general information in text or graphic form.</p> <p><b>InformationTypeType (extension)</b></p> <p><b>Attributes:</b></p> <ul style="list-style-type: none"> <li><b>gml:id</b> (type ID, use required): The attribute gml:id supports provision of a handle for the XML element representing a GML Object. Its use is mandatory for all GML objects. It is of XML type ID, so is constrained to be unique in the XML document within which it occurs.</li> </ul> <p><b>Children:</b></p> <ul style="list-style-type: none"> <li><b>informationAssociation</b> (type InformationPropertyType, 0..1)</li> <li><b>invInformationAssociation</b> (type InverseInformationAs..., 0..1)</li> <li><b>fixedDateRange</b> (type fixedDateRangeType, 0..1)</li> <li><b>periodicDateRange</b> (type periodicDateRangeT..., 0..1)</li> <li><b>featureName</b> (type featureNameType, 0..1)</li> <li><b>sourceIndication</b> (type sourceIndicationType, 0..1)</li> <li><b>providesInformation</b> (type gml:ReferenceType, 0..1)</li> <li><b>categoryOfAuthority</b> (type categoryOfAuthorityT..., 0..1)</li> <li><b>textContent</b> (type textContentType, 0..1)</li> <li><b>graphic</b> (type graphicType, 0..1)</li> <li><b>rxnCode</b> (type rxnCodeType, 0..1)</li> <li><b>isApplicableTo</b> (type gml:ReferenceType, 0..1)</li> <li><b>theOrganisation</b> (type gml:ReferenceType, 0..1)</li> </ul>
type	extension of <a href="#">InformationTypeType</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociation</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a> <a href="#">categoryOfAuthority</a> <a href="#">textContent</a> <a href="#">graphic</a> <a href="#">rxnCode</a> <a href="#">isApplicableTo</a> <a href="#">theOrganisation</a>
annotation	<p>documentation</p> <p>An abstract superclass for information types that encode rules, recommendations, and general information in text or graphic form.</p> <p>documentation</p> <p>Remarks: Subtypes of AbstractRxN carry the same attributes, but differ in the nature of information they encode. There are currently four such subtypes: Regulations, Restrictions, Recommendations, and NauticalInformation.</p>

element **AbstractRXNType/categoryOfAuthority**

diagram	<p><b>categoryOfAuthority</b></p> <p>type categoryOfAuthorityT...</p>
type	<a href="#">categoryOfAuthorityType</a>



facets	Kind	Value	Annotation
	enumeration	customs	documentation The agency or establishment for collecting duties, tolls. (Merriam-Websters online Dictionary 23rd February 2006, amended).
	enumeration	border control	documentation 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).
	enumeration	police	documentation The department of government, or civil force, charged with maintaining public order. (Adapted from OED)
	enumeration	port	documentation 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)
	enumeration	immigration	documentation The authority controlling people entering a country.
	enumeration	health	documentation The authority with responsibility for checking the validity of the health declaration of a vessel and for declaring free pratique.
	enumeration	coast guard	documentation Organisation keeping watch on shipping and coastal waters according to governmental law; normally the authority with responsibility for search and rescue.
	enumeration	agricultural	documentation The authority with responsibility for preventing infection of the agriculture of a country and for the protection of the agricultural interests of a country.
	enumeration	military	documentation A military authority which provides control of access to or approval for transit through designated areas or airspace.
	enumeration	private company	documentation A private or publicly owned company or commercial enterprise which exercises control of facilities, for example a calibration area.
	enumeration	maritime police	documentation A governmental or military force with jurisdiction in territorial waters. Examples could include Gendarmerie Maritime, Carabinerie, and Guardia Civil.
	enumeration	environmental	documentation An authority with responsibility for the protection of the environment.
	enumeration	fishery	documentation An authority with responsibility for the control of fisheries.
	enumeration	finance	documentation an authority with responsibility for the control and movement of money.
	enumeration	maritime	documentation A national or regional authority charged with administration of maritime affairs.

element **AbstractRXNType/textContent**

diagram	
type	<a href="#">textContentType</a>
children	<a href="#">categoryOfText</a> <a href="#">information</a> <a href="#">onlineResource</a> <a href="#">sourceIndication</a>

element **AbstractRXNType/graphic**

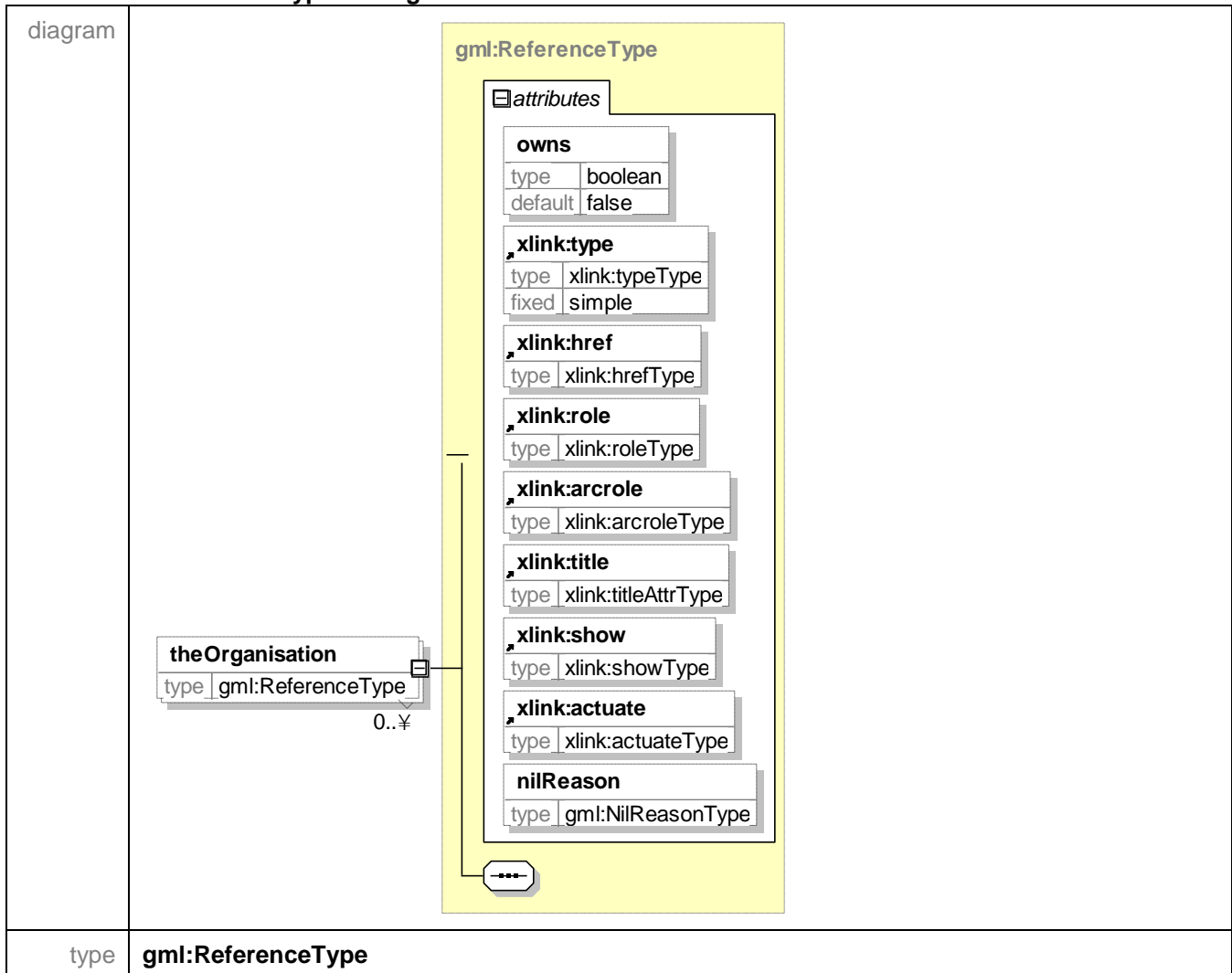
diagram	
type	<a href="#">graphicType</a>
children	<a href="#">pictorialRepresentation</a> <a href="#">pictureCaption</a> <a href="#">sourceDate</a> <a href="#">pictureInformation</a> <a href="#">bearingInformation</a>

element **AbstractRXNType/rxnCode**

diagram	
type	<a href="#">rxnCodeType</a>
children	<a href="#">categoryOfRxN</a> <a href="#">actionOrActivity</a> <a href="#">headline</a>

element **AbstractRXNType/isApplicableTo**

diagram	
type	<b>gml:ReferenceType</b>

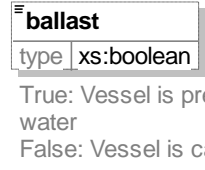
element **AbstractRXNType/theOrganisation**

complexType **ApplicabilityType**


diagram	<p><b>ApplicabilityType</b></p> <p>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.</p> <p><b>InformationTypeType (extension)</b></p> <p><b>Attributes:</b></p> <ul style="list-style-type: none"> <li><b>gml:id</b> (type ID, use required): The attribute gml:id supports provision of a handle for the XML element representing a GML Object. Its use is mandatory for all GML objects. It is of XML type ID, so is constrained to be unique in the XML document within which it occurs.</li> <li><b>informationAssociation</b> (type InformationPropertyType, 0..1)</li> <li><b>invInformationAssociation</b> (type InverseInformationAssociationType, 0..1)</li> <li><b>fixedDateRange</b> (type fixedDateRangeType, 0..1)</li> <li><b>periodicDateRange</b> (type periodicDateRangeType, 0..1)</li> <li><b>featureName</b> (type featureNameType, 0..1)</li> <li><b>sourceIndication</b> (type sourceIndicationType, 0..1)</li> <li><b>providesInformation</b> (type gml:ReferenceType, 0..1)</li> <li><b>ballast</b> (type xs:boolean, 0..1): True: Vessel is predominantly empty of cargo and stabilised with the use of ballast water. False: Vessel is carrying cargo and is not ballasted.</li> <li><b>categoryOfCargo</b> (type categoryOfCargoType, 0..1)</li> <li><b>categoryOfDangerousOrHazardousCargo</b> (type categoryOfDangerousOrHazardousCargoType, 0..1)</li> <li><b>categoryOfVessel</b> (type categoryOfVesselType, 0..1)</li> <li><b>categoryOfVesselRegistry</b> (type categoryOfVesselRegistryType, 0..1)</li> <li><b>logicalConnectives</b> (type logicalConnectivesType, 0..1)</li> <li><b>thicknessOfficeCapability</b> (type xs:nonNegativeInteger, 0..1): The thickness of ice that the ship can safely transit</li> <li><b>information</b> (type informationType, 0..1)</li> <li><b>vesselPerformance</b> (type xs:string, 0..1): A description of the required handling characteristics of a vessel including hull design, main and auxiliary machinery, cargo handling equipment, navigation equipment and manoeuvring behaviour.</li> <li><b>vesselsMeasurements</b> (type vesselsMeasurementsType, 0..1)</li> <li><b>vsiLocation</b> (type gml:ReferenceType, 0..1): Association to the Association class PermissionType</li> <li><b>theApplicableRxN</b> (type gml:ReferenceType, 0..1): To InclusionType</li> <li><b>theShipReport</b> (type gml:ReferenceType, 0..1)</li> </ul>
type	extension of <a href="#">InformationTypeType</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociation</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a> <a href="#">ballast</a> <a href="#">categoryOfCargo</a> <a href="#">categoryOfDangerousOrHazardousCargo</a> <a href="#">categoryOfVessel</a> <a href="#">categoryOfVesselRegistry</a> <a href="#">logicalConnectives</a> <a href="#">thicknessOfficeCapability</a> <a href="#">information</a> <a href="#">vesselPerformance</a> <a href="#">vesselsMeasurements</a> <a href="#">vsiLocation</a> <a href="#">theApplicableRxN</a> <a href="#">theShipReport</a>
annotation	<p>documentation</p> <p>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</p>

	service by the vessel; or, (iii) passage of the vessel through an area.
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**element ApplicabilityType/ballast**

diagram	
type	<b>xs:boolean</b>
annotation	documentation True: Vessel is predominantly empty of cargo and stabilised with the use of ballast water False: Vessel is carrying cargo and is not ballasted.

**element ApplicabilityType/categoryOfCargo**


diagram			
type	<a href="#"><u>categoryOfCargoType</u></a>		
facets	Kind	Value	Annotation
	enumeration	bulk	<a href="#">documentation</a> Normally dry cargo which is transported to and from the vessel on conveyors or grabs
	enumeration	container	<a href="#">documentation</a> One of a number of standard sized cargo carrying units, secured using standard corner attachments and bars
	enumeration	general	<a href="#">documentation</a> Break bulk cargo normally loaded by crane
	enumeration	liquid	<a href="#">documentation</a> Any cargo loaded by pipeline
	enumeration	passenger	<a href="#">documentation</a> A fee paying traveller
	enumeration	livestock	<a href="#">documentation</a> Live animals carried in bulk
	enumeration	dangerous or hazardous	<a href="#">documentation</a> Dangerous or hazardous cargo as described by the IMO International Maritime Dangerous Goods code

**element ApplicabilityType/categoryOfDangerousOrHazardousCargo**

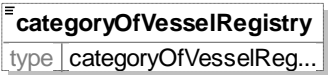
diagram							
type	<a href="#"><u>categoryOfDangerousOrHazardousCargoType</u></a>						
facets	<table><tr><th>Kind</th><th>Value</th><th>Annotation</th></tr><tr><td>enumeration</td><td>IMDG Code Class 1 Div. 1.1</td><td>documentation Explosives, Division 1: substances and articles which have a</td></tr></table>	Kind	Value	Annotation	enumeration	IMDG Code Class 1 Div. 1.1	documentation Explosives, Division 1: substances and articles which have a
Kind	Value	Annotation					
enumeration	IMDG Code Class 1 Div. 1.1	documentation Explosives, Division 1: substances and articles which have a					

	enumeration	IMDG Code Class 1 Div. 1.2	mass explosion hazard documentation Explosives, Division 2: substances and articles which have a projection hazard but not a mass explosion hazard
	enumeration	IMDG Code Class 1 Div. 1.3	documentation 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
	enumeration	IMDG Code Class 1 Div. 1.4	documentation Explosives, Division 4: substances and articles which present no significant hazard
	enumeration	IMDG Code Class 1 Div. 1.5	documentation Explosives, Division 5: very insensitive substances which have a mass explosion hazard
	enumeration	IMDG Code Class 1 Div. 1.6	documentation Explosives, Division 6: extremely insensitive articles which do not have a mass explosion hazard
	enumeration	IMDG Code Class 2 Div. 2.1	documentation Gases, flammable gases
	enumeration	IMDG Code Class 2 Div. 2.2	documentation Gases, non-flammable, non-toxic gases
	enumeration	IMDG Code Class 2 Div. 2.3	documentation Gases, toxic gases
	enumeration	IMDG Code Class 3	documentation flammable liquids
	enumeration	IMDG Code Class 4 Div. 4.1	documentation flammable solids, self-reactive substances and desensitized explosives
	enumeration	IMDG Code Class 4 Div. 4.2	documentation substances liable to spontaneous combustion
	enumeration	IMDG Code Class 4 Div. 4.3	documentation substances which, in contact with water, emit flammable gases
	enumeration	IMDG Code Class 5 Div. 5.1	documentation oxidizing substances
	enumeration	IMDG Code Class 5 Div. 5.2	documentation organic peroxides
	enumeration	IMDG Code Class 6 Div. 6.1	documentation toxic substances
	enumeration	IMDG Code Class 6. Div. 6.2	documentation infectious substances
	enumeration	IMDG Code Class 7	documentation Radioactive material
	enumeration	IMDG Code Class 8	documentation Corrosive substances
	enumeration	IMDG Code Class 9	documentation Miscellaneous dangerous substances and articles
	enumeration	Harmful Substances in packaged form	documentation 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)

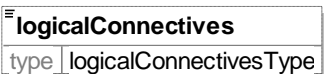
element **ApplicabilityType/categoryOfVessel**

diagram	
type	<a href="#">categoryOfVesselType</a>

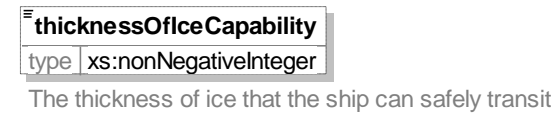
element **ApplicabilityType/categoryOfVesselRegistry**

diagram			
type	<a href="#">categoryOfVesselRegistryType</a>		
facets	Kind	Value	Annotation
	enumeration	domestic	<div>documentation</div> <div>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.</div>
	enumeration	foreign	<div>documentation</div> <div>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.</div>

element **ApplicabilityType/logicalConnectives**

diagram			
type	<a href="#">logicalConnectivesType</a>		
facets	Kind	Value	Annotation
	enumeration	logical conjunction	documentation all the conditions described by the other attributes of the object, or sub-attributes of the same complex attribute, are true
	enumeration	logical disjunction	documentation at least one of the conditions described by the other attributes of the object, or sub-attributes of the same complex attributes, is true

element **ApplicabilityType/thicknessOfIceCapability**

diagram	
type	<b>xs:nonNegativeInteger</b>
annotation	documentation The thickness of ice that the ship can safely transit



element **ApplicabilityType/information**

diagram	<p><b>informationType</b></p> <p><b>fileLocator</b> type xs:string The string encodes the location of a fragment of text or other information in a support file.</p> <p><b>fileReference</b> type xs:string The string encodes the file name of a single external text file that contains the text.</p> <p><b>headline</b> type xs:string Words set at the head of a passage or page to introduce or categorize</p> <p><b>language</b> type xs:string ISO 639-3 value</p> <p><b>text</b> type xs:string A non-formatted digital text string.</p> <p><b>information</b> type informationType 0..1</p>
type	<a href="#">informationType</a>
children	<a href="#">fileLocator</a> <a href="#">fileReference</a> <a href="#">headline</a> <a href="#">language</a> <a href="#">text</a>

element **ApplicabilityType/vesselPerformance**

diagram	<p><b>vesselPerformance</b> type xs:string</p> <p>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.</p>
type	<b>xs:string</b>
annotation	<p>documentation</p> <p>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.</p>

element **ApplicabilityType/vesselsMeasurements**

diagram	
type	<a href="#">vesselsMeasurementsType</a>
children	<a href="#">comparisonOperator</a> <a href="#">vesselsCharacteristics</a> <a href="#">vesselsCharacteristicsValue</a> <a href="#">vesselsCharacteristicsUnit</a>

element **ApplicabilityType/vslLocation**

diagram	<p>Association to the Association class PermissionType</p>
type	<b><a href="#">gml:ReferenceType</a></b>

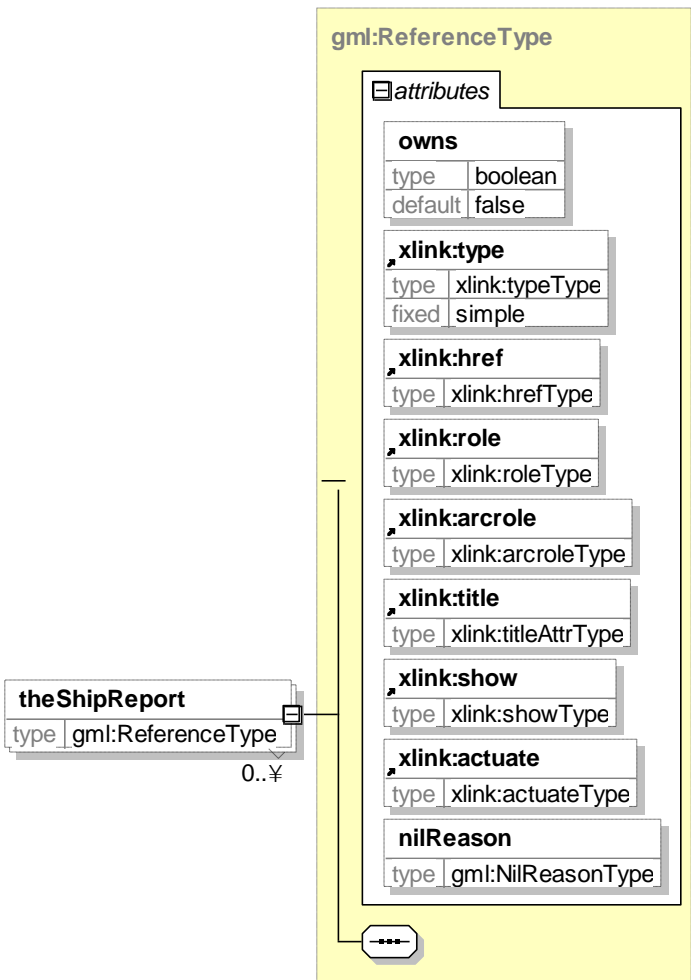
annotation	documentation Association to the Association class PermissionType
------------	--

element **ApplicabilityType/theApplicableRxN**

diagram	<p><b>gml:ReferenceType</b></p> <p><b>attributes</b></p> <ul style="list-style-type: none"> <li><b>owns</b> <ul style="list-style-type: none"> <li>type: boolean</li> <li>default: false</li> </ul> </li> <li><b>xlink:type</b> <ul style="list-style-type: none"> <li>type: xlink:typeType</li> <li>fixed: simple</li> </ul> </li> <li><b>xlink:href</b> <ul style="list-style-type: none"> <li>type: xlink:hrefType</li> </ul> </li> <li><b>xlink:role</b> <ul style="list-style-type: none"> <li>type: xlink:roleType</li> </ul> </li> <li><b>xlink:arcrole</b> <ul style="list-style-type: none"> <li>type: xlink:arcroleType</li> </ul> </li> <li><b>xlink:title</b> <ul style="list-style-type: none"> <li>type: xlink:titleAttrType</li> </ul> </li> <li><b>xlink:show</b> <ul style="list-style-type: none"> <li>type: xlink:showType</li> </ul> </li> <li><b>xlink:actuate</b> <ul style="list-style-type: none"> <li>type: xlink:actuateType</li> </ul> </li> <li><b>nilReason</b> <ul style="list-style-type: none"> <li>type: gml:nilReasonType</li> </ul> </li> </ul> <p><b>theApplicableRxN</b></p> <p>type: gml:ReferenceType</p> <p>0..∞</p> <p>To InclusionType</p>
type	<b>gml:ReferenceType</b>
annotation	documentation To InclusionType

element **ApplicabilityType/theShipReport**

diagram



type

**gml:ReferenceType**

complexType **AuthorityType**

diagram	
type	extension of <a href="#">InformationTypeType</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociation</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a> <a href="#">categoryOfAuthority</a> <a href="#">textContent</a> <a href="#">theContactDetails</a> <a href="#">theServiceHours</a> <a href="#">theShipReport</a> <a href="#">theInformation</a>
annotation	<p>documentation</p> <p>A person or organisation having political or administrative power and control. (Oxford Dictionary of English)</p>

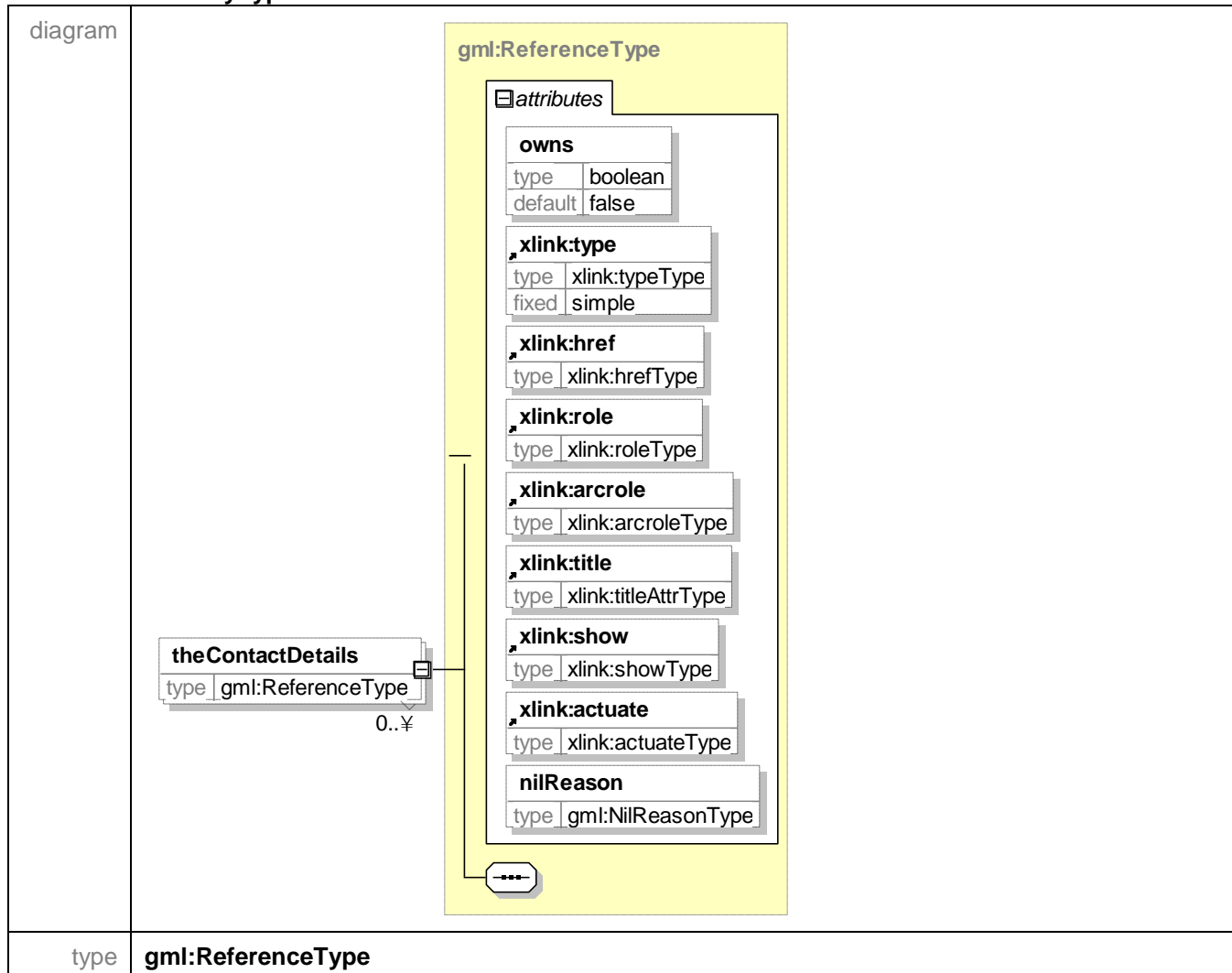
element **AuthorityType/categoryOfAuthority**

diagram			
type	<a href="#">categoryOfAuthorityType</a>		
facets	Kind	Value	Annotation
	enumeration	customs	<div>documentation</div> <div>The agency or establishment for collecting duties, tolls. (Merriam-Websters online Dictionary 23rd February 2006, amended).</div>
	enumeration	border control	<div>documentation</div> <div>The administration to prevent or detect and prosecute</div>

		violations of rules and regulations at international boundaries (adapted from Merriam-Websters online Dictionary 23rd February 2006).
enumeration	police	documentation The department of government, or civil force, charged with maintaining public order. (Adapted from OED)
enumeration	port	documentation 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)
enumeration	immigration	documentation The authority controlling people entering a country.
enumeration	health	documentation The authority with responsibility for checking the validity of the health declaration of a vessel and for declaring free pratique.
enumeration	coast guard	documentation Organisation keeping watch on shipping and coastal waters according to governmental law; normally the authority with responsibility for search and rescue.
enumeration	agricultural	documentation The authority with responsibility for preventing infection of the agriculture of a country and for the protection of the agricultural interests of a country.
enumeration	military	documentation A military authority which provides control of access to or approval for transit through designated areas or airspace.
enumeration	private company	documentation A private or publicly owned company or commercial enterprise which exercises control of facilities, for example a calibration area.
enumeration	maritime police	documentation A governmental or military force with jurisdiction in territorial waters. Examples could include Gendarmerie Maritime, Carabinerie, and Guardia Civil.
enumeration	environmental	documentation An authority with responsibility for the protection of the environment.
enumeration	fishery	documentation An authority with responsibility for the control of fisheries.
enumeration	finance	documentation an authority with responsibility for the control and movement of money.
enumeration	maritime	documentation A national or regional authority charged with administration of maritime affairs.

