Hydrography - coast and sea (S57)

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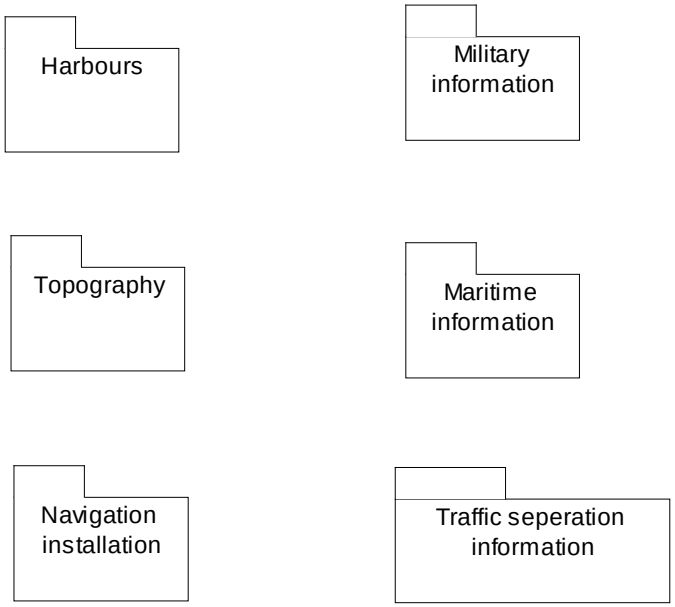
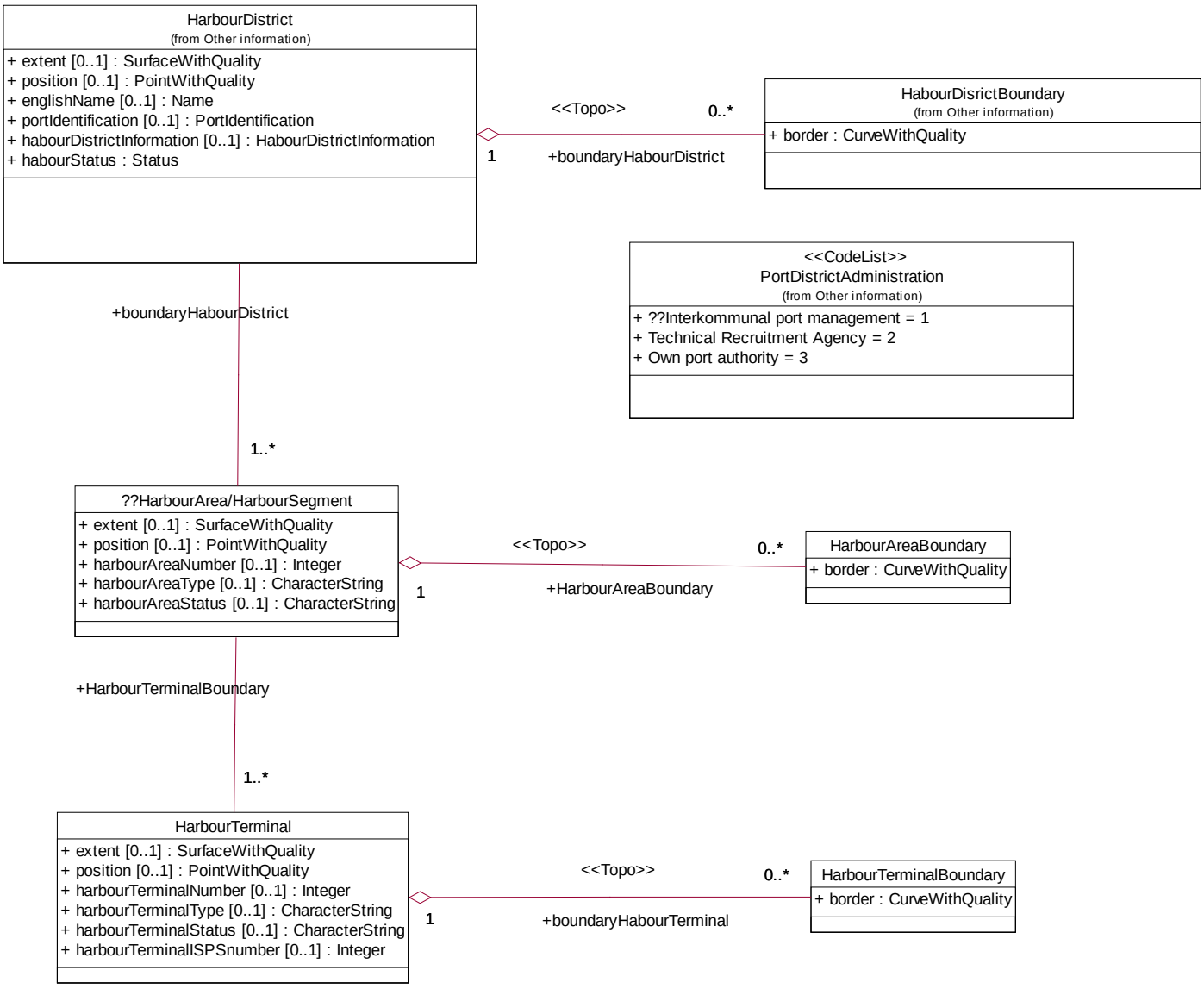
1.1 Application schema

