S-101 Features

Data coverage: A geographical area that describes the coverage and extent of spatial types.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
maximumDisplayScale	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	false	1 1
minimumDisplayScale	2 3 4 5 6 7 8 9 10 11 12 13 14 15	false	1 1

AssociationType:

Navigational system of marks: An area within which a specific system of navigational marks applies and/or a common direction of buoyage.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
marksNavigationalSyste	1 2 9 10 11	false	1 1

Local Direction of Buoyage:

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
orientation		false	1 1
scaleMinimum		false	0 1

Sounding datum: An area of uniform sounding datum.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
verticalDatum	1 2 3 4 5 6 7 8 9	false	1 1

attribute	permittedValues	sequential	multiplicity
	10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30		

AssociationType:

Vertical datum of data: Any level surface from which to reference elevations. Also called datum level, reference level, reference plane, levelling datum, datum for heights.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
verticalDatum	3 16 17 18 19 20 21 24 25 26 28 29 30	false	1 1

Update Information:

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
updateDescription		false	1
updateReference		false	0 1
scaleMinimum		false	0 1

AssociationType:

Magnetic variation: The angle between the magnetic and geographic (true) north at a location, expressed in degrees east or west from the direction of true north.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
referenceYearForMagne		false	1 1
valueOfAnnualChangeIn		false	1 1
valueOfMagneticVariatio		false	1 1

attribute	permittedValues	sequential	multiplicity
scaleMinimum		false	0 1

AssociationType:

Local magnetic anomaly: An anomaly of the magnetic field of the Earth, extending over a relatively small area, due to local magnetic influences.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
reportedDate		false	0 1
valueOfLocalMagneticA		false	1 1
scaleMinimum		false	0 1

AssociationType:

Coastline: The line where shore and water meet. Although the terminology of coasts and shores is rather confused, shoreline and Coastline are generally used as synonyms.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
categoryOfCoastline	1 2 6 7	false	0 1

attribute	permittedValues	sequential	multiplicity
	8 10		
colour	1 2 3 4 6 7 8 11 13	false	0
elevation		false	0 1
featureName		false	0
natureOfSurface	1 2 3 4 5 6 8 9 11 14 17	false	0
radarConspicuous		false	0 1
visuallyConspicuous	1 2 3	false	0 1

AssociationType: association
   spatialQuality

Land area: The solid portion of the Earth's surface, as opposed to sea, water.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
condition	1 3 5	false	0 1
featureName		false	0
status	18	false	0 1
scaleMinimum		false	0 1

AssociationType:

Island Group:

GeoMetric Primitive: noGeometry,

attribute	permittedValues	sequential	multiplicity
featureName		false	0

AssociationType:

Land elevation: An elevation is the vertical distance of a point or a level, on, or affixed to, the surface of the earth, measured from a specified vertical datum.

GeoMetric Primitive: point, curve,

attribute	permittedValues	sequential	multiplicity
elevation		false	1 1
featureName		false	0
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

River: A relatively large natural stream of water.

GeoMetric Primitive: curve, surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
status	5	false	0 1
scaleMinimum		false	0 1

AssociationType:

Rapids: Portions of a stream with accelerated current where it descends rapidly but without a break in the slope of the bed sufficient to form a waterfall. Usually used in the plural.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
verticalLength		false	0 1
scaleMinimum		false	0 1

Waterfall: A sudden descent of water over a step in the bed of a river.

GeoMetric Primitive: point, curve,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

Lake: A large body of water entirely surrounded by land.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
elevation		false	0 1
featureName		false	0
scaleMinimum		false	0 1

AssociationType:

Land region: An area of natural scenery on land. It is defined by its geographical characteristics and may be known by its proper name.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfLandRegion	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 17 18 19 20	false	0

attribute	permittedValues	sequential	multiplicity
featureName		false	0
natureOfSurface	1 2 3 4 5 6 7 8 9 11 14 17 18	false	0
waterLevelEffect	1 6	false	0 1
scaleMinimum		false	0 1

AssociationType: association
    additionalInformation

Vegetation: Collections of, or individual plants.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfVegetation	3 4 5 6 7 13 14	false	1 1

attribute	permittedValues	sequential	multiplicity
	15 16 17 18 19 20 21 22		
elevation		false	0 1
featureName		false	0
height		false	0 1
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Ice area: An area of ice over land or water.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
categoryOfIce	1 5 8	false	1 1
elevation		false	0 1
featureName		false	0
height		false	0 1
periodicDateRange		false	0
reportedDate		false	0 1
status	1 5 18	false	0
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Sloping ground: An inclined surface.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfSlope	1 2 3 4 5 6 7	false	0 1
colour	1 2 3 4 6 7 8 11 13	false	0
featureName		false	0
natureOfSurface	4 5 6 7 9 11	false	0
radarConspicuous		false	0 1
visuallyConspicuous	1 2 3	false	0 1

attribute	permittedValues	sequential	multiplicity
scaleMinimum		false	0 1

AssociationType: association
additionalInformation

Slope topline: The upper marking of a slope, e.g. the ridge line or the separation line between two different gradients.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
categoryOfSlope	1 2 3 4 6 7	false	0 1
colour	1 2 3 4 6 7 8 11 13	false	0
elevation		false	0 1
featureName		false	0
natureOfSurface	4 5 6	false	0

attribute	permittedValues	sequential	multiplicity
	7 9 11		
radarConspicuous		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Tideway: A natural water course in intertidal areas where water flows during the ebb or flow.

GeoMetric Primitive: curve, surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
scaleMinimum		false	0 1

AssociationType:

Built-up area: An area containing a concentration of buildings and the supporting road or rail infrastructure.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfBuiltUpArea	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1
featureName		false	0
height		false	0 1
radarConspicuous		false	0 1
reportedDate		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType: association
   additionalInformation

Building: A relatively permanent structure, roofed and usually walled. It is designed for some particular use which it may be important to indicate.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
buildingShape	5 6 7 8 9	false	0 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1
elevation		false	0 1
featureName		false	0

attribute	permittedValues	sequential	multiplicity
function	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45	false	0

attribute	permittedValues	sequential	multiplicity
	46 47 48		
height		false	0 1
multiplicityOfFeatures		false	0 1
natureOfConstruction	1 2 6 7 8 12	false	0
status	4 7 8 12 13 14	false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
verticalClearanceFixed		false	0 1
verticalDatum	3 16 17 18 19	false	0 1

attribute	permittedValues	sequential	multiplicity
	20 21 24 25 26 28 29 30		
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1
inTheWater		false	0 1

AssociationType: association
    additionalInformation

Airport/airfield: An area containing at least one runway, used for landing, take-off, and movement of aircraft.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfAirportAirfield	1 2 3 4 5 6 8 9	false	0

attribute	permittedValues	sequential	multiplicity
condition	1 2 3 5	false	0 1
featureName		false	0
reportedDate		false	0 1
status	1 2 4 5 6 7 8 12 14	false	0
scaleMinimum		false	0 1

AssociationType:

Runway: A defined rectangular area, on a land aerodrome, prepared for the landing and take-off run of aircraft along its length.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfRunway	1 2	false	0

attribute	permittedValues	sequential	multiplicity
condition	1 2 3 5	false	0 1
featureName		false	0
natureOfConstruction	1 2 4 5 6 7	false	0
periodicDateRange		false	0
reportedDate		false	0 1
status	1 2 4 5 6 7 8 12 14	false	0
scaleMinimum		false	0 1

AssociationType:

Bridge: A structure erected over a depression or an obstacle such as a body of water, railroad, etc. to provide a roadway for vehicles, pedestrians or to carry utility services.

GeoMetric Primitive: curve, surface, noGeometry,

attribute	permittedValues	sequential	multiplicity
categoryOfBridge	1 2 3 4 5 6 7 8 9 10 11 12	false	0 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1

attribute	permittedValues	sequential	multiplicity
featureName		false	0
fixedDateRange		false	0 1
height		false	0 1
natureOfConstruction	1 2 6 7 11	false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
status	1 2 4 5 7 12	false	0
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Span Fixed:

GeoMetric Primitive: curve, surface,

attribute	permittedValues	sequential	multiplicity
horizontalClearanceFixe		false	0 1
verticalClearanceFixed		false	1 1
verticalDatum	3 16 17 18 19 20 21 24 25 26 28 29 30	false	0 1

AssociationType:

Span Opening:

GeoMetric Primitive: curve, surface,

attribute	permittedValues	sequential	multiplicity
horizontalClearanceFixe		false	0 1

attribute	permittedValues	sequential	multiplicity
timeRange		false	0
verticalClearanceClosed		false	1 1
verticalClearanceOpen		false	1 1
verticalDatum	3 16 17 18 19 20 21 24 25 26 28 29 30	false	0 1

AssociationType:

Conveyor: A mechanical apparatus for moving bulk material or people from place to place (as by a moving belt or chain of receptacles).

GeoMetric Primitive: curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfConveyor	1 2 3 4	false	0 1

attribute	permittedValues	sequential	multiplicity
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1
fixedDateRange		false	0 1
height		false	0 1
liftingCapacity		false	0 1
featureName		false	0

attribute	permittedValues	sequential	multiplicity
multiplicityOfFeatures		false	0 1
product	4 5 6 10 11 12 13 14 15 16 17 22 25	false	0 1
radarConspicuous		false	0 1
reportedDate		false	0 1
status	4 12	false	0
verticalClearanceFixed		false	0 1
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1

attribute	permittedValues	sequential	multiplicity
verticalDatum	3 16 17 18 19 20 21 24 25 26 28 29 30	false	0 1
scaleMinimum		false	0 1

AssociationType:

Cable, overhead: An overhead cable is an assembly of wires or fibres, or a wire rope or chain, which is supported by structures such as poles or pylons and passing over or nearby navigable waters.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
categoryOfCable	1 3 4 5	false	0 1
condition	1 5	false	0 1
fixedDateRange		false	0 1

attribute	permittedValues	sequential	multiplicity
iceFactor		false	0 1
featureName		false	0
multiplicityOfFeatures		false	0 1
radarConspicuous		false	0 1
reportedDate		false	0 1
status	1 4 5 7 12 28	false	0
verticalClearanceFixed		false	0 1
verticalClearanceSafe		false	0 1
verticalDatum	3 16 17 18 19 20 21	false	0 1

attribute	permittedValues	sequential	multiplicity
	24 25 26 28 29 30		
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Pipeline, overhead: An overhead pipeline is a pipeline supported by pylons and passing over or nearby navigable waters.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
categoryOfPipelinePipe	2 3 4 6	false	0 1
condition	1 5	false	0 1
featureName		false	0
fixedDateRange		false	0 1

attribute	permittedValues	sequential	multiplicity
multiplicityOfFeatures		false	0 1
product	1 2 3 7 8 9 18 19 20 22	false	0
radarConspicuous		false	0
reportedDate		false	0 1
status	1 4 7 12	false	0
verticalClearanceFixed		false	0 1
verticalDatum	3 16 17 18 19 20 21 24 25 26	false	0 1

attribute	permittedValues	sequential	multiplicity
	28 29 30		
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Pylon/bridge support: A vertical construction consisting, for example, of a steel framework or pre-stressed concrete to carry cables, a bridge, etc.

GeoMetric Primitive: point, curve,

attribute	permittedValues	sequential	multiplicity
categoryOfPylon	1 2 3 4 5	false	1 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0

attribute	permittedValues	sequential	multiplicity
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1
featureName		false	0
fixedDateRange		false	0 1
height		false	0 1
multiplicityOfFeatures		false	0 1
natureOfConstruction	1 2 6 7 11	false	0
radarConspicuous		false	0 1
reportedDate		false	0 1

attribute	permittedValues	sequential	multiplicity
status	4 12	false	0
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
waterLevelEffect	1 2 3 4 5 6	false	0 1
scaleMinimum		false	0 1

AssociationType:

Fence/Wall: A natural or man-made barrier used as an enclosure or boundary or for protection.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
categoryOfFencelWall	1 3 4	false	0
colour	1 2 3 4 5 6 7	true	0

attribute	permittedValues	sequential	multiplicity
	8 9 10 11 12 13		
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1
elevation		false	0 1
featureName		false	0
height		false	0 1
natureOfConstruction	1 2 3 6 7 11	false	0
radarConspicuous		false	0 1

attribute	permittedValues	sequential	multiplicity
reportedDate		false	0 1
status	1 7 12 13	false	0
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Railway: A rail or set of parallel rails on which a train or tram runs.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
condition	1 2 5	false	0 1
featureName		false	0
height		false	0 1

attribute	permittedValues	sequential	multiplicity
reportedDate		false	0 1
status	1 4 6 12 13 14	false	0
scaleMinimum		false	0 1

AssociationType:

Road: A road is an open way for the passage of vehicles.

GeoMetric Primitive: curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfRoad	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1
featureName		false	0
natureOfConstruction	1 2 4 5	false	0

attribute	permittedValues	sequential	multiplicity
reportedDate		false	0 1
status	1 4 6 7 8 12 13 14	false	0
scaleMinimum		false	0 1

Tunnel: A passage that is open to the atmosphere at both ends, buried under the sea bed or laid over the sea floor or bored under the ground or through mountains.