element **AuthorityType/textContent**

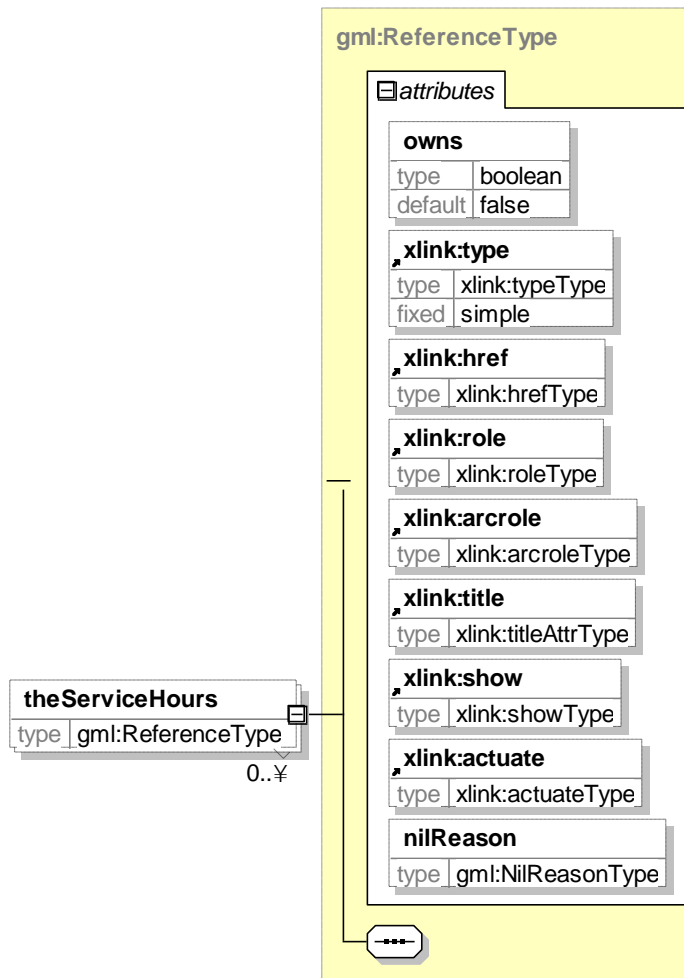
diagram	<pre> classDiagram     class textContent {         type textContentType     }     class textContentType {         type textContentType         categoryOfText categoryOfTextType         information informationType 0..*         onlineResource onlineResourceType         sourceIndication sourceIndicationType     }     textContent -- textContentType   </pre>
type	<a href="#">textContentType</a>
children	<a href="#">categoryOfText</a> <a href="#">information</a> <a href="#">onlineResource</a> <a href="#">sourceIndication</a>

element **AuthorityType/theContactDetails**



element **AuthorityType/theServiceHours**

diagram

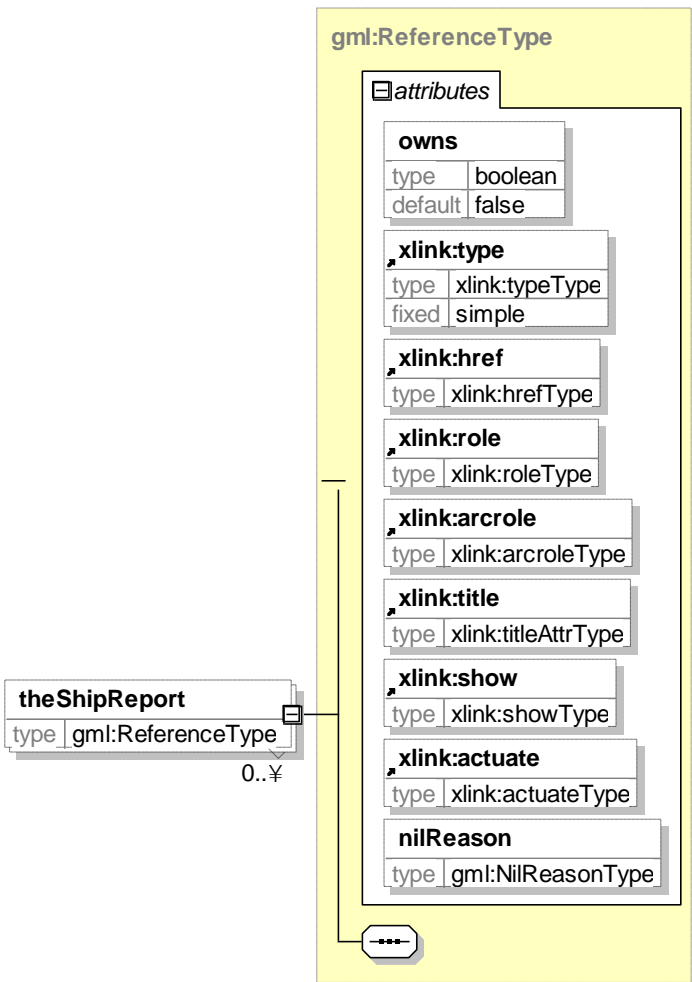


type

**gml:ReferenceType**

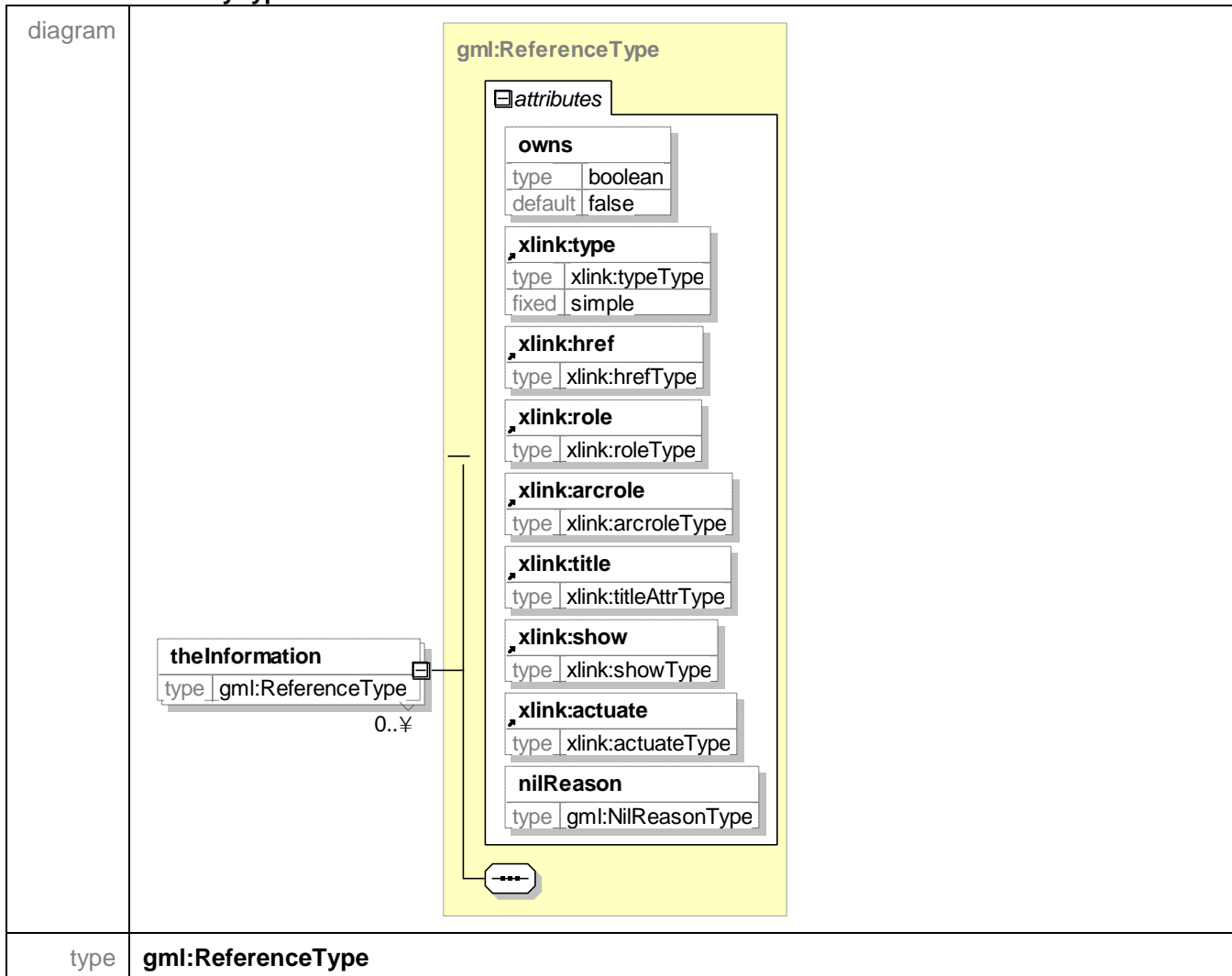
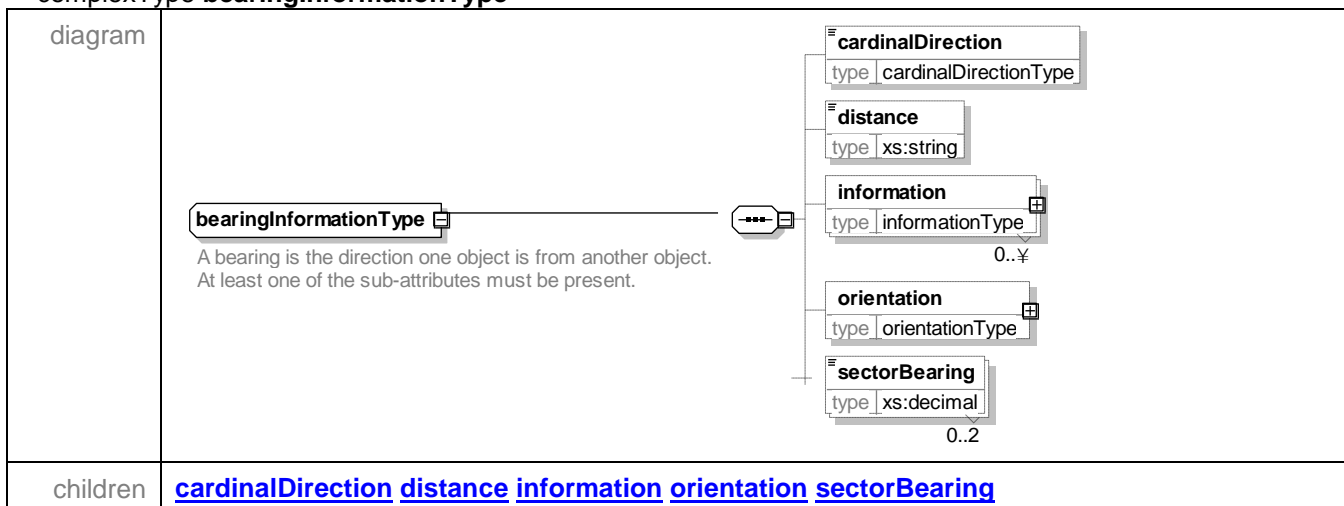
element **AuthorityType/theShipReport**

diagram



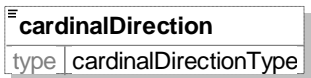
type

**gml:ReferenceType**

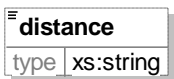
element **AuthorityType/theInformation**complexType **bearingInformationType**

annotation	documentation A bearing is the direction one object is from another object. At least one of the sub-attributes must be present.
------------	---

element **bearingInformationType/cardinalDirection**

diagram			
type	<a href="#"><u>cardinalDirectionType</u></a>		
facets	Kind	Value	Annotation
	enumeration	N	documentation North
	enumeration	NNE	documentation Northnortheast
	enumeration	NE	documentation Northeast
	enumeration	ENE	documentation Eastnortheast
	enumeration	E	documentation East
	enumeration	ESE	documentation Eastsoutheast
	enumeration	SE	documentation Southeast
	enumeration	SSE	documentation Southsoutheast
	enumeration	S	documentation South
	enumeration	SSW	documentation Southsouthwest
	enumeration	SW	documentation Southwest
	enumeration	WSW	documentation Westsouthwest
	enumeration	W	documentation West
	enumeration	WNW	documentation Westnorthwest
	enumeration	NW	documentation Northwest
	enumeration	NNW	documentation Northnorthwest

element **bearingInformationType/distance**

diagram			
type	<b>xs:string</b>		

element **bearingInformationType/information**

diagram	
type	<a href="#">informationType</a>
children	<a href="#">fileLocator</a> <a href="#">fileReference</a> <a href="#">headline</a> <a href="#">language</a> <a href="#">text</a>

element **bearingInformationType/orientation**

diagram	
type	<a href="#">orientationType</a>
children	<a href="#">orientationUncertainty</a> <a href="#">orientationValue</a>

element **bearingInformationType/sectorBearing**

diagram	
type	<b>xs:decimal</b>

complexType **contactAddressType**

diagram	
children	<a href="#">deliveryPoint</a> <a href="#">cityName</a> <a href="#">administrativeDivision</a> <a href="#">country</a> <a href="#">postalCode</a>
annotation	documentation 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).

element **contactAddressType/deliveryPoint**

diagram	
type	<b>xs:string</b>
annotation	documentation Details of where post can be delivered such as the apartment, name and/or number of a street, building or PO Box.

element **contactAddressType/cityName**


diagram	
type	<b>xs:string</b>
annotation	documentation The name of a town or city.

element **contactAddressType/administrativeDivision**


diagram	
type	<b>xs:string</b>

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

element **contactAddressType/country**

diagram	 <p>The name of a nation. (Adapted from The American Heritage Dictionaries)</p>
type	<b>xs:string</b>
annotation	documentation The name of a nation. (Adapted from The American Heritage Dictionaries)

element **contactAddressType/postalCode**

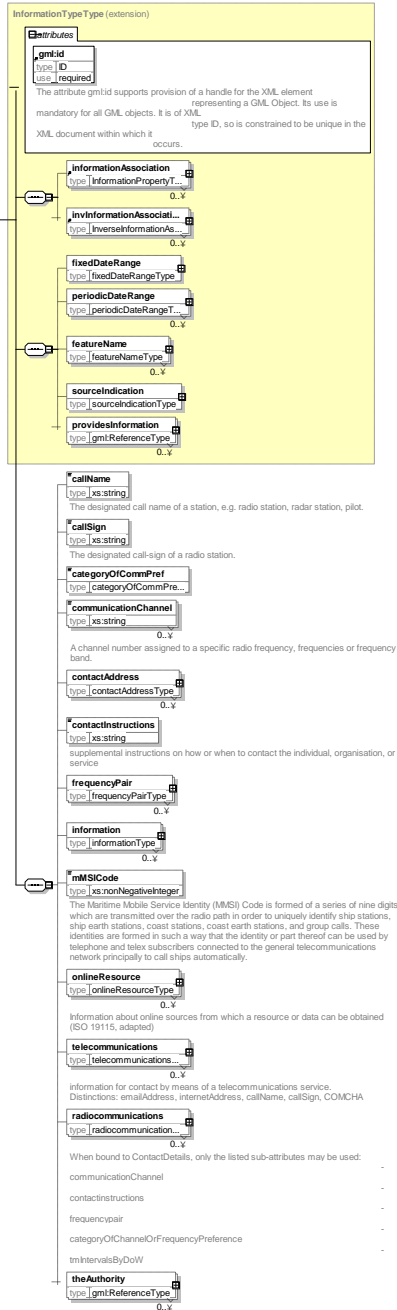
diagram	 <p>Known in various countries as a postcode, or ZIP code, the postal code is a series of letters and/or digits that identifies each postal delivery area.</p>
type	<b>xs:string</b>
annotation	documentation Known in various countries as a postcode, or ZIP code, the postal code is a series of letters and/or digits that identifies each postal delivery area.

complexType **ContactDetailsType**

diagram

**ContactDetailsType**

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



type

extension of [InformationTypeType](#)

children

**informationAssociation** **invInformationAssociation** [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [callName](#) [callSign](#) [categoryOfCommPref](#) [communicationChannel](#) [contactAddress](#) [contactInstructions](#) [frequencyPair](#) [information](#) [mMSICode](#) [onlineResource](#) [telecommunications](#) [radiocommunications](#) [theAuthority](#)


annotation

documentation


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



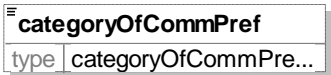
element **ContactDetailsType/callName**

diagram	 <p>The designated call name of a station, e.g. radio station, radar station, pilot.</p>
type	<b>xs:string</b>
annotation	<p>documentation The designated call name of a station, e.g. radio station, radar station, pilot.</p> <p>documentation Remarks: This is the name used when calling a radio station by radio i.e. "Singapore Pilots".</p>

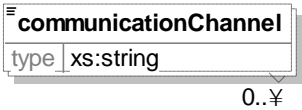
element **ContactDetailsType/callSign**

diagram	 <p>The designated call-sign of a radio station.</p>
type	<b>xs:string</b>
annotation	<p>documentation The designated call-sign of a radio station.</p>

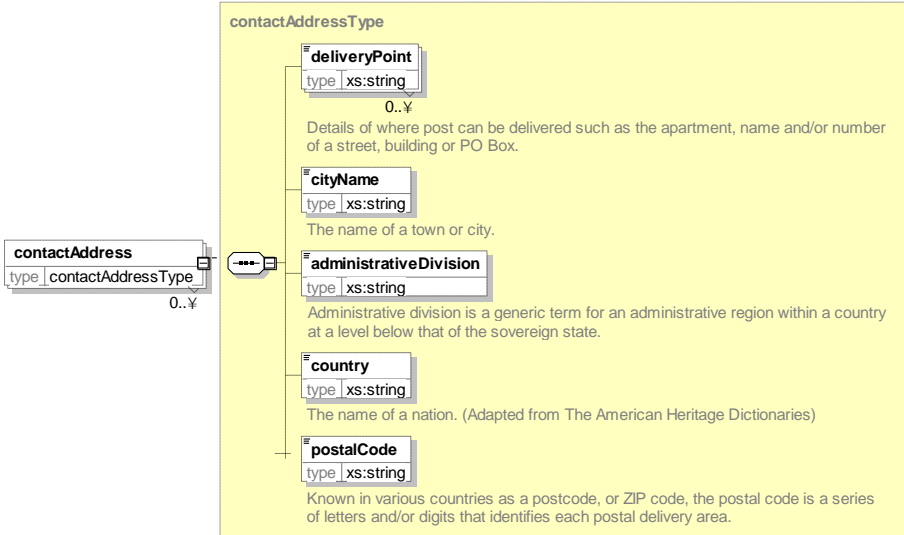
element **ContactDetailsType/categoryOfCommPref**

diagram			
type	<a href="#"><b>categoryOfCommPrefType</b></a>		
facets	Kind	Value	Annotation
	enumeration	preferred calling	documentation the first choice channel or frequency to be used when calling a radio station
	enumeration	alternate calling	documentation 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
	enumeration	preferred working	documentation the first choice channel or frequency to be used when working with a radio station
	enumeration	alternate working	documentation 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

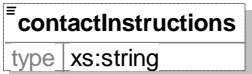
element **ContactDetailsType/communicationChannel**

diagram	 <p>A channel number assigned to a specific radio frequency, frequencies or frequency band.</p>
type	<b>xs:string</b>
annotation	documentation A channel number assigned to a specific radio frequency, frequencies or frequency band.

element **ContactDetailsType/contactAddress**

diagram	 <p>The diagram shows the <b>contactAddress</b> element (type <b>contactAddressType</b>) with a cardinality of 0..1. The <b>contactAddressType</b> is a complex type containing five elements: <b>deliveryPoint</b> (type <b>xs:string</b>, 0..1), <b>cityName</b> (type <b>xs:string</b>), <b>administrativeDivision</b> (type <b>xs:string</b>), <b>country</b> (type <b>xs:string</b>), and <b>postalCode</b> (type <b>xs:string</b>). Each element has a descriptive text below it.</p>
type	<a href="#"><b>contactAddressType</b></a>
children	<a href="#"><b>deliveryPoint</b></a> <a href="#"><b>cityName</b></a> <a href="#"><b>administrativeDivision</b></a> <a href="#"><b>country</b></a> <a href="#"><b>postalCode</b></a>

element **ContactDetailsType/contactInstructions**

diagram	 <p>supplemental instructions on how or when to contact the individual, organisation, or service</p>
type	<b>xs:string</b>
annotation	documentation supplemental instructions on how or when to contact the individual, organisation, or service

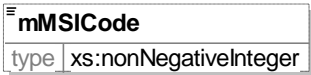
element **ContactDetailsType/frequencyPair**

diagram	<p><b>frequencyPairType</b></p> <ul style="list-style-type: none"> <li><b>contactInstructions</b> type: xs:string 0..1</li> <li><b>categoryOfCommPref</b> type: categoryOfCommPref 0..1</li> <li><b>frequencyShoreStationTransmits</b> type: xs:positiveInteger 0..1 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</li> <li><b>frequencyShoreStationReceives</b> type: xs:positiveInteger 0..1 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</li> <li><b>textContent</b> type: textContentType 0..1</li> </ul>
type	<a href="#">frequencyPairType</a>
children	<a href="#">contactInstructions</a> <a href="#">categoryOfCommPref</a> <a href="#">frequencyShoreStationTransmits</a> <a href="#">frequencyShoreStationReceives</a> <a href="#">textContent</a>

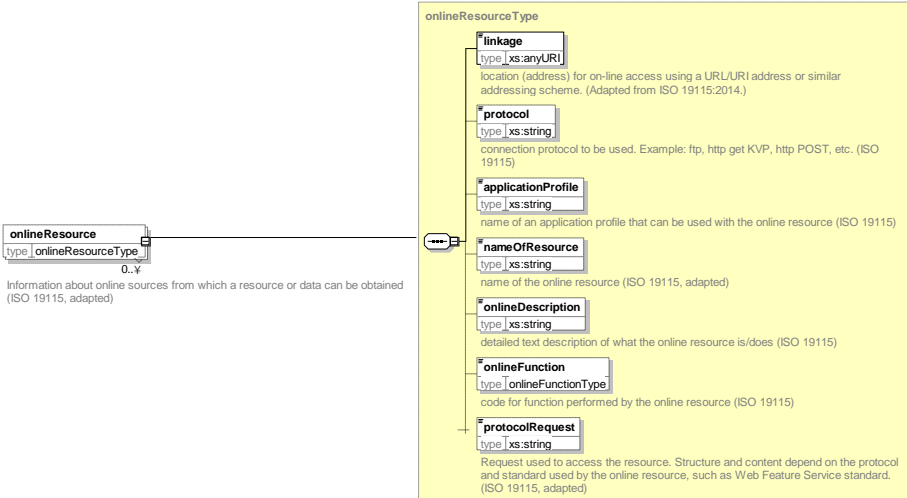
element **ContactDetailsType/information**

diagram	<p><b>informationType</b></p> <ul style="list-style-type: none"> <li><b>fileLocator</b> type: xs:string The string encodes the location of a fragment of text or other information in a support file.</li> <li><b>fileReference</b> type: xs:string The string encodes the file name of a single external text file that contains the text.</li> <li><b>headline</b> type: xs:string Words set at the head of a passage or page to introduce or categorize</li> <li><b>language</b> type: xs:string ISO 639-3 value</li> <li><b>text</b> type: xs:string A non-formatted digital text string.</li> </ul>
type	<a href="#">informationType</a>
children	<a href="#">fileLocator</a> <a href="#">fileReference</a> <a href="#">headline</a> <a href="#">language</a> <a href="#">text</a>

element **ContactDetailsType/mMUSICode**

diagram	 <p>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.</p>
type	<b>xs:nonNegativeInteger</b>
annotation	<p>documentation</p> <p>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.</p>

element **ContactDetailsType/onlineResource**

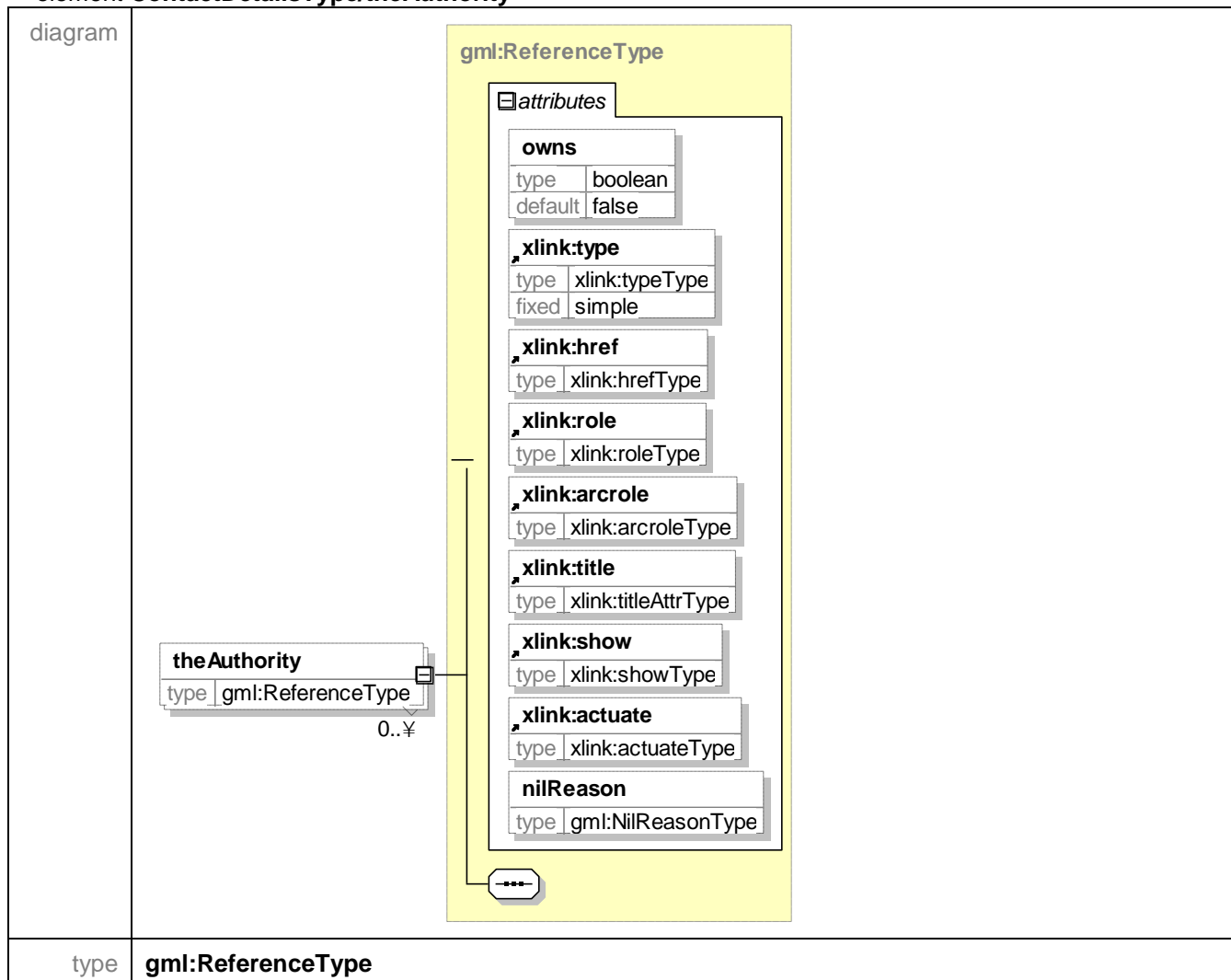
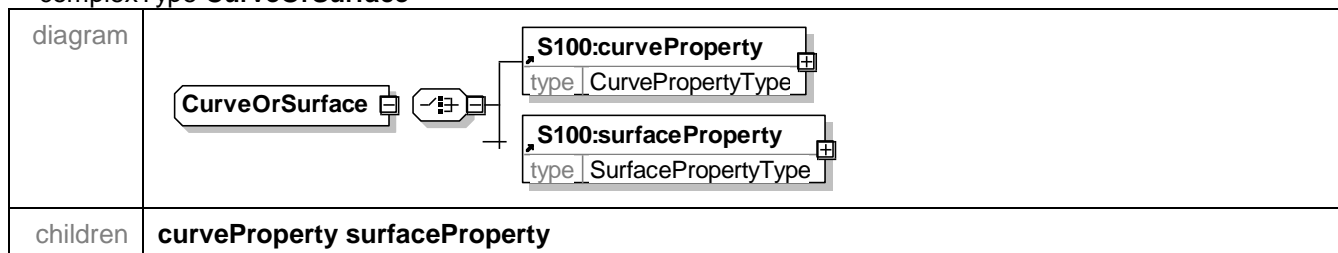
diagram	 <p>The diagram shows the <b>onlineResource</b> element structure. It is a complex type derived from <b>onlineResourceType</b>. The structure includes the following elements:</p> <ul style="list-style-type: none"> <li><b>linkage</b> (type: xs:anyURI): location (address) for on-line access using a URL/URI address or similar addressing scheme. (Adapted from ISO 19115:2014.)</li> <li><b>protocol</b> (type: xs:string): connection protocol to be used. Example: ftp, http get KVP, http POST, etc. (ISO 19115)</li> <li><b>applicationProfile</b> (type: xs:string): name of an application profile that can be used with the online resource (ISO 19115)</li> <li><b>nameOfResource</b> (type: xs:string): name of the online resource (ISO 19115, adapted)</li> <li><b>onlineDescription</b> (type: xs:string): detailed text description of what the online resource is/does (ISO 19115)</li> <li><b>onlineFunction</b> (type: onlineFunctionType): code for function performed by the online resource (ISO 19115)</li> <li><b>protocolRequest</b> (type: xs:string): 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)</li> </ul>
type	<a href="#"><b>onlineResourceType</b></a>
children	<a href="#"><b>linkage</b></a> <a href="#"><b>protocol</b></a> <a href="#"><b>applicationProfile</b></a> <a href="#"><b>nameOfResource</b></a> <a href="#"><b>onlineDescription</b></a> <a href="#"><b>onlineFunction</b></a> <a href="#"><b>protocolRequest</b></a>
annotation	<p>documentation</p> <p>Information about online sources from which a resource or data can be obtained (ISO 19115, adapted)</p>

element **ContactDetailsType/telecommunications**

diagram	
type	<a href="#">telecommunicationsType</a>
children	<a href="#">telecommunicationIdentifier</a> <a href="#">telcomCarrier</a> <a href="#">contactInstructions</a> <a href="#">telecommunicationService</a> <a href="#">categoryOfCommPref</a> <a href="#">scheduleByDoW</a>
annotation	<p>documentation</p> <p>information for contact by means of a telecommunications service. Distinctions: emailAddress, internetAddress, callName, callSign, COMCHA</p>

element **ContactDetailsType/radiocommunications**

diagram	
type	<a href="#">radiocommunicationsType</a>
children	<a href="#">categoryOfCommPref</a> <a href="#">communicationChannel</a> <a href="#">contactInstructions</a> <a href="#">frequencyPair</a> <a href="#">tmIntervalsByDoW</a>
annotation	<p>documentation</p> <p>When bound to ContactDetails, only the listed sub-attributes may be used:</p> <ul style="list-style-type: none"> <li>- communicationChannel</li> <li>- contactInstructions</li> <li>- frequencypair</li> <li>-</li> </ul> <p>categoryOfChannelOrFrequencyPreference</p> <ul style="list-style-type: none"> <li>- tmIntervalsByDoW</li> </ul>

element **ContactDetailsType/theAuthority**complexType **CurveOrSurface**

complexType **DataCoverageType**

diagram	
type	extension of <a href="#">MetaFeatureType</a>
children	<b>gml:boundedBy</b> <b>featureObjectIdentifier</b> <b>informationAssociation</b> <b>featureAssociation</b> <b>invFeatureAssociation</b> <a href="#">maximumDisplayScale</a> <a href="#">minimumDisplayScale</a> <a href="#">geometry</a>
annotation	documentation A geographical area that describes the coverage and extent of spatial types.

element **DataCoverageType/maximumDisplayScale**

diagram	
type	<b>xs:positiveInteger</b>
annotation	documentation The largest intended viewing scale for the data. Not nillable(?)

element **DataCoverageType/minimumDisplayScale**

diagram	
type	<b>xs:positiveInteger</b>
annotation	documentation The smallest intended viewing scale for the data. Not nillable(?)