Main



Habours


HarbourDistrict
(from Other information)
+ extent [0..1] : SurfaceWithQuality
+ position [0..1] : PointWithQuality
+ englishName [0..1] : Name
+ portIdentification [0..1] : PortIdentification
+ habourDistrictInformation [0..1] : HabourDistrictInformation
+ habourStatus : Status
<<Topo>>
0..*
1
+boundaryHabourDistrict
HabourDisrictBoundary
(from Other information)
+ border : CurveWithQuality
<<CodeList>>
PortDistrictAdministration
(from Other information)
+ ??Interkommunal port management = 1
+ Technical Recruitment Agency = 2
+ Own port authority = 3
+boundaryHabourDistrict
1..*
??HarbourArea/HarbourSegment
+ extent [0..1] : SurfaceWithQuality
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+ harbourAreaNumber [0..1] : Integer
+ harbourAreaType [0..1] : CharacterString
+ harbourAreaStatus [0..1] : CharacterString
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0..*
1
+HarbourAreaBoundary
HarbourAreaBoundary
+ border : CurveWithQuality
+HarbourTerminalBoundary
1..*
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+boundaryHabourTerminal
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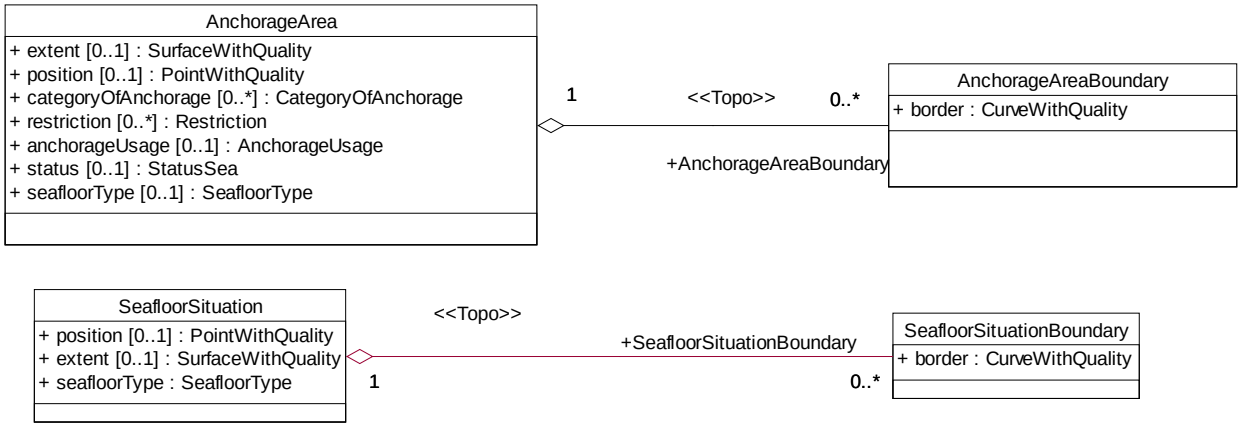
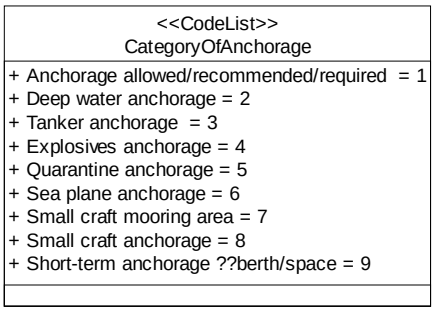
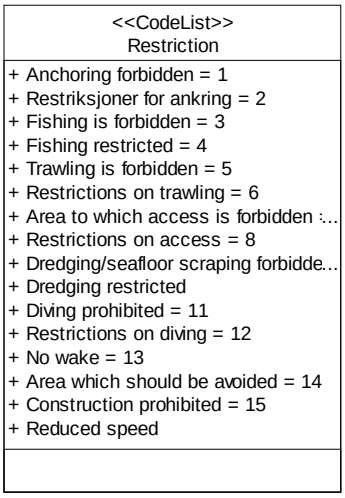
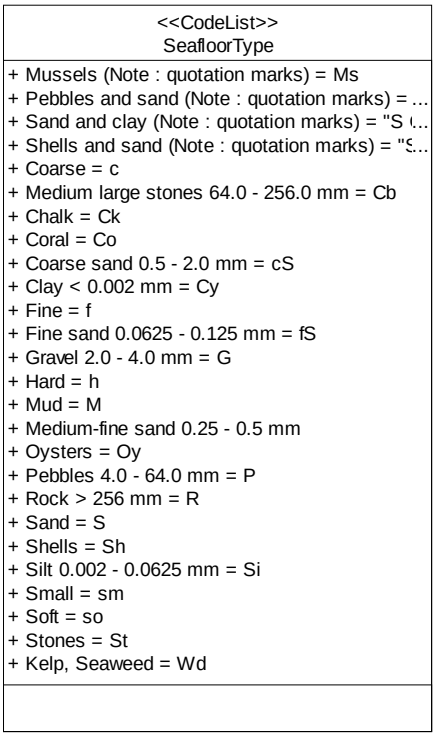
Maritime information