GeoMetric Primitive: curve, surface,

attribute	permittedValues	sequential	multiplicity
condition	1 2 5	false	0 1
featureName		false	0
horizontalClearanceFixe		false	0 1
reportedDate		false	0 1

attribute	permittedValues	sequential	multiplicity
status	1 3 4 6 8 14	false	0
verticalClearanceFixed		false	0 1
verticalDatum	3 16 17 18 19 20 21 24 25 26 28 29 30	false	0 1
scaleMinimum		false	0 1

AssociationType:

Landmark: A prominent object at a fixed location which can be used in determining a location or a direction.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfLandmark	1 2 3 4	false	1

attribute	permittedValues	sequential	multiplicity
	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25		
categoryOfSpecialPurpo	16 17 41	false	0
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3 4	false	0 1

attribute	permittedValues	sequential	multiplicity
	5 6		
condition	1 2 4 5	false	0 1
elevation		false	0 1
featureName		false	0
function	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29	false	0

attribute	permittedValues	sequential	multiplicity
	30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48		
height		false	0 1
multiplicityOfFeatures		false	0 1
natureOfConstruction	1 2 3 6 7 8 11 12	false	0
radarConspicuous		false	0 1
reportedDate		false	0 1

attribute	permittedValues	sequential	multiplicity
status	2 4 5 7 8 12 13 14	false	0
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	1 1
scaleMinimum		false	0 1
inTheWater		false	0 1

AssociationType: association
additionalInformation

Silo/tank: An enclosed container, used for storage.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
buildingShape	5 6 7 8 9	false	0 1

attribute	permittedValues	sequential	multiplicity
categoryOfSiloTank	1 2 3 4	false	0 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 3 4 5	false	0 1
elevation		false	0 1
featureName		false	0

attribute	permittedValues	sequential	multiplicity
height		false	0 1
multiplicityOfFeatures		false	0 1
natureOfConstruction	1 2 6 7 8	false	0
product	1 2 3 5 6 7 8 9 13 14 16 18 19 20 21 22 23	false	0
radarConspicuous		false	0 1
reportedDate		false	0 1

attribute	permittedValues	sequential	multiplicity
status	4 12 13	false	0
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1
inTheWater		false	0 1

AssociationType:

Fortified structure: A structure for the military defence of a site.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfFortifiedStruc	1 2 3 4 5 6 8 9	false	0 1
condition	1 2	false	0 1

attribute	permittedValues	sequential	multiplicity
featureName		false	0
height		false	0 1
natureOfConstruction	1 2 3 6 7	false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
status	4 7 8 12 13 14 28	false	0
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

attribute	permittedValues	sequential	multiplicity
inTheWater		false	0 1

AssociationType: association
    additionalInformation

Production/storage area: An area on land for the exploitation or storage of natural resources.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfProductionAr	1 2 3 4 5 6 7 8 9 10 11	false	1 1
condition	1 2 3 5	false	0 1
elevation		false	0 1
featureName		false	0
fixedDateRange		false	0 1

attribute	permittedValues	sequential	multiplicity
height		false	0 1
product	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 25	false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
status	4 12	false	0

attribute	permittedValues	sequential	multiplicity
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType: association
   additionalInformation

Checkpoint: An official place to register, declare or check goods and people.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfCheckpoint	1	false	0 1
featureName		false	0
status	1 2 5 7 9 12	false	0
scaleMinimum		false	0 1

AssociationType:

Hulk: A permanently moored ship.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfHulk	1 2 3 4 5 6 7	false	0
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1
featureName		false	0

attribute	permittedValues	sequential	multiplicity
horizontalLength		false	0 1
horizontalWidth		false	0 1
radarConspicuous		false	0 1
reportedDate		false	0 1
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Pile: A long heavy timber or section of steel, wood, concrete, etc. forced into the earth which may serve as a support, as for a pier, or a free standing pole within a marine environment.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfPile	1 3 4 5 6	false	0 1

attribute	permittedValues	sequential	multiplicity
	7		
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1
featureName		false	0
fixedDateRange		false	0 1
height		false	0 1
radarConspicuous		false	0 1

attribute	permittedValues	sequential	multiplicity
reportedDate		false	0 1
status	1 4 6 7 8 12 14	false	0
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Dyke: A dyke (or dike) is an artificial embankment to contain or hold back water.

GeoMetric Primitive: curve, surface,

attribute	permittedValues	sequential	multiplicity
condition	1 2 3 5	false	0 1
height		false	0 1

attribute	permittedValues	sequential	multiplicity
natureOfConstruction	1 2 3 4 5 6 7	false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Shoreline construction: A fixed (not afloat) artificial structure between the water and the land, i.e. a man-made Coastline.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfShorelineCor	1 2 3 4 5	false	0 1

attribute	permittedValues	sequential	multiplicity
	6 7 8 9 10 11 12 13 14 15 16 17 20		
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 3 5	false	0 1
featureName		false	0

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
height		false	0 1
horizontalClearanceFixe		false	0 1
horizontalLength		false	0 1
horizontalWidth		false	0 1
natureOfConstruction	1 2 3 4 5 6 7 8 11	false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
status	1 2 3 4	false	0

attribute	permittedValues	sequential	multiplicity
	6 7 8 12 13 14 28		
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
waterLevelEffect	1 2 3 4 5 6 7	false	0 1
scaleMinimum		false	0 1

AssociationType:

Causeway: A raised way across low or wet ground or water.

GeoMetric Primitive: curve, surface,

attribute	permittedValues	sequential	multiplicity
condition	1 2 3 5	false	0 1

attribute	permittedValues	sequential	multiplicity
featureName		false	0
natureOfConstruction	1 2 3 4 5 6 7	false	0
reportedDate		false	0 1
status	1 7 8 12 14	false	0
waterLevelEffect	1 2 3 4 5 6	false	0 1
scaleMinimum		false	0 1

AssociationType:

Canal: An artificial waterway with no flow, or a controlled flow, used for navigation, or for draining or irrigating land (ditch).

GeoMetric Primitive: curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfCanal	1 2 3	false	0 1
condition	1 2 3 5	false	0 1
fixedDateRange		false	0 1
horizontalClearanceFixe		false	0 1
horizontalWidth		false	0 1
featureName		false	0
reportedDate		false	0 1
status	1 3 4 5 6 8 14	false	0
scaleMinimum		false	0 1

AssociationType:

Distance mark: A distance mark indicates the distance measured from an origin and consists of either a solid visible structure or a distinct location without special installation.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
categoryOfDistanceMark	1 2 3 4	false	0 1
featureName		false	0
fixedDateRange		false	0 1
measuredDistanceValue		false	1 1
scaleMinimum		false	0 1

AssociationType:

Gate: A structure that may be swung, drawn, or lowered to block an entrance or passageway.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfGate	2 3 4 5 6	false	0 1

attribute	permittedValues	sequential	multiplicity
condition	1 2 5	false	0 1
depthRangeMinimumVa		false	0 1
featureName		false	0
horizontalClearanceOpe		false	0 1
natureOfConstruction	1 2 6 7	false	0
qualityOfSoundingMeas	2 3 4 6 7	false	0
reportedDate		false	0 1
status	1 4 6 16 17	false	0
verticalClearanceOpen		false	0 1

attribute	permittedValues	sequential	multiplicity
verticalDatum	3 16 17 18 19 20 21 24 25 26 28 29 30	false	0 1
verticalUncertainty		false	0 1
scaleMinimum		false	0 1

AssociationType:

Dam: A barrier to check or confine anything in motion; particularly one constructed to hold back water and raise its level to form a reservoir, or to prevent flooding.

GeoMetric Primitive: curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfDam	1 2 3	false	0 1
colour	1 2 3 4 5 6 7	true	0

attribute	permittedValues	sequential	multiplicity
	8 9 10 11 12 13		
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 3 5	false	0 1
featureName		false	0
fixedDateRange		false	0 1
height		false	0 1
natureOfConstruction	1 2 3 4 5 6 7	false	0
radarConspicuous		false	0 1

attribute	permittedValues	sequential	multiplicity
reportedDate		false	0 1
status	1 2 6 7 8 14 28	false	0
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
waterLevelEffect	1 2 3 6	false	0 1
scaleMinimum		false	0 1

AssociationType:

Crane: A machine for lifting, shifting and lowering objects or materials by means of a swinging boom or with a lifting apparatus supported on an overhead track.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfCrane	2 3 4 5	false	0 1

attribute	permittedValues	sequential	multiplicity
	6		
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1
featureName		false	0
height		false	0 1
liftingCapacity		false	0 1
orientation		false	0 1

attribute	permittedValues	sequential	multiplicity
radarConspicuous		false	0 1
radius		false	0 1
reportedDate		false	0 1
status	1 4 6 12	false	0
verticalClearanceFixed		false	0 1
verticalDatum	3 16 17 18 19 20 21 24 25 26 28 29 30	false	0 1
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1

attribute	permittedValues	sequential	multiplicity
scaleMinimum		false	0 1
inTheWater		false	0 1

AssociationType:

Berth: A named or numbered place where a vessel is moored at a wharf.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
depthRangeMinimumVa		false	0 1
featureName		false	1
fixedDateRange		false	0 1
horizontalClearanceLen		false	0 1
horizontalClearanceWid		false	0 1
maximumPermittedDrau		false	0 1

attribute	permittedValues	sequential	multiplicity
periodicDateRange		false	0
qualityOfSoundingMeas	1 2	false	0
status	1 2 5 7 9 12	false	0
verticalUncertainty		false	0 1
scaleMinimum		false	0 1

AssociationType:

Mooring/Warping facility: The equipment or structure used to secure a vessel.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
buoyShape	1 2 3 4 5 6 7 8	false	0 1

attribute	permittedValues	sequential	multiplicity
categoryOfMooringWarp	1 2 3 4 5 6 7	false	1 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1
elevation		false	0 1
expositionOfSounding	1 2	false	0 1

attribute	permittedValues	sequential	multiplicity
featureName		false	0
fixedDateRange		false	0 1
height		false	0 1
natureOfConstruction	1 2 6 7	false	0
periodicDateRange		false	0
qualityOfSoundingMeas	2 3 4 6 7	false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
status	1 2 3 4 5 6 7	false	0

attribute	permittedValues	sequential	multiplicity
	8 12 14 18		
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
waterLevelEffect	1 2 3 4 5 6	false	0 1
scaleMinimum		false	0 1

AssociationType:

Dry dock: An artificial basin fitted with a gate or caisson, into which vessels can be floated and the water pumped out to expose the vessel's bottom.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
condition	1 2 3 5	false	0 1
depthRangeMinimumVa		false	0 1

attribute	permittedValues	sequential	multiplicity
elevation		false	0 1
featureName		false	0
horizontalClearanceLen		false	0 1
horizontalClearanceWid		false	0 1
horizontalLength		false	0 1
horizontalWidth		false	0 1
maximumPermittedDrau		false	0 1
qualityOfSoundingMeas	2 3 4 5 6 7 8 9	false	0
reportedDate		false	0 1

attribute	permittedValues	sequential	multiplicity
status	1 4 6 8 12 14	false	0
verticalUncertainty		false	0 1
scaleMinimum		false	0 1

AssociationType:

Floating dock: A form of dry dock consisting of a floating structure of one or more sections which can be partly submerged by controlled flooding to receive a vessel, then raised by pumping out the water so that the vessel's bottom can be exposed.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3	false	0 1

attribute	permittedValues	sequential	multiplicity
	4 5 6		
condition	1 2 5	false	0 1
depthRangeMinimumVa		false	0 1
featureName		false	0
fixedDateRange		false	0 1
horizontalClearanceLen		false	0 1
horizontalClearanceWid		false	0 1
horizontalLength		false	0 1
horizontalWidth		false	0 1
liftingCapacity		false	0 1

attribute	permittedValues	sequential	multiplicity
maximumPermittedDrau		false	0 1
radarConspicuous		false	0 1
reportedDate		false	0 1
status	1 4 6 7 8 12	false	0
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Pontoon: A floating structure, usually rectangular in shape which serves as landing, pier head or bridge support.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
condition	1 2 5	false	0 1
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
status	1 2 4 5 6 7 8 12 14	false	0
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1

attribute	permittedValues	sequential	multiplicity
scaleMinimum		false	0 1

AssociationType:

Dock area: A dock is an artificially enclosed area within which ships may moor and which may have gates to regulate water level.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
categoryOfDock	1 2	false	0 1
condition	1 2 3 5	false	0 1
featureName		false	0
fixedDateRange		false	0 1
horizontalClearanceFixe		false	0 1
horizontalClearanceLen		false	0 1
horizontalClearanceWid		false	0 1

attribute	permittedValues	sequential	multiplicity
maximumPermittedDrau		false	0 1
reportedDate		false	0 1
status	1 4 6 8 14	false	0

AssociationType:

Gridiron: A structure in the intertidal zone serving as a support for vessels at low stages of the tide to permit work on the exposed portion of the vessel's hull.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
horizontalLength		false	0 1
horizontalWidth		false	0 1
natureOfConstruction	1 2 6 7 11	false	0

attribute	permittedValues	sequential	multiplicity
status	1 4 6 8 14 28	false	0
verticalLength		false	0 1
waterLevelEffect	1 4 5	false	0 1
scaleMinimum		false	0 1

AssociationType:

Lock basin: A lock basin is a wet dock in a waterway, permitting a ship to pass from one level to another.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
fixedDateRange		false	0 1
horizontalClearanceFixe		false	0 1

attribute	permittedValues	sequential	multiplicity
horizontalLength		false	0 1
horizontalWidth		false	0 1
status	1 4 6 8 13 14 16 17	false	0

AssociationType:

Sea area/named water area: A geographically defined part of the sea or other navigable waters. It may be specified within its limits by its proper name.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfSeaArea	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	false	0 1

attribute	permittedValues	sequential	multiplicity
	19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56		
featureName		false	0

attribute	permittedValues	sequential	multiplicity
scaleMinimum		false	0 1

Tidal stream - flood/ebb: Approximate tidal stream rates given as discrete rate values for flood and ebb flow during springs.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfTidalStream	1 2 3	false	1 1
currentVelocity		false	1 1
featureName		false	0
fixedDateRange		false	0 1
orientation		false	1 1
scaleMinimum		false	0 1

Current - non-gravitational: Currents (non-gravitational) include either singly or in combination: ocean currents (wind and/or density driven), inter-oceanic equalising currents, currents of navigable rivers, river outflow effects offshore and other non-tidal flows.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
currentVelocity		false	1 1
featureName		false	0
fixedDateRange		false	0 1
orientation		false	1 1
periodicDateRange		false	0
status	5	false	0 1
scaleMinimum		false	0 1

AssociationType: association
    additionalInformation

Water turbulence: The disturbance of water caused by the interaction of any combination of waves, currents, tidal streams, wind, shoal patches and obstructions.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfWaterTurbul	1 2 3 4 5	false	1 1
featureName		false	0
scaleMinimum		false	0 1

AssociationType:

Tidal stream panel data: Approximate tidal stream rates given as discrete rate values at a specified interval before or after a high water.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
stationName		false	1 1
stationNumber		false	0 1
tidalStreamPanelValues		true	1

attribute	permittedValues	sequential	multiplicity
scaleMinimum		false	0 1

AssociationType:

Sounding: A measured water depth or spot which has been reduced to a vertical datum (may be a drying height).