element **DataCoverageType/geometry**

diagram	
type	<b>SurfacePropertyType</b>
children	<b>surfaceProperty</b>

complexType **DataQualityType**

diagram	
type	extension of <a href="#">MetaFeatureType</a>
children	<b>gml:boundedBy</b> <b>featureObjectIdentifier</b> <b>informationAssociation</b> <b>featureAssociation</b> <b>invFeatureAssociation</b> <a href="#">information</a>
annotation	documentation Abstract feature type for data quality meta-features



element **DataQualityType/information**

diagram	
type	<a href="#">informationType</a>
children	<a href="#">fileLocator</a> <a href="#">fileReference</a> <a href="#">headline</a> <a href="#">language</a> <a href="#">text</a>
annotation	<p>documentation</p> <p>Use of attribute information is discouraged for nautical publications data quality meta-features.</p>

complexType **DatasetType**

diagram	
type	extension of <b>gml:AbstractFeatureType</b>
children	<b>gml:boundedBy</b> <a href="#">DatasetIdentificationInformation</a> <a href="#">DatasetStructureInformation</a> <b>Point</b> <b>MultiPoint</b> <b>Curve</b> <b>CompositeCurve</b> <b>OrientableCurve</b> <b>Surface</b> <b>Polygon</b> <a href="#">inmember</a> <a href="#">member</a>
annotation	<p>documentation</p> <p>Dataset element for MPA dataset as "GML document"</p>

element **DatasetType/DatasetIdentificationInformation**

diagram	<p><b>S100:DataSetIdentificationType</b></p> <ul style="list-style-type: none"> <li><b>encodingSpecification</b> type xs:string fixed S-100 Part 10b Encoding specification that defines the encoding.</li> <li><b>encodingSpecificationEdition</b> type xs:string fixed 1.0 Edition of the encoding specification</li> <li><b>productIdentifier</b> type xs:string Unique identifier of the data product as specified in the product specification</li> <li><b>productEdition</b> type xs:string Edition of the product specification</li> <li><b>applicationProfile</b> type xs:string Identifier that specifies a profile within the data product</li> <li><b>datasetFileIdentifier</b> type xs:string The file identifier of the dataset</li> <li><b>datasetTitle</b> type xs:string The title of the dataset</li> <li><b>datasetReferenceDate</b> type xs:date The reference date of the dataset</li> <li><b>datasetLanguage</b> type ISO-639-1 default en The (primary) language used in this dataset</li> <li><b>datasetAbstract</b> type xs:string The abstract of the dataset</li> <li><b>datasetTopicCategory</b> type MD_TopicCategoryCode 1..N A set of topic categories</li> </ul> <p><b>DatasetIdentificationInformation</b> type S100:DataSetIdentificationType Dataset identification information</p>
type	<b>DataSetIdentificationType</b>
children	<b>encodingSpecification encodingSpecificationEdition productIdentifier productEdition applicationProfile datasetFileIdentifier datasetTitle datasetReferenceDate datasetLanguage datasetAbstract datasetTopicCategory</b>
annotation	documentation Dataset identification information

element **DatasetType/DatasetStructureInformation**

diagram	<p><b>S100:DataSetStructureInformationType</b></p> <ul style="list-style-type: none"> <li><b>datasetCoordOriginX</b> type   xs:double Shift used to adjust X coordinate before encoding</li> <li><b>datasetCoordOriginY</b> type   xs:double Shift used to adjust Y coordinate before encoding</li> <li><b>datasetCoordOriginZ</b> type   xs:double Shift used to adjust Z coordinate before encoding</li> <li><b>coordMultFactorX</b> type   xs:positiveInteger Floating point to integer multiplication factor for X coordinate or longitude</li> <li><b>coordMultFactorY</b> type   xs:positiveInteger Floating point to integer multiplication factor for Y coordinate or latitude</li> <li><b>coordMultFactorZ</b> type   xs:positiveInteger Floating point to integer multiplication factor for Z coordinate or depths or height</li> <li><b>nInfoRec</b> type   xs:nonNegativeInteger Number of information records in the data set</li> <li><b>nPointRec</b> type   xs:nonNegativeInteger Number of point records in the data set</li> <li><b>nMultiPointRec</b> type   xs:nonNegativeInteger Number of multipoint records in the data set</li> <li><b>nCurveRec</b> type   xs:nonNegativeInteger Number of curve records in the data set</li> <li><b>nCompositeCurveRec</b> type   xs:nonNegativeInteger Number of composite curve records in the data set</li> <li><b>nSurfaceRec</b> type   xs:nonNegativeInteger Number of surface records in the data set</li> <li><b>nFeatureRec</b> type   xs:nonNegativeInteger Number of feature records in the data set</li> </ul> <p><b>DatasetStructureInform...</b> type   S100:DataSetStruct... Dataset structure information</p>
type	<b>DataSetStructureInformationType</b>
children	<b>datasetCoordOriginX datasetCoordOriginY datasetCoordOriginZ coordMultFactorX coordMultFactorY coordMultFactorZ nInfoRec nPointRec nMultiPointRec nCurveRec nCompositeCurveRec nSurfaceRec nFeatureRec</b>
annotation	documentation Dataset structure information

element **DatasetType/imember**

diagram	<p><b>imember</b> type <code>IMemberType</code> 0..∞ intended for S100 information types. Extension of GML practice, not addressed by ISO 19136.</p> <p><b>IMemberType</b> Attributes: owns (type: <code>boolean</code>, default: <code>false</code>) xlink:type (type: <code>xlink:typeType</code>, fixed: <code>simple</code>) xlink:href (type: <code>xlink:hrefType</code>) xlink:role (type: <code>xlink:roleType</code>) xlink:arcrole (type: <code>xlink:arcroleType</code>) xlink:title (type: <code>xlink:titleAttrType</code>) xlink:show (type: <code>xlink:showType</code>) xlink:actuate (type: <code>xlink:actuateType</code>) nilReason (type: <code>gml:nilReasonType</code>) InformationType (type: <code>InformationTypeType</code>)</p>
type	<a href="#"><b>IMemberType</b></a>
children	<a href="#"><b>InformationType</b></a>
annotation	documentation intended for S100 information types. Extension of GML practice, not addressed by ISO 19136.


element **DatasetType/member**

diagram	
type	<a href="#">MemberType</a>
children	<b>gml:AbstractFeature</b>
annotation	<p>documentation</p> <p>intended for technical GML 3.2 requirement for making the dataset a "GML document" and clause 21.3 of the OGC GML standard</p>

complexType **featureNameType**

diagram	
children	<a href="#">displayName</a> <a href="#">language</a> <a href="#">name</a>
annotation	<p>documentation</p> <p>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.</p>

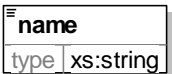
element **featureNameType/displayName**

diagram	 <p>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 True).</p>
type	<b>xs:boolean</b>
annotation	<p>documentation</p> <p>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 True).</p>

element **featureNameType/language**

diagram	<div><table><tr><td colspan="2">language</td></tr><tr><td>type</td><td>ISO639-3</td></tr><tr><td>pattern</td><td>\w{3}</td></tr></table><p>The method of human communication, either spoken or written, consisting of the use of words in a structured and conventional way</p></div>	language		type	ISO639-3	pattern	\w{3}
language							
type	ISO639-3						
pattern	\w{3}						
type	<a href="#">ISO639-3</a>						
facets	<table><tr><td>Kind</td><td>Value</td><td>Annotation</td></tr><tr><td>pattern</td><td>\w{3}</td><td></td></tr></table>	Kind	Value	Annotation	pattern	\w{3}	
Kind	Value	Annotation					
pattern	\w{3}						
annotation	<p>documentation</p> <p>The method of human communication, either spoken or written, consisting of the use of words in a structured and conventional way</p> <p>documentation</p> <p>Remarks: The language is encoded by a character code following ISO 639-3</p>						

element **featureNameType/name**

diagram	 <p>The individual name of a feature.</p>
type	<b>xs:string</b>
annotation	<p>documentation</p> <p>The individual name of a feature.</p>

complexType **FeatureType**

<p>diagram</p>	<p><b>FeatureType</b> Generalized feature type which carry all the common attributes</p> <p><b>S100:AbstractFeatureType</b> (extension)</p> <p><b>Attributes</b></p> <ul style="list-style-type: none"> <li><b>gml:id</b> type ID use required The attribute gml:id supports provision of a handle for the XML element representing a GML Object. Its use is mandatory for all GML objects. It is of XML type ID, so is constrained to be unique in the XML document within which it occurs.</li> <li><b>gml:boundedBy</b> type gml:BoundingShape... This property describes the minimum bounding box or rectangle that encloses the entire feature.</li> <li><b>featureObjectIdentifier</b> type FeatureObjectIdentifier</li> <li><b>informationAssociation</b> type InformationPropertyT... 0..1</li> <li><b>featureAssociation</b> type FeaturePropertyType 0..1</li> <li><b>invFeatureAssociation</b> type FeaturePropertyType 0..1</li> <li><b>fixedDateRange</b> type fixedDateRangeType</li> <li><b>periodicDateRange</b> type periodicDateRangeT... 0..1</li> <li><b>featureName</b> type featureNameType 0..1</li> <li><b>sourceIndication</b> type sourceIndicationType</li> <li><b>textContent</b> type textContentType 0..1</li> <li><b>permission</b> type gml:ReferenceType 0..1</li> <li><b>providesInformation</b> type gml:ReferenceType 0..1</li> <li><b>theRxN</b> type gml:ReferenceType 0..1</li> <li><b>positions</b> type gml:ReferenceType A pointer to a specific cartographically positioned location for text.</li> </ul>
type	extension of <b>AbstractFeatureType</b>
children	<b>gml:boundedBy</b> <b>featureObjectIdentifier</b> <b>informationAssociation</b> <b>featureAssociation</b> <b>invFeatureAssociation</b> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">textContent</a> <a href="#">permission</a> <a href="#">providesInformation</a> <a href="#">theRxN</a> <a href="#">positions</a>
annotation	<p>documentation</p> <p>Generalized feature type which carry all the common attributes</p>

element **FeatureType/fixedDateRange**

diagram	<p>The diagram shows the <b>fixedDateRange</b> element with a type <b>fixedDateRangeType</b>. The <b>fixedDateRangeType</b> is a complex type containing two elements: <b>dateStart</b> and <b>dateEnd</b>. Both <b>dateStart</b> and <b>dateEnd</b> have a type of <b>S100_TruncatedDate</b>. The <b>dateStart</b> element is described as "The start date or time of the interval." and the <b>dateEnd</b> element is described as "The end date or time of the interval."</p>
type	<a href="#">fixedDateRangeType</a>
children	<a href="#">dateStart</a> <a href="#">dateEnd</a>

element **FeatureType/periodicDateRange**

diagram	<p>The diagram shows the <b>periodicDateRange</b> element with a type <b>periodicDateRangeType</b>. The <b>periodicDateRangeType</b> is a complex type containing two elements: <b>dateStart</b> and <b>dateEnd</b>. Both <b>dateStart</b> and <b>dateEnd</b> have a type of <b>S100_TruncatedDate</b>. The <b>dateStart</b> element is described as "The start date or time of the interval." and the <b>dateEnd</b> element is described as "The end date or time of the interval."</p>
type	<a href="#">periodicDateRangeType</a>
children	<a href="#">dateStart</a> <a href="#">dateEnd</a>

element **FeatureType/featureName**

diagram	<p>The diagram shows the <b>featureName</b> element with a type <b>featureNameType</b>. The <b>featureNameType</b> is a complex type containing three elements: <b>displayName</b>, <b>language</b>, and <b>name</b>. The <b>displayName</b> element has a type of <b>xs:boolean</b> and is described as "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 True).". The <b>language</b> element has a type of <b>ISO639-3</b> and a pattern of <b>\w{3}</b>, and is described as "The method of human communication, either spoken or written, consisting of the use of words in a structured and conventional way". The <b>name</b> element has a type of <b>xs:string</b> and is described as "The individual name of a feature."</p>
type	<a href="#">featureNameType</a>



children	<a href="#">displayName</a> <a href="#">language</a> <a href="#">name</a>
----------	---

element **FeatureType/sourceIndication**

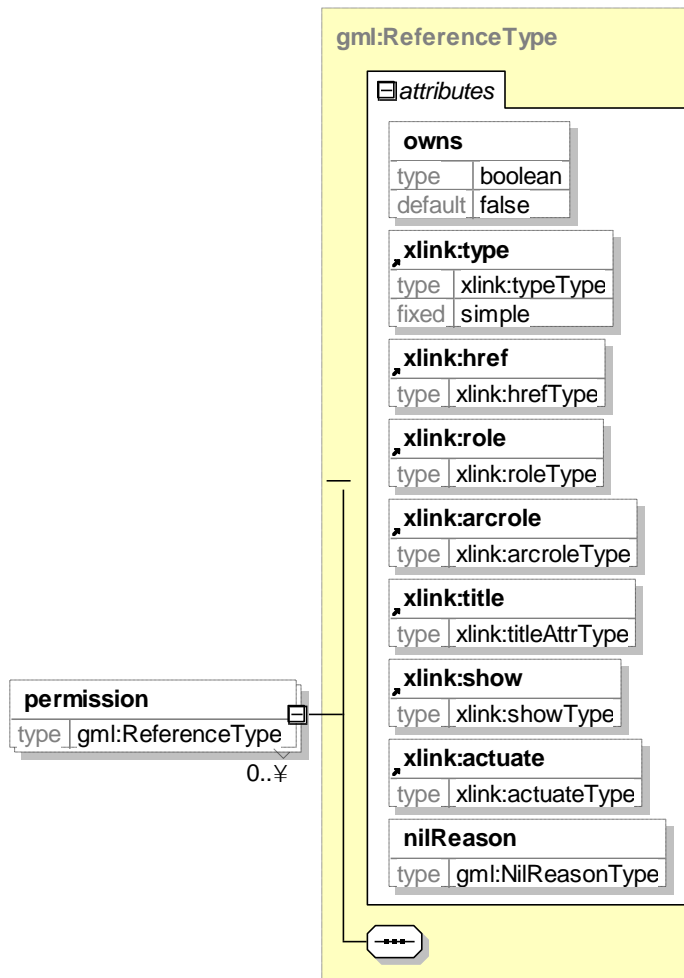
diagram	
type	<a href="#">sourceIndicationType</a>
children	<a href="#">categoryOfAuthority</a> <a href="#">country</a> <a href="#">featureName</a> <a href="#">reportedDate</a> <a href="#">source</a> <a href="#">sourceType</a>

element **FeatureType/textContent**

diagram	
type	<a href="#">textContentType</a>
children	<a href="#">categoryOfText</a> <a href="#">information</a> <a href="#">onlineResource</a> <a href="#">sourceIndication</a>

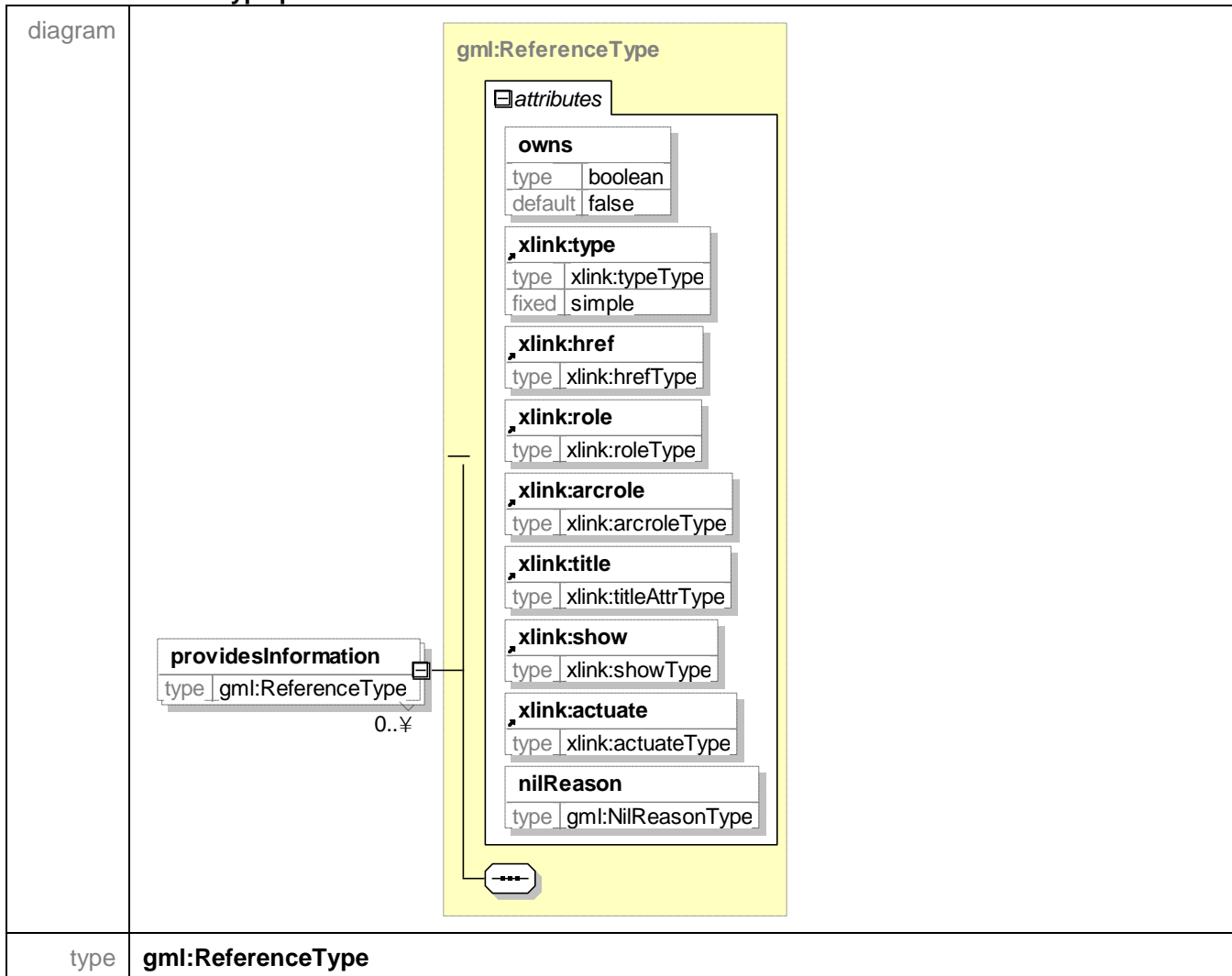
element **FeatureType/permission**

diagram



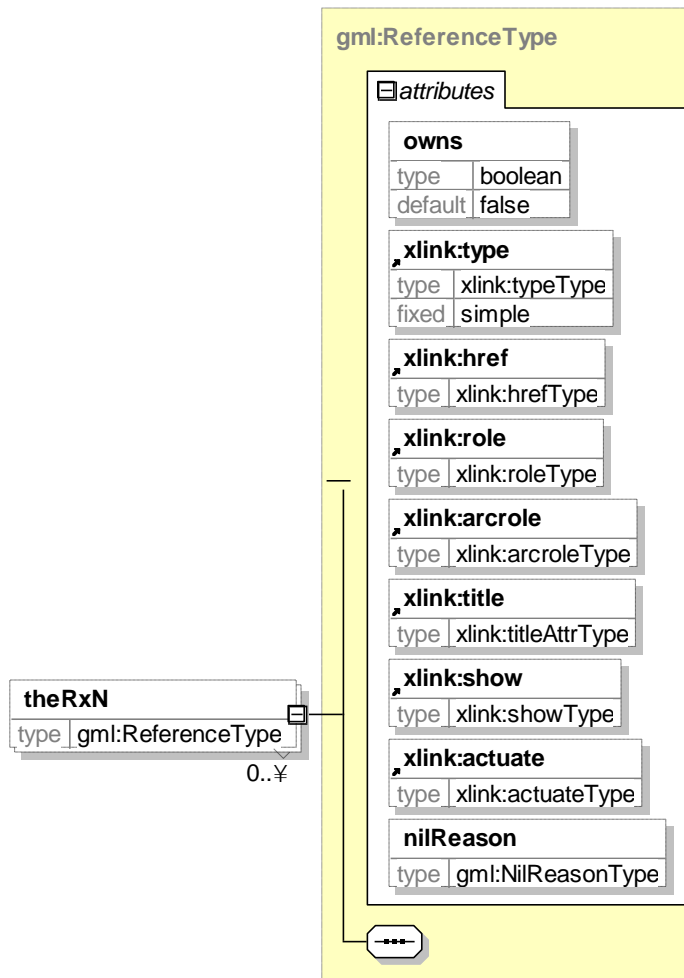
type

**gml:ReferenceType**

element **FeatureType/providesInformation**

element **FeatureType/theRxN**

diagram



type

**gml:ReferenceType**

element **FeatureType/positions**

diagram	<p><b>positions</b></p> <p>type <code>gml:ReferenceType</code></p> <p>A pointer to a specific cartographically positioned location for text.</p> <p><b>gml:ReferenceType</b></p> <p><b>attributes</b></p> <p><b>owns</b></p> <p>type <code>boolean</code> default <code>false</code></p> <p><b>xlink:type</b></p> <p>type <code>xlink:typeType</code> fixed <code>simple</code></p> <p><b>xlink:href</b></p> <p>type <code>xlink:hrefType</code></p> <p><b>xlink:role</b></p> <p>type <code>xlink:roleType</code></p> <p><b>xlink:arcrole</b></p> <p>type <code>xlink:arcroleType</code></p> <p><b>xlink:title</b></p> <p>type <code>xlink:titleAttrType</code></p> <p><b>xlink:show</b></p> <p>type <code>xlink:showType</code></p> <p><b>xlink:actuate</b></p> <p>type <code>xlink:actuateType</code></p> <p><b>nilReason</b></p> <p>type <code>gml:nilReasonType</code></p>
type	<b>gml:ReferenceType</b>
annotation	<p>documentation</p> <p>A pointer to a specific cartographically positioned location for text.</p>

complexType **fixedDateRangeType**

diagram	<p><b>fixedDateRangeType</b></p> <p>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.)</p> <p><b>dateStart</b></p> <p>type <code>S100_TruncatedDate</code></p> <p>The start date or time of the interval.</p> <p><b>dateEnd</b></p> <p>type <code>S100_TruncatedDate</code></p> <p>The end date or time of the interval.</p>
children	<a href="#">dateStart</a> <a href="#">dateEnd</a>
annotation	<p>documentation</p> <p>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.)</p>

element **fixedDateRangeType/dateStart**

diagram	<p><b>dateStart</b> type S100_TruncatedDate The start date or time of the interval.</p> <p><b>S100_TruncatedDate</b></p> <ul style="list-style-type: none"> <li><b>gDay</b> type xs:gDay</li> <li><b>gMonth</b> type xs:gMonth</li> <li><b>gYear</b> type xs:gYear</li> <li><b>gMonthDay</b> type xs:gMonthDay</li> <li><b>gYearMonth</b> type xs:gYearMonth</li> <li><b>date</b> type xs:date</li> </ul>
type	<a href="#">S100_TruncatedDate</a>
children	<a href="#">gDay</a> <a href="#">gMonth</a> <a href="#">gYear</a> <a href="#">gMonthDay</a> <a href="#">gYearMonth</a> <a href="#">date</a>
annotation	documentation The start date or time of the interval.

element **fixedDateRangeType/dateEnd**

diagram	<p><b>dateEnd</b> type S100_TruncatedDate The end date or time of the interval.</p> <p><b>S100_TruncatedDate</b></p> <ul style="list-style-type: none"> <li><b>gDay</b> type xs:gDay</li> <li><b>gMonth</b> type xs:gMonth</li> <li><b>gYear</b> type xs:gYear</li> <li><b>gMonthDay</b> type xs:gMonthDay</li> <li><b>gYearMonth</b> type xs:gYearMonth</li> <li><b>date</b> type xs:date</li> </ul>
type	<a href="#">S100_TruncatedDate</a>
children	<a href="#">gDay</a> <a href="#">gMonth</a> <a href="#">gYear</a> <a href="#">gMonthDay</a> <a href="#">gYearMonth</a> <a href="#">date</a>
annotation	documentation

	The end date or time of the interval.
--	---------------------------------------


### complexType **frequencyPairType**

diagram	<p><b>frequencyPairType</b> A pair of frequencies for transmitting and receiving radio signals. The shore station transmits and receives on the frequencies indicated</p> <p><b>contactInstructions</b> type xs:string 0..1</p> <p><b>categoryOfCommPref</b> type categoryOfCommPref 0..1</p> <p><b>frequencyShoreStationTransmits</b> type xs:positiveInteger 0..1</p> <p>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</p> <p><b>frequencyShoreStationReceives</b> type xs:positiveInteger 0..1</p> <p>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</p> <p><b>textContent</b> type textContentType 0..1</p>
children	<a href="#">contactInstructions</a> <a href="#">categoryOfCommPref</a> <a href="#">frequencyShoreStationTransmits</a> <a href="#">frequencyShoreStationReceives</a> <a href="#">textContent</a>
annotation	<p>documentation</p> <p>A pair of frequencies for transmitting and receiving radio signals. The shore station transmits and receives on the frequencies indicated</p>

### element **frequencyPairType/contactInstructions**

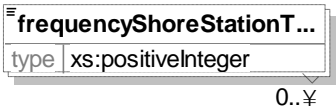
diagram	<p><b>contactInstructions</b> type xs:string 0..1</p>
type	<b>xs:string</b>

### element **frequencyPairType/categoryOfCommPref**

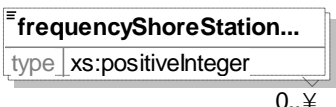
diagram			
type	<a href="#">categoryOfCommPrefType</a>		
facets	Kind	Value	Annotation
	enumeration	preferred calling	<a href="#">documentation</a> the first choice channel or frequency to be used when calling a radio station
	enumeration	alternate calling	<a href="#">documentation</a> a channel or frequency to be used for calling a radio station when the preferred channel or frequency is busy or is suffering from interference
	enumeration	preferred working	<a href="#">documentation</a> the first choice channel or frequency to be used when working with a radio station
	enumeration	alternate working	<a href="#">documentation</a> 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
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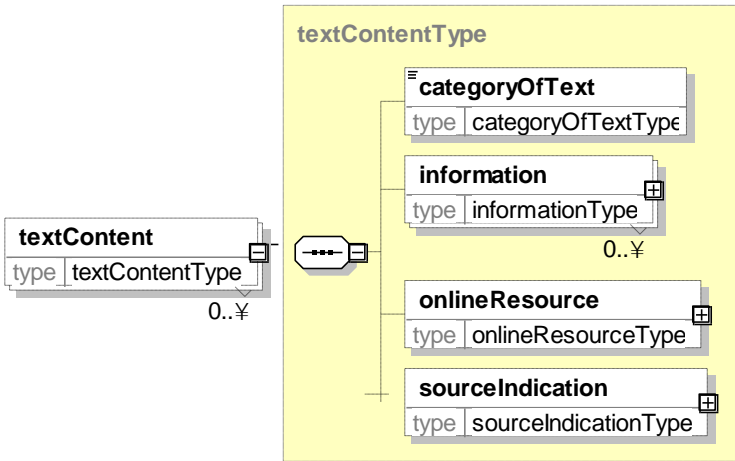
element **frequencyPairType/frequencyShoreStationTransmits**

diagram	 <p>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</p>
type	<b>xs:positiveInteger</b>
annotation	<p>documentation</p> <p>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</p>

element **frequencyPairType/frequencyShoreStationReceives**

diagram	 <p>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</p>
type	<b>xs:positiveInteger</b>
annotation	<p>documentation</p> <p>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</p>

element **frequencyPairType/textContent**

diagram	
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type	<a href="#">textContentType</a>
children	<a href="#">categoryOfText</a> <a href="#">information</a> <a href="#">onlineResource</a> <a href="#">sourceIndication</a>

### complexType **GenericFeatureType**

diagram	
type	extension of <b>AbstractFeatureType</b>
children	<b>gml:boundedBy</b> <b>featureObjectIdentifier</b> <b>informationAssociation</b> <b>featureAssociation</b> <b>invFeatureAssociation</b>

### complexType **GM\_Curve**

diagram	
children	<b>curveProperty</b>

### complexType **GM\_Point**

diagram	
children	<b>pointProperty</b>

complexType **GM\_Surface**

diagram	
children	<b>surfaceProperty</b>

complexType **graphicType**

diagram	
children	<a href="#">pictorialRepresentation</a> <a href="#">pictureCaption</a> <a href="#">sourceDate</a> <a href="#">pictureInformation</a> <a href="#">bearingInformation</a>

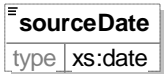
element **graphicType/pictorialRepresentation**

diagram	
type	<b>xs:string</b>


element **graphicType/pictureCaption**

diagram	
type	<b>xs:string</b>
annotation	documentation Short description of the purpose of the image.

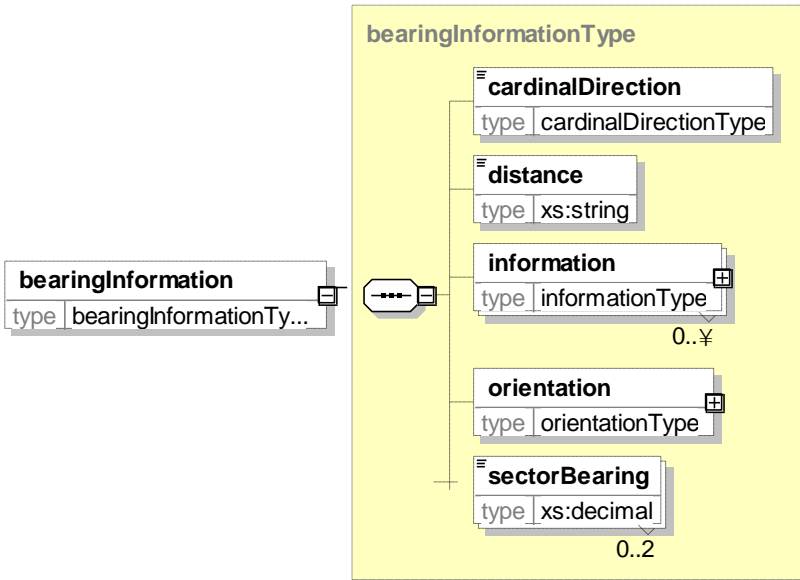
element **graphicType/sourceDate**

diagram	
type	<b>xs:date</b>

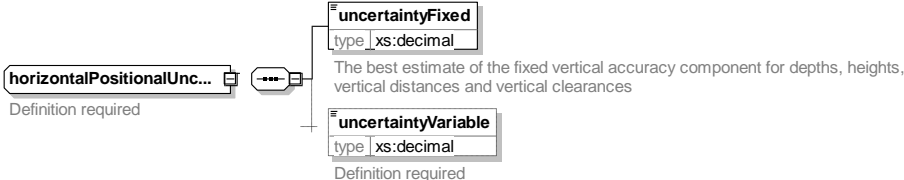
element **graphicType/pictureInformation**

diagram	 <p>A set of information to provide credits to picture creator, copyright owner etc.</p>
type	<b>xs:string</b>
annotation	<p>documentation</p> <p>A set of information to provide credits to picture creator, copyright owner etc.</p>

element **graphicType/bearingInformation**


diagram	
type	<a href="#"><u>bearingInformationType</u></a>
children	<a href="#"><u>cardinalDirection</u></a> <a href="#"><u>distance</u></a> <a href="#"><u>information</u></a> <a href="#"><u>orientation</u></a> <a href="#"><u>sectorBearing</u></a>

complexType **horizontalPositionalUncertainty**

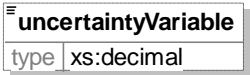
diagram	
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children	<a href="#">uncertaintyFixed</a> <a href="#">uncertaintyVariable</a>
annotation	documentation Definition required

element **horizontalPositionalUncertainty/uncertaintyFixed**

diagram	 <p>The best estimate of the fixed vertical accuracy component for depths, heights, vertical distances and vertical clearances</p>
type	<b>xs:decimal</b>
annotation	documentation The best estimate of the fixed vertical accuracy component for depths, heights, vertical distances and vertical clearances

element **horizontalPositionalUncertainty/uncertaintyVariable**

diagram	 <p>Definition required</p>
type	<b>xs:decimal</b>
annotation	documentation Definition required

complexType **IMemberType**

diagram	<p>The diagram illustrates the structure of the <b>IMemberType</b> complex type. It is an extension of <b>gml:AbstractFeatureMemberType</b>. The <b>IMemberType</b> is associated with the dataset member S-100 information types. The <b>gml:AbstractFeatureMemberType</b> (extension) contains an <b>owns</b> attribute (type: boolean, default: false). Below this, a large box shows the <b>gml:AssociationAttr...</b> group, which includes various <b>xlink</b> attributes (xlink:type, xlink:href, xlink:role, xlink:arcrole, xlink:title, xlink:show, xlink:actuate) and a <b>nilReason</b> attribute (type: gml:nilReasonType). At the bottom, an <b>InformationType</b> attribute is shown with type <b>InformationTypeType</b>.</p>
type	extension of <b>gml:AbstractFeatureMemberType</b>
children	<a href="#">InformationType</a>
annotation	documentation dataset member S-100 infotmation types

complexType **InclusionType**

diagram	<p><b>InclusionType</b> Association class specifying the relationship between the subset of vessels described by an APPLIC data object and a regulation (restriction, recommendation, or nautical information).</p>
type	extension of <a href="#">InformationTypeType</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociation</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a> <a href="#">membership</a> <a href="#">theApplicableRxN</a> <a href="#">isApplicableTo</a>
annotation	<p>documentation</p> <p>Association class specifying the relationship between the subset of vessels described by an APPLIC data object and a regulation (restriction, recommendation, or nautical information).</p>