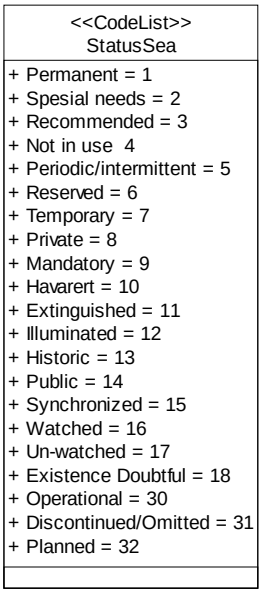
Anchorage area and seafloor situation

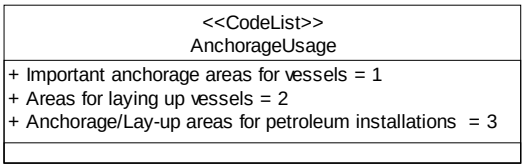






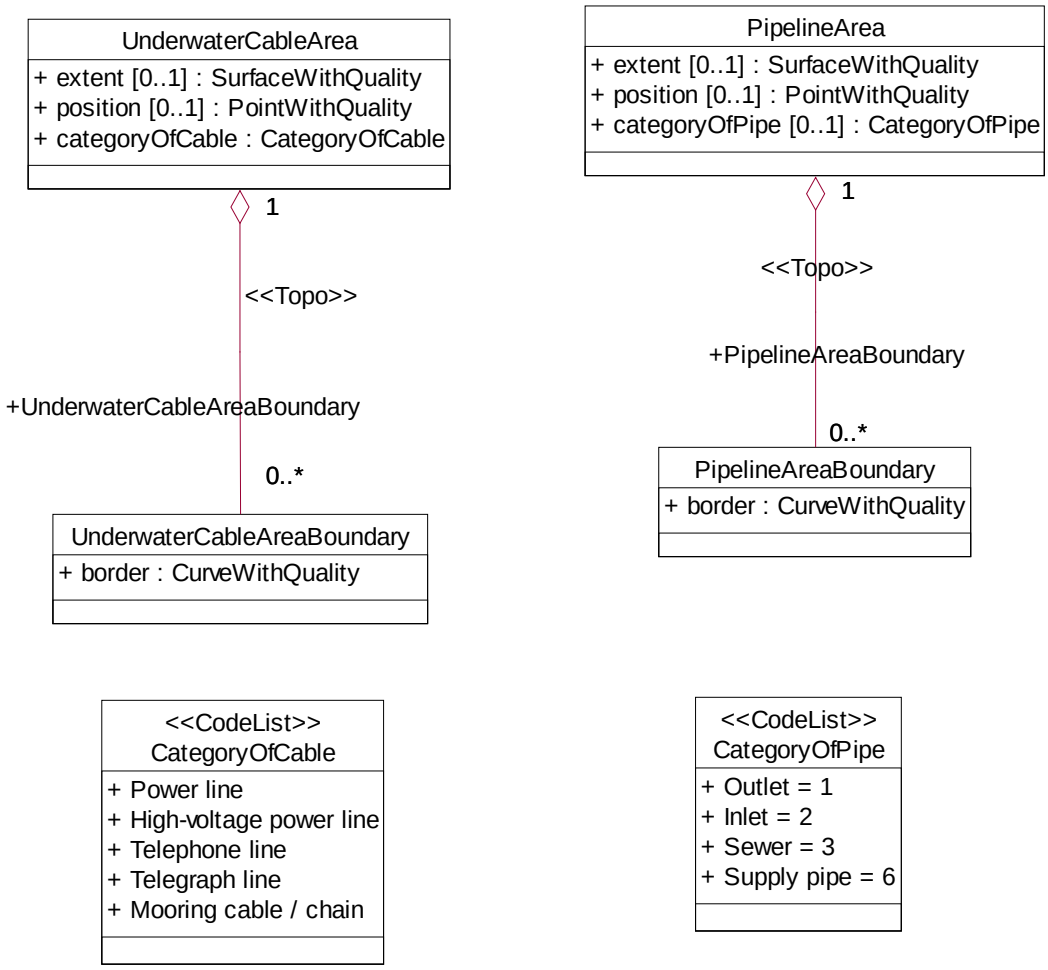






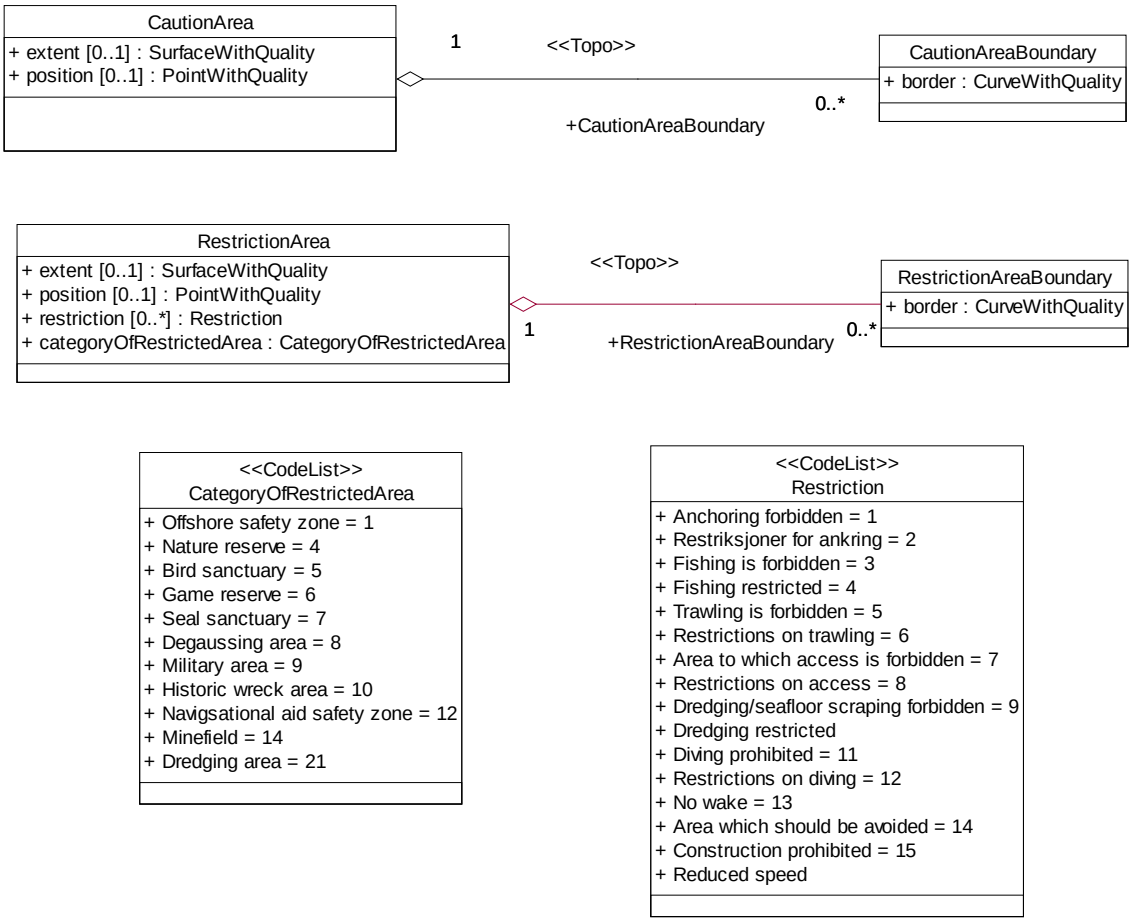
Maritime information

Cables and pipeline



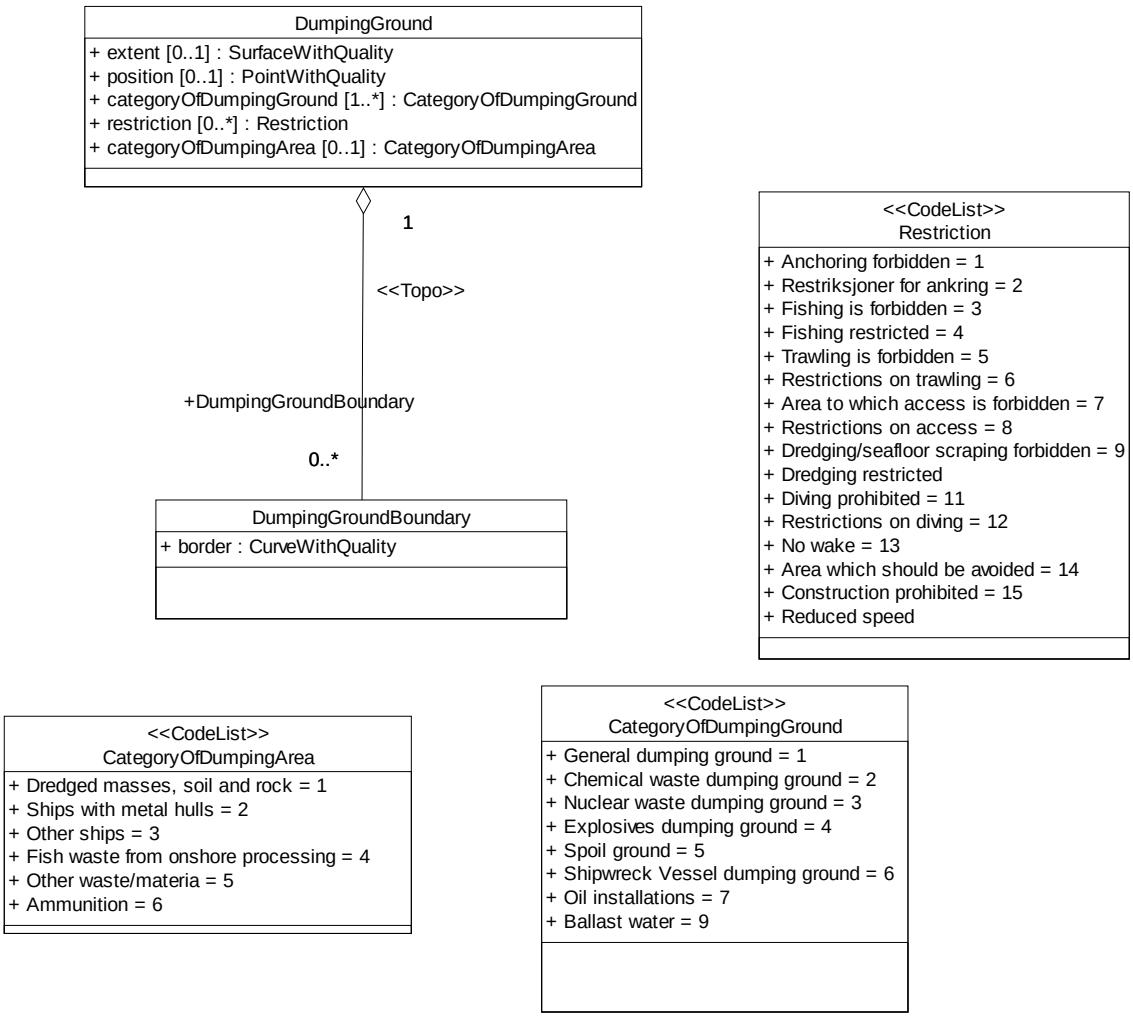