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
qualityOfSoundingMeas	1 3 4 8 9	false	0
reportedDate		false	0 1
status	18	false	0 1
techniqueOfVerticalMea	1 2 3 4 5 6 8 9 10 11 12	false	0

attribute	permittedValues	sequential	multiplicity
	13 15		
verticalUncertainty		false	0 1
scaleMinimum		false	0 1

AssociationType: association
   additionalInformation

Dredged area: An area of the bottom of a body of water which has been deepened by dredging.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
depthRangeMinimumVa		false	1 1
depthRangeMaximumVa		false	0 1
dredgedDate		false	0 1
featureName		false	0
maximumPermittedDrau		false	0 1

attribute	permittedValues	sequential	multiplicity
qualityOfSoundingMeas	10 11	false	0 1
restriction	1 2 3 4 5 6 8 9 11 12 13 16 17 18 19 20 21 23 25 27 28	false	0
techniqueOfVerticalMea	1 2 3 6 8 9 13 15	false	0
verticalUncertainty		false	0 1

AssociationType: association
    additionalInformation

Swept Area: An area that has been determined to be clear of navigational dangers to a specified depth.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
depthRangeMinimumVa		false	1 1
qualityOfSoundingMeas	1 6	false	0
sweptDate		false	0 1
techniqueOfVerticalMea	6 8 13	false	0
verticalUncertainty		false	0 1
scaleMinimum		false	0 1

AssociationType: association
    additionalInformation

Depth contour: A line connecting points of equal water depth which is sometimes significantly displaced outside of soundings, symbols and other chart detail for clarity as well as generalization.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
valueOfDepthContour		false	1 1

attribute	permittedValues	sequential	multiplicity
scaleMinimum		false	0 1

AssociationType:

Depth area: A depth area is a water area whose depth is within a defined range of values.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
depthRangeMinimumVa		false	1 1
depthRangeMaximumVa		false	1 1

AssociationType: association
    additionalInformation

Depth No Bottom Found:

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
techniqueOfVerticalMea	1 2 3 5 6 8 9 13 15	false	0
scaleMinimum		false	0 1

AssociationType:

Unsurveyed area: An area for which no bathymetric survey information is available.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity

AssociationType:

Seabed area: An area of the sea where the nature of bottom is homogeneous. The nature of bottom includes the material of which it is composed and its physical characteristics.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
surfaceCharacteristics		true	1
waterLevelEffect	3 4 5	false	0 1
scaleMinimum		false	0 1

AssociationType:

Weed/Kelp: Seaweed, any macroscopic marine alge or seagrass (IHO Dictionary, S-32, 5th Edition, 4589). Kelp is one of an order (laminariales) of usually large, blade-shaped or vine-like brown algae (IHO Dictionary, S-32, 5th Edition, 2611).

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfWeedKelp	1 2 3 4	false	0 1
featureName		false	0
scaleMinimum		false	0 1

Sand waves: A large mobile wave-like sediment feature in shallow water and composed of sand. The wavelength may reach 100 metres, the amplitude may be up to 20 metres.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
verticalLength		false	0 1
scaleMinimum		false	0 1

Spring: A natural issue of water or other substances from the earth. One on the bottom of the sea is called a 'submarine spring'.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
featureName		false	0

attribute	permittedValues	sequential	multiplicity
scaleMinimum		false	0 1

Underwater/awash rock: A concreted mass of stony material or coral which dries, is awash or is below the water surface.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
expositionOfSounding	1 2	false	0 1
featureName		false	0
natureOfSurface	14	false	0
qualityOfSoundingMeas	1 2 3 4 6 7 8 9	false	0
reportedDate		false	0 1
status	18	false	0 1

attribute	permittedValues	sequential	multiplicity
techniqueOfVerticalMea	1 2 3 4 5 6 8 9 10 11 12 13	false	0
valueOfSounding		false	1 1
verticalUncertainty		false	0 1
waterLevelEffect	3 4 5	false	1 1
scaleMinimum		false	0 1
defaultClearanceDepth		false	0 1
surroundingDepth		false	0 1

AssociationType:

Wreck: The ruined remains of a stranded or sunken vessel which has been rendered useless.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfWreck	1 2 3 4 5	false	0 1
expositionOfSounding	1 2 3	false	0 1
featureName		false	0
height		false	0 1
qualityOfSoundingMeas	1 2 3 4 6 7 8 9	false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
status	7 13 18	false	0

attribute	permittedValues	sequential	multiplicity
techniqueOfVerticalMea	1 2 3 4 5 6 8 9 10 11 12 13 15	false	0
valueOfSounding		false	0 1
verticalUncertainty		false	0 1
visuallyConspicuous	1 2 3	false	0 1
waterLevelEffect	1 2 3 4 5	false	1 1
scaleMinimum		false	0 1
defaultClearanceDepth		false	0 1

attribute	permittedValues	sequential	multiplicity
surroundingDepth		false	0 1

Obstruction: In marine navigation, anything that hinders or prevents movement, particularly anything that endangers or prevents passage of a vessel.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfObstruction	1 2 3 4 5 6 8 9 10 11 12 13 14 15 16 17 18 19	false	0 1
condition	1 2 5	false	0 1
expositionOfSounding	1 2 3	false	0 1

attribute	permittedValues	sequential	multiplicity
featureName		false	0
height		false	0 1
maximumPermittedDrau		false	0 1
product	1 2 3 8 23	false	0
qualityOfSoundingMeas	1 2 3 4 6 7 8 9	false	0
reportedDate		false	0 1
status	1 4 5 7 8 13 18 28	false	0

attribute	permittedValues	sequential	multiplicity
natureOfSurface	1 2 3 4 5 6 7 8 9 11 14 17 18	false	0
techniqueOfVerticalMea	1 2 3 4 5 6 8 9 10 11 12 13 15	false	0
valueOfSounding		false	0 1
verticalLength		false	0 1
verticalUncertainty		false	0 1
waterLevelEffect	1 2	false	1 1

attribute	permittedValues	sequential	multiplicity
	3 4 5 7		
scaleMinimum		false	0 1
defaultClearanceDepth		false	0 1
surroundingDepth		false	0 1

AssociationType: association
   additionalInformationassociation
   spatialQuality

Foul Ground:

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
qualityOfSoundingMeas	1 2 3 4 6 7 8 9	false	0
reportedDate		false	0 1

attribute	permittedValues	sequential	multiplicity
status	13 18 28	false	0
techniqueOfVerticalMea	1 2 3 4 5 6 8 9 10 11 12 13 15	false	0
valueOfSounding		false	0 1
verticalUncertainty		false	0 1
waterLevelEffect	3 4 5	false	0 1
scaleMinimum		false	0 1

AssociationType:

Discoloured Water:

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
reportedDate		false	0 1
scaleMinimum		false	0 1

Fishing facility: A structure in shallow water for fishing purposes which can be an obstruction to ships in general.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfFishingFacili	1 2 3 4	false	0 1
condition	1 2 5	false	0 1
featureName		false	0
periodicDateRange		false	0
reportedDate		false	0 1
status	1 4 5 6	false	0

attribute	permittedValues	sequential	multiplicity
	7 8 12 18 28		
verticalLength		false	0 1
scaleMinimum		false	0 1

Marine farm/culture: An assemblage of cages, nets, rafts and floats or posts where fish, including shellfish, are artificially cultivated.

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfMarineFarm(	1 2 3 4 5	false	0 1
expositionOfSounding	1 2	false	0 1
featureName		false	0
fixedDateRange		false	0 1

attribute	permittedValues	sequential	multiplicity
periodicDateRange		false	0
qualityOfSoundingMeas	1 2 3 4 6 7 8 9	false	0
restriction	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	false	0

attribute	permittedValues	sequential	multiplicity
status	1 2 4 5 6 7 8 14 16 17 28	false	0
valueOfSounding		false	0 1
verticalLength		false	0 1
verticalUncertainty		false	0 1
waterLevelEffect	1 2 3 4 5 7	false	1 1
scaleMinimum		false	0 1

AssociationType: association
    additionalInformation

Offshore platform: A permanent offshore structure, either fixed or floating, used in the production of oil or natural gas.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfOffshorePlatt	1 2 3 4 5 6 7 8 9 10 11	false	0 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 4 5	false	0 1
featureName		false	0

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
flareStack		false	0 1
height		false	0 1
product	1 2 3 18 19 23	false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
status	1 2 4 7 8 12 28	false	0
verticalLength		false	0 1
visuallyConspicuous	1 2	false	0 1

attribute	permittedValues	sequential	multiplicity
	3		
waterLevelEffect	2 7	false	1 1
scaleMinimum		false	0 1

AssociationType: association
   additionalInformation

Offshore Wind turbine:

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 4	false	0 1

attribute	permittedValues	sequential	multiplicity
	5		
featureName		false	0
fixedDateRange		false	0 1
height		false	0 1
radarConspicuous		false	0 1
reportedDate		false	0 1
status	1 2 4 7 8 12 28	false	0
verticalClearanceFixed		false	0 1
verticalDatum	3 16 17 18 19 20 21 24 25	false	0 1

attribute	permittedValues	sequential	multiplicity
	26 28 29 30		
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
waterLevelEffect	2 7	false	1 1
scaleMinimum		false	0 1

AssociationType:

Cable, submarine: An assembly of wires or fibres, or a wire rope or chain which has been laid underwater or buried beneath the seabed.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
buriedDepth		false	0 1
categoryOfCable	1 6 7 8	false	0 1
condition	1 5	false	0 1

attribute	permittedValues	sequential	multiplicity
featureName		false	0
fixedDateRange		false	0 1
status	1 4 13 18	false	0
scaleMinimum		false	0 1

AssociationType:

Cable area: An area which contains one or more submarine cables.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
categoryOfCable	1 7 8	false	0
featureName		false	0
fixedDateRange		false	0 1
restriction	1 2 3 4 5	false	0

attribute	permittedValues	sequential	multiplicity
	6 7 8 9 11 12 13 14 16 17 18 20 23 24 25 27 28		
status	1 7 13	false	0
scaleMinimum		false	0 1

AssociationType:

Pipeline, submarine/on land: A submarine or land pipeline is a pipeline lying on or buried under the seabed or the land.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
buriedDepth		false	0 1
categoryOfPipelinePipe	2 3 4 5	false	0

attribute	permittedValues	sequential	multiplicity
	6		
condition	1 5	false	0 1
depthRangeMinimumV		false	0 1
depthRangeMaximumV		false	0 1
featureName		false	0
fixedDateRange		false	0 1
multiplicityOfFeatures		false	0 1
product	1 2 3 7 8 9 18 19	false	0
reportedDate		false	0 1
restriction	1 2 4	false	0

attribute	permittedValues	sequential	multiplicity
	5 8 9 11 12 13 14 16 17 18 20 23 24 25 26 27 28		
status	1 4 7 12	false	0
verticalLength		false	0 1
scaleMinimum		false	0 1

AssociationType: association
 additionalInformation

Submarine pipeline area: An area containing one or more pipelines.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfPipelinePipe	2 3 4 5	false	0

attribute	permittedValues	sequential	multiplicity
	6		
featureName		false	0
fixedDateRange		false	0 1
product	1 2 3 7 8 18 19	false	0
restriction	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26	false	0

attribute	permittedValues	sequential	multiplicity
	28		
status	1 4 7	false	0
scaleMinimum		false	0 1

AssociationType:

Offshore production area: An area at sea within which there are production facilities.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
categoryOfOffshoreProd	1 2 3 4 5	false	0 1
condition	1 2 4 5	false	0 1
featureName		false	0
fixedDateRange		false	0 1
height		false	0 1

attribute	permittedValues	sequential	multiplicity
product	1 2 4 6 10 14 23	false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
restriction	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27	false	0

attribute	permittedValues	sequential	multiplicity
	28		
status	1 4 7 8 12 28	false	0
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

Navigation line: A navigation line is a straight line extending towards an area of navigational interest and generally generated by two navigational aids or one navigational aid and a bearing.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
categoryOfNavigationLir	1 2 3	false	1 1
fixedDateRange		false	0 1
orientation		false	1 1

attribute	permittedValues	sequential	multiplicity
periodicDateRange		false	0
status	1 2 5 7 8 14	false	0
scaleMinimum		false	0 1