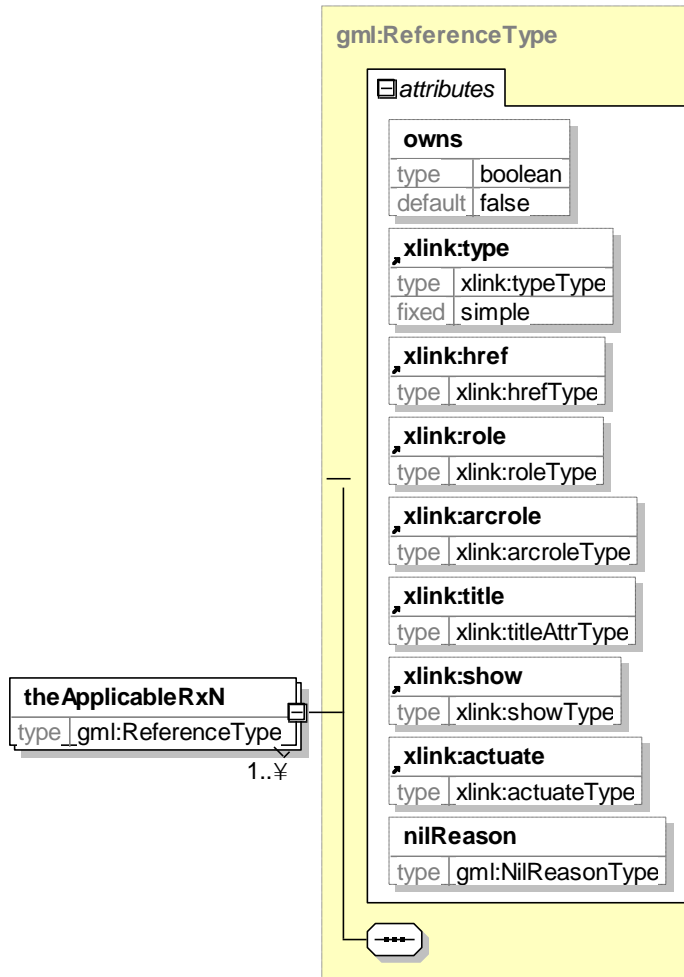
element **InclusionType/membership**

diagram	<div><div><div><div><div><div></div><div><b>membership</b></div></div><div><div>type</div><div>membershipType</div></div></div></div></div><p>indicates whether a vessel is included or excluded from the regulation/restriction/recommendation/nautical information</p></div>									
type	<a href="#">membershipType</a>									
facets	<table><tr><th>Kind</th><th>Value</th><th>Annotation</th></tr><tr><td>enumeration</td><td>included</td><td>documentation Vessels with these characteristics are included in the regulation/restriction/recommendation/nautical information.</td></tr><tr><td>enumeration</td><td>excluded</td><td>documentation Vessels with these characteristics are excluded from the regulation/restriction/recommendation/nautical information.</td></tr></table>	Kind	Value	Annotation	enumeration	included	documentation Vessels with these characteristics are included in the regulation/restriction/recommendation/nautical information.	enumeration	excluded	documentation Vessels with these characteristics are excluded from the regulation/restriction/recommendation/nautical information.
Kind	Value	Annotation								
enumeration	included	documentation Vessels with these characteristics are included in the regulation/restriction/recommendation/nautical information.								
enumeration	excluded	documentation Vessels with these characteristics are excluded from the regulation/restriction/recommendation/nautical information.								
annotation	documentation indicates whether a vessel is included or excluded from the									

regulation/restriction/recommendation/nautical information

element **InclusionType/theApplicableRxN**

diagram

type **gml:ReferenceType**

element **InclusionType/isApplicableTo**

diagram	
type	<b>gml:ReferenceType</b>

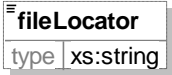
complexType **informationType**

diagram	
children	<a href="#">fileLocator</a> <a href="#">fileReference</a> <a href="#">headline</a> <a href="#">language</a> <a href="#">text</a>
annotation	<p>documentation</p> <p>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-</p>

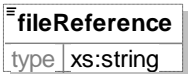


	<p>attribute file reference. documentation</p> <p>Remarks: - The sub-attribute text should be used, for example, to hold the information that is shown on paper charts by cautionary and explanatory notes. No formatting of text is possible within the sub-attribute text. If formatted text is required then 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.</p>
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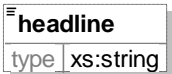
#### element **informationType/fileLocator**

diagram	 <p>The string encodes the location of a fragment of text or other information in a support file.</p>
type	<b>xs:string</b>
annotation	<p>documentation</p> <p>The string encodes the location of a fragment of text or other information in a support file.</p> <p>documentation</p> <p>Remarks: - Application schemas must describe how the associated file is identified. The associated file will commonly be named in a file reference co-attribute of the same complex attribute.; - Each DCEG must specify requirements for the format of the associated file and the semantics of file locator. For example, the value of file locator may be an HTML ID in an HTML file, line number in a text file) or a bookmark in a PDF file.</p>

#### element **informationType/fileReference**

diagram	 <p>The string encodes the file name of a single external text file that contains the text.</p>
type	<b>xs:string</b>
annotation	<p>documentation</p> <p>The string encodes the file name of a single external text file that contains the text.</p> <p>documentation</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>

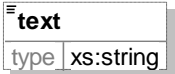
#### element **informationType/headline**

diagram	 <p>Words set at the head of a passage or page to introduce or categorize</p>
type	<b>xs:string</b>
annotation	<p>documentation</p> <p>Words set at the head of a passage or page to introduce or categorize</p>

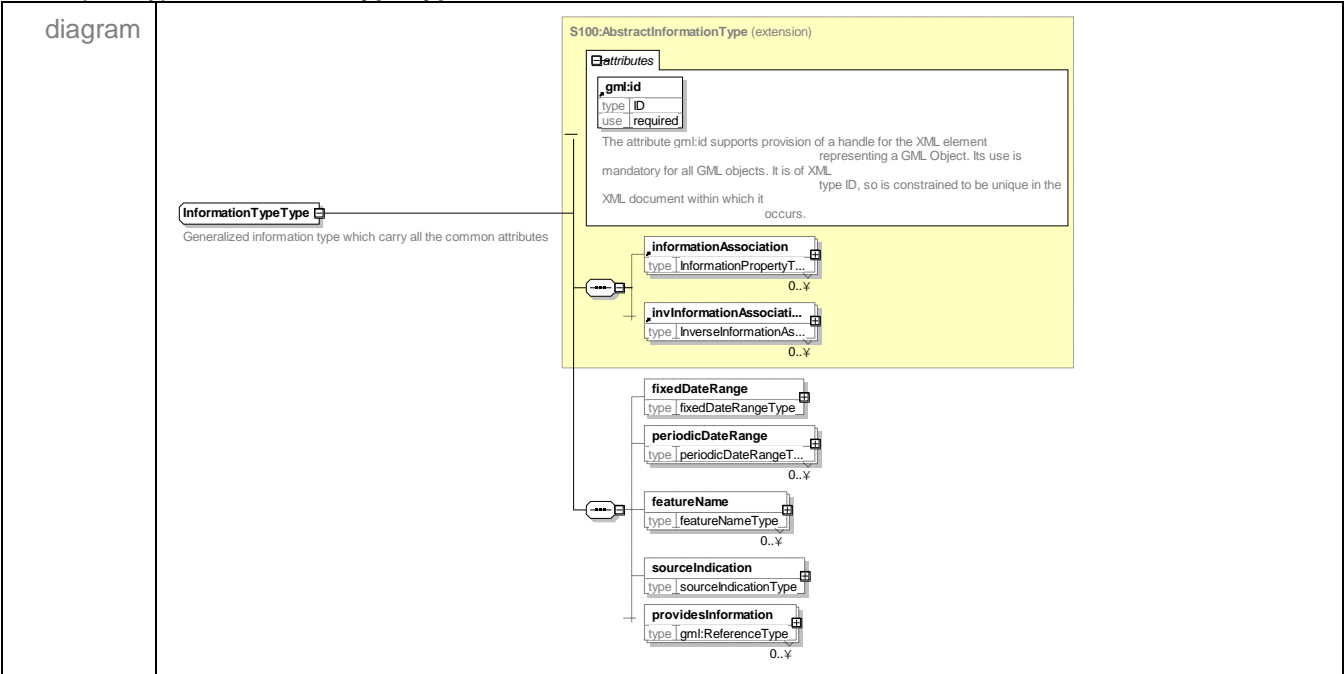
element **informationType/language**

diagram	 <p>The diagram shows a box labeled 'language' with a sub-box 'type' containing 'xs:string'. Below the box is the text 'ISO 639-3 value'.</p>
type	<b>xs:string</b>
annotation	documentation ISO 639-3 value

element **informationType/text**

diagram	 <p>The diagram shows a box labeled 'text' with a sub-box 'type' containing 'xs:string'. Below the box is the text 'A non-formatted digital text string.'</p>
type	<b>xs:string</b>
annotation	documentation A non-formatted digital text string. documentation 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.

complexType **InformationTypeType**



type	extension of <b>AbstractInformationType</b>
children	<b>informationAssociation</b> <b>invInformationAssociation</b> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a>
annotation	documentation Generalized information type which carry all the common attributes

element **InformationTypeType/fixedDateRange**

diagram	
type	<a href="#">fixedDateRangeType</a>
children	<a href="#">dateStart</a> <a href="#">dateEnd</a>

element **InformationTypeType/periodicDateRange**

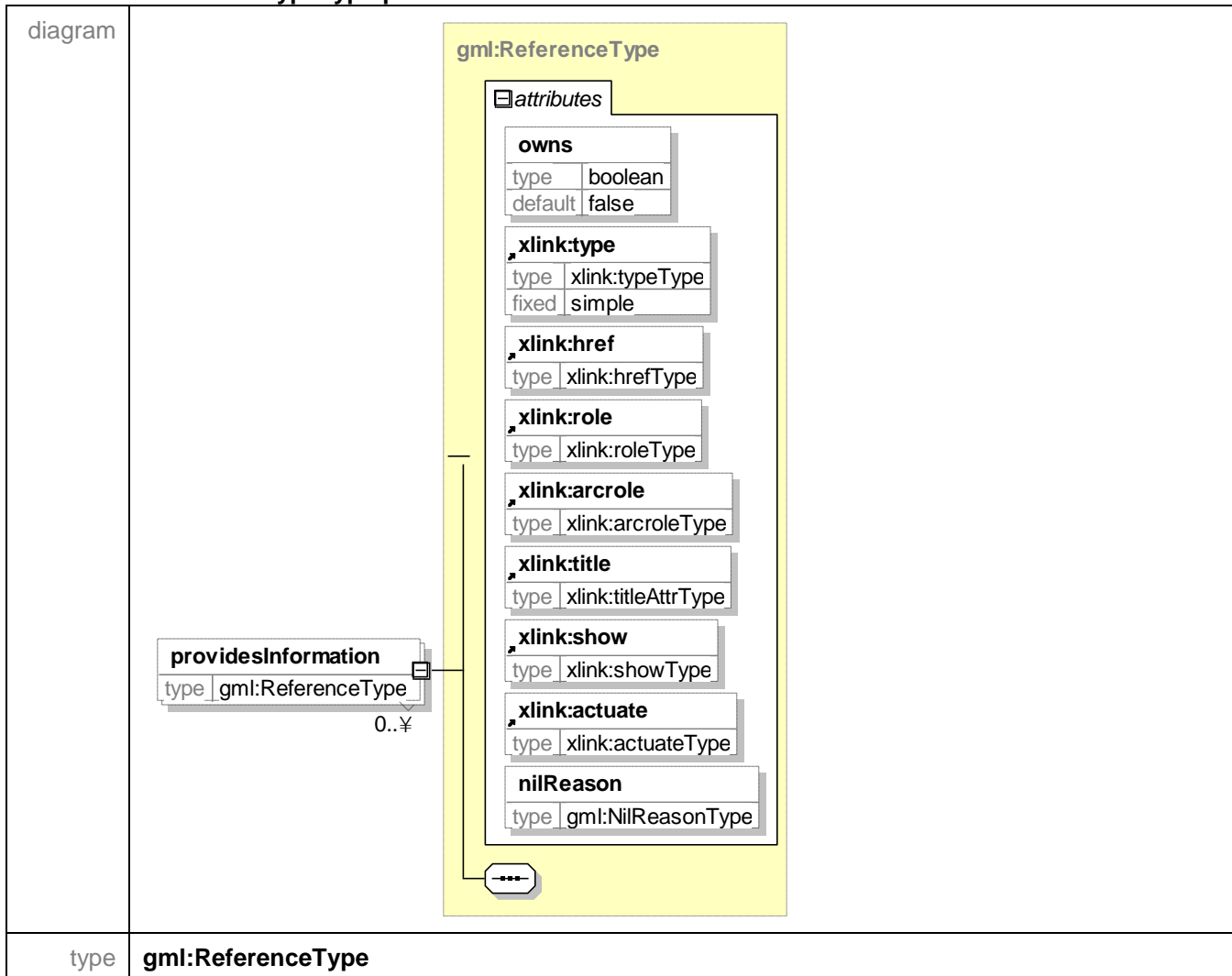
diagram	
type	<a href="#">periodicDateRangeType</a>
children	<a href="#">dateStart</a> <a href="#">dateEnd</a>

element **InformationType/featureName**

diagram	
type	<a href="#">featureNameType</a>
children	<a href="#">displayName</a> <a href="#">language</a> <a href="#">name</a>

element **InformationType/sourceIndication**

diagram	
type	<a href="#">sourceIndicationType</a>
children	<a href="#">categoryOfAuthority</a> <a href="#">country</a> <a href="#">featureName</a> <a href="#">reportedDate</a> <a href="#">source</a> <a href="#">sourceType</a>

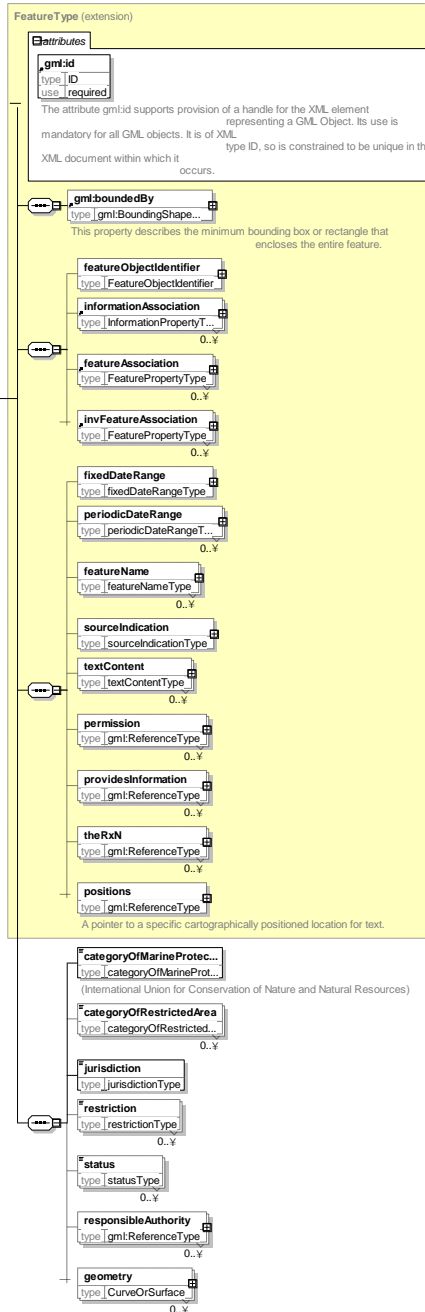
element **InformationTypeType/providesInformation**

complexType **MarineProtectedAreaType**

diagram

**MarineProtectedAreaType**

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.)

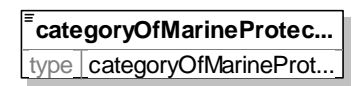
type extension of [FeatureType](#)

children **gml:boundedBy** **featureObjectIdentifier** **informationAssociation** **featureAssociation** **invFeatureAssociation** [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [textContent](#) [permission](#) [providesInformation](#) [theRxnN](#) [positions](#) [categoryOfMarineProtectedArea](#) [categoryOfRestrictedArea](#) [jurisdiction](#) [restriction](#) [status](#) [responsibleAuthority](#) [geometry](#)

annotation documentation  
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.)
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element **MarineProtectedAreaType/categoryOfMarineProtectedArea**

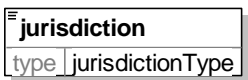
diagram	 <p>(International Union for Conservation of Nature and Natural Resources)</p>
type	<a href="#">categoryOfMarineProtectedAreaType</a>
annotation	documentation (International Union for Conservation of Nature and Natural Resources)

element **MarineProtectedAreaType/categoryOfRestrictedArea**

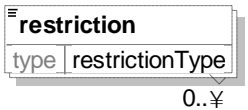
diagram			
type	<a href="#">categoryOfRestrictedAreaType</a>		
facets	Kind	Value	Annotation
	enumeration	nature reserve	documentation A tract of land or water managed so as to preserve it's flora, fauna, physical features, etc.
	enumeration	bird sanctuary	documentation A place where birds are bred and protected.
	enumeration	game reserve	documentation A place where wild animals or birds hunted for sport or food are kept undisturbed for private use.
	enumeration	seal sanctuary	documentation A place where seals are protected.
	enumeration	historic wreck area	documentation An area around certain wrecks of historical importance to protect the wrecks from unauthorized interference by diving, salvage or deposition (including anchoring).
	enumeration	research area	documentation an area where marine research takes place.
	enumeration	fish sanctuary	documentation A place where fish are protected.
	enumeration	ecological reserve	documentation 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.
	enumeration	environmentally sensitive sea area	documentation A generic term which may be used to describe a wide range of areas, considered sensitive for a variety of environmental reasons.
	enumeration	particularly sensitive sea area	documentation 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

	enumeration coral sanctuary	activities. documentation A place where coral is protected. (TSMAD 29)
	enumeration recreation area	documentation An area within which recreational activities regularly take place and therefore vessel movement may be restricted. (Adapted from S-57 Edition 3.1, Appendix A – Chapter 2, Page 2.76, November 2000).

element **MarineProtectedAreaType/jurisdiction**

diagram			
type	<a href="#">jurisdictionType</a>		
facets	Kind	Value	Annotation
	enumeration	international	documentation involving more than one country; covering more than one national area.
	enumeration	national	documentation an area administered or controlled by a single nation.
	enumeration	national sub-division	documentation an area smaller than the nation in which it lies.

element **MarineProtectedAreaType/restriction**

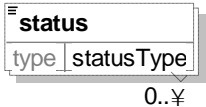
diagram			
type	<a href="#">restrictionType</a>		
facets	Kind	Value	Annotation
	enumeration	anchoring prohibited	documentation An area within which anchoring is not permitted.
	enumeration	anchoring restricted	documentation a specified area designated by appropriate authority, within which anchoring is restricted in accordance with certain specified conditions.
	enumeration	fishing prohibited	documentation An area within which fishing is not permitted.
	enumeration	fishing restricted	documentation a specified area designated by appropriate authority, within which fishing is restricted in accordance with certain specified conditions.
	enumeration	trawling prohibited	documentation An area within which trawling is not permitted.
	enumeration	trawling restricted	documentation a specified area designated by appropriate authority, within which trawling is restricted in accordance with certain specified conditions.
	enumeration	entry prohibited	documentation



	enumeration	entry restricted	An area within which navigation and/or anchoring is prohibited. <a href="#">documentation</a> a specified area designated by appropriate authority, within which navigation is restricted in accordance with certain specified conditions.
	enumeration	dredging prohibited	<a href="#">documentation</a> An area within which dredging is not permitted.
	enumeration	dredging restricted	<a href="#">documentation</a> a specified area designated by appropriate authority, within which dredging is restricted in accordance with certain specified conditions.
	enumeration	diving prohibited	<a href="#">documentation</a> An area within which diving is not permitted.
	enumeration	diving restricted	<a href="#">documentation</a> a specified area designated by appropriate authority, within which diving is restricted in accordance with certain specified conditions.
	enumeration	no wake	<a href="#">documentation</a> Mariners must adjust the speed of their vessels to reduce the wave or wash which may cause erosion or disturb moored vessels.
	enumeration	area to be avoided	<a href="#">documentation</a> 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.
	enumeration	construction prohibited	<a href="#">documentation</a> The erection of permanent or temporary fixed structures or artificial islands is prohibited.
	enumeration	discharging prohibited	<a href="#">documentation</a> An area in which discharging or dumping is prohibited.
	enumeration	discharging restricted	<a href="#">documentation</a> A specified area designated by appropriate authority, within which discharging or dumping is restricted in accordance with certain specified conditions.
	enumeration	industrial or mineral exploration/development prohibited	<a href="#">documentation</a> An area in which industrial or mineral exploration and development are prohibited.
	enumeration	industrial or mineral exploration/development restricted	<a href="#">documentation</a> A specified area designated by appropriate authority, within which industrial or mineral exploration and development is restricted in accordance with certain specified conditions.
	enumeration	drilling prohibited	<a href="#">documentation</a> An area in which excavating a hole on the seabed with a drill is prohibited.
	enumeration	drilling restricted	<a href="#">documentation</a> 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.

enumeration	removal of historical artifacts prohibited	documentation An area in which the removal of historical artifacts is prohibited.
enumeration	cargo transshipment (lightering) prohibited	documentation An area in which cargo transshipment (lightering) is prohibited.
enumeration	dragging prohibited	documentation An area in which the dragging or anything along the seabed, e.g., bottom trawling, is prohibited.
enumeration	stopping prohibited	documentation An area in which a vessel is prohibited from stopping.
enumeration	landing prohibited	documentation An area in which landing is prohibited.
enumeration	speed restricted	documentation An area in which speed is restricted.
enumeration	swimming prohibited	documentation An area in which swimming is prohibited.

element **MarineProtectedAreaType/status**

diagram			
type	<a href="#">statusType</a>		
facets	Kind	Value	Annotation
	enumeration	permanent	documentation Intended to last or function indefinitely
	enumeration	occasional	documentation Acting on special occasions; happening irregularly
	enumeration	recommended	documentation Presented as worthy of confidence, acceptance, use, etc.
	enumeration	not in use	documentation Use has ceased, but the facility still exists intact; disused.
	enumeration	periodic/intermittent	documentation Recurring at intervals
	enumeration	reserved	documentation Set apart for some specific use
	enumeration	temporary	documentation Meant to last only for a time
	enumeration	private	documentation Administered by an individual or corporation, rather than a State or a public body.
	enumeration	mandatory	documentation Compulsory; enforced.
	enumeration	extinguished	documentation No longer lit
	enumeration	illuminated	documentation Lit by floodlights, strip lights, etc.
	enumeration	historic	documentation Famous in history; of historical interest
	enumeration	public	documentation Belonging to, available to, used or shared by, the

	enumeration	synchronised	community as a whole and not restricted to private use. documentation
	enumeration	watched	Occur at a time, coincide in point of time, be contemporary or simultaneous documentation
	enumeration	un-watched	Looked at or observed over a period of time especially so as to be aware of any movement or change. documentation
	enumeration	existence doubtful	Usually automatic in operation, without any permanently- stationed personnel to superintend it. documentation
	enumeration	buoyed	A feature that has been reported but has not been definitely determined to exist. documentation
			Marked by buoys

element **MarineProtectedAreaType/responsibleAuthority**

diagram	<p>The diagram illustrates the <b>responsibleAuthority</b> element, which is a specialization of <b>gml:ReferenceType</b>. The element is shown with a multiplicity of 0..1. The <b>gml:ReferenceType</b> base class is highlighted in yellow and contains the following attributes:</p> <ul style="list-style-type: none"> <li><b>owns</b>: type boolean, default false</li> <li><b>xlink:type</b>: type xlink:typeType, fixed simple</li> <li><b>xlink:href</b>: type xlink:hrefType</li> <li><b>xlink:role</b>: type xlink:roleType</li> <li><b>xlink:arcrole</b>: type xlink:arcroleType</li> <li><b>xlink:title</b>: type xlink:titleAttrType</li> <li><b>xlink:show</b>: type xlink:showType</li> <li><b>xlink:actuate</b>: type xlink:actuateType</li> <li><b>nilReason</b>: type gml:nilReasonType</li> </ul>
type	<b>gml:ReferenceType</b>

element **MarineProtectedAreaType/geometry**

diagram	<p>The diagram illustrates the structure of the <b>MarineProtectedAreaType/geometry</b> element. It consists of a <b>geometry</b> element with a <b>type</b> attribute of <b>CurveOrSurface</b> and a cardinality of <b>0..∞</b>. This element is connected to a <b>CurveOrSurface</b> container, which contains two child elements: <b>S100:curveProperty</b> (with <b>type</b> <b>CurvePropertyType</b>) and <b>S100:surfaceProperty</b> (with <b>type</b> <b>SurfacePropertyType</b>). Both child elements have a cardinality of <b>1</b>.</p>
type	<a href="#">CurveOrSurface</a>
children	<b>curveProperty</b> <b>surfaceProperty</b>

complexType **MemberType**

diagram	<p>The diagram illustrates the structure of <b>gml:AbstractFeatureMemberType</b> (extension). It features a <b>MemberType</b> class with a <b>dataset member</b> role. The class has an <b>owns</b> attribute (boolean, default false) and a large <b>attributes</b> block. This block contains a group of <b>gml:AssociationAttr...</b> components, including <b>xlink:type</b>, <b>xlink:href</b>, <b>xlink:role</b>, <b>xlink:arcrole</b>, <b>xlink:title</b>, <b>xlink:show</b>, <b>xlink:actuate</b>, and <b>nilReason</b>. Below these is a substitution group for <b>gml:AbstractFeature</b>, which includes <b>gml:AbstractFe...</b> and <b>gml:AbstractGML</b>.</p> <p>XLink components are the standard method to support hypertext referencing in XML. An XML Schema attribute group, <b>gml:AssociationAttributeGroup</b>, is provided to support the use of Xlinks as the method for indicating the value of a property by reference in a uniform manner in GML.</p> <p>This abstract element serves as the head of a substitution group which may contain any elements whose content model is derived from <b>gml:AbstractFeatureType</b>. This may be used as a variable in the construction of content models. <b>gml:AbstractFeature</b> may be thought of as "anything that is a GML feature" and may be used to define variables or templates in which the value of a GML property is "any feature". This occurs in particular in a GML feature collection where the feature member properties contain one or multiple copies of <b>gml:AbstractFeature</b> respectively.</p>
type	extension of <b>gml:AbstractFeatureMemberType</b>
children	<b>gml:AbstractFeature</b>
annotation	documentation dataset member

complexType **MetaFeatureType**

diagram	<p><b>MetaFeatureType</b> Generalized feature type which carry all the common attributes</p> <p><b>S100:AbstractFeatureType (extension)</b></p> <p><b>Attributes</b></p> <p><b>gml:id</b> type ID use required The attribute gml:id supports provision of a handle for the XML element representing a GML Object. Its use is mandatory for all GML objects. It is of XML type ID, so is constrained to be unique in the XML document within which it occurs.</p> <p><b>gml:boundedBy</b> type gml:BoundingShape... This property describes the minimum bounding box or rectangle that encloses the entire feature.</p> <p><b>featureObjectIdentifier</b> type FeatureObjectIdentifier</p> <p><b>informationAssociation</b> type InformationPropertyT... 0..1</p> <p><b>featureAssociation</b> type FeaturePropertyType 0..1</p> <p><b>invFeatureAssociation</b> type FeaturePropertyType 0..1</p>
type	extension of <b>AbstractFeatureType</b>
children	<b>gml:boundedBy featureObjectIdentifier informationAssociation featureAssociation invFeatureAssociation</b>
annotation	documentation Generalized feature type which carry all the common attributes

complexType **NauticalInformationType**

diagram	<p><b>NauticalInformationType</b></p> <p>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.</p> <p><b>AbstractRXNType (extension)</b></p> <p><b>Attributes</b></p> <p><b>gml:id</b>          type   ID          use   required</p> <p>The attribute gml:id supports provision of a handle for the XML element representing a GML Object. Its use is mandatory for all GML objects. It is of XML type ID, so is constrained to be unique in the XML document within which it occurs.</p> <p><b>informationAssociation</b>          type   InformationPropertyT...          0..1</p> <p><b>invInformationAssociati...</b>          type   InverseInformationAs...          0..1</p> <p><b>fixedDateRange</b>          type   fixedDateRangeType          0..1</p> <p><b>periodicDateRange</b>          type   periodicDateRangeT...          0..1</p> <p><b>featureName</b>          type   FeatureNameType          0..1</p> <p><b>sourceIndication</b>          type   sourceIndicationType          0..1</p> <p><b>providesInformation</b>          type   gml:ReferenceType          0..1</p> <p><b>categoryOfAuthority</b>          type   categoryOfAuthorityT...          0..1</p> <p><b>textContent</b>          type   textContentType          0..1</p> <p><b>graphic</b>          type   graphicType          0..1</p> <p><b>rxnCode</b>          type   rxnCodeType          0..1</p> <p><b>isApplicableTo</b>          type   gml:ReferenceType          0..1</p> <p><b>theOrganisation</b>          type   gml:ReferenceType          0..1</p> <p><b>informationProvidedFor</b>          type   gml:ReferenceType          0..1</p> <p>This tag is overloaded, but the relationship cannot be to a feature type because info-&gt;feature links are not allowed by the 3.0.0 feature catalogue</p>
type	extension of <a href="#">AbstractRXNType</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociation</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a> <a href="#">categoryOfAuthority</a> <a href="#">textContent</a> <a href="#">graphic</a> <a href="#">rxnCode</a> <a href="#">isApplicableTo</a> <a href="#">theOrganisation</a> <a href="#">informationProvidedFor</a>
annotation	<p>documentation</p> <p>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.</p>





complexType **NonStandardWorkingDayType**

diagram	<p><b>NonStandardWorkingDa...</b> 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.</p> <p><b>InformationTypeType (extension)</b> <b>Attributes</b> <b>gml:id</b> type ID use required The attribute gml:id supports provision of a handle for the XML element representing a GML Object. Its use is mandatory for all GML objects. It is of XML type ID, so is constrained to be unique in the XML document within which it occurs.</p> <p><b>informationAssociation</b> type InformationPropertyT... 0..1</p> <p><b>invInformationAssociati...</b> type InverseInformationAs... 0..1</p> <p><b>fixedDateRange</b> type fixedDateRangeType 0..1</p> <p><b>periodicDateRange</b> type periodicDateRangeT... 0..1</p> <p><b>featureName</b> type featureNameType 0..1</p> <p><b>sourceIndication</b> type sourceIndicationType 0..1</p> <p><b>providesInformation</b> type gml:ReferenceType 0..1</p> <p><b>fixedDate</b> type S100_TruncatedDate 0..1 The date when a festival or national holiday recurs on the same day each year in the Gregorian calendar.</p> <p><b>variableDate</b> type xs:string 0..1 A day which is not fixed in the Gregorian calendar. Examples: The fourth Thursday in November; new moon day of Kartika (Diwali); Easter Sunday.</p> <p><b>information</b> type informationType 0..1</p> <p><b>theServiceHours_nsd...</b> type gml:ReferenceType 0..1 optional</p>
type	extension of <a href="#">InformationTypeType</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociation</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a> <a href="#">fixedDate</a> <a href="#">variableDate</a> <a href="#">information</a> <a href="#">theServiceHours_nsd...</a>
annotation	<p>documentation</p> <p>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.</p>

element **NonStandardWorkingDayType/fixedDate**

diagram	<p><b>fixedDate</b> type <code>S100_TruncatedDate</code> 0..1</p> <p>The date when a festival or national holiday recurs on the same day each year in the Gregorian calendar.</p> <p><b>S100_TruncatedDate</b></p> <ul style="list-style-type: none"> <li><b>gDay</b> (type <code>xs:gDay</code>)</li> <li><b>gMonth</b> (type <code>xs:gMonth</code>)</li> <li><b>gYear</b> (type <code>xs:gYear</code>)</li> <li><b>gMonthDay</b> (type <code>xs:gMonthDay</code>)</li> <li><b>gYearMonth</b> (type <code>xs:gYearMonth</code>)</li> <li><b>date</b> (type <code>xs:date</code>)</li> </ul>
type	<a href="#"><b>S100_TruncatedDate</b></a>
children	<a href="#"><b>gDay</b></a> <a href="#"><b>gMonth</b></a> <a href="#"><b>gYear</b></a> <a href="#"><b>gMonthDay</b></a> <a href="#"><b>gYearMonth</b></a> <a href="#"><b>date</b></a>
annotation	<p>documentation</p> <p>The date when a festival or national holiday recurs on the same day each year in the Gregorian calendar.</p>

element **NonStandardWorkingDayType/variableDate**

diagram	<p><b>variableDate</b> type <code>xs:string</code> 0..1</p> <p>A day which is not fixed in the Gregorian calendar. Examples: The fourth Thursday in November; new moon day of Kartika (Diwali); Easter Sunday.</p>
type	<b>xs:string</b>
annotation	<p>documentation</p> <p>A day which is not fixed in the Gregorian calendar. Examples: The fourth Thursday in November; new moon day of Kartika (Diwali); Easter Sunday.</p>

element **NonStandardWorkingDayType/information**

diagram	
type	<a href="#">informationType</a>
children	<a href="#">fileLocator</a> <a href="#">fileReference</a> <a href="#">headline</a> <a href="#">language</a> <a href="#">text</a>

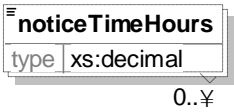
element **NonStandardWorkingDayType/theServiceHours\_nsdy**

diagram	
type	<b>gml:ReferenceType</b>
annotation	documentation optional

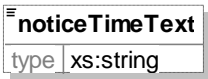
complexType **noticeTimeType**

diagram	
children	<a href="#">noticeTimeHours</a> <a href="#">noticeTimeText</a> <a href="#">operation</a>

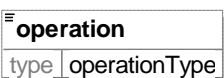
element **noticeTimeType/noticeTimeHours**

diagram	 <p>The time duration prior to the time the service is needed, when notice must be provided to the service provider.</p>
type	<b>xs:decimal</b>
annotation	documentation The time duration prior to the time the service is needed, when notice must be provided to the service provider.

element **noticeTimeType/noticeTimeText**

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

element **noticeTimeType/operation**

diagram			
type	<a href="#"><b>operationType</b></a>		
facets	Kind	Value	Annotation
	enumeration	largest value	documentation The numerically largest value computed from the applicable attributes or sub-attributes
	enumeration	smallest value	documentation The numerically smallest value computed from the applicable attributes or sub-attributes

complexType **onlineResourceType**

diagram	
children	<a href="#">linkage</a> <a href="#">protocol</a> <a href="#">applicationProfile</a> <a href="#">nameOfResource</a> <a href="#">onlineDescription</a> <a href="#">onlineFunction</a> <a href="#">protocolRequest</a>
annotation	documentation Information about online sources from which a resource or data can be obtained (ISO 19115, adapted).