Maritime information

Caution- and restriction area



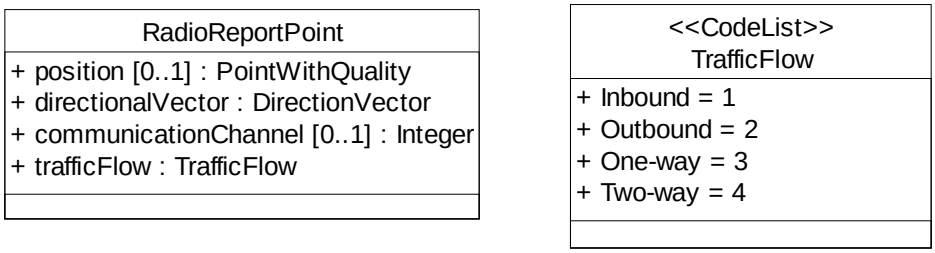
Maritime information

Dumping area



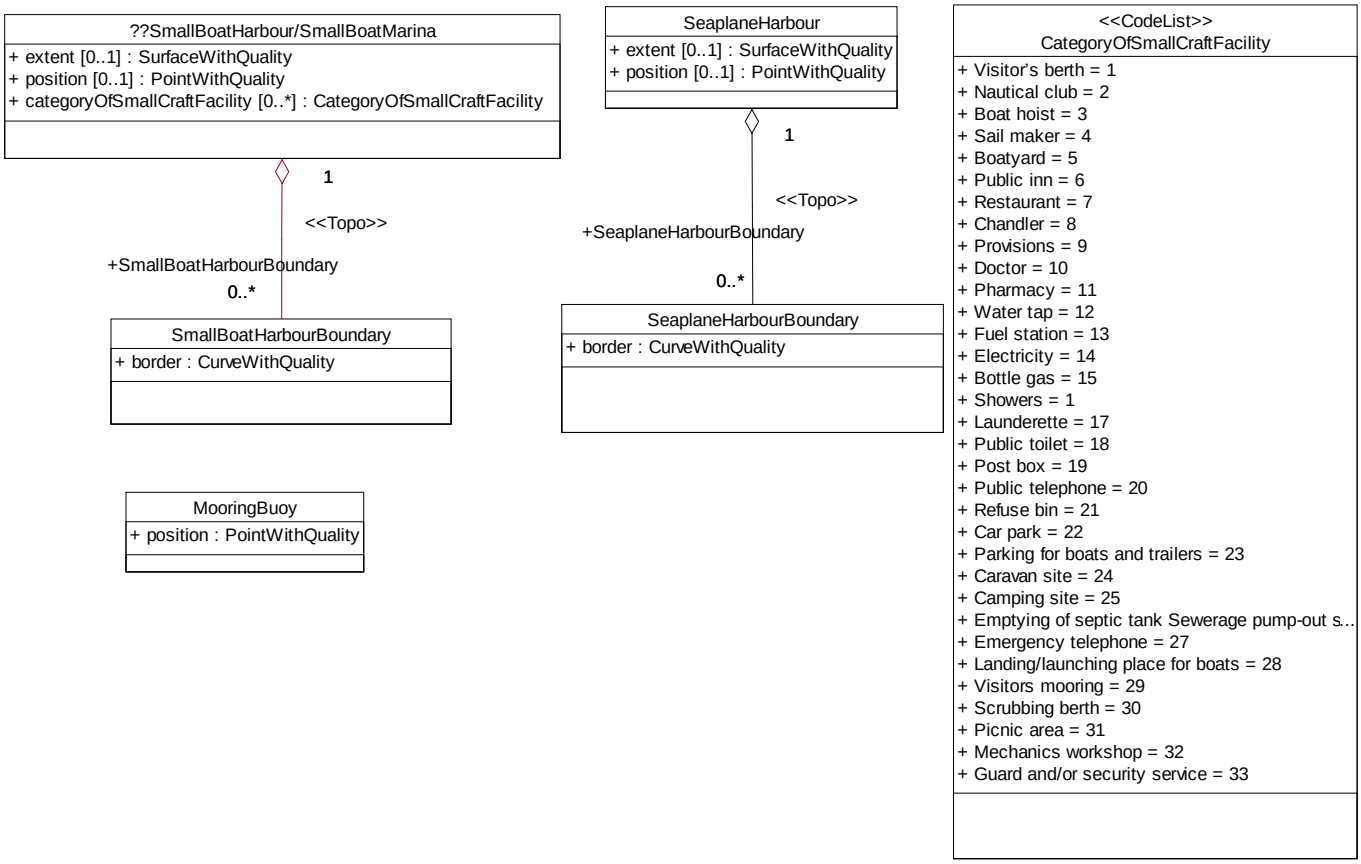
Maritime information

Radio report point



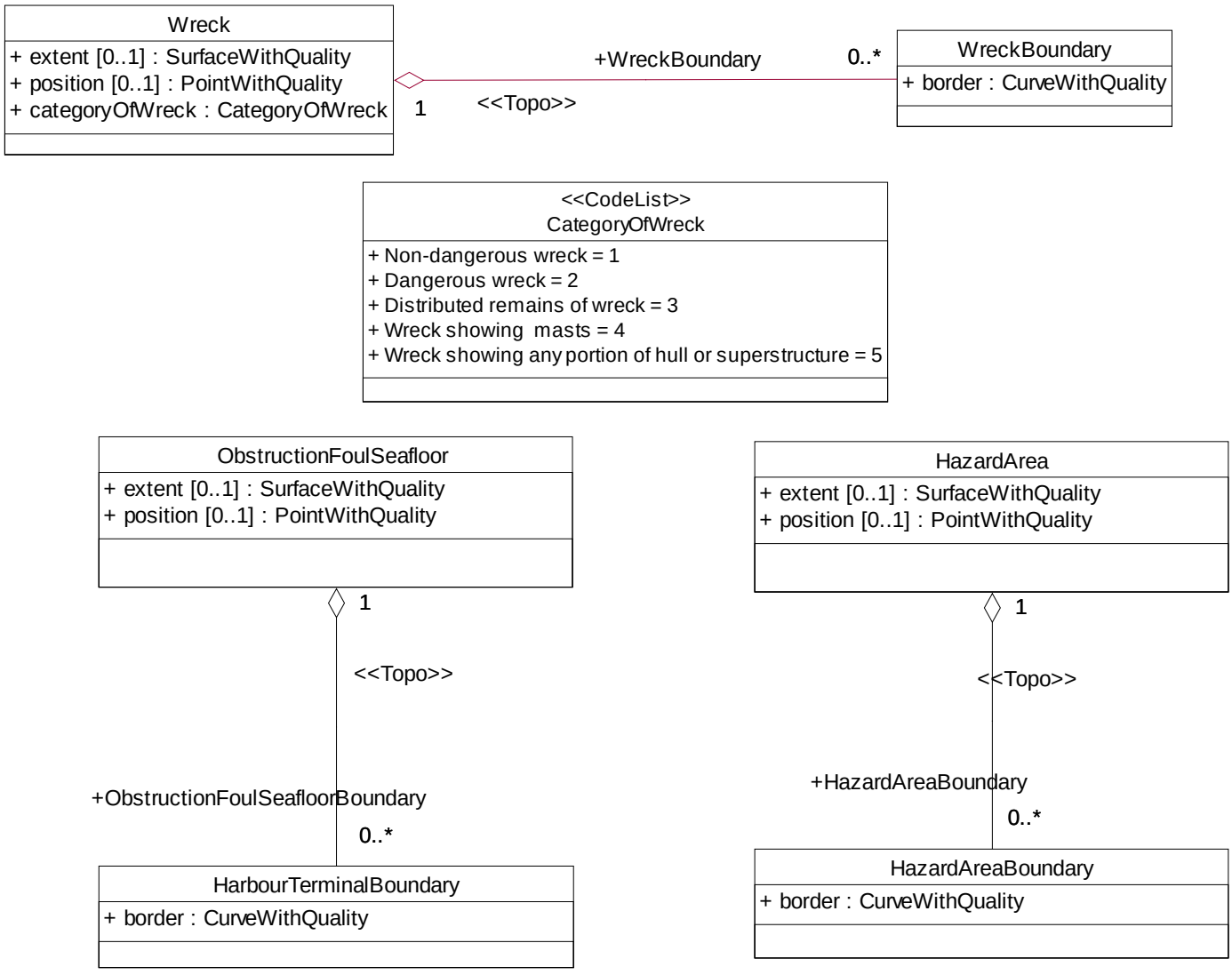
Maritime information