AssociationType: association
    additionalInformation

Recommended track: A track recommended to all or only certain vessels.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
categoryOfRecommend	1 2	false	1 1
depthRangeMaximumV;		false	0 1
featureName		false	0
fixedDateRange		false	0 1

attribute	permittedValues	sequential	multiplicity
maximumPermittedDrau		false	0 1
orientation		false	1 1
periodicDateRange		false	0
qualityOfSoundingMeas	1 2 6	false	0
status	1 2 5 7 9 12 16 17	false	0
techniqueOfVerticalMea	1 2 3 6 8 9 13 15	false	0
trafficFlow	1 2 3 4	false	1 1
verticalUncertainty		false	0 1

attribute	permittedValues	sequential	multiplicity
scaleMinimum		false	0 1

AssociationType: association
    additionalInformation

Range system:

GeoMetric Primitive: noGeometry,

attribute	permittedValues	sequential	multiplicity
featureName		false	0

AssociationType:

Fairway: That part of a river, harbour and so on, where the main navigable channel for vessels of larger size lies.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
depthRangeMinimumVa		false	0 1
featureName		false	0
fixedDateRange		false	0 1
maximumPermittedDrau		false	0 1

attribute	permittedValues	sequential	multiplicity
orientation		false	0 1
qualityOfSoundingMeas	1 2	false	0
restriction	1 2 3 4 5 6 8 9 10 11 12 13 15 16 17 18 19 20 21 22 23 24 25 27 28	false	0
status	1 3 6 7 9 28	false	0

attribute	permittedValues	sequential	multiplicity
trafficFlow	1 2 3 4	false	0 1
verticalUncertainty		false	0 1
scaleMinimum		false	0 1

AssociationType:

Recommended route centerline: A recommended route centerline indicates the 'centerline' of a recommended route.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
categoryOfRecommend	1 2	false	1 1
depthRangeMinimumVa		false	0 1
featureName		false	0
fixedDateRange		false	0 1
orientation		false	0 1

attribute	permittedValues	sequential	multiplicity
periodicDateRange		false	0
qualityOfSoundingMeas	1 2 3 4 6	false	0
status	1 5 6 9	false	0
techniqueOfVerticalMea	1 3 6 8 9 13 15	false	0
trafficFlow	1 2 3 4	false	0 1
verticalUncertainty		false	0 1
scaleMinimum		false	0 1

AssociationType:

Two-way route part: A two-way route part is an area of a two-way route within which traffic flow is generally along one bearing (and possibly its reciprocal).

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
categoryOfRecommend	1 2	false	0 1
depthRangeMinimumVa		false	0 1
fixedDateRange		false	0 1
orientation		false	1 1
qualityOfSoundingMeas	1 2 3 4 6	false	0
status	1 3 6 9	false	0
techniqueOfVerticalMea	1 3 5 6 8 9 13 15	false	0
trafficFlow	1 2 3 4	false	1 1

attribute	permittedValues	sequential	multiplicity
verticalUncertainty		false	0 1
scaleMinimum		false	0 1

Two-Way Route:

GeoMetric Primitive: noGeometry,

attribute	permittedValues	sequential	multiplicity
featureName		false	0

Recommended traffic lane part: An optional part of an IMO-adopted routing measure.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
orientation		false	1 1
status	1 6 9	false	0

attribute	permittedValues	sequential	multiplicity
scaleMinimum		false	0 1

AssociationType:

Deep water route centerline: A deep water route centerline indicates the centerline of a deep water route, the width of which is not explicitly defined.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
categoryOfRecommend	1 2	false	1 1
categoryOfTrafficSepara	1 2	false	0 1
depthRangeMinimumVa		false	0 1
featureName		false	0
fixedDateRange		false	0 1
orientation		false	1 1
qualityOfSoundingMeas	1 2 3 4 6	false	0

attribute	permittedValues	sequential	multiplicity
	7		
status	1 3 6 9	false	0
techniqueOfVerticalMea	1 3 5 6 8 9 13 15	false	0
trafficFlow	1 2 3 4	false	1 1
verticalUncertainty		false	0 1
scaleMinimum		false	0 1

AssociationType:

Deep water route part: A part of a deep water route.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
categoryOfTrafficSepara	1 2	false	0 1

attribute	permittedValues	sequential	multiplicity
depthRangeMinimumVa		false	1 1
featureName		false	0
fixedDateRange		false	0 1
orientation		false	1 1
qualityOfSoundingMeas	1 2 3 4 6 7	false	0
restriction	1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 23	false	0

attribute	permittedValues	sequential	multiplicity
	24 25 27		
status	1 3 6 9 28	false	0
techniqueOfVerticalMea	1 3 5 6 8 9 13 15	false	0
trafficFlow	1 2 3 4	false	1 1
verticalUncertainty		false	1 1
scaleMinimum		false	0 1

AssociationType: association
   additionalInformation

Deep Water Route:

GeoMetric Primitive: noGeometry,

attribute	permittedValues	sequential	multiplicity
categoryOfTrafficSepara	1 2	false	0 1
featureName		false	0

AssociationType:

Inshore traffic zone: A routeing measure comprising a designated area between the landward boundary of a traffic separation scheme and the adjacent coast, to be used in accordance with the provisions of the International Regulations for Preventing Collisions at Sea.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
restriction	1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 23 24	false	0

attribute	permittedValues	sequential	multiplicity
	25 27		
status	1 3 6 9 16 17	false	0
scaleMinimum		false	0 1

AssociationType:

Precautionary area: A routeing measure comprising an area within defined limits where ships must navigate with particular caution and within which the direction of traffic flow may be recommended.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfTrafficSepara	1 2	false	0 1
featureName		false	0
fixedDateRange		false	0 1
status	1 9 28	false	0
scaleMinimum		false	0 1

Traffic separation scheme lane part: A traffic separation scheme lane part is an area of a traffic lane in which the direction of flow of traffic is uniform.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
orientation		false	0 1
restriction	1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 23 24 25 27	false	0

attribute	permittedValues	sequential	multiplicity
status	1 3 6 9 28	false	0
scaleMinimum		false	0 1

AssociationType: association
    additionalInformation

Traffic separation zone: A traffic separation zone is a zone separating the lanes in which ships are proceeding in opposite or nearly opposite directions; or separating traffic lanes designated for particular classes of ships proceeding in the same direction.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
status	1 3 9 28	false	0
scaleMinimum		false	0 1

AssociationType:

Traffic separation scheme boundary: The boundary of a traffic separation scheme is the outer limit of a traffic lane part or a traffic separation scheme roundabout.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
status	1 3 9 28	false	0
scaleMinimum		false	0 1

AssociationType:

Traffic separation line: A traffic separation scheme is a scheme which aims to reduce the risk of collision in congested and/or converging areas by separating traffic moving in opposite, or nearly opposite, directions.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
status	1 3 9 28	false	0
scaleMinimum		false	0 1

AssociationType:

Traffic separation scheme crossing: A traffic separation scheme crossing is a defined area where traffic lanes cross.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
restriction	1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 23 24 25 27	false	0
status	1 3 6 9	false	0
scaleMinimum		false	0 1

AssociationType:

Traffic separation scheme roundabout: A roundabout is a traffic separation scheme in which traffic moves in a counter-clockwise direction around a specified point or zone.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
restriction	1 2 3 4 5 6 8 9 10 11 12 13 16 17 18 19 20 21 22 23 24 25 27	false	0
status	1 3 6 9	false	0
scaleMinimum		false	0 1

AssociationType:

Traffic Separation Scheme:

GeoMetric Primitive: noGeometry,

attribute	permittedValues	sequential	multiplicity
categoryOfTrafficSepara	1 2	false	0 1
featureName		false	0

AssociationType:

Archipelagic sea lane area:

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
fixedDateRange		false	0 1
nationality		false	1 1
scaleMinimum		false	0 1

AssociationType:

Archipelagic sea lane axis:

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
fixedDateRange		false	0 1
nationality		false	1 1
scaleMinimum		false	0 1

AssociationType:

Archipelagic Sea Lane: Sea lanes designated by an archipelagic State for the passage of ships and aircraft.

GeoMetric Primitive: noGeometry,

attribute	permittedValues	sequential	multiplicity
featureName		false	0

AssociationType:

Radio calling-in point: On passing a radio callin-in point or crossing a defined line vessels are required to report on VHF to a Traffic Control Centre. The attribute 'orientation' (ORIENT) encodes the orientation of the traffic flow at that point.

GeoMetric Primitive: point, curve,

attribute	permittedValues	sequential	multiplicity
callSign		false	0 1

attribute	permittedValues	sequential	multiplicity
communicationChannel		false	0
featureName		false	0
fixedDateRange		false	0 1
orientation		false	0 2
periodicDateRange		false	0
status	1 3 4 5 6 7 9	false	0
trafficFlow	1 2 3 4	false	1 1
scaleMinimum		false	0 1

AssociationType:

Ferry route: A route in a body of water where a ferry crosses from one shoreline to another.

GeoMetric Primitive: curve, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfFerry	1 2 3 5	false	1
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0
status	1 2 4 5 6 7 8 9 14	false	0
scaleMinimum		false	0 1

AssociationType:

Radar line: A track along which ships may be guided by coastal radar stations in the event of bad visibility. Also known as a radar guided track.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
orientation		false	1 1
status	1 2 3 4 7	false	0
scaleMinimum		false	0 1

AssociationType:

Radar range: Indicates the coverage of a sea area by a radar surveillance station. Inside this area a vessel may request shore-based radar assistance, particularly in poor visibility.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
communicationChannel		false	0
featureName		false	0
fixedDateRange		false	0 1
status	1 2 4	false	0

attribute	permittedValues	sequential	multiplicity
	7		
scaleMinimum		false	0 1

AssociationType:

Radar station: A station with a transmitter emitting pulses of ultra-high frequency radio waves which are reflected by solid objects and are detected upon their return to the sending station.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
callSign		false	0 1
categoryOfRadarStation	1 2	false	0
communicationChannel		false	0
featureName		false	0
height		false	0 1
periodicDateRange		false	0
status	1 2 4	false	0

attribute	permittedValues	sequential	multiplicity
	7 8		
valueOfMaximumRange		false	0 1
scaleMinimum		false	0 1

AssociationType:

Anchorage area: An area in which a vessel anchors or may anchor.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfAnchorage	1 2 3 4 5 6 7 8 9 10 14 15	false	0
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0

attribute	permittedValues	sequential	multiplicity
restriction	2 3 4 5 6 8 9 10 11 12 13 15 16 17 18 19 20 21 23 24 27 28	false	0
status	1 2 3 5 6 7 8 9 14	false	0
scaleMinimum		false	0 1

AssociationType:

Anchor berth: A designated area of water where a single vessel, sea plane, etc., may anchor.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfAnchorage	1 2 3 4 5 6 7 8 9 10	false	0
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0
radius		false	0 1
status	1 2 3 4 5 6 7 8 9 14	false	0
scaleMinimum		false	0 1

AssociationType:

Sea-plane landing area: A designated portion of water for the landing and take-off of sea-planes.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
periodicDateRange		false	0
restriction	1 2 3 4 5 6 7 8 9 10 11 12 13 15 16 17 18 19 20 21 22 23 24 25 27	false	0
status	1 2 4	false	0

attribute	permittedValues	sequential	multiplicity
	6 7		
scaleMinimum		false	0 1

AssociationType:

Military practice area: An area within which naval, military or aerial exercises are carried out. Also called an 'exercise area'.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfMilitaryPracti	2 3 4 5 6	false	0
featureName		false	0
fixedDateRange		false	0 1
nationality		false	0 1
periodicDateRange		false	0
restriction	1 2 3 4 5	false	0

attribute	permittedValues	sequential	multiplicity
	6 7 8 9 10 11 12 13 15 16 17 18 19 20 21 22 23 24 25 26 27 28		
status	1 2 5 6 7 16 17	false	0
scaleMinimum		false	0 1

AssociationType: association
   additionalInformation

Administration Area (Named): A defined (and possibly named) administrative area.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
inDispute		false	0 1
jurisdiction	1 2 3	false	1 1
featureName		false	0
nationality		false	0
scaleMinimum		false	0 1

AssociationType:

Cargo transhipment area: An area designated for the transfer of cargo from one vessel to another.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0

attribute	permittedValues	sequential	multiplicity
restriction	2 3 4 5 6 8 9 10 11 12 13 15 16 17 18 19 20 21 22 24 27 28	false	0
status	1 2 3 5 6 7 9	false	0
scaleMinimum		false	0 1

AssociationType:

Caution Area: Generally, an area where the mariner has to be made aware of circumstances influencing the safety of navigation.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
condition	1 3 5	false	0 1
fixedDateRange		false	0 1
periodicDateRange		false	0
reportedDate		false	0 1
scaleMinimum		false	0 1

AssociationType: association
　　additionalInformation

Information Area:

GeoMetric Primitive: point, curve, surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0

attribute	permittedValues	sequential	multiplicity
reportedDate		false	0 1
scaleMinimum		false	0 1

AssociationType: association
additionalInformation

Contiguous zone: A zone contiguous to a coastal State's territorial sea, which may not extend beyond 24 nautical miles from the baselines from which the breadth of the territorial sea is measured.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
inDispute		false	0 1
nationality		false	1
fixedDateRange		false	0 1
scaleMinimum		false	0 1

AssociationType:

Continental shelf area: The continental shelf of a coastal State comprises the sea bed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend out to that distance.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
nationality		false	1
scaleMinimum		false	0 1