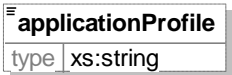
element **onlineResourceType/linkage**

diagram	
type	<b>xs:anyURI</b>
annotation	documentation location (address) for on-line access using a URL/URI address or similar addressing scheme. (Adapted from ISO 19115:2014.)

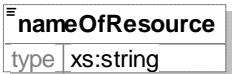
element **onlineResourceType/protocol**

diagram	
type	<b>xs:string</b>
annotation	documentation connection protocol to be used. Example: ftp, http get KVP, http POST, etc. (ISO 19115)


element **onlineResourceType/applicationProfile**

diagram	 <p>name of an application profile that can be used with the online resource (ISO 19115)</p>
type	<b>xs:string</b>
annotation	documentation name of an application profile that can be used with the online resource (ISO 19115)

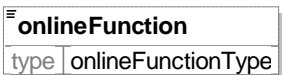
element **onlineResourceType/nameOfResource**

diagram	 <p>name of the online resource (ISO 19115, adapted)</p>
type	<b>xs:string</b>
annotation	documentation name of the online resource (ISO 19115, adapted)


element **onlineResourceType/onlineDescription**

diagram	 <p>detailed text description of what the online resource is/does (ISO 19115)</p>
type	<b>xs:string</b>
annotation	documentation detailed text description of what the online resource is/does (ISO 19115)

element **onlineResourceType/onlineFunction**

diagram	 <p>code for function performed by the online resource (ISO 19115)</p>
type	<a href="#"><b>onlineFunctionType</b></a>
annotation	documentation code for function performed by the online resource (ISO 19115)

element **onlineResourceType/protocolRequest**

diagram	 <p>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)</p>
type	<b>xs:string</b>

annotation	<p>documentation</p> <p>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)</p>
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### complexType **orientationType**

diagram	
children	<a href="#">orientationUncertainty</a> <a href="#">orientationValue</a>

### element **orientationType/orientationUncertainty**

diagram	
type	<b>xs:string</b>

### element **orientationType/orientationValue**

diagram	
type	<b>xs:decimal</b>

### complexType **periodicDateRangeType**

diagram	
children	<a href="#">dateStart</a> <a href="#">dateEnd</a>
annotation	<p>documentation</p> <p>This complex attribute describes the active period for a seasonal feature or information type.</p>



element **periodicDateRangeType/dateStart**

diagram	
type	<a href="#">S100_TruncatedDate</a>
children	<a href="#">gDay</a> <a href="#">gMonth</a> <a href="#">gYear</a> <a href="#">gMonthDay</a> <a href="#">gYearMonth</a> <a href="#">date</a>
annotation	documentation The start date or time of the interval.

element **periodicDateRangeType/dateEnd**

diagram	
type	<a href="#">S100_TruncatedDate</a>
children	<a href="#">gDay</a> <a href="#">gMonth</a> <a href="#">gYear</a> <a href="#">gMonthDay</a> <a href="#">gYearMonth</a> <a href="#">date</a>
annotation	documentation

	The end date or time of the interval.
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### complexType **PermissionType**

diagram	<p><b>PermissionType</b> 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.</p> <p><b>InformationTypeType (extension)</b> <b>Attributes</b> <b>gml:id</b> type ID use required The attribute gml:id supports provision of a handle for the XML element representing a GML Object. Its use is mandatory for all GML objects. It is of XML type ID, so is constrained to be unique in the XML document within which it occurs.</p> <p><b>informationAssociation</b> type InformationPropertyT... 0..1</p> <p><b>invInformationAssociati...</b> type InverseInformationAs... 0..1</p> <p><b>fixedDateRange</b> type fixedDateRangeType 0..1</p> <p><b>periodicDateRange</b> type periodicDateRangeT... 0..1</p> <p><b>featureName</b> type featureNameType 0..1</p> <p><b>sourceIndication</b> type sourceIndicationType 0..1</p> <p><b>providesInformation</b> type gml:ReferenceType 0..1</p> <p><b>categoryOfRelationship</b> type categoryOfRelationship... 0..1 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.</p> <p><b>permission</b> type gml:ReferenceType 1..1 Reference Applicability</p>
type	extension of <a href="#">InformationTypeType</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociation</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a> <a href="#">categoryOfRelationship</a> <a href="#">permission</a>
annotation	<p>documentation</p> <p>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.</p>

### element **PermissionType/categoryOfRelationship**

diagram	<p><b>categoryOfRelationship</b> type categoryOfRelationship...</p> <p>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.</p>		
type	<a href="#">categoryOfRelationshipType</a>		
facets	Kind	Value	Annotation
	enumeration	prohibited	documentation use of facility, waterway or service is forbidden
	enumeration	not recommended	documentation use of facility, waterway or service is not recommended
	enumeration	permitted	documentation use of facility, waterway, or service is permitted but not

	enumeration recommended	required documentation use of facility, waterway, or service is recommended
	enumeration required	documentation use of facility, waterway, or service is required
	enumeration not required	documentation use of facility, waterway, or service is not required
annotation	documentation	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.

element **PermissionType/permission**

diagram	<p>The diagram illustrates the structure of the <b>PermissionType/permission</b> element. It is a reference type that can occur one or more times (1..∞). The detailed view of the <b>gml:ReferenceType</b> structure shows the following attributes:</p> <ul style="list-style-type: none"> <li><b>owns</b>: type <code>boolean</code>, default <code>false</code></li> <li><b>xlink:type</b>: type <code>xlink:typeType</code>, fixed <code>simple</code></li> <li><b>xlink:href</b>: type <code>xlink:hrefType</code></li> <li><b>xlink:role</b>: type <code>xlink:roleType</code></li> <li><b>xlink:arcrole</b>: type <code>xlink:arcroleType</code></li> <li><b>xlink:title</b>: type <code>xlink:titleAttrType</code></li> <li><b>xlink:show</b>: type <code>xlink:showType</code></li> <li><b>xlink:actuate</b>: type <code>xlink:actuateType</code></li> <li><b>nilReason</b>: type <code>gml:nilReasonType</code></li> </ul> <p>A 'Reference Applicability' label is shown below the permission element box.</p>
type	<b>gml:ReferenceType</b>
annotation	documentation Reference Applicability

complexType **PointCurveSurface**

diagram	
children	<b>pointProperty curveProperty surfaceProperty</b>

complexType **PointOrCurve**

diagram	
children	<b>curveProperty surfaceProperty</b>

complexType **PointOrSurface**

diagram	
children	<b>pointProperty surfaceProperty</b>

complexType **QualityOfNonBathymetricDataType**

diagram	
type	extension of <a href="#">QualityOfTemporalVariationType</a>
children	<b>gml:boundedBy</b> <b>featureObjectIdentifier</b> <b>informationAssociation</b> <b>featureAssociation</b> <b>invFeatureAssociation</b> <a href="#">information</a> <a href="#">categoryOfTemporalVariation</a> <a href="#">dataAssessment</a> <a href="#">horizontalDistanceUncertainty</a> <a href="#">horizontalPositionalUncertainty</a> <a href="#">directionUncertainty</a> <a href="#">sourceIndication</a> <a href="#">surveyDateRange</a> <a href="#">geometry</a>
annotation	documentation An area within which a uniform assessment of the quality of the non-bathymetric data exists. (Adapted from S-57 Edition 3.1, Appendix A – Chapter 1, Page 1.208, November 2000).

element **QualityOfNonBathymetricDataType/horizontalDistanceUncertainty**

diagram	
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type	<b>xs:string</b>
annotation	documentation The best estimate of the horizontal accuracy of horizontal clearances and distances.

element **QualityOfNonBathymetricDataType/horizontalPositionalUncertainty**

diagram	
type	<a href="#">horizontalPositionalUncertainty</a>
children	<a href="#">uncertaintyFixed</a> <a href="#">uncertaintyVariable</a>
annotation	documentation The best estimate of the accuracy of a position.

element **QualityOfNonBathymetricDataType/directionUncertainty**

diagram	
type	<b>xs:string</b>
annotation	documentation The best estimate of the accuracy of a bearing

element **QualityOfNonBathymetricDataType/sourceIndication**

diagram	
type	<a href="#">sourceIndicationType</a>
children	<a href="#">categoryOfAuthority</a> <a href="#">country</a> <a href="#">featureName</a> <a href="#">reportedDate</a> <a href="#">source</a> <a href="#">sourceType</a>

element **QualityOfNonBathymetricDataType/surveyDateRange**

diagram	
type	<a href="#">surveyDateRangeType</a>
children	<a href="#">dateStart</a> <a href="#">dateEnd</a>

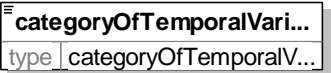
element **QualityOfNonBathymetricDataType/geometry**

diagram	
type	<b>SurfacePropertyType</b>
children	<b>surfaceProperty</b>

## complexType **QualityOfTemporalVariationType**

diagram	
type	extension of <a href="#">DataQualityType</a>
children	<b>gml:boundedBy</b> <b>featureObjectIdentifier</b> <b>informationAssociation</b> <b>featureAssociation</b> <b>invFeatureAssociation</b> <a href="#">information</a> <a href="#">categoryOfTemporalVariationType</a> <a href="#">dataAssessment</a>
annotation	documentation Abstract type for meta-feature which can describe temporal variation.

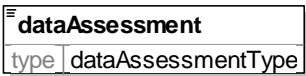
## element **QualityOfTemporalVariationType/categoryOfTemporalVariation**

diagram										
type	<a href="#">categoryOfTemporalVariationType</a>									
facets	<table><tr><th>Kind</th><th>Value</th><th>Annotation</th></tr><tr><td>enumeration</td><td>extreme event</td><td><div>documentation</div><div>NIPWG: No new hydrographic survey conducted after an event (e.g., hurricane, earthquake, volcanic eruption, landslide, etc.) which is considered likely to have resulted in significant change at the location.</div><div>documentation</div><div>In GI Registry: Definition: No new hydrographic survey conducted after an event (e.g. hurricane, earthquake, volcanic eruption, landslide, etc), which is considered likely to have changed the seafloor significantly.</div><div>documentation</div><div>NIPWG: Continuous or frequent change (e.g., river siltation, sand waves, seasonal storms, construction,</div></td></tr><tr><td>enumeration</td><td>likely to change</td><td><div>documentation</div><div>NIPWG: Continuous or frequent change (e.g., river siltation, sand waves, seasonal storms, construction,</div></td></tr></table>	Kind	Value	Annotation	enumeration	extreme event	<div>documentation</div> <div>NIPWG: No new hydrographic survey conducted after an event (e.g., hurricane, earthquake, volcanic eruption, landslide, etc.) which is considered likely to have resulted in significant change at the location.</div> <div>documentation</div> <div>In GI Registry: Definition: No new hydrographic survey conducted after an event (e.g. hurricane, earthquake, volcanic eruption, landslide, etc), which is considered likely to have changed the seafloor significantly.</div> <div>documentation</div> <div>NIPWG: Continuous or frequent change (e.g., river siltation, sand waves, seasonal storms, construction,</div>	enumeration	likely to change	<div>documentation</div> <div>NIPWG: Continuous or frequent change (e.g., river siltation, sand waves, seasonal storms, construction,</div>
Kind	Value	Annotation								
enumeration	extreme event	<div>documentation</div> <div>NIPWG: No new hydrographic survey conducted after an event (e.g., hurricane, earthquake, volcanic eruption, landslide, etc.) which is considered likely to have resulted in significant change at the location.</div> <div>documentation</div> <div>In GI Registry: Definition: No new hydrographic survey conducted after an event (e.g. hurricane, earthquake, volcanic eruption, landslide, etc), which is considered likely to have changed the seafloor significantly.</div> <div>documentation</div> <div>NIPWG: Continuous or frequent change (e.g., river siltation, sand waves, seasonal storms, construction,</div>								
enumeration	likely to change	<div>documentation</div> <div>NIPWG: Continuous or frequent change (e.g., river siltation, sand waves, seasonal storms, construction,</div>								



		etc.)	
		Registry:	GI
enumeration	likely to change but significant shoaling not expected	Continuous or frequent change (e.g. river siltation, sand waves, seasonal storms, ice bergs, etc). documentation GI Registry: Likely to change but significant shoaling no expected	
enumeration	unlikely to change	[Proposed draft 6/27/2014: Recommended that SNPWG not use this enumerate - ref. E.M. email 6/27/2014.] documentation NIPWG: Significant change at the location is not expected.	
enumeration	unassessed	Registry: Significant change to the seafloor is not expected. documentation Temporal variation not assessed or cannot be determined	GI

#### element **QualityOfTemporalVariationType/dataAssessment**


diagram	 <p>The categorisation of the assessment level of bathymetric data for an area.</p>		
type	<a href="#">dataAssessmentType</a>		
facets	Kind	Value	Annotation
	enumeration	assessed	documentation The quality of the bathymetric data has been assessed.
	enumeration	oceanic	documentation The quality of oceanic bathymetric data has been assessed or is not required.
	enumeration	unassessed	documentation The quality of the bathymetric data has yet to be assessed.
annotation	documentation The categorisation of the assessment level of bathymetric data for an area.		

#### complexType **radiocommunicationsType**

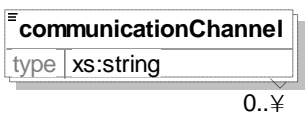
diagram	
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children	<a href="#">categoryOfCommPref</a> <a href="#">communicationChannel</a> <a href="#">contactInstructions</a> <a href="#">frequencyPair</a> <a href="#">tmIntervalsByDoW</a>
annotation	documentation Detailed radiocommunications description with channels, frequencies, preferences and time schedules

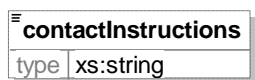
element **radiocommunicationsType/categoryOfCommPref**

diagram			
type	<a href="#">categoryOfCommPrefType</a>		
facets	Kind	Value	Annotation
	enumeration	preferred calling	documentation the first choice channel or frequency to be used when calling a radio station
	enumeration	alternate calling	documentation 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
	enumeration	preferred working	documentation the first choice channel or frequency to be used when working with a radio station
	enumeration	alternate working	documentation 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

element **radiocommunicationsType/communicationChannel**

diagram			
type	<b>xs:string</b>		

element **radiocommunicationsType/contactInstructions**

diagram	 <p>supplemental instructions on how or when to contact the individual, organisation, or service</p>		
type	<b>xs:string</b>		
annotation	documentation supplemental instructions on how or when to contact the individual, organisation, or service		

element **radiocommunicationsType/frequencyPair**

diagram	<p><b>frequencyPairType</b></p> <ul style="list-style-type: none"> <li><b>contactInstructions</b> type xs:string 0..∞</li> <li><b>categoryOfCommPref</b> type categoryOfCommPref 0..∞</li> <li><b>frequencyShoreStationTransmits</b> type xs:positiveInteger 0..∞ 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</li> <li><b>frequencyShoreStationReceives</b> type xs:positiveInteger 0..∞ 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</li> <li><b>textContent</b> type textContentType 0..∞</li> </ul> <p><b>frequencyPair</b> type frequencyPairType 0..∞</p>
type	<a href="#">frequencyPairType</a>
children	<a href="#">contactInstructions</a> <a href="#">categoryOfCommPref</a> <a href="#">frequencyShoreStationTransmits</a> <a href="#">frequencyShoreStationReceives</a> <a href="#">textContent</a>

element **radiocommunicationsType/tmIntervalsByDoW**

diagram	<p><b>tmIntervalsByDoW</b></p> <ul style="list-style-type: none"> <li><b>dayOfWeek</b> type dayOfWeekType 0..7 Encodes either range(s) of days or discrete days.</li> <li><b>dayOfWeeksRanges</b> type xs:boolean Indicates whether the values in dayOfWeek indicate a range of days (true) or discrete days (false).</li> <li><b>timeReference</b> type timeReferenceType Indicates whether the time co-attributes are encoded in UTC or local time (LT).</li> <li><b>timeOfDayStart</b> type xs:time 0..∞ Starting time of day, possibly for a period within the day. Distinction: Time start (TIMSTA) (S-101) which has a format YYYYMMDDThmmss (mandatory) in the baseline S-101 DCEG as of October 2015.</li> <li><b>timeOfDayEnd</b> type xs:time 0..∞ Ending time of day, possibly for a period within the day. Distinction: Time end (TIMEND) (S-101) which has a format YYYYMMDDThmmss (mandatory) in the baseline S-101 DCEG as of October 2015.</li> </ul> <p><b>tmIntervalsByDoW</b> type tmIntervalsByDoW 0..∞</p>
type	<a href="#">tmIntervalsByDoW</a>
children	<a href="#">dayOfWeek</a> <a href="#">dayOfWeeksRanges</a> <a href="#">timeReference</a> <a href="#">timeOfDayStart</a> <a href="#">timeOfDayEnd</a>

## complexType RecommendationsType

diagram	<p><b>RecommendationsType</b>  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.</p>
type	extension of <a href="#">AbstractRXNType</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociation</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a> <a href="#">categoryOfAuthority</a> <a href="#">textContent</a> <a href="#">graphic</a> <a href="#">rxnCode</a> <a href="#">isApplicableTo</a> <a href="#">theOrganisation</a>
annotation	documentation 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.


complexType **RegulationsType**

diagram	<p><b>RegulationsType</b> 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.</p> <p><b>AbstractRXNType (extension)</b> <b>Attributes</b> gml:id type ID use required The attribute gml:id supports provision of a handle for the XML element representing a GML Object. Its use is mandatory for all GML objects. It is of XML type ID, so is constrained to be unique in the XML document within which it occurs.</p> <p><b>Children</b> informationAssociation type InformationPropertyType 0..1 invInformationAssociation type InverseInformationAssociationType 0..1 fixedDateRange type fixedDateRangeType 0..1 periodicDateRange type periodicDateRangeType 0..1 featureName type FeatureNameType 0..1 sourceIndication type sourceIndicationType 0..1 providesInformation type gml:ReferenceType 0..1 categoryOfAuthority type categoryOfAuthorityType 0..1 textContent type textContentType 0..1 graphic type graphicType 0..1 rxnCode type rxnCodeType 0..1 isApplicableTo type gml:ReferenceType 0..1 theOrganisation type gml:ReferenceType 0..1</p>
type	extension of <a href="#">AbstractRXNType</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociation</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a> <a href="#">categoryOfAuthority</a> <a href="#">textContent</a> <a href="#">graphic</a> <a href="#">rxnCode</a> <a href="#">isApplicableTo</a> <a href="#">theOrganisation</a>
annotation	<p>documentation</p> <p>Regulations for a related area or facility.</p> <p>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.</p>

complexType **RestrictedAreaNavigationalType**

diagram	<p><b>RestrictedAreaNavigationalType</b></p> <p>A specified area of land or water designated by an appropriate authority within which access or navigation is restricted in accordance with certain specified conditions. A navigational restricted area is an area where the restrictions have a direct impact on the navigation of a vessel in the area.</p> <p><b>FeatureType (extension)</b></p> <p><b>Attributes</b></p> <p><b>gml:id</b> type: ID use: required The attribute gml:id supports provision of a handle for the XML element representing a GML Object. Its use is mandatory for all GML objects. It is of XML type ID, so is constrained to be unique in the XML document within which it occurs.</p> <p><b>gml:boundedBy</b> type: gml:BoundingShapeType This property describes the minimum bounding box or rectangle that encloses the entire feature.</p> <p><b>featureObjectIdentifier</b> type: FeatureObjectIdentifier</p> <p><b>informationAssociation</b> type: InformationPropertyType 0..Y</p> <p><b>featureAssociation</b> type: FeaturePropertyType 0..Y</p> <p><b>invFeatureAssociation</b> type: FeaturePropertyType 0..Y</p> <p><b>fixedDateRange</b> type: fixedDateRangeType</p> <p><b>periodicDateRange</b> type: periodicDateRangeType 0..Y</p> <p><b>featureName</b> type: featureNameType 0..Y</p> <p><b>sourceIndication</b> type: sourceIndicationType</p> <p><b>textContent</b> type: textContentType 0..Y</p> <p><b>permission</b> type: gml:ReferenceType 0..Y</p> <p><b>providesInformation</b> type: gml:ReferenceType 0..Y</p> <p><b>theRxn</b> type: gml:ReferenceType 0..Y</p> <p><b>positions</b> type: gml:ReferenceType A pointer to a specific cartographically positioned location for text.</p> <p><b>categoryOfRestrictedArea</b> type: categoryOfRestrictedAreaType 0..Y</p> <p><b>restriction</b> type: restrictionType 1..Y</p> <p><b>status</b> type: statusType 0..Y</p> <p><b>geometry</b> type: GM_Surface 0..Y</p>
type	extension of <a href="#">FeatureType</a>
children	<b>gml:boundedBy</b> <b>featureObjectIdentifier</b> <b>informationAssociation</b> <b>featureAssociation</b> <b>invFeatureAssociation</b> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">textContent</a> <a href="#">permission</a> <a href="#">providesInformation</a> <a href="#">theRxn</a> <a href="#">positions</a> <a href="#">categoryOfRestrictedArea</a> <a href="#">restriction</a> <a href="#">status</a> <a href="#">geometry</a>
annotation	<p>documentation</p> <p>A specified area of land or water designated by an appropriate authority within which access or navigation is restricted in accordance with certain specified conditions.</p> <p>A navigational restricted area is an area where the restrictions have a direct impact on the navigation of a vessel in the area.</p>

element **RestrictedAreaNavigationalType/categoryOfRestrictedArea**

diagram			
type	<a href="#"><u>categoryOfRestrictedAreaType</u></a>		
facets	Kind	Value	Annotation
	enumeration	nature reserve	<a href="#">documentation</a> A tract of land or water managed so as to preserve it's flora, fauna, physical features, etc.
	enumeration	bird sanctuary	<a href="#">documentation</a> A place where birds are bred and protected.
	enumeration	game reserve	<a href="#">documentation</a> A place where wild animals or birds hunted for sport or food are kept undisturbed for private use.
	enumeration	seal sanctuary	<a href="#">documentation</a> A place where seals are protected.
	enumeration	historic wreck area	<a href="#">documentation</a> An area around certain wrecks of historical importance to protect the wrecks from unauthorized interference by diving, salvage or deposition (including anchoring).
	enumeration	research area	<a href="#">documentation</a> an area where marine research takes place.
	enumeration	fish sanctuary	<a href="#">documentation</a> A place where fish are protected.
	enumeration	ecological reserve	<a href="#">documentation</a> 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.
	enumeration	environmentally sensitive sea area	<a href="#">documentation</a> A generic term which may be used to describe a wide range of areas, considered sensitive for a variety of environmental reasons.
	enumeration	particularly sensitive sea area	<a href="#">documentation</a> 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.
	enumeration	coral sanctuary	<a href="#">documentation</a> A place where coral is protected. (TSMAD 29)
	enumeration	recreation area	<a href="#">documentation</a> An area within which recreational activities regularly take place and therefore vessel movement may be restricted.
			(Adapted from S-57 Edition 3.1, Appendix A – Chapter 2, Page 2.76, November 2000).

element **RestrictedAreaNavigationalType/restriction**

diagram			
type	<a href="#">restrictionType</a>		
facets	Kind	Value	Annotation
	enumeration	anchoring prohibited	documentation An area within which anchoring is not permitted.
	enumeration	anchoring restricted	documentation a specified area designated by appropriate authority, within which anchoring is restricted in accordance with certain specified conditions.
	enumeration	fishing prohibited	documentation An area within which fishing is not permitted.
	enumeration	fishing restricted	documentation a specified area designated by appropriate authority, within which fishing is restricted in accordance with certain specified conditions.
	enumeration	trawling prohibited	documentation An area within which trawling is not permitted.
	enumeration	trawling restricted	documentation a specified area designated by appropriate authority, within which trawling is restricted in accordance with certain specified conditions.
	enumeration	entry prohibited	documentation An area within which navigation and/or anchoring is prohibited.
	enumeration	entry restricted	documentation a specified area designated by appropriate authority, within which navigation is restricted in accordance with certain specified conditions.
	enumeration	dredging prohibited	documentation An area within which dredging is not permitted.
	enumeration	dredging restricted	documentation a specified area designated by appropriate authority, within which dredging is restricted in accordance with certain specified conditions.
	enumeration	diving prohibited	documentation An area within which diving is not permitted.
	enumeration	diving restricted	documentation a specified area designated by appropriate authority, within which diving is restricted in accordance with certain specified conditions.
	enumeration	no wake	documentation Mariners must adjust the speed of their vessels to reduce the wave or wash which may cause erosion or disturb moored vessels.
	enumeration	area to be avoided	documentation 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



enumeration	construction prohibited	classes of ships. <a href="#">documentation</a> The erection of permanent or temporary fixed structures or artificial islands is prohibited.
enumeration	discharging prohibited	<a href="#">documentation</a> An area in which discharging or dumping is prohibited.
enumeration	discharging restricted	<a href="#">documentation</a> A specified area designated by appropriate authority, within which discharging or dumping is restricted in accordance with certain specified conditions.
enumeration	industrial or mineral exploration/development prohibited	<a href="#">documentation</a> An area in which industrial or mineral exploration and development are prohibited.
enumeration	industrial or mineral exploration/development restricted	<a href="#">documentation</a> A specified area designated by appropriate authority, within which industrial or mineral exploration and development is restricted in accordance with certain specified conditions.
enumeration	drilling prohibited	<a href="#">documentation</a> An area in which excavating a hole on the seabed with a drill is prohibited.
enumeration	drilling restricted	<a href="#">documentation</a> 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.
enumeration	removal of historical artifacts prohibited	<a href="#">documentation</a> An area in which the removal of historical artifacts is prohibited.
enumeration	cargo transshipment (lightering) prohibited	<a href="#">documentation</a> An area in which cargo transshipment (lightering) is prohibited.
enumeration	dragging prohibited	<a href="#">documentation</a> An area in which the dragging or anything along the seabed, e.g., bottom trawling, is prohibited.
enumeration	stopping prohibited	<a href="#">documentation</a> An area in which a vessel is prohibited from stopping.
enumeration	landing prohibited	<a href="#">documentation</a> An area in which landing is prohibited.
enumeration	speed restricted	<a href="#">documentation</a> An area in which speed is restricted.
enumeration	swimming prohibited	<a href="#">documentation</a> An area in which swimming is prohibited.