Various maritime information

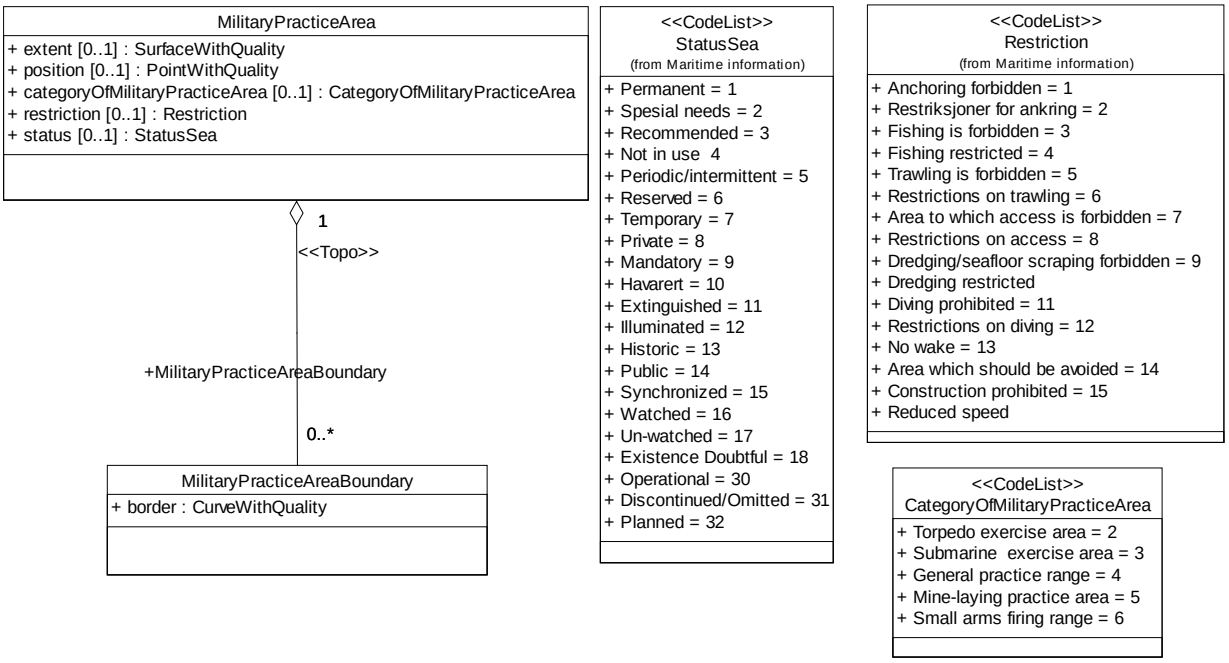


Maritime information

Wreck and obstructions