AssociationType:

Custom zone: The area within which national custom regulations are in force.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
nationality		false	1 1
scaleMinimum		false	0 1

AssociationType:

Exclusive economic zone: An area, not exceeding 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, subject to a specific legal regime established in the United Nations Convention on the Law of the Sea under which the coastal state has certain rights and jurisdiction.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
inDispute		false	0 1
nationality		false	1
scaleMinimum		false	0 1

AssociationType:

Fishery zone: The offshore zone in which exclusive fishing rights and management are held by the coastal nation.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
nationality		false	1 1
status	1 5 6 7	false	0
scaleMinimum		false	0 1

AssociationType: association
    additionalInformation

Fishing ground: A water area in which fishing is frequently carried on.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
periodicDateRange		false	0
restriction	1 2 4 5 6 8 9 10 11 12 15 16 17 18 19 20 21 22 23 24 25 26 27 28	false	0
status	1 5 6 7 8 14 16	false	0

attribute	permittedValues	sequential	multiplicity
	17 28		
scaleMinimum		false	0 1

Free port area: A port where certain import and export duties are waived (unless goods pass into the country) to facilitate reshipment to other countries.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
status	1 6 8 14	false	0
scaleMinimum		false	0 1

Harbour area (administrative): The area over which a harbour authority has jurisdiction.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0

attribute	permittedValues	sequential	multiplicity
status	1 4 6 8 14	false	0
scaleMinimum		false	0 1

Incineration area: An offshore area officially designated as suitable for the burning of chemical waste by specially equipped ships.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
periodicDateRange		false	0
restriction	1 2 3 4 5 6 7 8 9 10 11 12 13 16	false	0

attribute	permittedValues	sequential	multiplicity
	17 18 19 20 21 22 23 24 25 27 28		
status	1 2 5 6 7 16 17	false	0
scaleMinimum		false	0 1

AssociationType:

Log pond: A maritime area enclosed with connected floating timbers used as a staging area for sawn logs.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
periodicDateRange		false	0

attribute	permittedValues	sequential	multiplicity
status	1 2 5 6 7 8	false	0
scaleMinimum		false	0 1

AssociationType:

Oil barrier: A construction to dam oil flow on water.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
categoryOfOilBarrier	1 2	false	0 1
condition	1 2 5	false	0 1
featureName		false	0
fixedDateRange		false	0 1
reportedDate		false	0 1
status	1 2 4	false	0

attribute	permittedValues	sequential	multiplicity
	5 7 8		
scaleMinimum		false	0 1

Straight territorial sea baseline: Straight baselines are a system of straight lines joining specified or discrete points on the low-water line, usually known as straight baseline turning points.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
nationality		false	1 1
scaleMinimum		false	0 1

Territorial sea area: The territorial sea is a belt of water of a defined breadth but not exceeding 12 nautical miles measured seaward from the territorial sea baseline.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
inDispute		false	0 1
nationality		false	1

attribute	permittedValues	sequential	multiplicity
restriction	2 4 6 8 9 10 12 17 18 19 20 21 22 23 24 27	false	0
scaleMinimum		false	0 1

AssociationType:

Submarine transit lane: An area where submarines may navigate under water or at the surface.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
nationality		false	0 1
restriction	1 2 3 4 5	false	0

attribute	permittedValues	sequential	multiplicity
	6 7 8 9 10 11 12 13 16 17 18 19 20 21 22 23 24 25 27		
scaleMinimum		false	0 1

AssociationType:

Restricted area: A specified area designated by an appropriate authority within which navigation is restricted in accordance with certain specified conditions.

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
categoryOfRestrictedAr	1 4 5 6 7 8 9 10 12 14 18	false	0

attribute	permittedValues	sequential	multiplicity
	19 20 21 22 23 24 25 26 27 28 29 30		
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0
restriction	1 2 3 4 5 6 7 8 9 10 11 12 13 15 16 17 18 19 20	false	0

attribute	permittedValues	sequential	multiplicity
	21 22 23 24 25 26 27 28		
status	1 2 3 4 5 6 7 9 18 28	false	0
vesselSpeedLimit		false	0
scaleMinimum		false	0 1

AssociationType: association
    additionalInformation

Pilotage district:

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
communicationChannel		false	0

attribute	permittedValues	sequential	multiplicity
featureName		false	0
scaleMinimum		false	0 1

AssociationType:

Collision regulation limit: Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs). The demarcation line between inland navigation rules and international navigation rules.

GeoMetric Primitive: curve,

attribute	permittedValues	sequential	multiplicity
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0
regulationCitation		false	0 1
scaleMinimum		false	0 1

AssociationType:

Light all around:

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
categoryOfLight	4 5 8 9 10 11 12 13 14 15 17 18 19 20	false	0
colour	1 3 4 5 6 9 10 11	true	1
exhibitionConditionOfLig	1 2 3 4	false	0 1
featureName		false	0
fixedDateRange		false	0 1
height		false	0 1

attribute	permittedValues	sequential	multiplicity
lightVisibility	1 2	false	0 1
majorLight		false	0 1
marksNavigationalSyste	1 2 9 10 11	false	0 1
multiplicityOfFeatures		false	0 1
periodicDateRange		false	0
rhythmOfLight		false	1 1
status	1 2 4 5 6 7 8 11 14 15 16 17	false	0
valueOfNominalRange		false	0 1

attribute	permittedValues	sequential	multiplicity
verticalDatum	3 16 17 18 19 20 21 24 25 26 28 29 30	false	0 1
scaleMinimum		false	0 1
flareAngle		false	0 1

AssociationType: association
    additionalInformation

Light sectored:

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
categoryOfLight	4 5 8 9 10 11 12 13 14 15 17 18	false	0

attribute	permittedValues	sequential	multiplicity
	19 20		
exhibitionConditionOfLig	1 2 4	false	0 1
featureName		false	0
fixedDateRange		false	0 1
height		false	0 1
marksNavigationalSyste	1 2 9 10 11	false	0 1
periodicDateRange		false	0
sectorCharacteristic		false	1
status	1 2 4 5 6 7 8 11 14 15	false	0

attribute	permittedValues	sequential	multiplicity
	16 17		
verticalDatum	3 16 17 18 19 20 21 24 25 26 28 29 30	false	0 1
scaleMinimum		false	0 1

Light fog detector: A light is a luminous or lighted aid to navigation.A fog detector light is a light used to automatically determine conditions of visibility which warrant the turning on or off of a sound signal.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
colour	1 3 4 5 6 9 10 11	false	0
featureName		false	0

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
height		false	0 1
periodicDateRange		false	0
rhythmOfLight		false	0 1
status	1 2 4 5 6 7 8 11 14 15 16 17	false	0
verticalDatum	3 16 17 18 19 20 21 24 25 26 28 29 30	false	0 1

attribute	permittedValues	sequential	multiplicity
scaleMinimum		false	0 1
flareAngle		false	0 1

AssociationType:

Light air obstruction:

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
colour	1 3 4 5 6 9 10 11	false	0
exhibitionConditionOfLig	1 2 3 4	false	0 1
featureName		false	0
fixedDateRange		false	0 1
height		false	0 1

attribute	permittedValues	sequential	multiplicity
lightVisibility	1 2 3 4 5 6 7 8 9	false	0
multiplicityOfFeatures		false	0 1
periodicDateRange		false	0
rhythmOfLight		false	0 1
status	1 2 4 5 6 7 8 11 14 15 16 17	false	0
valueOfNominalRange		false	0 1
verticalDatum	3 16 17	false	0 1

attribute	permittedValues	sequential	multiplicity
	18 19 20 21 24 25 26 28 29 30		
scaleMinimum		false	0 1
flareAngle		false	0 1

AssociationType:

Buoy, lateral: A lateral buoy is used to indicate the port or starboard hand side of the route to be followed. They are generally used for well defined channels and are used in conjunction with a conventional direction of buoyage.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
buoyShape	1 2 3 4 5 6 7 8	false	1 1
categoryOfLateralMark	1 2 3 4	false	1 1

attribute	permittedValues	sequential	multiplicity
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1
colourPattern	1 2 3 4 5 6	false	0 1
featureName		false	0
fixedDateRange		false	0 1
marksNavigationalSyste	1 2 9 10 11	false	0 1
natureOfConstruction	6 7 8 11	false	0

attribute	permittedValues	sequential	multiplicity
periodicDateRange		false	0
radarConspicuous		false	0 1
status	1 2 5 7 8 18	false	0
topmark		false	0 1
verticalLength		false	0 1
scaleMinimum		false	0 1

AssociationType:

Buoy, cardinal: A cardinal buoy is used in conjunction with the compass to indicate where the mariner may find the best navigable water. It is placed in one of the four quadrants (North, East, South and West), bounded by inter-cardinal bearings from the point marked.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
buoyShape	1 2 3 4 5	false	1 1

attribute	permittedValues	sequential	multiplicity
	6 7 8		
categoryOfCardinalMark	1 2 3 4	false	1 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1
colourPattern	1 2 3 4 5 6	false	0 1
featureName		false	0
fixedDateRange		false	0 1
marksNavigationalSystem	1 2 9 10 11	false	0 1

attribute	permittedValues	sequential	multiplicity
natureOfConstruction	6 7 8 11	false	0
periodicDateRange		false	0
radarConspicuous		false	0 1
status	1 2 5 7 8 18	false	0
topmark		false	0 1
verticalLength		false	0 1
scaleMinimum		false	0 1

AssociationType:

Buoy, isolated danger: A isolated danger buoy is a buoy moored on or above an isolated danger of limited extent, which has navigable water all around it.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
buoyShape	1 2 3 4 5 6 7 8	false	1 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1
colourPattern	1 2 3 4 5 6	false	0 1
featureName		false	0
fixedDateRange		false	0 1
marksNavigationalSyste	1 2 9	false	0 1

attribute	permittedValues	sequential	multiplicity
natureOfConstruction	6 7 8 11	false	0
periodicDateRange		false	0
radarConspicuous		false	0 1
status	1 2 5 7 8 18	false	0
topmark		false	0 1
verticalLength		false	0 1
scaleMinimum		false	0 1

AssociationType:

Buoy, safe water: A safe water buoy is used to indicate that there is navigable water around the mark.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
buoyShape	1 2 3 4 5 6 7 8	false	1 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1
colourPattern	1 2 3 4 5 6	false	0 1
featureName		false	0
fixedDateRange		false	0 1
marksNavigationalSyste	1 2 9 10	false	0 1

attribute	permittedValues	sequential	multiplicity
	11		
natureOfConstruction	6 7 8 11	false	0
periodicDateRange		false	0
radarConspicuous		false	0 1
status	1 2 5 7 8 18	false	0
topmark		false	0 1
verticalLength		false	0 1
scaleMinimum		false	0 1

AssociationType:

Buoy, special purpose/general: A special purpose buoy is primarily used to indicate an area or feature, the nature of which is apparent from reference to a chart, Sailing Directions or Notices to Mariners (UKHO NP 735, 5th Edition). Buoy in general: A buoy whose appearance or purpose is not adequately known.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
buoyShape	1 2 3 4 5 6 7 8	false	1 1
categoryOfSpecialPurpo	1 2 3 4 5 6 7 8 9 10 11 12 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36	false	1

attribute	permittedValues	sequential	multiplicity

attribute	permittedValues	sequential	multiplicity
	37 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63		
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1
colourPattern	1 2 3 4	false	0 1

attribute	permittedValues	sequential	multiplicity
	5 6		
featureName		false	0
fixedDateRange		false	0 1
marksNavigationalSyste	1 2 9 10 11	false	0 1
natureOfConstruction	6 7 8 11	false	0
periodicDateRange		false	0
radarConspicuous		false	0 1
status	1 2 5 7 8 18	false	0
topmark		false	0 1

attribute	permittedValues	sequential	multiplicity
verticalLength		false	0 1
scaleMinimum		false	0 1

AssociationType: association
    additionalInformation

Buoy Emergency Wreck Marking:

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
buoyShape	1 2 3 4 5 6 7 8	false	1 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1

attribute	permittedValues	sequential	multiplicity
colourPattern	1 2 3 4 5 6	false	0 1
featureName		false	0
fixedDateRange		false	0 1
marksNavigationalSyste	1 2 9 10 11	false	0 1
natureOfConstruction	6 7 8 11	false	0
radarConspicuous		false	0 1
topmark		false	0 1
verticalLength		false	0 1
scaleMinimum		false	0 1

Buoy, installation: An installation buoy is a buoy used for loading tankers with gas or oil.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
buoyShape	1 2 3 4 5 6 7 8	false	1 1
categoryOfInstallationBu	1 2	false	0 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1
colourPattern	1 2 3 4 5 6	false	0 1

attribute	permittedValues	sequential	multiplicity
featureName		false	0
fixedDateRange		false	0 1
natureOfConstruction	7 11	false	0
periodicDateRange		false	0
product	1 2 18 19	false	0 1
radarConspicuous		false	0 1
status	1 2 4 5 7 8 18	false	0
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Beacon, lateral: A lateral beacon is used to indicate the port or starboard hand side of the route to be followed. They are generally used for well defined channels and are used in conjunction with a conventional direction of buoyage.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
beaconShape	1 2 3 5 6 7	false	1 1
categoryOfLateralMark	1 2 3 4	false	1 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1
colourPattern	1 2 3 4 5 6	false	0 1

attribute	permittedValues	sequential	multiplicity
condition	1 2 5	false	0 1
elevation		false	0 1
featureName		false	0
fixedDateRange		false	0 1
height		false	0 1
marksNavigationalSyste	1 2 9 10 11	false	0 1
natureOfConstruction	1 2 6 7 8 11	false	0
periodicDateRange		false	0
radarConspicuous		false	0 1

attribute	permittedValues	sequential	multiplicity
reportedDate		false	0 1
status	1 2 4 5 7 8 12 18	false	0
topmark		false	0 1
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Beacon, cardinal: A cardinal beacon is used in conjunction with the compass to indicate where the mariner may find the best navigable water. It is placed in one of the four quadrants (North, East, South and West), bounded by inter-cardinal bearings from the point marked.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
beaconShape	1 2 3	false	1 1

attribute	permittedValues	sequential	multiplicity
	5 6 7		
categoryOfCardinalMark	1 2 3 4	false	1 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1
elevation		false	0 1
featureName		false	0