element **RestrictedAreaNavigationalType/status**

diagram	<pre> classDiagram     class status {         type         statusType     }     status "0..∞" </pre>
type	<a href="#">statusType</a>

facets	Kind	Value	Annotation
	enumeration	permanent	documentation Intended to last or function indefinitely
	enumeration	occasional	documentation Acting on special occasions; happening irregularly
	enumeration	recommended	documentation Presented as worthy of confidence, acceptance, use, etc.
	enumeration	not in use	documentation Use has ceased, but the facility still exists intact; disused.
	enumeration	periodic/intermittent	documentation Recurring at intervals
	enumeration	reserved	documentation Set apart for some specific use
	enumeration	temporary	documentation Meant to last only for a time
	enumeration	private	documentation Administered by an individual or corporation, rather than a State or a public body.
	enumeration	mandatory	documentation Compulsory; enforced.
	enumeration	extinguished	documentation No longer lit
	enumeration	illuminated	documentation Lit by floodlights, strip lights, etc.
	enumeration	historic	documentation Famous in history; of historical interest
	enumeration	public	documentation Belonging to, available to, used or shared by, the community as a whole and not restricted to private use.
	enumeration	synchronised	documentation Occur at a time, coincide in point of time, be contemporary or simultaneous
	enumeration	watched	documentation Looked at or observed over a period of time especially so as to be aware of any movement or change.
	enumeration	un-watched	documentation Usually automatic in operation, without any permanently-stationed personnel to superintend it.
	enumeration	existence doubtful	documentation A feature that has been reported but has not been definitely determined to exist.
	enumeration	buoyed	documentation Marked by buoys

element **RestrictedAreaNavigationalType/geometry**

diagram	<p>The diagram illustrates the structure of the <b>RestrictedAreaNavigationalType/geometry</b> element. It shows a <b>geometry</b> element with a multiplicity of 0..* and a type of <b>GM_Surface</b>. This element is connected to a <b>S100:surfaceProperty</b> element, which has a type of <b>SurfacePropertyType</b>. The <b>S100:surfaceProperty</b> element is highlighted in yellow.</p>
type	<a href="#">GM_Surface</a>


children	<b>surfaceProperty</b>
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### complexType **RestrictedAreaRegulatoryType**

diagram	<p><b>RestrictedAreaRegulatoryType</b></p> <p>A specified area of land or water designated by an appropriate authority within which access or navigation is restricted in accordance with certain specified conditions. A regulatory restricted area is an area where the restrictions have no direct impact on the navigation of a vessel in the area, but impact on the activities that can take place within the area.</p>
type	extension of <a href="#">FeatureType</a>
children	<b>gml:boundedBy</b> <a href="#">featureObjectIdentifier</a> <b>informationAssociation</b> <a href="#">featureAssociation</a> <a href="#">invFeatureAssociation</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">textContent</a> <a href="#">permission</a> <a href="#">providesInformation</a> <a href="#">theRxN</a> <a href="#">positions</a> <a href="#">categoryOfRestrictedArea</a> <a href="#">restriction</a> <a href="#">status</a> <a href="#">geometry</a>
annotation	<p>documentation</p> <p>A specified area of land or water designated by an appropriate authority within which access or navigation is restricted in accordance with certain specified conditions.</p>

	A regulatory restricted area is an area where the restrictions have no direct impact on the navigation of a vessel in the area, but impact on the activities that can take place within the area.
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element **RestrictedAreaRegulatoryType/categoryOfRestrictedArea**

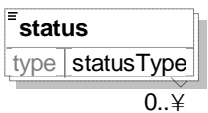
diagram			
type	<a href="#">categoryOfRestrictedAreaType</a>		
facets	Kind	Value	Annotation
	enumeration	nature reserve	documentation A tract of land or water managed so as to preserve it's flora, fauna, physical features, etc.
	enumeration	bird sanctuary	documentation A place where birds are bred and protected.
	enumeration	game reserve	documentation A place where wild animals or birds hunted for sport or food are kept undisturbed for private use.
	enumeration	seal sanctuary	documentation A place where seals are protected.
	enumeration	historic wreck area	documentation An area around certain wrecks of historical importance to protect the wrecks from unauthorized interference by diving, salvage or deposition (including anchoring).
	enumeration	research area	documentation an area where marine research takes place.
	enumeration	fish sanctuary	documentation A place where fish are protected.
	enumeration	ecological reserve	documentation 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.
	enumeration	environmentally sensitive sea area	documentation A generic term which may be used to describe a wide range of areas, considered sensitive for a variety of environmental reasons.
	enumeration	particularly sensitive sea area	documentation 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.
	enumeration	coral sanctuary	documentation A place where coral is protected. (TSMAD 29)
	enumeration	recreation area	documentation An area within which recreational activities regularly take place and therefore vessel movement may be restricted. (Adapted from S-57 Edition 3.1, Appendix A – Chapter 2, Page 2.76, November 2000).

element **RestrictedAreaRegulatoryType/restriction**

diagram	<pre> classDiagram     class restriction {         type restrictionType     }     </pre>		
type	<a href="#">restrictionType</a>		
facets	Kind	Value	Annotation
	enumeration	anchoring prohibited	documentation An area within which anchoring is not permitted.
	enumeration	anchoring restricted	documentation a specified area designated by appropriate authority, within which anchoring is restricted in accordance with certain specified conditions.
	enumeration	fishing prohibited	documentation An area within which fishing is not permitted.
	enumeration	fishing restricted	documentation a specified area designated by appropriate authority, within which fishing is restricted in accordance with certain specified conditions.
	enumeration	trawling prohibited	documentation An area within which trawling is not permitted.
	enumeration	trawling restricted	documentation a specified area designated by appropriate authority, within which trawling is restricted in accordance with certain specified conditions.
	enumeration	entry prohibited	documentation An area within which navigation and/or anchoring is prohibited.
	enumeration	entry restricted	documentation a specified area designated by appropriate authority, within which navigation is restricted in accordance with certain specified conditions.
	enumeration	dredging prohibited	documentation An area within which dredging is not permitted.
	enumeration	dredging restricted	documentation a specified area designated by appropriate authority, within which dredging is restricted in accordance with certain specified conditions.
	enumeration	diving prohibited	documentation An area within which diving is not permitted.
	enumeration	diving restricted	documentation a specified area designated by appropriate authority, within which diving is restricted in accordance with certain specified conditions.
	enumeration	no wake	documentation Mariners must adjust the speed of their vessels to reduce the wave or wash which may cause erosion or disturb moored vessels.
	enumeration	area to be avoided	documentation 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

	enumeration	construction prohibited	classes of ships. <a href="#">documentation</a> The erection of permanent or temporary fixed structures or artificial islands is prohibited.
	enumeration	discharging prohibited	<a href="#">documentation</a> An area in which discharging or dumping is prohibited.
	enumeration	discharging restricted	<a href="#">documentation</a> A specified area designated by appropriate authority, within which discharging or dumping is restricted in accordance with certain specified conditions.
	enumeration	industrial or mineral exploration/development prohibited	<a href="#">documentation</a> An area in which industrial or mineral exploration and development are prohibited.
	enumeration	industrial or mineral exploration/development restricted	<a href="#">documentation</a> A specified area designated by appropriate authority, within which industrial or mineral exploration and development is restricted in accordance with certain specified conditions.
	enumeration	drilling prohibited	<a href="#">documentation</a> An area in which excavating a hole on the seabed with a drill is prohibited.
	enumeration	drilling restricted	<a href="#">documentation</a> 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.
	enumeration	removal of historical artifacts prohibited	<a href="#">documentation</a> An area in which the removal of historical artifacts is prohibited.
	enumeration	cargo transshipment (lightering) prohibited	<a href="#">documentation</a> An area in which cargo transshipment (lightering) is prohibited.
	enumeration	dragging prohibited	<a href="#">documentation</a> An area in which the dragging or anything along the seabed, e.g., bottom trawling, is prohibited.
	enumeration	stopping prohibited	<a href="#">documentation</a> An area in which a vessel is prohibited from stopping.
	enumeration	landing prohibited	<a href="#">documentation</a> An area in which landing is prohibited.
	enumeration	speed restricted	<a href="#">documentation</a> An area in which speed is restricted.
	enumeration	swimming prohibited	<a href="#">documentation</a> An area in which swimming is prohibited.

element **RestrictedAreaRegulatoryType/status**

diagram	
type	<a href="#">statusType</a>

facets	Kind	Value	Annotation
	enumeration	permanent	documentation Intended to last or function indefinitely
	enumeration	occasional	documentation Acting on special occasions; happening irregularly
	enumeration	recommended	documentation Presented as worthy of confidence, acceptance, use, etc.
	enumeration	not in use	documentation Use has ceased, but the facility still exists intact; disused.
	enumeration	periodic/intermittent	documentation Recurring at intervals
	enumeration	reserved	documentation Set apart for some specific use
	enumeration	temporary	documentation Meant to last only for a time
	enumeration	private	documentation Administered by an individual or corporation, rather than a State or a public body.
	enumeration	mandatory	documentation Compulsory; enforced.
	enumeration	extinguished	documentation No longer lit
	enumeration	illuminated	documentation Lit by floodlights, strip lights, etc.
	enumeration	historic	documentation Famous in history; of historical interest
	enumeration	public	documentation Belonging to, available to, used or shared by, the community as a whole and not restricted to private use.
	enumeration	synchronised	documentation Occur at a time, coincide in point of time, be contemporary or simultaneous
	enumeration	watched	documentation Looked at or observed over a period of time especially so as to be aware of any movement or change.
	enumeration	un-watched	documentation Usually automatic in operation, without any permanently-stationed personnel to superintend it.
	enumeration	existence doubtful	documentation A feature that has been reported but has not been definitely determined to exist.
	enumeration	buoyed	documentation Marked by buoys

element **RestrictedAreaRegulatoryType/geometry**

diagram	<p>The diagram illustrates the structure of the <b>RestrictedAreaRegulatoryType/geometry</b> element. It contains two main components: a <b>geometry</b> element and an <b>S100:surfaceProperty</b> element. The <b>geometry</b> element has a type of <b>GM_Surface</b> and a multiplicity of <b>0..*</b>. The <b>S100:surfaceProperty</b> element has a type of <b>SurfacePropertyType</b> and a multiplicity of <b>1</b>. The <b>S100:surfaceProperty</b> element is highlighted in yellow.</p>
type	<a href="#"><u>GM_Surface</u></a>

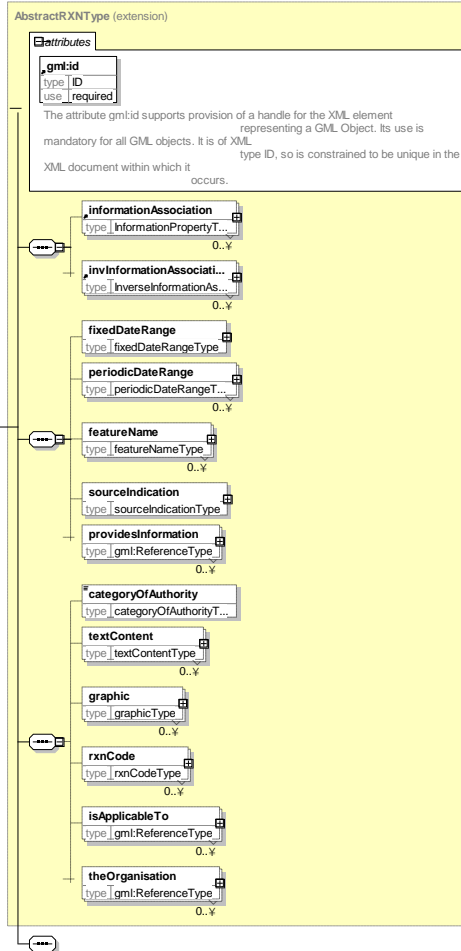
children	<b>surfaceProperty</b>
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## complexType RestrictionsType

diagram

### RestrictionsType

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.



type extension of [AbstractRXNType](#)

children **informationAssociation** **invInformationAssociation** [fixedDateRange](#) [periodicDateRange](#) [featureName](#) [sourceIndication](#) [providesInformation](#) [categoryOfAuthority](#) [textContent](#) [graphic](#) [rxnCode](#) [isApplicableTo](#) [theOrganisation](#)

annotation [documentation](#)  
 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.



## complexType rxnCodeType

diagram	
children	<a href="#">categoryOfRxN</a> <a href="#">actionOrActivity</a> <a href="#">headline</a>
annotation	<p>documentation A summary of the impact of the most common types of regulation, restriction, recommendation and nautical information on a vessel.</p> <p>documentation Remark: This attribute converts the subject, topic, and effects of regulations, etc., from plain text or natural language into a set of categories.</p>

## element rxnCodeType/categoryOfRxN

diagram	
type	<a href="#">categoryOfRxNType</a>

## element rxnCodeType/actionOrActivity

diagram	
type	<a href="#">actionOrActivityType</a>

## element rxnCodeType/headline

diagram	
type	<b>xs:string</b>
annotation	<p>documentation Words set at the head of a passage or page to introduce or categorize</p>

complexType **S100\_TruncatedDate**

diagram	
children	<a href="#">gDay</a> <a href="#">gMonth</a> <a href="#">gYear</a> <a href="#">gMonthDay</a> <a href="#">gYearMonth</a> <a href="#">date</a>
annotation	documentation built in date types from W3C XML schema, implementing S-100 truncated date

element **S100\_TruncatedDate/gDay**

diagram	
type	<b>xs:gDay</b>

element **S100\_TruncatedDate/gMonth**

diagram	
type	<b>xs:gMonth</b>


element **S100\_TruncatedDate/gYear**

diagram	
type	<b>xs:gYear</b>

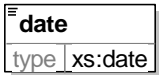
element **S100\_TruncatedDate/gMonthDay**

diagram	
type	<b>xs:gMonthDay</b>

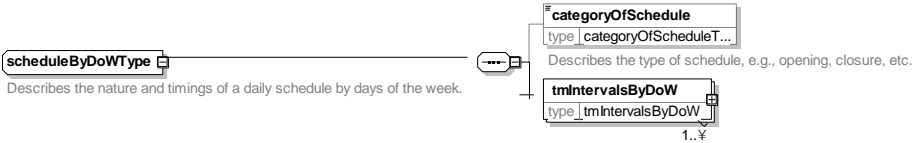
element **S100\_TruncatedDate/gYearMonth**

diagram	 <pre> graph LR     gYearMonth["gYearMonth type xs:gYearMonth"]   </pre>
type	<b>xs:gYearMonth</b>

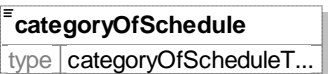
element **S100\_TruncatedDate/date**

diagram	 <pre> graph LR     date["date type xs:date"]   </pre>
type	<b>xs:date</b>

complexType **scheduleByDoWType**

diagram	 <pre> graph LR     subgraph scheduleByDoWType ["scheduleByDoWType"]         direction TB         categoryOfSchedule["categoryOfSchedule type categoryOfScheduleT... Describes the type of schedule, e.g., opening, closure, etc."]         tmIntervalsByDoW["tmIntervalsByDoW type tmIntervalsByDoW 1..∞"]     end   </pre>
children	<a href="#">categoryOfSchedule</a> <a href="#">tmIntervalsByDoW</a>
annotation	documentation Describes the nature and timings of a daily schedule by days of the week.

element **scheduleByDoWType/categoryOfSchedule**

diagram	 <pre> graph LR     categoryOfSchedule["categoryOfSchedule type categoryOfScheduleT... Describes the type of schedule, e.g., opening, closure, etc."]   </pre>
type	<a href="#">categoryOfScheduleType</a>
annotation	documentation Describes the type of schedule, e.g., opening, closure, etc.

element **scheduleByDoWType/tmIntervalsByDoW**

diagram	<p><b>tmIntervalsByDoW</b> type: tmIntervalsByDoW 1..∞</p> <p><b>dayOfWeek</b> type: dayOfWeekType 0..7 Encodes either range(s) of days or discrete days.</p> <p><b>dayOfWeeksRanges</b> type: xs:boolean Indicates whether the values in dayOfWeek indicate a range of days (true) or discrete days (false).</p> <p><b>timeReference</b> type: timeReferenceType Indicates whether the time co-attributes are encoded in UTC or local time (LT).</p> <p><b>timeOfDayStart</b> type: xs:time 0..∞ Starting time of day, possibly for a period within the day. Distinction: Time start (TIMSTA) (S-101) which has a format YYYYMMDDThhmmss (mandatory) in the baseline S-101 DCEG as of October 2015.</p> <p><b>timeOfDayEnd</b> type: xs:time 0..∞ Ending time of day, possibly for a period within the day. Distinction: Time end (TIMEND) (S-101) which has a format YYYYMMDDThhmmss (mandatory) in the baseline S-101 DCEG as of October 2015.</p>
type	<a href="#"><b>tmIntervalsByDoW</b></a>
children	<a href="#"><b>dayOfWeek</b></a> <a href="#"><b>dayOfWeeksRanges</b></a> <a href="#"><b>timeReference</b></a> <a href="#"><b>timeOfDayStart</b></a> <a href="#"><b>timeOfDayEnd</b></a>

complexType **ServiceHoursType**

diagram	
type	extension of <a href="#">InformationTypeType</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociati...</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a> <a href="#">scheduleByDoW</a> <a href="#">information</a> <a href="#">theAuthority_srvHrs</a> <a href="#">partialWorkingDay</a>
annotation	documentation The time when a service is available and known exceptions.

element **ServiceHoursType/scheduleByDoW**

diagram	
type	<a href="#">scheduleByDoWType</a>

children	<a href="#">categoryOfSchedule</a> <a href="#">tmlIntervalsByDoW</a>
----------	--

element **ServiceHoursType/information**

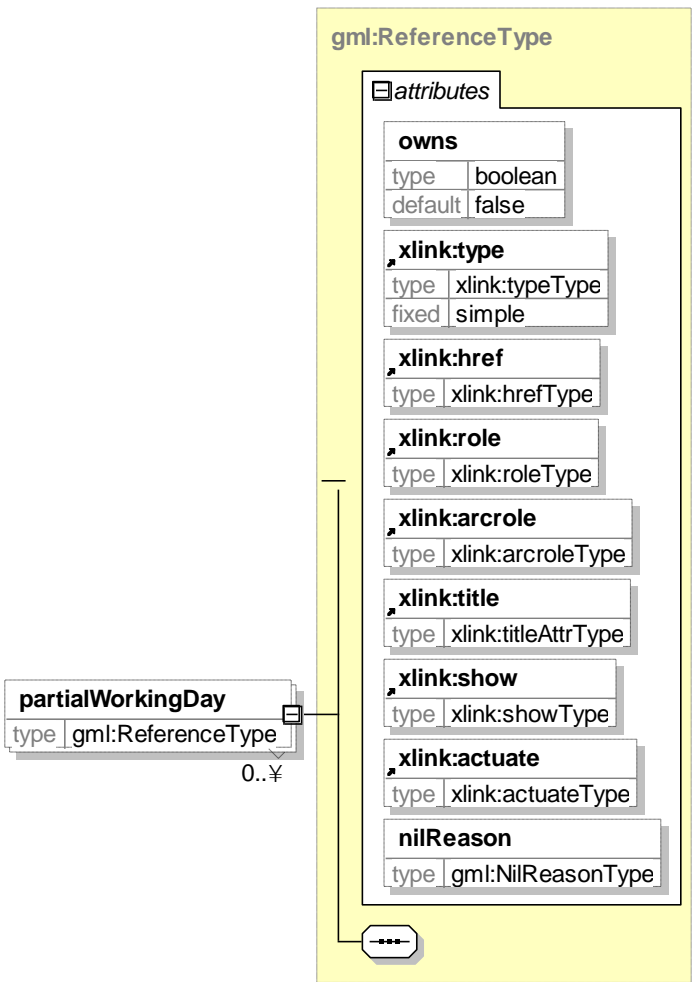
diagram	<p>The diagram illustrates the structure of the <code>informationType</code> element. On the left, a box labeled <code>information</code> shows its type as <code>informationType</code> and its cardinality as <code>0..1</code>. A line connects this box to a larger box on the right titled <code>informationType</code>. This box contains five child elements, each with its own type and description:</p> <ul style="list-style-type: none"><li><b>fileLocator</b>: type <code>xs:string</code>. The string encodes the location of a fragment of text or other information in a support file.</li><li><b>fileReference</b>: type <code>xs:string</code>. The string encodes the file name of a single external text file that contains the text.</li><li><b>headline</b>: type <code>xs:string</code>. Words set at the head of a passage or page to introduce or categorize.</li><li><b>language</b>: type <code>xs:string</code>. ISO 639-3 value.</li><li><b>text</b>: type <code>xs:string</code>. A non-formatted digital text string.</li></ul>
type	<a href="#">informationType</a>
children	<a href="#">fileLocator</a> <a href="#">fileReference</a> <a href="#">headline</a> <a href="#">language</a> <a href="#">text</a>

element **ServiceHoursType/theAuthority\_srvHrs**

diagram	<p>The diagram illustrates the <b>gml:ReferenceType</b> class and its association with the <b>theAuthority_srvHrs</b> element. The <b>gml:ReferenceType</b> class is shown with a yellow background and contains the following attributes:</p> <ul style="list-style-type: none"> <li><b>owns</b>: type <code>boolean</code>, default <code>false</code></li> <li><b>xlink:type</b>: type <code>xlink:typeType</code>, fixed <code>simple</code></li> <li><b>xlink:href</b>: type <code>xlink:hrefType</code></li> <li><b>xlink:role</b>: type <code>xlink:roleType</code></li> <li><b>xlink:arcrole</b>: type <code>xlink:arcroleType</code></li> <li><b>xlink:title</b>: type <code>xlink:titleAttrType</code></li> <li><b>xlink:show</b>: type <code>xlink:showType</code></li> <li><b>xlink:actuate</b>: type <code>xlink:actuateType</code></li> <li><b>nilReason</b>: type <code>gml:nilReasonType</code></li> </ul> <p>The <b>theAuthority_srvHrs</b> element is shown with a white background and is associated with <b>gml:ReferenceType</b> via a directed association line. The association is labeled with the cardinality <code>0..∞</code> and the word <code>optional</code>.</p>
type	<b>gml:ReferenceType</b>
annotation	documentation optional

element **ServiceHoursType/partialWorkingDay**

diagram



type **gml:ReferenceType**



complexType **ShipReportType**

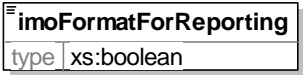
diagram	<p><b>ShipReportType</b> This describes how a ship should report to a maritime authority, including when to report, what to report and whether the format conforms to the IMO standard.</p>
type	extension of <a href="#">InformationTypeType</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociation</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a> <a href="#">categoryOfShipReport</a> <a href="#">imoFormatForReporting</a> <a href="#">reportTo</a> <a href="#">noticeTime</a> <a href="#">textContent</a> <a href="#">mustBeFiledBy</a>
annotation	<p>documentation</p> <p>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.</p>

element **ShipReportType/categoryOfShipReport**

diagram	<pre>classDiagram     class categoryOfShipReport {         type categoryOfShipReportType     }     categoryOfShipReport "1" -- "1" categoryOfShipReportType</pre>		
type	<a href="#">categoryOfShipReportType</a>		
facets	Kind enumeration	Value sailing plan	Annotation documentation 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]

	enumeration	position report	documentation when necessary to ensure effective operation of the system
	enumeration	deviation report	documentation 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
	enumeration	final report	documentation on arrival at the destination or on leaving the area covered by the system
	enumeration	dangerous goods report	documentation 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
	enumeration	harmful substances report	documentation 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)
	enumeration	marine pollutants report	documentation 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).
	enumeration	any other report	documentation any other report should be made in accordance with the system procedures as notified in accordance with paragraph 9 of the general principles

element **ShipReportType/imoFormatForReporting**

diagram	 <pre> &lt;imoFormatForReporting type="xs:boolean"/&gt; </pre> <p>Whether a report must be in an IMO standard format</p>
type	<b>xs:boolean</b>
annotation	documentation Whether a report must be in an IMO standard format

element **ShipReportType/reportTo**

diagram	
type	<b>gml:ReferenceType</b>

element **ShipReportType/noticeTime**

diagram	<p><b>noticeTimeHours</b> type xs:decimal 0..∞ The time duration prior to the time the service is needed, when notice must be provided to the service provider.</p> <p><b>noticeTimeText</b> type xs:string Text string qualifying the notice time specified in NTCHRS. This may explain the time specification in NTCHRS (e.g., "3 working days" for a NTCHRS value of "72" where NTCTIM is supposed to be "3 working days") or consist of other language qualifying the time, e.g., "On departure from last port" or "On passing reporting line XY").</p> <p><b>operation</b> type operationType</p>
type	<a href="#">noticeTimeType</a>
children	<a href="#">noticeTimeHours</a> <a href="#">noticeTimeText</a> <a href="#">operation</a>

element **ShipReportType/textContent**

diagram	<p>The diagram illustrates the structure of the <b>textContent</b> element. It is a container for a <b>textContent</b> object of type <b>textContentType</b>. This object contains four optional elements: <b>categoryOfText</b> (type <b>categoryOfTextType</b>), <b>information</b> (type <b>informationType</b>, 0..1), <b>onlineResource</b> (type <b>onlineResourceType</b>), and <b>sourceIndication</b> (type <b>sourceIndicationType</b>).</p>
type	<a href="#">textContentType</a>
children	<a href="#">categoryOfText</a> <a href="#">information</a> <a href="#">onlineResource</a> <a href="#">sourceIndication</a>

element **ShipReportType/mustBeFiledBy**


diagram	
type	<b>gml:ReferenceType</b>

complexType **sourceIndicationType**

diagram	
children	<a href="#">categoryOfAuthority</a> <a href="#">country</a> <a href="#">featureName</a> <a href="#">reportedDate</a> <a href="#">source</a> <a href="#">sourceType</a>
annotation	documentation


Content of featureName is source authority name
---

element **sourceIndicationType/categoryOfAuthority**

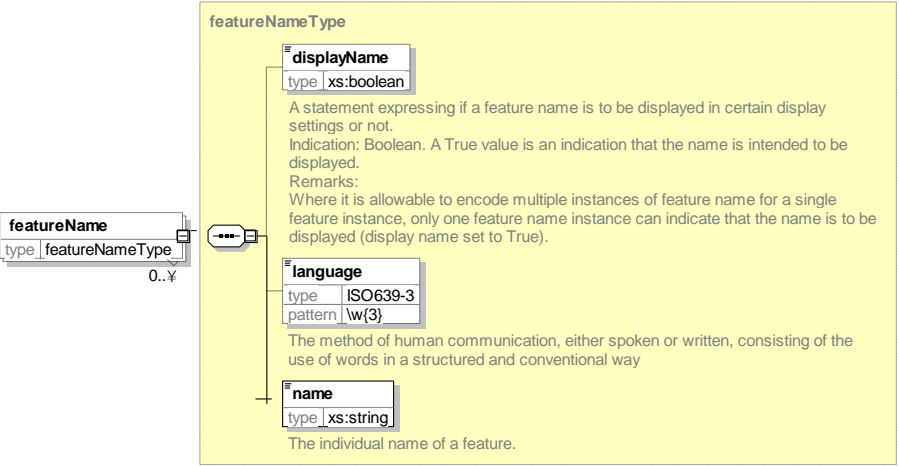
diagram			
type	<a href="#">categoryOfAuthorityType</a>		
facets	Kind	Value	Annotation
	enumeration	customs	documentation The agency or establishment for collecting duties, tolls. (Merriam-Websters online Dictionary 23rd February 2006, amended).
	enumeration	border control	documentation The administration to prevent or detect and prosecute violations of rules and regulations at international boundaries (adapted from Merriam-Websters online Dictionary 23rd February 2006).
	enumeration	police	documentation The department of government, or civil force, charged with maintaining public order. (Adapted from OED)
	enumeration	port	documentation 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)
	enumeration	immigration	documentation The authority controlling people entering a country.
	enumeration	health	documentation The authority with responsibility for checking the validity of the health declaration of a vessel and for declaring free pratique.
	enumeration	coast guard	documentation Organisation keeping watch on shipping and coastal waters according to governmental law; normally the authority with responsibility for search and rescue.
	enumeration	agricultural	documentation The authority with responsibility for preventing infection of the agriculture of a country and for the protection of the agricultural interests of a country.
	enumeration	military	documentation A military authority which provides control of access to or approval for transit through designated areas or airspace.
	enumeration	private company	documentation A private or publicly owned company or commercial enterprise which exercises control of facilities, for example a calibration area.
	enumeration	maritime police	documentation A governmental or military force with jurisdiction in territorial waters. Examples could include Gendarmerie Maritime, Carabinerie, and Guardia Civil.
	enumeration	environmental	documentation An authority with responsibility for the protection of the environment.
	enumeration	fishery	documentation

	enumeration finance	An authority with responsibility for the control of fisheries. documentation an authority with responsibility for the control and movement of money.
	enumeration maritime	documentation A national or regional authority charged with administration of maritime affairs.

element **sourceIndicationType/country**

diagram	
type	<b>xs:string</b>

element **sourceIndicationType/featureName**

diagram	
type	<a href="#">featureNameType</a>
children	<a href="#">displayName</a> <a href="#">language</a> <a href="#">name</a>

element **sourceIndicationType/reportedDate**

diagram	
type	<a href="#">S100_TruncatedDate</a>
children	<a href="#">gDay</a> <a href="#">gMonth</a> <a href="#">gYear</a> <a href="#">gMonthDay</a> <a href="#">gYearMonth</a> <a href="#">date</a>

element **sourceIndicationType/source**

diagram	
type	<b>xs:string</b>
annotation	documentation The publication, document, or reference work from which information comes or is acquired.

element **sourceIndicationType/sourceType**

diagram	<div><div><div>≡</div><div>sourceType</div><div>type sourceTypeType</div></div><div>Type of source</div></div>									
type	<a href="#">sourceTypeType</a>									
facets	<table><tr><td>Kind</td><td>Value</td><td>Annotation</td></tr><tr><td>enumeration</td><td>law or regulation</td><td>documentation treaty, convention, or international agreement; law or regulation issued by a national or other authority</td></tr><tr><td>enumeration</td><td>official publication</td><td>documentation publication not having the force of law, issued by an international organisation or a national or local administration</td></tr></table>	Kind	Value	Annotation	enumeration	law or regulation	documentation treaty, convention, or international agreement; law or regulation issued by a national or other authority	enumeration	official publication	documentation publication not having the force of law, issued by an international organisation or a national or local administration
Kind	Value	Annotation								
enumeration	law or regulation	documentation treaty, convention, or international agreement; law or regulation issued by a national or other authority								
enumeration	official publication	documentation publication not having the force of law, issued by an international organisation or a national or local administration								




	enumeration	mariner report, confirmed	documentation Reported by mariner(s) and confirmed by another source
	enumeration	mariner report, not confirmed	documentation reported by mariner(s) but not confirmed
	enumeration	industry publications and reports	documentation shipping and other industry publication, including graphics, charts and web sites
	enumeration	remotely sensed images	documentation information obtained from satellite images
	enumeration	photographs	documentation information obtained from photographs
	enumeration	products issued by HO services	documentation information obtained from products issued by Hydrographic Offices
	enumeration	news media	documentation information obtained from news media
	enumeration	traffic data	documentation information obtained from the analysis of traffic data
annotation	documentation Type of source		

complexType **SpatialQuality**

diagram	<p><b>InformationType</b> (extension)</p> <p><b>attributes</b></p> <p><b>gml:id</b> type ID use required</p> <p>The attribute gml:id supports provision of a handle for the XML element representing a GML Object. Its use is mandatory for all GML objects. It is of XML type ID, so is constrained to be unique in the XML document within which it occurs.</p> <p><b>elements</b></p> <p><b>informationAssociation</b> type InformationPropertyType 0..1</p> <p><b>invInformationAssociation</b> type InverseInformationAssociationType 0..1</p> <p><b>fixedDateRange</b> type fixedDateRangeType 0..1</p> <p><b>periodicDateRange</b> type periodicDateRangeType 0..1</p> <p><b>featureName</b> type featureNameType 0..1</p> <p><b>sourceIndication</b> type sourceIndicationType 0..1</p> <p><b>providesInformation</b> type gml:ReferenceType 0..1</p> <p><b>categoryOfTemporalVariation</b> type categoryOfTemporalVariationType 0..1</p> <p><b>horizontalPositionalUncertainty</b> type horizontalPositionalUncertaintyType 0..1</p> <p><b>qualityOfHorizontalMeasurement</b> type QUAPOSType 0..1</p>
type	extension of <a href="#">InformationType</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociation</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a> <a href="#">categoryOfTemporalVariation</a> <a href="#">horizontalPositionalUncertainty</a> <a href="#">qualityOfHorizontalMeasurement</a>

element **SpatialQuality/categoryOfTemporalVariation**

diagram			
type	<a href="#">categoryOfTemporalVariationType</a>		
facets	Kind enumeration	Value extreme event	Annotation documentation NIPWG: No new hydrographic survey conducted after an

	<p>event (e.g., hurricane, earthquake, volcanic eruption, landslide, etc.) which is considered likely to have resulted in significant change at the location. documentation In GI Registry: Definition: No new hydrographic survey conducted after an event (e.g. hurricane, earthquake, volcanic eruption, landslide, etc), which is considered likely to have changed the seafloor significantly. documentation NIPWG: Continuous or frequent change (e.g., river siltation, sand waves, seasonal storms, construction, etc.)</p> <p style="text-align: right;">GI</p> <p>Registry:</p> <p>Continuous or frequent change (e.g. river siltation, sand waves, seasonal storms, ice bergs, etc). documentation GI Registry: Likely to change but significant shoaling no expected</p> <p>[Proposed draft 6/27/2014: Recommended that SNPWG not use this enumerate - ref. E.M. email 6/27/2014.] documentation NIPWG: Significant change at the location is not expected.</p> <p style="text-align: right;">GI</p> <p>Registry: Significant change to the seafloor is not expected. documentation Temporal variation not assessed or cannot be determined</p>
enumeration	likely to change
enumeration	likely to change but significant shoaling not expected
enumeration	unlikely to change
enumeration	unassessed

element **SpatialQuality/horizontalPositionalUncertainty**

diagram	
type	<a href="#">horizontalPositionalUncertainty</a>
children	<a href="#">uncertaintyFixed</a> <a href="#">uncertaintyVariable</a>

element **SpatialQuality/qualityOfHorizontalMeasurement**

diagram	
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type	<a href="#">QUAPOSType</a>		
facets	Kind	Value	Annotation
	enumeration	surveyed	documentation The position(s) was(were) determined by the operation of making measurements for determining the relative position of points on, above, or beneath the earth's surface. Survey implies a regular, controlled, survey of any date.
	enumeration	unsurveyed	documentation Survey data does not exist or is very poor
	enumeration	inadequately surveyed	documentation Position data is of very poor quality
	enumeration	approximate	documentation A position that is considered to be less than third-order accuracy, but is generally considered to be within 30.5 meters of its correct geographic location. Also, may apply to a feature whose position does not remain fixed.
	enumeration	position doubtful	documentation A feature whose position has been reported but which is considered to be doubtful
	enumeration	unreliable	documentation A feature's position obtained from questionable or unreliable data.
	enumeration	reported (not surveyed)	documentation A feature whose position has been reported and its position confirmed by some means other than a formal survey such as an independent report of the same feature.
	enumeration	reported (not confirmed)	documentation A feature whose position has been reported and its position has not been confirmed.
	enumeration	estimated	documentation The most probable position of a feature determined from incomplete data or data of questionable accuracy.
	enumeration	precisely known	documentation A position that is of a known value, such as the position of an anchor berth or other defined feature.
	enumeration	calculated	documentation A position that is computed from data.

complexType **SpatialQualityPoints**

diagram	
type	extension of <a href="#">SpatialQuality</a>
children	<a href="#">informationAssociation</a> <a href="#">invInformationAssociation</a> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">providesInformation</a> <a href="#">categoryOfTemporalVariation</a> <a href="#">horizontalPositionalUncertainty</a> <a href="#">qualityOfHorizontalMeasurement</a>
annotation	documentation Definition required

complexType **surveyDateRangeType**

diagram	
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children	<a href="#">dateStart</a> <a href="#">dateEnd</a>
annotation	documentation The complex attribute describes the period of the hydrographic survey, as the time between its sub-attributes.

element **surveyDateRangeType/dateStart**

diagram	<p>The diagram illustrates the structure of the <b>S100_TruncatedDate</b> element. On the left, a box represents the <b>dateStart</b> attribute, which has a type of <b>S100_TruncatedDate</b> and is described as "The start date or time of the interval." This attribute is connected to a larger box representing the <b>S100_TruncatedDate</b> element itself. Inside this box, a vertical line indicates a choice of sub-elements. The sub-elements are: <b>gDay</b> (type <b>xs:gDay</b>), <b>gMonth</b> (type <b>xs:gMonth</b>), <b>gYear</b> (type <b>xs:gYear</b>), <b>gMonthDay</b> (type <b>xs:gMonthDay</b>), <b>gYearMonth</b> (type <b>xs:gYearMonth</b>), and <b>date</b> (type <b>xs:date</b>).</p>
type	<a href="#">S100_TruncatedDate</a>
children	<a href="#">gDay</a> <a href="#">gMonth</a> <a href="#">gYear</a> <a href="#">gMonthDay</a> <a href="#">gYearMonth</a> <a href="#">date</a>
annotation	documentation The start date or time of the interval.