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
height		false	0 1
marksNavigationalSyste	1 2 9 10 11	false	0 1
natureOfConstruction	1 2 6 7 8 11	false	0
periodicDateRange		false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
status	1 2 4 5 7 8 12 18	false	0

attribute	permittedValues	sequential	multiplicity
topmark		false	0 1
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Beacon, isolated danger: An isolated danger beacon is a beacon erected on an isolated danger of limited extent, which has navigable water all around it.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
beaconShape	1 2 3 5 6 7	false	1 1
colour	1 2 3 4 5 6 7 8 9 10	true	1

attribute	permittedValues	sequential	multiplicity
	11 12 13		
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 3 4 5	false	0 1
elevation		false	0 1
featureName		false	0
fixedDateRange		false	0 1
height		false	0 1
marksNavigationalSyste	1 2 9 10 11	false	0 1
natureOfConstruction	1 2 6 7	false	0

attribute	permittedValues	sequential	multiplicity
	8 11		
periodicDateRange		false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
status	1 2 4 5 7 8 12 18	false	0
topmark		false	0 1
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Beacon, safe water: A safe water beacon is a prominent specially constructed object forming a conspicuous mark as a fixed aid to navigation or for use in hydrographic survey.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
beaconShape	1 2 3 5 6 7	false	1 1
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1
elevation		false	0 1

attribute	permittedValues	sequential	multiplicity
featureName		false	0
fixedDateRange		false	0 1
height		false	0 1
marksNavigationalSyste	1 2 9 10 11	false	0 1
natureOfConstruction	1 2 6 7 8 11	false	0
periodicDateRange		false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
status	1 2 4 5 7	false	0

attribute	permittedValues	sequential	multiplicity
	8 12 18		
topmark		false	0 1
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Beacon, special purpose/general: A special purpose beacon is primarily used to indicate an area or feature, the nature of which is apparent from reference to a chart, Sailing Directions or Notices to Mariners (UKHO NP 735, 5th Edition). Beacon in general: A beacon whose appearance or purpose is not adequately known.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
beaconShape	1 2 3 5 6 7	false	1 1
categoryOfSpecialPurpo	1 2 3 4 5	false	1

attribute	permittedValues	sequential	multiplicity
	6		
	7		
	8		
	10		
	11		
	12		
	14		
	16		
	17		
	18		
	19		
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		
	32		
	33		
	34		
	35		
	36		
	37		
	39		
	40		
	41		
	42		
	43		
	44		
	45		
	46		
	47		
	48		
	49		
	50		
	51		
	52		
	53		
	54		

attribute	permittedValues	sequential	multiplicity

attribute	permittedValues	sequential	multiplicity
	55 56 57 58 60 61 62 63		
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1
colourPattern	1 2 3 4 5 6	false	0 1
condition	1 2 5	false	0 1
elevation		false	0 1
featureName		false	0

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
height		false	0 1
marksNavigationalSyste	1 2 9 10 11	false	0 1
natureOfConstruction	1 2 6 7 8 11	false	0
periodicDateRange		false	0
radarConspicuous		false	0 1
reportedDate		false	0 1
status	1 2 4 5 7 8 12 18	false	0

attribute	permittedValues	sequential	multiplicity
topmark		false	0 1
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Daymark: The identifying characteristics of an aid to navigation which serve to facilitate its recognition against a daylight viewing background.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
categoryOfSpecialPurpo	1 2 3 4 5 6 7 8 10 11 12 14 15 16 17 18 19	false	0

attribute	permittedValues	sequential	multiplicity
	20		
	21		
	22		
	23		
	24		
	25		
	26		
	27		
	28		
	29		
	30		
	31		
	32		
	33		
	34		
	35		
	36		
	37		
	39		
	40		
	41		
	42		
	43		
	44		
	45		
	46		
	47		
	48		
	49		
	50		
	51		
	52		
	53		
	54		
	55		
	56		
	57		
	58		
	60		
	61		
	62		
	63		

attribute	permittedValues	sequential	multiplicity
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1
colourPattern	1 2 3 4 5 6	false	0 1
elevation		false	0 1
featureName		true	0
fixedDateRange		false	0 1
height		false	0 1
natureOfConstruction	1 2 4 6 7	false	0

attribute	permittedValues	sequential	multiplicity
	8 11		
periodicDateRange		false	0
radarConspicuous		false	0 1
status	1 4 5 7 8 12	false	0
topmarkDaymarkShape	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26	false	1 1

attribute	permittedValues	sequential	multiplicity
	27 28 29 30 31 32 33		
verticalLength		false	0 1
shapeInformation		false	0
scaleMinimum		false	0 1

AssociationType:

Light float: A boat-like structure used instead of a light buoy in waters where strong streams or currents are experienced, or when a greater elevation than that of a light buoy is necessary.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1

attribute	permittedValues	sequential	multiplicity
colourPattern	1 2 3 4 5 6	false	0 1
featureName		false	0
fixedDateRange		false	0 1
horizontalLength		false	0 1
horizontalWidth		false	0 1
natureOfConstruction	6 7 11	false	0
periodicDateRange		false	0
radarConspicuous		false	0 1
status	1 2 4 5 7 8 14	false	0

attribute	permittedValues	sequential	multiplicity
	16 17		
topmark		false	0 1
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType: association
   additionalInformation

Light vessel: A distinctively marked vessel anchored or moored at a charted point, to serve as an aid to navigation. By night, it displays a characteristic light(s) and is usually equipped with other devices, such as fog signal, submarine sound signal, and radio-beacon, to assist navigation.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	1

attribute	permittedValues	sequential	multiplicity
colourPattern	1 2 3 4 5 6	false	0 1
featureName		false	0
fixedDateRange		false	0 1
horizontalLength		false	0 1
horizontalWidth		false	0 1
natureOfConstruction	6 7	false	0
periodicDateRange		false	0
radarConspicuous		false	0 1
status	1 2 4 5 7 8 14	false	0

attribute	permittedValues	sequential	multiplicity
	16 17		
verticalLength		false	0 1
visuallyConspicuous	1 2 3	false	0 1
scaleMinimum		false	0 1

AssociationType:

Retroreflector: A means of distinguishing unlighted marks at night. Retro-reflective material is secured to the mark in a particular pattern to reflect back light.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
colour	1 2 3 4 5 6 7 8 9 10 11 12 13	true	0
colourPattern	1 2 3 4 5	false	0 1

attribute	permittedValues	sequential	multiplicity
	6		
fixedDateRange		false	0 1
height		false	0 1
periodicDateRange		false	0
status	1 4 8	false	0
scaleMinimum		false	0 1

AssociationType:

Radar reflector: A device capable of, or intended for, reflecting radar signals.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
fixedDateRange		false	0 1
height		false	0 1
periodicDateRange		false	0

attribute	permittedValues	sequential	multiplicity
status	1 4 8	false	0
scaleMinimum		false	0 1

AssociationType:

Fog signal: A warning signal transmitted by a vessel, or aid to navigation, during periods of low visibility. Also, the device producing such a signal.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
categoryOfFogSignal	1 2 3 4 5 6 7 8 9 10	false	1 1
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0

attribute	permittedValues	sequential	multiplicity
signalFrequency		false	0 1
signalGeneration	1 2 3 4	false	0 1
signalGroup		false	0 1
signalPeriod		false	0 1
signalSequence		true	0
status	1 2 4 5 7 8 15	false	0
valueOfMaximumRange		false	0 1
scaleMinimum		false	0 1

AssociationType:

Physical AIS Aid To Navigation:

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
estimatedRangeOfTrans		false	0 1
featureName		false	0
fixedDateRange		false	0 1
mmsiCode		false	0 1
periodicDateRange		false	0
status	1 5 7	false	0 1
scaleMinimum		false	0 1

AssociationType:

Virtual AIS Aid to Navigation:

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
estimatedRangeOfTrans		false	0 1

attribute	permittedValues	sequential	multiplicity
featureName		false	0
fixedDateRange		false	0 1
mmsiCode		false	0 1
periodicDateRange		false	0
status	1 5 7	false	0 1
virtualAISAidToNavigati	1 2 3 4 5 6 7 8 9 10 11 12	false	1 1
scaleMinimum		false	0 1

AssociationType:

Radio station: A place equipped to transmit radio waves.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
callSign		false	0 1
categoryOfRadioStation	5 8 9 10 11 12 13 14 19 20	false	0 1
communicationChannel		false	0
estimatedRangeOfTrans		false	0 1
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0
signalFrequency		false	0 1

attribute	permittedValues	sequential	multiplicity
status	1 2 4 5 7 8	false	0
scaleMinimum		false	0 1

AssociationType:

Radar transponder beacon: A transponder beacon transmitting a coded signal on radar frequency, permitting an interrogating craft to determine the bearing and range of the transponder.

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
categoryOfRadarTransp	1 2 3	false	1 1
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0
radarWaveLength		false	0 2

attribute	permittedValues	sequential	multiplicity
sectorLimit		false	0 1
signalGroup		false	0 1
signalSequence		true	0
status	1 2 4 5 7 8	false	0
valueOfMaximumRange		false	0 1
scaleMinimum		false	0 1

AssociationType:

Pilot boarding place: The meeting place to which the pilot comes out.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfPilotBoarding	1 2 3	false	0 1

attribute	permittedValues	sequential	multiplicity
communicationInformati		false	0 1
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0
status	1 2 5 6 9 16 17 28	false	0
scaleMinimum		false	0 1

AssociationType:

Vessel Traffic Service Area:

GeoMetric Primitive: surface,

attribute	permittedValues	sequential	multiplicity
featureName		false	0

attribute	permittedValues	sequential	multiplicity
scaleMinimum		false	0 1

AssociationType:

Coastguard station: Watch keeping stations at which a watch is kept either continuously, or at certain times only.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
communicationChannel		false	0
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0
status	1 4 5 16 17	false	0
scaleMinimum		false	0 1

AssociationType:

Signal station, warning: A signal station is a place on shore from which signals are made to ships at sea.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfSignalStation	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	false	1
communicationChannel		false	0
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0
status	1 2 4 5 7 8	false	0

attribute	permittedValues	sequential	multiplicity
	12 14 15 16 17		
scaleMinimum		false	0 1

AssociationType:

Signal station, traffic: A signal station that regulates the movement of traffic.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfSignalStation	1 2 3 4 5 6 7 8 9 10	false	1
communicationChannel		false	0
featureName		false	0
fixedDateRange		false	0 1

attribute	permittedValues	sequential	multiplicity
periodicDateRange		false	0
status	1 2 4 5 7 8 12 14 15 16 17	false	0
scaleMinimum		false	0 1

AssociationType:

Rescue station: A place at which life saving equipment is held.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfRescueStatic	1 2 4 5 6 7 8	false	0
communicationChannel		false	0

attribute	permittedValues	sequential	multiplicity
featureName		false	0
fixedDateRange		false	0 1
periodicDateRange		false	0
status	1 2 4 5 7 8 14 16 17	false	0
scaleMinimum		false	0 1

AssociationType:

Harbour facility: A harbour installation with a service or commercial operation of public interest.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfHarbourFacil	1 3 4 5 6 7 8 9	false	1

attribute	permittedValues	sequential	multiplicity
	10 11 12 13 14 15		
communicationChannel		false	0
condition	1 2 3 5	false	0 1
featureName		false	0
fixedDateRange		false	0 1
natureOfConstruction	1 2 3 6 7	false	0
periodicDateRange		false	0
product	1 2 3 4 5 6 7 8 9	false	0 1

attribute	permittedValues	sequential	multiplicity
	10 11 12 13 14 15 16 17 18 19 20 21 22 25		
reportedDate		false	0 1
restriction	1 2 3 4 5 6 8 9 10 11 12 13 15 16 17 18 19 20 21 23 24 27	false	0

attribute	permittedValues	sequential	multiplicity
status	1 4 5 6 7 8 9 12 13 14 16 17	false	0
scaleMinimum		false	0 1

AssociationType:

Small craft facility: A place at which a service generally of interest to small craft or pleasure boats is available.

GeoMetric Primitive: point, surface,

attribute	permittedValues	sequential	multiplicity
categoryOfSmallCraftFa	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	false	1

attribute	permittedValues	sequential	multiplicity
	18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33		
featureName		false	0
periodicDateRange		false	0
status	1 2 3 4 5 6 7 8 9 12 14 16 17	false	0
scaleMinimum		false	0 1

AssociationType:

GeoMetric Primitive: point,

attribute	permittedValues	sequential	multiplicity
flipBearing		false	0 1
scaleMinimum		false	0 1
textJustification	1 2 3	false	1 1
text		false	0 1
textType	1 2	false	0 1

AssociationType:

S-101 Complex Attributes

Communication information
   callSign

   communicationChannel

   emailAddress

   faxNumber

telephoneNumber

webAddress

Current velocity
velocityMaximum

velocityMinimum

Feature name
displayName

language

name

Directional character
moireEffect

orientation

Fixed date range
dateEnd

dateStart

Horizontal clearance fixed
horizontalClearanceValue

horizontalDistanceUncertainty

Horizontal clearance open
horizontalClearanceValue

horizontalDistanceUncertainty

Information
language

text

Light sector
colour

1
3

4
        5
        6
        9
        10
        11
directionalCharacter

lightVisibility

        1
        2
        3
        4
        5
        6
        8
        9
sectorLimit

valueOfNominalRange

sectorInformation

sectorExtension

Measured distance value
distanceUnitsOfMeasurement

referenceLocation

waterwayDistance

Multiplicity of features
multiplicityKnown

numberOfFeatures

Orientation
orientationValue

orientationUncertainty

Periodic date range
dateEnd

dateStart

Radar wave length
radarBand

waveLengthValue

Rhythm of light
lightCharacteristic

signalGroup

signalPeriod

signalSequence

Sector characteristics
lightCharacteristic

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 25
- 26
- 27
- 28
- 29

lightSector

signalGroup

signalPeriod

signalSequence

Sector information
language

text

Sector limit
sectorLimitOne

sectorLimitTwo

Shape information
language

text

Signal sequence
signalDuration

signalStatus

Surface characteristics
natureOfSurface

1
2
3
4
5
6
7
8
9
11
14
17
18
natureOfSurfaceQualifyingTerms

1
2
3
4
5
6

7

8

9

10

underlyingLayer

Textual description
fileReference

language

Tidal stream panel values
referenceTide

referenceTideType

streamDepth

tidalStreamValue

Tidal stream value
orientation

timeRelativeToTide

velocityMaximum

Time range
timeEnd

timeStart

Topmark
colour

1

2

3

4

5

6

7

8

9

10

11

12

13

topmarkDaymarkShape

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33

shapeInformation

Update description

language

text

Value of local magnetic anomaly

magneticAnomalyValueMaximum

magneticAnomalyValueMinimum

Vertical clearance closed
  verticalClearanceValue

  verticalUncertainty

Vertical clearance fixed
  verticalClearanceValue

  verticalUncertainty

Vertical clearance open
  verticalClearanceValue

  verticalUncertainty

Vertical clearance safe
  verticalClearanceValue

  verticalUncertainty

Vessel speed limit
  speedLimit

  vesselClass

S-101 Attributes

name	alias	valueType	listedValues	listedValues
Beacon shape	BCNSHP	enumeratio	1 2 3 4 5 6 7	stake, pole, perch, post withy beacon tower lattice beacon pile beacon cairn buoyant beacon
Building shape	BUISHP	enumeratio	5 6	high-rise building pyramid

name	alias	valueType	listedValues	listedValues
			7 8 9	cylindrical spherical cubic
Buoy shape	BOYSHP	enumeratio	1 2 3 4 5 6 7 8	conical (nun, ogival) can (cylindrical) spherical pillar spar (spindle) barrel (tun) super-buoy ice buoy
Category of airport/ airfield	CATAIR	enumeratio	1 2 3 4 5 6 8 9	military aeroplane airport civil aeroplane airport military heliport civil heliport glider airfield small planes airfield emergency airfield search and rescue airfield
Category of anchorage	CATACH	enumeratio	1 2 3 4 5 6 7 8 9 10 14 15	unrestricted anchorage deep water anchorage tanker anchorage explosives anchorage quarantine anchorage sea-plane anchorage small craft anchorage small craft mooring area anchorage for periods up to 24 hours anchorage for a limited period of time waiting anchorage reported anchorage
Category of bridge	CATBRG	enumeratio	1 2 3 4 5 6 7	fixed bridge opening bridge swing bridge lifting bridge bascule bridge pontoon bridge drawBridge

name	alias	valueType	listedValues	listedValues
			8	transporter bridge
			9	foot bridge
			10	viaduct
			11	aqueduct
			12	suspension bridge
Category of built-up area	CATBUA	enumeratio	1 2 3 4 5 6	urban area settlement village town city holiday village
Category of cable	CATCBL	enumeratio	1 3 4 5 6 7 8	power line transmission line telephone telegraph mooring cable/chain ferry telecommunications
Category of canal	CATCAN	enumeratio	1 2 3	transportation drainage irrigation
Category of cardinal mark	CATCAM	enumeratio	1 2 3 4	north cardinal mark east cardinal mark south cardinal mark west cardinal mark
Category of checkpoint	CATCHP	enumeratio	1	custom
Category of coastline	CATCOA	enumeratio	1 2 3 4 5 6 7 8 9 10 11	steep coast flat coast sandy shore stony shore shingly shore glacier, seaward end mangrove marshy shore coral reef ice coast shelly shore

name	alias	valueType	listedValues	listedValues
Category of conveyor	CATCON	enumeratio	1 2 3 4	aerial cableway (telepheric) belt conveyor flume lift/elevator
Category of crane	CATCRN	enumeratio	2 3 4 5 6	container crane/gantry sheerlegs travelling crane A-frame Goliath Crane
Category of dam	CATDAM	enumeratio	1 2 3	weir dam flood barrage
Category of distance mark	CATDIS	enumeratio	1 2 3 4	distance mark not physically installed visible mark, pole visible mark, board visible mark, unknown shape
Category of dock	CATDOC	enumeratio	1 2	tidal non-tidal (wet dock)
Category of fence/wall	CATFNC	enumeratio	1 3 4	fence hedge wall
Category of ferry	CATFRY	enumeratio	1 2 3 5	'free-moving' ferry cable ferry ice ferry high Speed Ferry
Category of fishing facility	CATFIF	enumeratio	1 2 3 4	fishing stake fish trap fish weir tunny net
Category of fog signal	CATFOG	enumeratio	1 2 3	explosive diaphone siren

name	alias	valueType	listedValues	listedValues
			4	nautophone
			5	reed
			6	tyfon
			7	bell
			8	whistle
			9	gong
			10	horn
Category of fortified structure	CATFOR	enumeratio	1	castle
			2	fort
			3	battery
			4	blockhouse
			5	martello tower
			6	redoubt
			8	fortified submarine shelter
			9	rampart
Category of gate	CATGAT	enumeratio	1	gate in general
			2	flood barrage gate
			3	caisson
			4	lock gate
			5	dyke gate
			6	sluice
Category of harbour facility	CATHAF	enumeratio	1	roRo terminal
			3	ferry terminal
			4	fishing harbour
			5	yacht harbour/marina
			6	naval base
			7	tanker terminal
			8	passenger terminal
			9	shipyard
			10	container terminal
			11	bulk terminal
			12	ship lift
			13	straddle carrier
			14	service harbour
			15	pilotage service
Category of hulk	CATHLK	enumeratio	1	floating restaurant
			2	historic ship
			3	floating museum
			4	floating accommodation
			5	floating breakwater

name	alias	valueType	listedValues	listedValues
			6 7	casino boat training vessel
Category of ice	CATICE	enumeratio	1 5 8	fast ice glacier polar ice
Category of installation buoy	CATINB	enumeratio	1 2	catenary anchor leg mooring (CALM) single buoy mooring (SBM)
Category of landmark	CATLMK	enumeratio	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	cairn cemetery chimney dish aerial flagstaff (flagpole) flare stack mast wind sock monument column (pillar) memorial plaque obelisk statue cross dome radar scanner tower windmill windmotor spire/minaret large rock or boulder on land triangulation Mark boundary Mark observation wheel torii
Category of land region	CATLND	enumeratio	1 2 3 4 5 6 7	fen marsh moor/bog heathland mountain range lowlands canyon lands

name	alias	valueType	listedValues	listedValues
			8	paddy field
			9	agricultural land
			10	savanna/grassland
			11	parkland
			12	swamp
			13	landslide
			14	lava flow
			15	saltpan
			17	crater
			18	cave
			19	rock column or pinnacle
			20	cay
Category of lateral mark	CATLAM	enumeratio	1 2 3 4	port-hand lateral mark starboard-hand lateral mark preferred channel to starboard lateral mark preferred channel to port lateral mark
Category of light	CATLIT	enumeratio	4 5 8 9 10 11 12 13 14 15 17 18 19 20	leading light aero light flood light strip light subsidiary light spotlight front rear lower upper emergency bearing light horizontally disposed vertically disposed
Category of marine farm/culture	CATMFA	enumeratio	1 2 3 4 5	crustaceans oysters/mussels fish seaweed pearl culture farm
Category of military practice area	CATMPA	enumeratio	2 3 4	torpedo exercise area submarine exercise area firing danger area

name	alias	valueType	listedValues	listedValues
			5 6	mine laying practice area small arms firing range
Category of mooring/ warping facility	CATMOR	enumeratio	1 2 3 4 5 6 7	dolphin deviation dolphin bollard tie-up wall post or pile chain/wire/cable mooring buoy
Category of navigation line	CATNAV	enumeratio	1 2 3	clearing line transit line leading line bearing a recommended track
Category of obstruction	CATOBS	enumeratio	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	snag/stump wellhead diffuser crib fish haven foul area foul ground ice boom ground tackle boom underwater turbine wave energy device fish aggregating device (FAD) subsurface ocean data acquisition system (ODAS) artificial reef template manifold submerged pingo remains of platform scientific instrument
Category of offshore platform	CATOFP	enumeratio	1 2 3 4 5 6	oil derrick/rig production platform observation/research platform articulated loading platform (ALP) single anchor leg mooring (SALM)

name	alias	valueType	listedValues	listedValues
			7 8 9 10 11	mooring tower artificial island floating production, storage and offloading vessel (FPSO) accommodation platform navigation, communication and control buoy (NCCB) offshore oil tank
Category of offshore production area		enumeratio	1 2 3 4 5	offshore wind farm wave farm current farm tank farm seabed material extraction area
Category of oil barrier	CATOLB	enumeratio	1 2	oil retention (high pressure pipe) floating oil barrier
Category of pile	CATPLE	enumeratio	1 3 4 5 6 7	stake post tripodal piling area of piles pipe
Category of pilot boarding place	CATPIL	enumeratio	1 2 3	boarding by pilot-cruising vessel boarding by helicopter pilot comes out from shore
Category of pipeline/ pipe	CATPIP	enumeratio	2 3 4 5 6	outfall pipe intake pipe sewer bubbler system supply pipe
Category of production area	CATPRA	enumeratio	1 2 3 4 5 6 7 8	quarry mine stockpile power station area refinery area timber yard factory area tank farm

name	alias	valueType	listedValues	listedValues
			9 10 11	wind farm slag heap/spoil heap production plant
Category of pylon	CATPYL	enumeratio	1 2 3 4 5	power transmission pylon/pole telephone/telegraph pylon/pole aerial cableway/sky pylon bridge pylon/tower bridge pier
Category of radar station	CATRAS	enumeratio	1 2	radar surveillance station coast radar station
Category of radar transponder beacon	CATRTB	enumeratio	1 2 3	ramark, radar beacon transmitting continuously racon, radar transponder beacon leading racon/radar transponder beacon
Category of radio station	CATROS	enumeratio	5 8 9 10 11 12 13 14 19 20	radio direction-finding station decca loran C differential GPS toran omega syledis chiaka (Chayka) radio telephone station AIS base station
Category of recommended track	CATTRK	enumeratio	1 2	based on a system of fixed marks not based on a system of fixed marks
Category of rescue station	CATRSC	enumeratio	1 2 4 5 6 7 8	rescue station with lifeboat rescue station with rocket refuge for ship-wrecked mariners refuge for intertidal area walkers lifeboat lying at a mooring aid radio station first aid equipment
Category of restricted area	CATREA	enumeratio	1	offshore safety zone

name	alias	valueType	listedValues	listedValues
			4 5 6 7 8 9 10 12 14 18 19 20 21 22 23 24 25 26 27 28 29 30	nature reserve bird sanctuary game reserve seal sanctuary degaussing range military area historic wreck area navigational aid safety zone minefield swimming area waiting area research area dredging area fish sanctuary ecological reserve no wake area swinging area recreation area environmentally sensitive sea area particularly sensitive sea area disengagement area port security area
Category of road	CATROD	enumeratio	1 2 3 4 5 6 7	motorway major road minor road track/path major street minor street crossing
Category of runway	CATRUN	enumeratio	1 2	aeroplane runway helicopter landing pad
Category of sea area	CATSEA	enumeratio	2 3 4 5 6 7 8 9 10	gat bank deep bay trench basin flat reef ledge

name	alias	valueType	listedValues	listedValues
			11	canyon
			12	narrows
			13	shoal
			14	knoll
			15	ridge
			16	seamount
			17	pinnacle
			18	abyssal plain
			19	plateau
			20	spur
			21	shelf
			22	trough
			23	saddle
			24	abyssal hills
			25	apron
			26	archipelagic apron
			27	borderland
			28	continental margin
			29	continental rise
			30	escarpment
			31	fan
			32	fracture zone
			33	gap
			34	guyot
			35	hill
			36	hole
			37	levee
			38	median valley
			39	moat
			40	mountains
			41	peak
			42	province
			43	rise
			44	sea channel
			45	seamount chain
			46	shelf-edge
			47	sill
			48	slope
			49	terrace
			50	valley
			51	canal
			52	lake
			53	river
			54	reach
			55	Intertidal cay