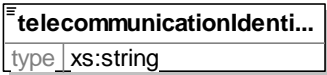
element **surveyDateRangeType/dateEnd**

diagram	
type	<a href="#">S100_TruncatedDate</a>
children	<a href="#">gDay</a> <a href="#">gMonth</a> <a href="#">gYear</a> <a href="#">gMonthDay</a> <a href="#">gYearMonth</a> <a href="#">date</a>
annotation	documentation The end date or time of the interval.

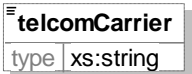
complexType **telecommunicationsType**

diagram	
children	<a href="#">telecommunicationIdentifier</a> <a href="#">telcomCarrier</a> <a href="#">contactInstructions</a> <a href="#">telecommunicationService</a> <a href="#">categoryOfCommPref</a> <a href="#">scheduleByDoW</a>
annotation	documentation A means or channel of communication at a distance by electrical, electronic, or electromagnetic means such as telegraphy, telephony, or broadcasting

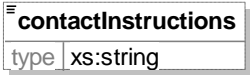
element **telecommunicationsType/telecommunicationIdentifier**

diagram	 <p>Identifier used for contact by means of a telecommunications service, such as a telephone number</p>
type	<b>xs:string</b>
annotation	documentation Identifier used for contact by means of a telecommunications service, such as a telephone number


element **telecommunicationsType/telcomCarrier**

diagram	 <p>The name of provider or type of carrier for a telecommunications service</p>
type	<b>xs:string</b>
annotation	documentation The name of provider or type of carrier for a telecommunications service

element **telecommunicationsType/contactInstructions**

diagram	 <p>instructions on how and when to contact an individual or organisation</p>
type	<b>xs:string</b>
annotation	documentation instructions on how and when to contact an individual or organisation

element **telecommunicationsType/telecommunicationService**

diagram	 <p>Type of telecommunications service</p>
type	<a href="#">telecommunicationServiceType</a>
annotation	documentation Type of telecommunications service

element **telecommunicationsType/categoryOfCommPref**

diagram	
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type	<a href="#">categoryOfCommPrefType</a>		
facets	Kind	Value	Annotation
	enumeration	preferred calling	documentation the first choice channel or frequency to be used when calling a radio station
	enumeration	alternate calling	documentation 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
	enumeration	preferred working	documentation the first choice channel or frequency to be used when working with a radio station
	enumeration	alternate working	documentation 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

element **telecommunicationsType/scheduleByDoW**

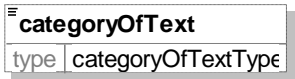
diagram	
type	<a href="#">scheduleByDoWType</a>
children	<a href="#">categoryOfSchedule</a> <a href="#">tmIntervalsByDoW</a>

complexType **textContentType**

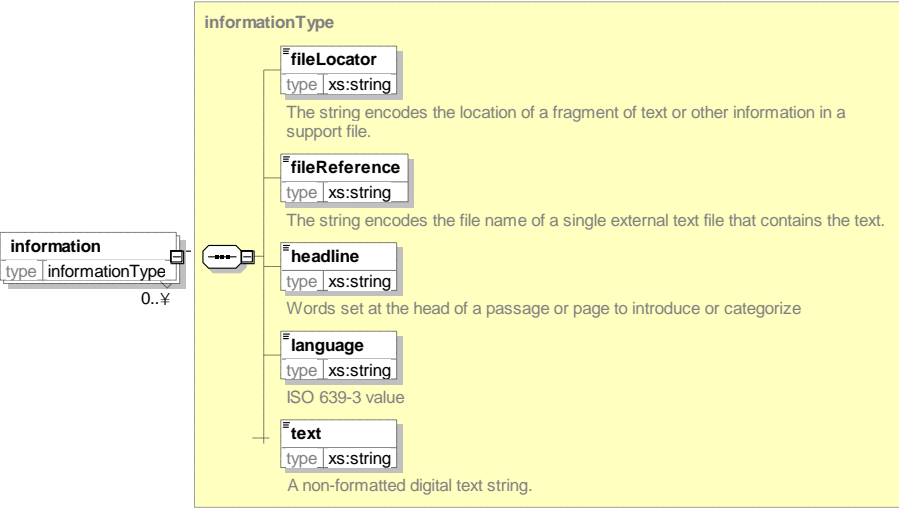
diagram	<p>Remarks:</p> <ul style="list-style-type: none"> <li>- Exactly one of sub-attributes onlineResource or information must be completed in one instance of textContent.</li> <li>- Product specifications may restrict the use or content of onlineResource for security. For example, a product specification may forbid populating onlineResource.</li> <li>- Product specification authors must consider whether applications using the data product may be prevented from accessing off-system resources by security policies.</li> </ul>
children	<a href="#">categoryOfText</a> <a href="#">information</a> <a href="#">onlineResource</a> <a href="#">sourceIndication</a>
annotation	<p>documentation</p> <p>Remarks:</p> <ul style="list-style-type: none"> <li>- Exactly one of sub-attributes onlineResource or information must be completed in one instance of textContent.</li> <li>- Product specifications may restrict the use or content of onlineResource for security. For example, a product specification may forbid populating onlineResource.</li> </ul>

- Product specification authors must consider whether applications using the data product may be prevented from accessing off-system resources by security policies.

#### element **textContentType/categoryOfText**

diagram			
type	<a href="#">categoryOfTextType</a>		
facets	Kind	Value	Annotation
	enumeration	abstract or summary	documentation A statement summarizing the important points of a text.
	enumeration	extract	documentation An excerpt or excerpts from a text.
	enumeration	full text	documentation The whole text

#### element **textContentType/information**

diagram			
type	<a href="#">informationType</a>		
children	<a href="#">fileLocator</a> <a href="#">fileReference</a> <a href="#">headline</a> <a href="#">language</a> <a href="#">text</a>		

element **textContentType/onlineResource**

diagram	<p><b>onlineResourceType</b></p> <ul style="list-style-type: none"> <li><b>linkage</b> type <code>xs:anyURI</code> location (address) for on-line access using a URL/URI address or similar addressing scheme. (Adapted from ISO 19115:2014.)</li> <li><b>protocol</b> type <code>xs:string</code> connection protocol to be used. Example: ftp, http get KVP, http POST, etc. (ISO 19115)</li> <li><b>applicationProfile</b> type <code>xs:string</code> name of an application profile that can be used with the online resource (ISO 19115)</li> <li><b>nameOfResource</b> type <code>xs:string</code> name of the online resource (ISO 19115, adapted)</li> <li><b>onlineDescription</b> type <code>xs:string</code> detailed text description of what the online resource is/does (ISO 19115)</li> <li><b>onlineFunction</b> type <code>onlineFunctionType</code> code for function performed by the online resource (ISO 19115)</li> <li><b>protocolRequest</b> type <code>xs:string</code> 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)</li> </ul> <p><b>onlineResource</b> type <code>onlineResourceType</code></p>
type	<a href="#">onlineResourceType</a>
children	<a href="#">linkage</a> <a href="#">protocol</a> <a href="#">applicationProfile</a> <a href="#">nameOfResource</a> <a href="#">onlineDescription</a> <a href="#">onlineFunction</a> <a href="#">protocolRequest</a>

element **textContentType/sourceIndication**

diagram	<p><b>sourceIndicationType</b></p> <ul style="list-style-type: none"> <li><b>categoryOfAuthority</b> type <code>categoryOfAuthorityT...</code></li> <li><b>country</b> type <code>xs:string</code></li> <li><b>featureName</b> type <code>featureNameType</code> 0..1</li> <li><b>reportedDate</b> type <code>S100_TruncatedDate</code> 0..1</li> <li><b>source</b> type <code>xs:string</code> The publication, document, or reference work from which information comes or is acquired.</li> <li><b>sourceType</b> type <code>sourceTypeType</code> Type of source</li> </ul> <p><b>sourceIndication</b> type <code>sourceIndicationType</code></p>
type	<a href="#">sourceIndicationType</a>
children	<a href="#">categoryOfAuthority</a> <a href="#">country</a> <a href="#">featureName</a> <a href="#">reportedDate</a> <a href="#">source</a> <a href="#">sourceType</a>

complexType **TextPlacement**

diagram	
children	<a href="#">flipBearing</a> <a href="#">scaleMinimum</a> <a href="#">textJustification</a> <a href="#">text</a> <a href="#">textType</a> <a href="#">geometry</a>
annotation	<p>documentation</p> <p>The Text Placement feature is used in association with the FeatureName attribute or a light description to optimise text positioning in ECDIS.</p> <p>documentation</p> <p>Remarks: - The Text Placement feature is used by the ECDIS to position the associated text, which has been populated using an attribute(s) for the related feature. This attribute is identified by populating the attribute text type. Alternatively, the text to be displayed may be encoded using the attribute text.</p> <ul style="list-style-type: none"> <li>- Only one of the attributes text or text type are allowable for each instance of Text Placement.</li> <li>- Text Placement should only be associated with features of type point, and used in areas where it is important that text clear navigationally relevant areas, e.g. shipping channels and dredged areas.</li> </ul>

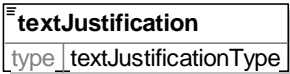
element **TextPlacement/flipBearing**

diagram	
type	<b>xs:decimal</b>
annotation	<p>documentation</p> <p>The bearing at which text is re-located to the opposite side of a feature when screen display is oriented away from true north.</p>

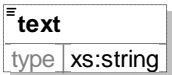
element **TextPlacement/scaleMinimum**

diagram	
type	<b>xs:integer</b>

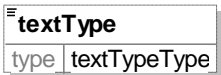
element **TextPlacement/textJustification**

diagram	 <p>The anchor point of a text string.</p>		
type	<a href="#">textJustificationType</a>		
facets	Kind	Value	Annotation
	enumeration	left	documentation The anchor point is at the start of the text string.
	enumeration	centred	documentation The anchor point is at the centre of the text string.
	enumeration	right	documentation The anchor point is at the end of the text string.
annotation	documentation The anchor point of a text string.		

element **TextPlacement/text**

diagram	 <p>A non-formatted digital text string.</p>		
type	<b>xs:string</b>		
annotation	documentation A non-formatted digital text string. documentation 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. <div style="display: flex; justify-content: space-between;"> <div>Text may be in English or in a national language defined by the attribute language.</div> <div>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.</div> </div>		

element **TextPlacement/textType**

diagram			
type	<a href="#">textTypeType</a>		
facets	Kind	Value	Annotation
	enumeration	Feature name	documentation Definition required

element **TextPlacement/geometry**

diagram	
type	<a href="#">GM_Point</a>
children	<b>pointProperty</b>

complexType **tmIntervalsByDoW**

diagram	
children	<a href="#">dayOfWeek</a> <a href="#">dayOfWeeksRanges</a> <a href="#">timeReference</a> <a href="#">timeOfDayStart</a> <a href="#">timeOfDayEnd</a>
annotation	<p>documentation Time intervals by days of the week.</p> <p>documentation Remarks:</p> <p>The sub-attribute dayOfWeeksRanges indicates whether an instance of this attribute encodes a range of days or discrete days. The days or day-range(s) are encoded in sub-attribute dayOfWeek. Multiple ranges are allowed but mixing range with discrete days(s) is not allowed (encode another instance of this attribute instead).</p> <p>An indeterminate range may be indicated with a null value at the appropriate position in the sequence.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>- To code the range “Monday through Friday” use the sequence: dayOfWeek=1, dayOfWeek=5 and set dayOfWeeksRanges=TRUE.</li> <li>- To encode the days Monday, Wednesday, Friday, use the sequence dayOfWeek=1, dayOfWeek=3, dayOfWeek=5 and set dayOfWeeksRanges=FALSE.</li> <li>- The sequence dayOfWeek=1, dayOfWeek=3, dayOfWeek=5 to indicate Mon-Wed and Thursday is not allowed. Encode the Mon-Wed and Thursday schedules in different instances of this complex attribute.</li> </ul> <p>Product specifications may need to allow this attribute to be</p>

	repeated in order to allow encoding of schedules which vary for different days of the week.
--	---

**element `tmIntervalsByDoW/dayOfWeek`**

diagram			
type	<a href="#">dayOfWeekType</a>		
facets	Kind	Value	Annotation
	enumeration	monday	documentation monday the day of the week before Tuesday and following Sunday
	enumeration	tuesday	documentation the day of the week before Wednesday and following Monday
	enumeration	wednesday	documentation wednesday the day of the week before Thursday and following Tuesday
	enumeration	thursday	documentation thursday the day of the week before Friday and following Wednesday
	enumeration	friday	documentation friday the day of the week before Saturday and following Thursday
	enumeration	saturday	documentation saturday the day of the week before Sunday and following Friday (together with Sunday forming part of the weekend)
	enumeration	sunday	documentation sunday the day of the week before Monday and following Saturday (together with Saturday forms part of the weekend)
annotation	documentation Encodes either range(s) of days or discrete days.		

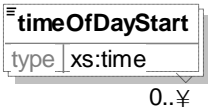
**element `tmIntervalsByDoW/dayOfWeekIsRanges`**

diagram			
type	<b>xs:boolean</b>		
annotation	documentation Indicates whether the values in dayOfWeek indicate a range of days (true) or discrete days (false).		

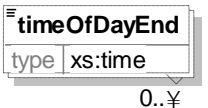
element **tmlIntervalsByDoW/timeReference**

diagram	<div><div><div><div><div><div></div><div><b>timeReference</b></div></div><div><div>type</div><div>timeReferenceType</div></div></div></div></div><p>Indicates whether the time co-attributes are encoded in UTC or local time (LT).</p></div>									
type	<a href="#">timeReferenceType</a>									
facets	<table><tr><th>Kind</th><th>Value</th><th>Annotation</th></tr><tr><td>enumeration</td><td>UTC</td><td>documentation Coordinated Universal Time</td></tr><tr><td>enumeration</td><td>LT</td><td>documentation Local time</td></tr></table>	Kind	Value	Annotation	enumeration	UTC	documentation Coordinated Universal Time	enumeration	LT	documentation Local time
Kind	Value	Annotation								
enumeration	UTC	documentation Coordinated Universal Time								
enumeration	LT	documentation Local time								
annotation	<p>documentation</p> <p>Indicates whether the time co-attributes are encoded in UTC or local time (LT).</p>									

element **tmlIntervalsByDoW/timeOfDayStart**

diagram	 <p>Starting time of day, possibly for a period within the day.</p> <p>Distinction: Time start (TIMSTA) (S-101) which has a format YYYYMMDDThhmmss (mandatory) in the baseline S-101 DCEG as of October 2015.</p>
type	<b>xs:time</b>
annotation	<p>documentation</p> <p>Starting time of day, possibly for a period within the day.</p> <p>Distinction: Time start (TIMSTA) (S-101) which has a format YYYYMMDDThhmmss (mandatory) in the baseline S-101 DCEG as of October 2015.</p>

element **tmlIntervalsByDoW/timeOfDayEnd**


diagram	 <p>Ending time of day, possibly for a period within the day.</p> <p>Distinction: Time end (TIMEND) (S-101) which has a format YYYYMMDDThhmmss (mandatory) in the baseline S-101 DCEG as of October 2015.</p>
type	<b>xs:time</b>
annotation	<p>documentation</p> <p>Ending time of day, possibly for a period within the day.</p> <p>Distinction: Time end (TIMEND) (S-101) which has a format YYYYMMDDThhmmss (mandatory) in the baseline S-101 DCEG as of October 2015.</p>




complexType **vesselsMeasurementsType**

diagram	
children	<a href="#">comparisonOperator</a> <a href="#">vesselsCharacteristics</a> <a href="#">vesselsCharacteristicsValue</a> <a href="#">vesselsCharacteristicsUnit</a>

element **vesselsMeasurementsType/comparisonOperator**

diagram			
type	<a href="#">comparisonOperatorType</a>		
facets	Kind	Value	Annotation
	enumeration	greater than	documentation The value of the left value is greater than that of the right. ( <a href="http://en.wikipedia.org/wiki/Logical_connective">http://en.wikipedia.org/wiki/Logical_connective</a> )
	enumeration	greater than or equal to	documentation The value of the left expression is greater than or equal to that of the right. ( <a href="http://en.wikipedia.org/wiki/Logical_connective">http://en.wikipedia.org/wiki/Logical_connective</a> )
	enumeration	less than	documentation The value of the left expression is less than that of the right. ( <a href="http://en.wikipedia.org/wiki/Logical_connective">http://en.wikipedia.org/wiki/Logical_connective</a> )
	enumeration	less than or equal to	documentation The value of the left expression is less than or equal to that of the right. ( <a href="http://en.wikipedia.org/wiki/Logical_connective">http://en.wikipedia.org/wiki/Logical_connective</a> )
	enumeration	equal to	documentation The two values are equivalent. (adapted <a href="http://en.wikipedia.org/wiki/Logical_connective">http://en.wikipedia.org/wiki/Logical_connective</a> )
	enumeration	not equal to	documentation The two values are not equivalent. (adapted <a href="http://en.wikipedia.org/wiki/Logical_connective">http://en.wikipedia.org/wiki/Logical_connective</a> )

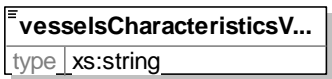
element **vesselsMeasurementsType/vesselsCharacteristics**

diagram			
type	<a href="#">vesselsCharacteristicsType</a>		
facets	Kind enumeration	Value length overall	Annotation documentation The maximum length of the ship (L.O.A.).

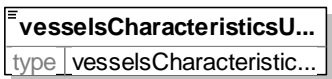
	enumeration	length at waterline	<p>(<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p> <p>documentation</p> <p>The ship's length measured at the waterline (L.W.L.). (<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p>
	enumeration	breadth	<p>documentation</p> <p>The width or beam of the vessel. (Adapted from <a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p>
	enumeration	draught	<p>documentation</p> <p>The depth of water necessary to float a vessel fully loaded. (<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p>
	enumeration	height	<p>documentation</p> <p>The height of the highest point of a vessel's structure (e.g. radar aerial, funnel, cranes, masthead) above her waterline. (UKHO NP100/2009)</p>
	enumeration	displacement tonnage	<p>documentation</p> <p>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. (<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p>
	enumeration	displacement tonnage, light	<p>documentation</p> <p>The weight of the ship excluding cargo, fuel, ballast, stores, passengers, and crew, but with water in the boilers to steaming level. (<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p>
	enumeration	displacement tonnage, loaded	<p>documentation</p> <p>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. (<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p>
	enumeration	deadweight tonnage	<p>documentation</p> <p>The difference between displacement, light and displacement, loaded. A measure of the ship's total carrying capacity. (<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p>
	enumeration	gross tonnage	<p>documentation</p> <p>The entire internal cubic capacity of the ship expressed in tons of 100 cubic feet to the ton, except certain spaces with are exempted such as: peak and other tanks for water ballast, open forecastle bridge and poop, access of hatchways, certain light and air spaces, domes of skylights, condenser, anchor gear, steering gear, wheel house, galley and cabin for passengers. (<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p>

	enumeration	net tonnage	2010) documentation Obtained from the gross tonnage by deducting crew and navigating spaces and allowances for propulsion machinery.( <a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a> ; 24 July 2010)
	enumeration	Panama Canal/Universal Measurement System net tonnage	documentation 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 <a href="http://en.wikipedia.org/wiki/Tonnage">http://en.wikipedia.org/wiki/Tonnage</a> 4 Oct 2010)
	enumeration	Suez Canal net tonnage	documentation the Suez Canal Net Tonnage (SCNT) is derived with a number of modifications from the former net register tonnage of the Moorsom System and was established by the International Commission of Constantinople in its Protocol of 18 December 1873. It is still in use, as amended by the Rules of Navigation of the Suez Canal Authority, and is registered in the Suez Canal Tonnage Certificate. (Adapted from <a href="http://en.wikipedia.org/wiki/Tonnage">http://en.wikipedia.org/wiki/Tonnage</a> 4 Oct 2010)
	enumeration	Suez Canal gross tonnage	documentation Suez Canal Gross Tonnage (SCGT) is derived with a number of modifications from the former net register tonnage of the Moorsom System and was established by the International Commission of Constantinople in its Protocol of 18 December 1873. It is still in use, as amended by the Rules of Navigation of the Suez Canal Authority, and is registered in the Suez Canal Tonnage Certificate.

element **vesselsMeasurementsType/vesselsCharacteristicsValue**

diagram			
type	<b>xs:string</b>		

element **vesselsMeasurementsType/vesselsCharacteristicsUnit**

diagram			
type	<b><u><a href="#">vesselsCharacteristicsUnitType</a></u></b>		
facets	Kind enumeration	Value metre	Annotation documentation 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.  enumeration foot documentation

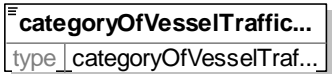
	enumeration    metric ton	<p>A foot (plural: feet) is a non-SI unit of length in a number of different systems including English units, Imperial units, and United States customary units. The most commonly used foot today is the international foot. There are three feet in a yard and 12 inches in a foot.</p> <p>documentation</p> <p>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%.</p> <p>documentation</p> <p>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<sup>3</sup>) of salt water with a density of 64 lb/ft<sup>3</sup> (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).</p> <p>documentation</p> <p>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).</p> <p>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).</p> <p>documentation</p> <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</p>
	enumeration    ton	
	enumeration    short ton	
	enumeration    gross ton	

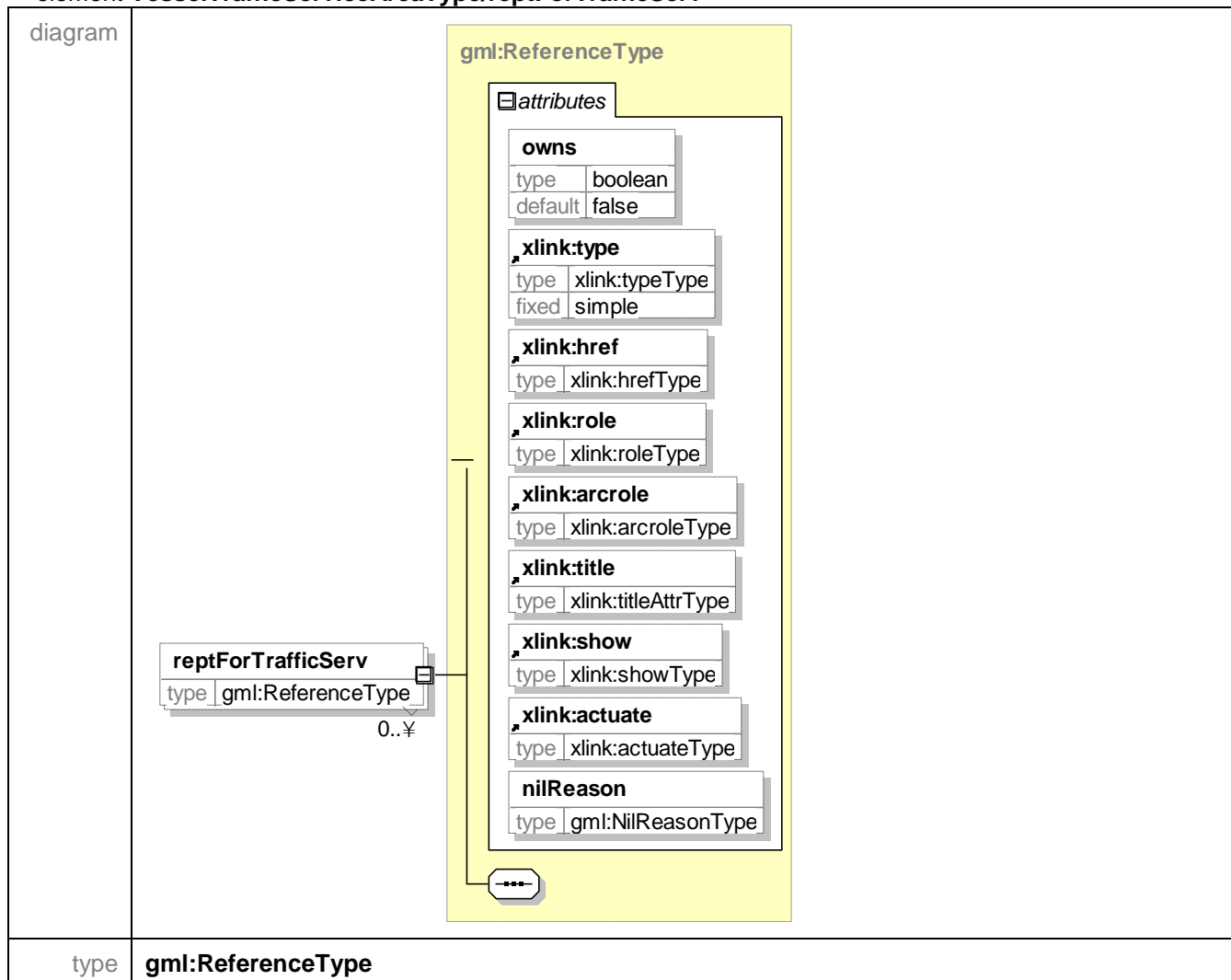
		<p>manning, safety and other statutory requirements and is expressed simply as GT, which is a unitless entity, even though its derivation is tied to the cubic meter unit of volumetric capacity.</p> <p>Tonnage measurements are now governed by an IMO Convention (International Convention on Tonnage Measurement 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>
enumeration	net ton	<p><a href="#">documentation</a></p> <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>
enumeration	Panama Canal/Universal Measurement System net tonnage	<p><a href="#">documentation</a></p> <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>
enumeration	Suez Canal Net Tonnage	<p><a href="#">documentation</a></p> <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>
enumeration	none	<p><a href="#">documentation</a></p> <p>Can be used for net and gross tonnages, including Panama Canal/Universal Measurement System net tonnage and The Suez Canal Net Tonnage.</p>
enumeration	cubic metres	<p><a href="#">documentation</a></p> <p>cubic metres</p>
enumeration	Suez Canal Gross Tonnage	<p><a href="#">documentation</a></p> <p>The Suez Canal Gross Tonnage (SCGT) is derived with a number of modifications from the former net register tonnage of the Moorsom System and was established by the International Commission of Constantinople in its Protocol of 18 December 1873. It is still in use, as amended by the Rules of Navigation of the Suez Canal Authority, and is registered in the Suez Canal Tonnage Certificate.</p>

complexType **VesselTrafficServiceAreaType**

diagram	<p><b>VesselTrafficServiceAreaType</b></p> <p>The area of any service implemented by a relevant authority primarily designed to improve safety and efficiency of traffic flow and the protection of the environment. It may range from simple information messages, to extensive organisation of the traffic involving national or regional schemes.</p>
type	extension of <a href="#">FeatureType</a>
children	<b>gml:boundedBy</b> <b>featureObjectIdentifier</b> <b>informationAssociation</b> <b>featureAssociation</b> <b>invFeatureAssociation</b> <a href="#">fixedDateRange</a> <a href="#">periodicDateRange</a> <a href="#">featureName</a> <a href="#">sourceIndication</a> <a href="#">textContent</a> <a href="#">permission</a> <a href="#">providesInformation</a> <a href="#">theRxn</a> <a href="#">positions</a> <a href="#">categoryOfVesselTrafficService</a> <a href="#">reptForTrafficServ</a> <a href="#">controlAuthority</a> <a href="#">geometry</a>
annotation	<p>documentation</p> <p>The area of any service implemented by a relevant authority primarily designed to improve safety and efficiency of traffic flow and the protection of the environment. It may range from simple information messages, to extensive organisation of the traffic involving national or regional schemes.</p>

element **VesselTrafficServiceAreaType/categoryOfVesselTrafficService**

diagram			
type	<a href="#"><u>categoryOfVesselTrafficServiceType</u></a>		
facets	Kind	Value	Annotation
	enumeration	Information Service	documentation A service to ensure that essential information becomes available in time for on-board navigational decision-making
	enumeration	Traffic Organisation Service	documentation A service to assist on-board navigational decision-making and to monitor its effects
	enumeration	Navigational Assistance Service	documentation A service to prevent the development of dangerous maritime traffic situations and to provide for the safe and efficient movement of vessel traffic within the VTS area
	enumeration	Ship Reporting Service	documentation 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
	enumeration	Local Port Service	documentation A service established to provide port information without interaction between the customer and the service provider. This information could be inter alia berthing information, availability of port services, shipping schedules, meteorological and hydrological data.