name	alias	valueType	listedValues	listedValues
			56	Sumarine Volcano
Category of shoreline construction	CATSLC	enumeratio	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 20	breakwater groyne (groin) mole pier (jetty) promenade pier wharf (quay) training wall rip rap revetment sea wall landing steps ramp slipway fender solid face wharf open face wharf log ramp Swimming Facility
Category of signal station, traffic	CATSIT	enumeratio	1 2 3 4 5 6 7 8 9 10	port control port entry and departure International Port Traffic berthing dock lock flood barrage bridge passage dredging traffic control light
Category of signal station, warning	CATSIW	enumeratio	1 2 3 4 5 6 7 8 9 10 11 12	danger maritime obstruction cable military practice distress weather storm ice time tide tidal stream tide gauge

name	alias	valueType	listedValues	listedValues
			13	tide scale
			14	diving
			15	water level gauge
Category of silo/tank	CATSIL	enumeratio	1	silo in general
			2	tank in general
			3	grain elevator
			4	water tower
Category of slope	CATSLO	enumeratio	1	cutting
			2	embankment
			3	dune
			4	hill
			5	pingo
			6	cliff
			7	scree
Category of small craft facility	CATSCF	enumeratio	1	visitor's berth
			2	nautical club
			3	boat hoist
			4	sailmaker
			5	boatyard
			6	public inn
			7	restaurant
			8	chandler
			9	provisions
			10	doctor
			11	pharmacy
			12	water tap
			13	fuel station
			14	electricity
			15	bottle gas
			16	showers
			17	launderette
			18	public toilets
			19	post box
			20	public telephone
			21	refuse bin
			22	car park
			23	parking for boats and trailers
			24	caravan site
			25	camping site
			26	sewerage pump-out station
			27	emergency telephone

name	alias	valueType	listedValues	listedValues
			28	landing/launching place for boats
			29	visitors mooring
			30	scrubbing berth
			31	picnic area
			32	mechanics workshop
			33	guard and/or security service
Category of special purpose mark	CATSPM	enumeratio	1	firing danger mark
			2	target mark
			3	marker ship mark
			4	degaussing range mark
			5	barge mark
			6	cable mark
			7	spoil ground mark
			8	outfall mark
			9	ODAS
			10	recording mark
			11	seaplane anchorage mark
			12	recreation zone mark
			13	private mark
			14	mooring mark
			15	LANBY
			16	leading mark
			17	measured distance mark
			18	notice mark
			19	TSS mark
			20	anchoring prohibited mark
			21	berthing prohibited mark
			22	overtaking prohibited mark
			23	two-way traffic prohibited mark
			24	"reduced wake" mark
			25	speed limit mark
			26	stop mark
			27	general warning mark
			28	"sound ships siren" mark
			29	restricted vertical clearance mark
			30	maximum vessel's draught mark
			31	restricted horizontal clearance
			32	mark
			33	strong current warning mark
			34	berthing permitted mark
			35	overhead power cable mark
			36	"channel edge gradient" mark
			37	telephone mark
			39	ferry crossing mark

name	alias	valueType	listedValues	listedValues
			40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63	pipeline mark anchorage mark clearing mark control mark diving mark refuge beacon foul ground mark yachting mark heliport mark GNSS mark seaplane landing mark entry prohibited mark work in progress mark mark with unknown purpose wellhead mark channel separation mark marine farm mark artificial reef mark ice mark nature reserve mark fish aggregating device (FAD) wreck mark customs mark causeway mark wave recorder
Category of Tidal stream	CAT_TS	enumeratio	1 2 3	flood stream ebb stream other tidal flow
Category of Traffic Separation Scheme	CATTSS	enumeratio	1 2	IMO - adopted not IMO - adopted
Category of vegetation	CATVEG	enumeratio	3 4 5 6 7 13 14 15 16 17 18	bush deciduous wood coniferous wood wood in general (inc. mixed wood) mangroves tree in general evergreen tree coniferous tree palm tree nipa palm tree

name	alias	valueType	listedValues	listedValues
			19 20 21 22	casuarina tree eucalypt tree deciduous tree mangrove tree filao tree
Category of water turbulence	CATWAT	enumeratio	1 2 3 4 5	breakers eddies overfalls tide rips bombora
Category of weed/ kelp	CATWED	enumeratio	1 2 3 4	kelp sea weed sea grass sargasso
Category of wreck	CATWRK	enumeratio	1 2 3 4 5	non-dangerous wreck dangerous wreck distributed remains of wreck wreck showing mast/masts wreck showing any portion of hull or superstructure
Colour	COLOUR	enumeratio	1 2 3 4 5 6 7 8 9 10 11 12 13	white black red green blue yellow grey brown amber violet orange magenta pink
Colour pattern	COLPAT	enumeratio	1 2 3 4 5	horizontal stripes vertical stripes diagonal stripes squared stripes (direction unknown)

name	alias	valueType	listedValues	listedValues
			6	border stripe
Condition	CONDTN	enumeratio	1 2 3 4 5	under construction ruined under reclamation wingless planned construction
Distance units of measurement		enumeratio	1 2 3 4 5	metres yards kilometers statute miles nautical miles
Exhibition condition of light	EXCLIT	enumeratio	1 2 3 4	light shown without change of character daytime light fog light night light
Exposition of sounding	EXPSOU	enumeratio	1 2 3	within the range of depth of the surrounding depth area shoaler than the range of depth of the surrounding depth area deeper than the range of depth of the surrounding depth area
Function	FUNCTN	enumeratio	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	harbour-master's office customs office health office hospital post office hotel railway station police station water-police station pilot office pilot lookout bank office headquarters for district control transit shed/warehouse factory power station

name	alias	valueType	listedValues	listedValues
			18	administrative
			19	educational facility
			20	church
			21	chapel
			22	temple
			23	pagoda
			24	shinto shrine
			25	buddhist temple
			26	mosque
			27	marabout
			28	lookout
			29	communication
			30	television
			31	radio
			32	radar
			33	light support
			34	microwave
			35	cooling
			36	observation
			37	time ball
			38	clock
			39	control
			40	airship mooring
			41	stadium
			42	bus station
			43	passenger terminal building
			44	sea rescue control
			45	observatory
			46	ore crusher
			47	boathouse
			48	pumping station
Jurisdiction	JRSDTN	enumeratio	1 2 3	international national national sub-division
Light characteristic	LITCHR	enumeratio	1 2 3 4 5 6 7 8 9	fixed flashing long-flashing quick-flashing very quick flashing ultra quick flashing isophased occulting interrupted quick flashing

name	alias	valueType	listedValues	listedValues
			10	interrupted very quick flashing
			11	interrupted ultra quick flashing
			12	morse
			13	fixed and flash
			14	flash and long-flash
			15	occulting and flash
			16	fixed and long-flash
			17	occulting alternating
			18	long-flash alternating
			19	flash alternating
			25	quick-flash plus long-flash
			26	very quick-flash plus long-flash
			27	ultra quick-flash plus long-flash
			28	alternating
			29	fixed and alternating flashing
Light visibility	LITVIS	enumeratio	1 2 3 4 5 6 7 8 9	high intensity low intensity faint intensified unintensified visibility deliberately restricted obscured partially obscured visible in line of range
Marks navigational - System of	MARSYS	enumeratio	1 2 9 10 11	IALA A IALA B no system other system CEVNI
Maximum display scale		enumeratio	1 2 3 4 5 6 7 8 9 10 11 12	1000 2000 3000 4000 8000 12000 22000 45000 90000 180000 350000 700000

name	alias	valueType	listedValues	listedValues
			13	1500000
			14	3500000
			15	10000000
Minimum display scale		enumeratio	1	1000
			2	2000
			3	3000
			4	4000
			5	8000
			6	12000
			7	22000
			8	45000
			9	90000
			10	180000
			11	350000
			12	700000
			13	1500000
			14	3500000
			15	10000000
Nature of construction	NATCON	enumeratio	1	masonry
			2	concreted
			3	loose boulders
			4	hard surface
			5	unsurfaced
			6	wooden
			7	metal
			8	glass reinforced plastic (GRP)
			9	painted
			11	latticed
			12	glass
Nature of surface	NATSUR	enumeratio	1	mud
			2	clay
			3	silt
			4	sand
			5	stone
			6	gravel
			7	pebbles
			8	cobbles
			9	rock
			11	lava
			14	coral
			17	shells

name	alias	valueType	listedValues	listedValues
			18	boulder
Nature of surface - qualifying terms	NATQUA	enumeratio	1 2 3 4 5 6 7 8 9 10	fine medium coarse broken sticky soft stiff volcanic calcareous hard
Product	PRODCT	enumeratio	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	oil gas water stone coal ore chemicals drinking water milk bauxite coke iron ingots salt sand timber sawdust/wood chips scrap metal liquified natural gas (LNG) liquified petroleum gas (LPG) wine cement grain electricity ice clay
Quality of position	QUAPOS	enumeratio	1 2 3 4 5	surveyed unsurveyed inadequately surveyed approximate position doubtful

name	alias	valueType	listedValues	listedValues
			6	unreliable
			7	reported (not surveyed)
			8	reported (not confirmed)
			9	estimated
			10	precisely known
			11	calculated
Quality of sounding measurement	QUASOU	enumeratio	1	depth known
			2	depth or least depth unknown
			3	doubtful sounding
			4	unreliable sounding
			5	no bottom found at value shown
			6	least depth known
			7	least depth unknown, safe clearance at depth shown
			8	value reported (not surveyed)
			9	value reported (not confirmed)
			10	maintained depth
			11	not regularly maintained
Reference tide		enumeratio	1	highWater
			2	lowWater
Reference tide type		enumeratio	1	springs
			2	neaps
			3	mean
Restriction	RESTRN	enumeratio	1	anchoring prohibited
			2	anchoring restricted
			3	fishing prohibited
			4	fishing restricted
			5	trawling prohibited
			6	trawling restricted
			7	entry prohibited
			8	entry restricted
			9	dredging prohibited
			10	dredging restricted
			11	diving prohibited
			12	diving restricted
			13	no wake
			14	area to be avoided
			15	construction prohibited
			16	discharging prohibited
			17	discharging restricted

name	alias	valueType	listedValues	listedValues
			18 19 20 21 22 23 24 25 26 27 28	industrial or mineral exploration/ development prohibited industrial or mineral exploration/ development restricted drilling prohibited drilling restricted removal of historical artifacts prohibited cargo transhipment (lightering) prohibited dragging prohibited stopping prohibited landing prohibited speed restricted swimming Prohibited
Signal generation	SIGGEN	enumeratio	1 2 3 4	automatically by wave action by hand by wind
Signal status		enumeratio	1 2	lit/sound eclipsed/silent
Status	STATUS	enumeratio	1 2 3 4 5 6 7 8 9 11 12 13 14 15 16 17 18 28	permanent occasional recommended not in use periodic/intermittent reserved temporary private mandatory extinguished illuminated historic public synchronized watched un-watched existence doubtful buoyed
Technique of vertical measurement	TECSOU	enumeratio	1	found by echo-sounder

name	alias	valueType	listedValues	listedValues
			2	found by side scan sonar
			3	found by multi-beam
			4	found by diver
			5	found by lead-line
			6	swept by wire-drag
			7	found by laser
			8	swept by vertical acoustic system
			9	found by electromagnetic sensor
			10	photogrammetry
			11	satellite imagery
			12	found by levelling
			13	swept by side-scan sonar
			15	found by LIDAR
Text justification		enumeratio	1	left
			2	centred
			3	right
Text type		enumeratio	1	feature name
			2	light characteristic
Topmark/daymark shape	TOPSHP	enumeratio	1	cone, point up
			2	cone, point down
			3	sphere
			4	2 spheres
			5	cylinder (can)
			6	board
			7	x-shape (St. Andrew's cross)
			8	upright cross (St. George's
			9	Cross)
			10	cube, point up
			11	2 cones, point to point
			12	2 cones, base to base
			13	rhombus
			14	2 cones (points upward)
			15	2 cones (points downward)
			16	besom, point up (broom or perch)
			17	besom, point down (broom or
			18	perch)
			19	flag
			20	sphere over rhombus
			21	square
			22	rectangle, horizontal
			23	rectangle, vertical

name	alias	valueType	listedValues	listedValues
			24 25 26 27 28 29 30 31 32 33	trapezium, up trapezium, down triangle, point up triangle, point down circle two upright crosses (one over the other) T-shape triangle pointing up over a circle upright cross over a circle rhombus over a circle circle over a triangle pointing up other shape (see INFORM)
Traffic flow	TRAFIC	enumeratio	1 2 3 4	inbound outbound one-way two-way
Vertical datum	VERDAT	enumeratio	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26	mean low water springs mean lower low water springs mean sea level lowest low water mean low water lowest low water springs approximate mean low water springs Indian spring low water low water springs approximate lowest astronomical tide nearly lowest low water mean lower low water low water approximate mean low water approximate mean lower low water mean high water mean high water springs high water approximate mean sea level high water springs mean higher high water equinoctial spring low water lowest astronomical tide

name	alias	valueType	listedValues	listedValues
			27 28 29 30	local datum international great lakes datum 1985 mean water level lower low water large tide higher high water large tide nearly highest high water highest astronomical tide (HAT)
Virtual AIS aid to navigation type		enumeratio	1 2 3 4 5 6 7 8 9 10 11 12	north cardinal east cardinal south cardinal west cardinal port lateral starboard lateral preferred channel to port preferred channel to starboard isolated danger safe water special purpose emergency wreck marking
Visually conspicuous		boolean	1 2 3	visually conspicuous prominent not visually conspicuous
Water level effect	WATLEV	enumeratio	1 2 3 4 5 6 7	partly submerged at high water always dry always under water/submerged covers and uncovers awash subject to inundation or flooding floating