element **VesselTrafficServiceAreaType/reptForTrafficServ**




element **VesselTrafficServiceAreaType/controlAuthority**

diagram	
type	<b>gml:ReferenceType</b>

element **VesselTrafficServiceAreaType/geometry**

diagram	
type	<a href="#"><b>GM_Surface</b></a>
children	<b>surfaceProperty</b>

simpleType **actionOrActivityType**

type	union of (restriction of <b>xs:string</b> , restriction of <b>xs:string</b> )
annotation	documentation

	The action or activity of a vessel
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simpleType **cardinalDirectionType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	N	documentation North
	enumeration	NNE	documentation Northnortheast
	enumeration	NE	documentation Northeast
	enumeration	ENE	documentation Eastnortheast
	enumeration	E	documentation East
	enumeration	ESE	documentation Eastsoutheast
	enumeration	SE	documentation Southeast
	enumeration	SSE	documentation Southsoutheast
	enumeration	S	documentation South
	enumeration	SSW	documentation Southsouthwest
	enumeration	SW	documentation Southwest
	enumeration	WSW	documentation Westsouthwest
	enumeration	W	documentation West
	enumeration	WNW	documentation Westnorthwest
	enumeration	NW	documentation Northwest
	enumeration	NNW	documentation Northnorthwest
annotation	documentation Principal and intermediate compass points.		

simpleType **categoryOfAuthorityType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	customs	documentation The agency or establishment for collecting duties, tolls. (Merriam-Websters online Dictionary 23rd February 2006, amended).
	enumeration	border control	documentation The administration to prevent or detect and prosecute violations of rules and regulations at international boundaries (adapted from Merriam-Websters online Dictionary 23rd

	enumeration	police	February 2006). documentation The department of government, or civil force, charged with maintaining public order. (Adapted from OED)
	enumeration	port	documentation 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)
	enumeration	immigration	documentation The authority controlling people entering a country.
	enumeration	health	documentation The authority with responsibility for checking the validity of the health declaration of a vessel and for declaring free pratique.
	enumeration	coast guard	documentation Organisation keeping watch on shipping and coastal waters according to governmental law; normally the authority with responsibility for search and rescue.
	enumeration	agricultural	documentation The authority with responsibility for preventing infection of the agriculture of a country and for the protection of the agricultural interests of a country.
	enumeration	military	documentation A military authority which provides control of access to or approval for transit through designated areas or airspace.
	enumeration	private company	documentation A private or publicly owned company or commercial enterprise which exercises control of facilities, for example a callibration area.
	enumeration	maritime police	documentation A governmental or military force with jurisdiction in territorial waters. Examples could include Gendarmerie Maritime, Carabinerie, and Guardia Civil.
	enumeration	environmental	documentation An authority with responsibility for the protection of the environment.
	enumeration	fishery	documentation An authority with responsibility for the control of fisheries.
	enumeration	finance	documentation an authority with responsibility for the control and movement of money.
	enumeration	maritime	documentation A national or regional authority charged with administration of maritime affairs.
annotation	documentation The type of person, government agency or organisation granted powers of managing or controlling access to and/or activity in an area		

simpleType **categoryOfCargoType**

type	restriction of <b>xs:string</b>		
facets	Kind enumeration	Value bulk	Annotation documentation

	enumeration	container	Normally dry cargo which is transported to and from the vessel on conveyors or grabs documentation
	enumeration	general	One of a number of standard sized cargo carrying units, secured using standard corner attachments and bars documentation
	enumeration	liquid	Break bulk cargo normally loaded by crane documentation
	enumeration	passenger	Any cargo loaded by pipeline documentation
	enumeration	livestock	A fee paying traveller documentation
	enumeration	dangerous or hazardous	Live animals carried in bulk documentation
			Dangerous or hazardous cargo as described by the IMO International Maritime Dangerous Goods code
annotation	documentation	Remarks: If item 7 is used, the nature of dangerous or hazardous cargoes can be amplified with category of dangerous or hazardous cargo.	

simpleType **categoryOfCommPrefType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	preferred calling	documentation the first choice channel or frequency to be used when calling a radio station
	enumeration	alternate calling	documentation 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
	enumeration	preferred working	documentation the first choice channel or frequency to be used when working with a radio station
	enumeration	alternate working	documentation 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

simpleType **categoryOfDangerousOrHazardousCargoType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	IMDG Code Class 1 Div. 1.1	documentation Explosives, Division 1: substances and articles which have a mass explosion hazard
	enumeration	IMDG Code Class 1 Div. 1.2	documentation Explosives, Division 2: substances and articles which have a projection hazard but not a mass explosion hazard
	enumeration	IMDG Code Class 1 Div. 1.3	documentation Explosives, Division 3: substances and articles which have a fire hazard and either a minor blast hazard or a minor

	enumeration	IMDG Code Class 1 Div. 1.4	projection hazard or both, but not a mass explosion hazard documentation Explosives, Division 4: substances and articles which present no significant hazard
	enumeration	IMDG Code Class 1 Div. 1.5	documentation Explosives, Division 5: very insensitive substances which have a mass explosion hazard
	enumeration	IMDG Code Class 1 Div. 1.6	documentation Explosives, Division 6: extremely insensitive articles which do not have a mass explosion hazard
	enumeration	IMDG Code Class 2 Div. 2.1	documentation Gases, flammable gases
	enumeration	IMDG Code Class 2 Div. 2.2	documentation Gases, non-flammable, non-toxic gases
	enumeration	IMDG Code Class 2 Div. 2.3	documentation Gases, toxic gases
	enumeration	IMDG Code Class 3	documentation flammable liquids
	enumeration	IMDG Code Class 4 Div. 4.1	documentation flammable solids, self-reactive substances and desensitized explosives
	enumeration	IMDG Code Class 4 Div. 4.2	documentation substances liable to spontaneous combustion
	enumeration	IMDG Code Class 4 Div. 4.3	documentation substances which, in contact with water, emit flammable gases
	enumeration	IMDG Code Class 5 Div. 5.1	documentation oxidizing substances
	enumeration	IMDG Code Class 5 Div. 5.2	documentation organic peroxides
	enumeration	IMDG Code Class 6 Div. 6.1	documentation toxic substances
	enumeration	IMDG Code Class 6. Div. 6.2	documentation infectious substances
	enumeration	IMDG Code Class 7	documentation Radioactive material
	enumeration	IMDG Code Class 8	documentation Corrosive substances
	enumeration	IMDG Code Class 9	documentation Miscellaneous dangerous substances and articles
	enumeration	Harmful Substances in packaged form	documentation 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)

simpleType **categoryOfMarineProtectedAreaType**

type	union of (restriction of <b>xs:string</b> , restriction of <b>xs:string</b> )
annotation	documentation Classification of marine protected areas based on IUCN (International Union for Conservation of Nature and Natural Resources) or another system

simpleType **categoryOfRelationshipType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	prohibited	documentation use of facility, waterway or service is forbidden
	enumeration	not recommended	documentation use of facility, waterway or service is not recommended
	enumeration	permitted	documentation use of facility, waterway, or service is permitted but not required
	enumeration	recommended	documentation use of facility, waterway, or service is recommended
	enumeration	required	documentation use of facility, waterway, or service is required
	enumeration	not required	documentation use of facility, waterway, or service is not required
annotation	documentation This attribute expresses the level of insistence for or against an action or activity		

simpleType **categoryOfRestrictedAreaType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	nature reserve	documentation A tract of land or water managed so as to preserve it's flora, fauna, physical features, etc.
	enumeration	bird sanctuary	documentation A place where birds are bred and protected.
	enumeration	game reserve	documentation A place where wild animals or birds hunted for sport or food are kept undisturbed for private use.
	enumeration	seal sanctuary	documentation A place where seals are protected.
	enumeration	historic wreck area	documentation An area around certain wrecks of historical importance to protect the wrecks from unauthorized interference by diving, salvage or deposition (including anchoring).
	enumeration	research area	documentation an area where marine research takes place.
	enumeration	fish sanctuary	documentation A place where fish are protected.
	enumeration	ecological reserve	documentation 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.
	enumeration	environmentally sensitive sea area	documentation A generic term which may be used to describe a wide range of areas, considered sensitive for a variety of environmental reasons.
	enumeration	particularly sensitive sea area	documentation An area that needs special protection through action by

	<p>enumeration coral sanctuary</p> <p>enumeration recreation area</p> <p>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.</p> <p>documentation</p> <p>A place where coral is protected. (TSMAD 29)</p> <p>documentation</p> <p>An area within which recreational activities regularly take place and therefore vessel movement may be restricted.</p> <p>(Adapted from S-57 Edition 3.1, Appendix A – Chapter 2, Page 2.76, November 2000).</p>
annotation	<p>documentation</p> <p>Definition required</p>

simpleType **categoryOfRxNType**

type	union of (restriction of <b>xs:string</b> , restriction of <b>xs:string</b> )
annotation	<p>documentation</p> <p>The principal subject matter of regulations, restrictions, recommendations or nautical information</p>

simpleType **categoryOfScheduleType**

type	union of (restriction of <b>xs:string</b> , restriction of <b>xs:string</b> )
annotation	<p>documentation</p> <p>Describes the type of schedule, e.g., opening, closure, etc.</p>

simpleType **categoryOfShipReportType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	sailing plan	<p>documentation</p> <p>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]</p>
	enumeration	position report	<p>documentation</p> <p>when necessary to ensure effective operation of the system</p>
	enumeration	deviation report	<p>documentation</p> <p>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</p>
	enumeration	final report	<p>documentation</p> <p>on arrival at the destination or on leaving the area covered by the system</p>
	enumeration	dangerous goods report	<p>documentation</p> <p>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</p>
	enumeration	harmful	documentation

	<p>substances report</p> <p>enumeration marine pollutants report</p> <p>enumeration any other report</p>	<p>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)</p> <p>documentation</p> <p>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).</p> <p>documentation</p> <p>any other report should be made in accordance with the system procedures as notified in accordance with paragraph 9 of the general principles</p>
annotation	<p>documentation</p> <p>Classification of ship reports based on IMO standard report formats.</p> <p>documentation</p> <p>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.)</p>	

#### simpleType categoryOfTemporalVariationType

type	restriction of xs:string		
facets	<p>Kind enumeration</p> <p>Value extreme event</p>	<p>Annotation</p> <p>documentation</p> <p>NIPWG: No new hydrographic survey conducted after an event (e.g., hurricane, earthquake, volcanic eruption, landslide, etc.) which is considered likely to have resulted in significant change at the location.</p> <p>documentation</p> <p>In GI Registry: Definition: No new hydrographic survey conducted after an event (e.g. hurricane, earthquake, volcanic eruption, landslide, etc), which is considered likely to have changed the seafloor significantly.</p> <p>documentation</p> <p>NIPWG: Continuous or frequent change (e.g., river siltation, sand waves, seasonal storms, construction, etc.)</p> <p>GI</p> <p>Registry:</p> <p>Continuous or frequent change (e.g. river siltation, sand waves, seasonal storms, ice bergs, etc).</p> <p>documentation</p> <p>GI Registry: Likely to change but significant shoaling no expected</p> <p>[Proposed draft 6/27/2014: Recommended that SNPWG not use this enumerate - ref. E.M. email</p>	
	<p>enumeration likely to change</p>		
	<p>enumeration likely to change but significant shoaling not expected</p>		



	<p>enumeration unlikely to change 6/27/2014.] documentation NIPWG: Significant change at the location is not expected.</p> <p>GI Registry: Significant change to the seafloor is not expected. documentation Temporal variation not assessed or cannot be determined</p>
annotation	<p>documentation An assessment of the likelihood of change within an area since last survey.</p>

### simpleType **categoryOfTextType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	abstract or summary	documentation A statement summarizing the important points of a text.
	enumeration	extract	documentation An excerpt or excerpts from a text.
	enumeration	full text	documentation The whole text
annotation	<p>documentation Classification of completeness of textual information in relation to the source.</p>		

### simpleType **categoryOfVesselRegistryType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	domestic	documentation 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.
	enumeration	foreign	documentation 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.
annotation	<p>documentation The locality of vessel registration or enrolment relative to the nationality of a port, territorial sea, administrative area, exclusive zone or other location.</p>		

### simpleType **categoryOfVesselTrafficServiceType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	Information Service	documentation A service to ensure that essential information becomes available in time for on-board navigational decision-making

	enumeration	Traffic Organisation Service	documentation A service to assist on-board navigational decision-making and to monitor its effects
	enumeration	Navigational Assistance Service	documentation A service to prevent the development of dangerous maritime traffic situations and to provide for the safe and efficient movement of vessel traffic within the VTS area
	enumeration	Ship Reporting Service	documentation 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
	enumeration	Local Port Service	documentation A service established to provide port information without interaction between the customer and the service provider. This information could be inter alia berthing information, availability of port services, shipping schedules, meteorological and hydrological data.
annotation	documentation Classification of vessel traffic services based on the nature of the control or services provided		

simpleType **categoryOfVesselType**

type	union of (restriction of <b>xs:string</b> , restriction of <b>xs:string</b> )
annotation	documentation Classification of vessels by function or use

simpleType **comparisonOperatorType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	greater than	documentation The value of the left value is greater than that of the right. ( <a href="http://en.wikipedia.org/wiki/Logical_connective">http://en.wikipedia.org/wiki/Logical_connective</a> )
	enumeration	greater than or equal to	documentation The value of the left expression is greater than or equal to that of the right. ( <a href="http://en.wikipedia.org/wiki/Logical_connective">http://en.wikipedia.org/wiki/Logical_connective</a> )
	enumeration	less than	documentation The value of the left expression is less than that of the right. ( <a href="http://en.wikipedia.org/wiki/Logical_connective">http://en.wikipedia.org/wiki/Logical_connective</a> )
	enumeration	less than or equal to	documentation The value of the left expression is less than or equal to that of the right. ( <a href="http://en.wikipedia.org/wiki/Logical_connective">http://en.wikipedia.org/wiki/Logical_connective</a> )
	enumeration	equal to	documentation The two values are equivalent. (adapted <a href="http://en.wikipedia.org/wiki/Logical_connective">http://en.wikipedia.org/wiki/Logical_connective</a> )
	enumeration	not equal to	documentation The two values are not equivalent. (adapted <a href="http://en.wikipedia.org/wiki/Logical_connective">http://en.wikipedia.org/wiki/Logical_connective</a> )
annotation	documentation Remarks: The definition of COMPOP provides the relation between the value given in the model and the real ship's value.		

simpleType **dataAssessmentType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	assessed	documentation The quality of the bathymetric data has been assessed.
	enumeration	oceanic	documentation The quality of oceanic bathymetric data has been assessed or is not required.
	enumeration	unassessed	documentation The quality of the bathymetric data has yet to be assessed.
annotation	documentation The categorisation of the assessment level of bathymetric data for an area.		

simpleType **dayOfWeekType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	monday	documentation monday the day of the week before Tuesday and following Sunday
	enumeration	tuesday	documentation the day of the week before Wednesday and following Monday
	enumeration	wednesday	documentation wednesday the day of the week before Thursday and following Tuesday
	enumeration	thursday	documentation thursday the day of the week before Friday and following Wednesday
	enumeration	friday	documentation friday the day of the week before Saturday and following Thursday
	enumeration	saturday	documentation saturday the day of the week before Sunday and following Friday (together with Sunday forming part of the weekend)
	enumeration	sunday	documentation sunday the day of the week before Monday and following Saturday (together with Saturday forms part of the weekend)

simpleType **Decimal0.0To360.0**

type	restriction of <b>xs:decimal</b>		
facets	Kind	Value	Annotation
	minInclusive	0.0	
	maxInclusive	360.0	
	fractionDigits	1	
annotation	documentation Type for value interval [0.0, 360.0]. Also limits value to 1 decimal place.		

simpleType **ISO3166-alpha2**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	pattern	\w{2}	
annotation	documentation stub for ISO 3166 alpha2 country codes		

simpleType **ISO639-2**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	pattern	\w{3}	
annotation	documentation stub for ISO 639-2 language codes		

simpleType **ISO639-3**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	pattern	\w{3}	
annotation	documentation stub for ISO 639-3 language codes		

simpleType **jurisdictionType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	international	documentation involving more than one country; covering more than one national area.
	enumeration	national	documentation an area administered or controlled by a single nation.
facets	enumeration	national sub-division	documentation an area smaller than the nation in which it lies.
annotation	documentation The jurisdiction applicable to an administrative area.		

simpleType **logicalConnectivesType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	logical conjunction	documentation all the conditions described by the other attributes of the object, or sub-attributes of the same complex attribute, are true
	enumeration	logical disjunction	documentation at least one of the conditions described by the other attributes of the object, or sub-attributes of the same complex attributes, is true

simpleType **membershipType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	included	documentation Vessels with these characteristics are included in the regulation/restriction/recommendation/nautical information.
facets	enumeration	excluded	documentation Vessels with these characteristics are excluded from the regulation/restriction/recommendation/nautical information.
annotation	documentation Definition required		

simpleType **multiplicityOfLightsType**

type	restriction of <b>xs:positiveInteger</b>		
facets	Kind	Value	Annotation
	minInclusive	2	
annotation	documentation The number of lights of identical character that exist as a co-located group. Integer (minimum 2).		

simpleType **NonNegativeDecimal**

type	restriction of <b>xs:decimal</b>		
facets	Kind	Value	Annotation
	minInclusive	0.0	
annotation	documentation Type for decimal values with minimum 0.0.		

simpleType **NonNegativeDecimal.1**

type	restriction of <a href="#">NonNegativeDecimal</a>		
facets	Kind	Value	Annotation
	minInclusive	0.0	
	fractionDigits	1	
annotation	documentation Type for decimal values with minimum 0.0 and at most 1 decimal place		

simpleType **onlineFunctionType**

type	union of (restriction of <b>xs:string</b> , restriction of <b>xs:string</b> )		
annotation	documentation online search interface for seeking out information about the resource (ISO 19115:2014).		

simpleType **operationType**

type	restriction of <b>xs:string</b>		
facets	Kind enumeration	Value largest value	Annotation documentation The numerically largest value computed from the applicable attributes or sub-attributes
	enumeration	smallest value	documentation The numerically smallest value computed from the applicable attributes or sub-attributes
annotation	documentation Indicates whether the minimum or maximum value should be used to describe a condition or in application processing documentation 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.		

simpleType **QUAPOSType**

type	restriction of <b>xs:string</b>		
facets	Kind enumeration	Value surveyed	Annotation documentation The position(s) was(were) determined by the operation of making measurements for determining the relative position of points on, above, or beneath the earth's surface. Survey implies a regular, controlled, survey of any date.
	enumeration	unsurveyed	documentation Survey data does not exist or is very poor
	enumeration	inadequately surveyed	documentation Position data is of very poor quality
	enumeration	approximate	documentation A position that is considered to be less than third-order accuracy, but is generally considered to be within 30.5 meters of its correct geographic location. Also, may apply to a feature whose position does not remain fixed.
	enumeration	position doubtful	documentation A feature whose position has been reported but which is considered to be doubtful
	enumeration	unreliable	documentation A feature's position obtained from questionable or unreliable data.
	enumeration	reported (not surveyed)	documentation A feature whose position has been reported and its position confirmed by some means other than a formal survey such as an independent report of the same feature.
	enumeration	reported (not confirmed)	documentation A feature whose position has been reported and its position has not been confirmed.
	enumeration	estimated	documentation The most probable position of a feature determined from incomplete data or data of questionable accuracy.

	enumeration	precisely known	documentation A position that is of a known value, such as the position of an anchor berth or other defined feature.
	enumeration	calculated	documentation A position that is computed from data.
annotation	documentation Definition required		

simpleType **restrictionType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	anchoring prohibited	documentation An area within which anchoring is not permitted.
	enumeration	anchoring restricted	documentation a specified area designated by appropriate authority, within which anchoring is restricted in accordance with certain specified conditions.
	enumeration	fishing prohibited	documentation An area within which fishing is not permitted.
	enumeration	fishing restricted	documentation a specified area designated by appropriate authority, within which fishing is restricted in accordance with certain specified conditions.
	enumeration	trawling prohibited	documentation An area within which trawling is not permitted.
	enumeration	trawling restricted	documentation a specified area designated by appropriate authority, within which trawling is restricted in accordance with certain specified conditions.
	enumeration	entry prohibited	documentation An area within which navigation and/or anchoring is prohibited.
	enumeration	entry restricted	documentation a specified area designated by appropriate authority, within which navigation is restricted in accordance with certain specified conditions.
	enumeration	dredging prohibited	documentation An area within which dredging is not permitted.
	enumeration	dredging restricted	documentation a specified area designated by appropriate authority, within which dredging is restricted in accordance with certain specified conditions.
	enumeration	diving prohibited	documentation An area within which diving is not permitted.
	enumeration	diving restricted	documentation a specified area designated by appropriate authority, within which diving is restricted in accordance with certain specified conditions.
	enumeration	no wake	documentation Mariners must adjust the speed of their vessels to reduce the wave or wash which

	enumeration	area to be avoided	may cause erosion or disturb moored vessels. documentation 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.
	enumeration	construction prohibited	documentation The erection of permanent or temporary fixed structures or artificial islands is prohibited.
	enumeration	discharging prohibited	documentation An area in which discharging or dumping is prohibited.
	enumeration	discharging restricted	documentation A specified area designated by appropriate authority, within which discharging or dumping is restricted in accordance with certain specified conditions.
	enumeration	industrial or mineral exploration/development prohibited	documentation An area in which industrial or mineral exploration and development are prohibited.
	enumeration	industrial or mineral exploration/development restricted	documentation A specified area designated by appropriate authority, within which industrial or mineral exploration and development is restricted in accordance with certain specified conditions.
	enumeration	drilling prohibited	documentation An area in which excavating a hole on the seabed with a drill is prohibited.
	enumeration	drilling restricted	documentation 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.
	enumeration	removal of historical artifacts prohibited	documentation An area in which the removal of historical artifacts is prohibited.
	enumeration	cargo transshipment (lightering) prohibited	documentation An area in which cargo transshipment (lightering) is prohibited.
	enumeration	dragging prohibited	documentation An area in which the dragging or anything along the seabed, e.g., bottom trawling, is prohibited.
	enumeration	stopping prohibited	documentation An area in which a vessel is prohibited from stopping.
	enumeration	landing prohibited	documentation An area in which landing is prohibited.
	enumeration	speed restricted	documentation An area in which speed is restricted.
	enumeration	swimming prohibited	documentation An area in which swimming is prohibited.
annotation	documentation Definition required.		



	<p>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'.</p> <p>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.</p>
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simpleType **sourceTypeType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	law or regulation	documentation treaty, convention, or international agreement; law or regulation issued by a national or other authority
	enumeration	official publication	documentation publication not having the force of law, issued by an international organisation or a national or local administration
	enumeration	mariner report, confirmed	documentation Reported by mariner(s) and confirmed by another source
	enumeration	mariner report, not confirmed	documentation reported by mariner(s) but not confirmed
	enumeration	industry publications and reports	documentation shipping and other industry publication, including graphics, charts and web sites
	enumeration	remotely sensed images	documentation information obtained from satellite images
	enumeration	photographs	documentation information obtained from photographs
	enumeration	products issued by HO services	documentation information obtained from products issued by Hydrographic Offices
	enumeration	news media	documentation information obtained from news media
	enumeration	traffic data	documentation information obtained from the analysis of traffic data

simpleType **statusType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	permanent	documentation Intended to last or function indefinitely
	enumeration	occasional	documentation Acting on special occasions; happening irregularly
	enumeration	recommended	documentation Presented as worthy of confidence, acceptance, use, etc.
	enumeration	not in use	documentation Use has ceased, but the facility still exists intact; disused.

	enumeration	periodic/intermittent	documentation Recurring at intervals
	enumeration	reserved	documentation Set apart for some specific use
	enumeration	temporary	documentation Meant to last only for a time
	enumeration	private	documentation Administered by an individual or corporation, rather than a State or a public body.
	enumeration	mandatory	documentation Compulsory; enforced.
	enumeration	extinguished	documentation No longer lit
	enumeration	illuminated	documentation Lit by floodlights, strip lights, etc.
	enumeration	historic	documentation Famous in history; of historical interest
	enumeration	public	documentation Belonging to, available to, used or shared by, the community as a whole and not restricted to private use.
	enumeration	synchronised	documentation Occur at a time, coincide in point of time, be contemporary or simultaneous
	enumeration	watched	documentation Looked at or observed over a period of time especially so as to be aware of any movement or change.
	enumeration	un-watched	documentation Usually automatic in operation, without any permanently-stationed personnel to superintend it.
	enumeration	existence doubtful	documentation A feature that has been reported but has not been definitely determined to exist.
	enumeration	buoyed	documentation Marked by buoys
annotation	documentation Definition required		

#### simpleType **telecommunicationServiceType**

type	union of (restriction of <b>xs:string</b> , restriction of <b>xs:string</b> )
annotation	documentation Classification of methods of communication over a distance by electrical or electromagnetic means.

#### simpleType **textJustificationType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	left	documentation The anchor point is at the start of the text string.
	enumeration	centred	documentation The anchor point is at the centre of the text string.
	enumeration	right	documentation

	The anchor point is at the end of the text string.
annotation	documentation The anchor point of a text string.

simpleType **textType**

type	restriction of <b>xs:string</b>		
facets	Kind enumeration	Value Feature name	Annotation documentation Definition required
annotation	documentation The attribute from which a text string is derived. (S-122) Remark: S-122 does not include light features and therefore listed value '2: light characteristic' is omitted from the S-122 application schema.		

simpleType **timeReferenceType**

type	restriction of <b>xs:string</b>		
facets	Kind enumeration	Value UTC	Annotation documentation Coordinated Universal Time
	enumeration	LT	documentation Local time

simpleType **vesselsCharacteristicsType**

type	restriction of <b>xs:string</b>		
facets	Kind enumeration	Value length overall	Annotation documentation The maximum length of the ship (L.O.A.). ( <a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a> ; 24 July 2010)
	enumeration	length at waterline	documentation The ship's length measured at the waterline (L.W.L.). ( <a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a> ; 24 July 2010)
	enumeration	breadth	documentation The width or beam of the vessel. (Adapted from <a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a> ; 24 July 2010)
	enumeration	draught	documentation The depth of water necessary to float a vessel fully loaded. ( <a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a> ; 24 July 2010)
	enumeration	height	documentation The height of the highest point of a vessel's structure (e.g. radar aerial, funnel, cranes, masthead) above her waterline. (UKHO NP100/2009)
	enumeration	displacement tonnage	documentation 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

	enumeration	displacement tonnage, light	<p>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.</p> <p>(<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p> <p>documentation</p> <p>The weight of the ship excluding cargo, fuel, ballast, stores, passengers, and crew, but with water in the boilers to steaming level.</p> <p>(<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p>
	enumeration	displacement tonnage, loaded	<p>documentation</p> <p>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. (<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p>
	enumeration	deadweight tonnage	<p>documentation</p> <p>The difference between displacement, light and displacement, loaded. A measure of the ship's total carrying capacity. (<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p>
	enumeration	gross tonnage	<p>documentation</p> <p>The entire internal cubic capacity of the ship expressed in tons of 100 cubic feet to the ton, except certain spaces with are exempted such as: peak and other tanks for water ballast, open forecastle bridge and poop, access of hatchways, certain light and air spaces, domes of skylights, condenser, anchor gear, steering gear, wheel house, galley and cabin for passengers.</p> <p>(<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p>
	enumeration	net tonnage	<p>documentation</p> <p>Obtained from the gross tonnage by deducting crew and navigating spaces and allowances for propulsion machinery. (<a href="http://en.wikipedia.org/wiki/Ship_measurements">http://en.wikipedia.org/wiki/Ship_measurements</a>; 24 July 2010)</p>
	enumeration	Panama Canal/Universal Measurement System net tonnage	<p>documentation</p> <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. (Adapted from <a href="http://en.wikipedia.org/wiki/Tonnage">http://en.wikipedia.org/wiki/Tonnage</a> 4 Oct 2010)</p>
	enumeration	Suez Canal net tonnage	<p>documentation</p> <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. (Adapted</p>

	enumeration	Suez Canal gross tonnage	from <a href="http://en.wikipedia.org/wiki/Tonnage">http://en.wikipedia.org/wiki/Tonnage</a> 4 Oct 2010) documentation Suez Canal Gross Tonnage (SCGT) is derived with a number of modifications from the former net register tonnage of the Moorsom System and was established by the International Commission of Constantinople in its Protocol of 18 December 1873. It is still in use, as amended by the Rules of Navigation of the Suez Canal Authority, and is registered in the Suez Canal Tonnage Certificate.
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simpleType **vesselsCharacteristicsUnitType**

type	restriction of <b>xs:string</b>		
facets	Kind	Value	Annotation
	enumeration	metre	documentation 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.
	enumeration	foot	documentation 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.
	enumeration	metric ton	documentation 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%.
	enumeration	ton	documentation 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 <sup>3</sup> ) of salt water with a density of 64 lb/ft <sup>3</sup> (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).

	<p>enumeration short ton</p> <p>enumeration gross ton</p> <p>enumeration net ton</p> <p>enumeration Panama Canal/Universal Measurement System net tonnage</p> <p>enumeration Suez Canal Net Tonnage</p> <p>enumeration none</p>	<p>documentation</p> <p>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).</p> <p>documentation</p> <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. 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> <p>documentation</p> <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> <p>documentation</p> <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> <p>documentation</p> <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>documentation</p> <p>Can be used for net and gross tonnages, including Panama Canal/Universal Measurement System net</p>
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	enumeration	cubic metres	tonnage and The Suez Canal Net Tonnage. documentation cubic metres
	enumeration	Suez Canal Gross Tonnage	documentation The Suez Canal Gross Tonnage (SCGT) is derived with a number of modifications from the former net register tonnage of the Moorsom System and was established by the International Commission of Constantinople in its Protocol of 18 December 1873. It is still in use, as amended by the Rules of Navigation of the Suez Canal Authority, and is registered in the Suez Canal Tonnage Certificate.

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