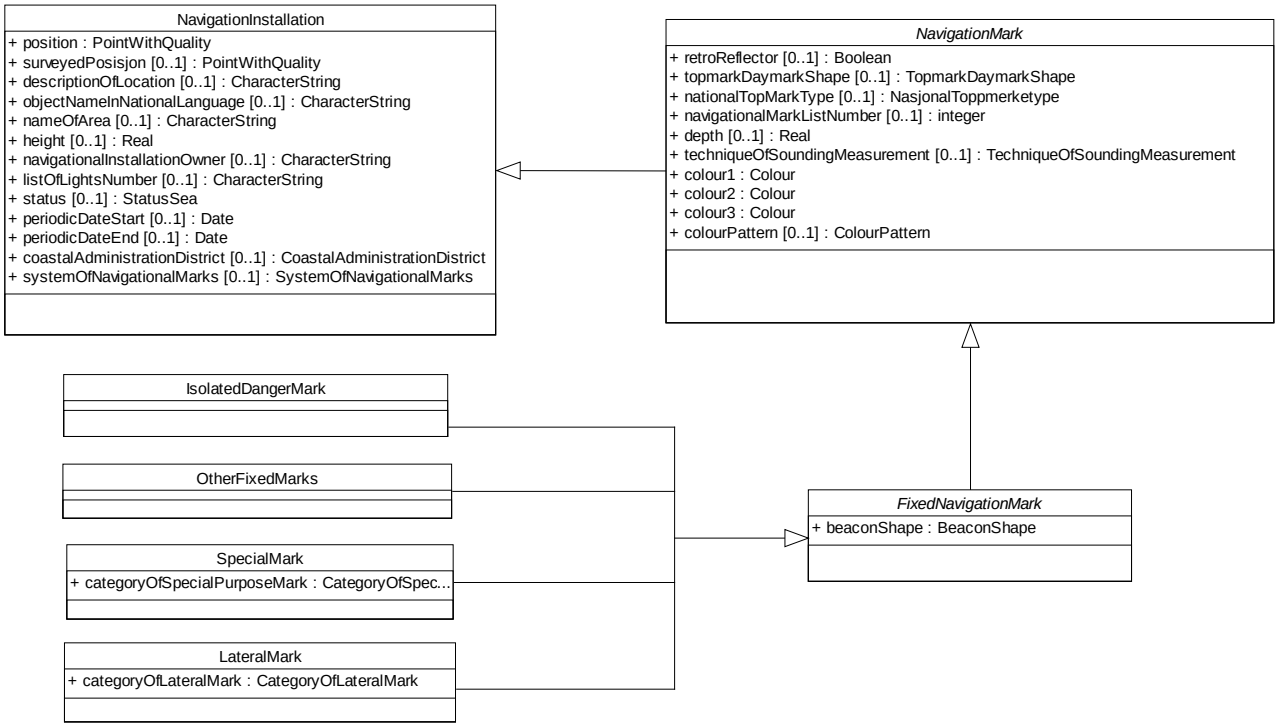


Military information



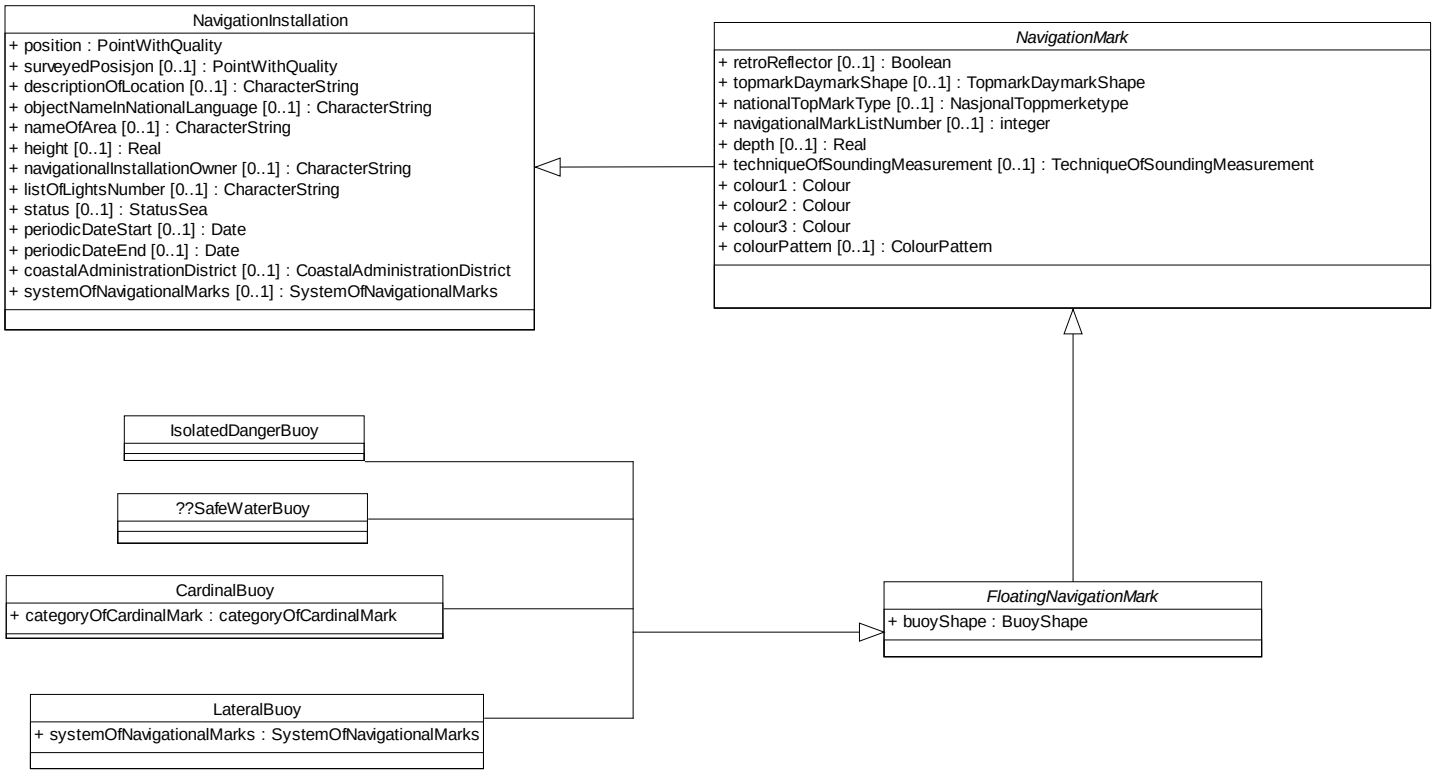
Navigation installation

Fixed navigation marks



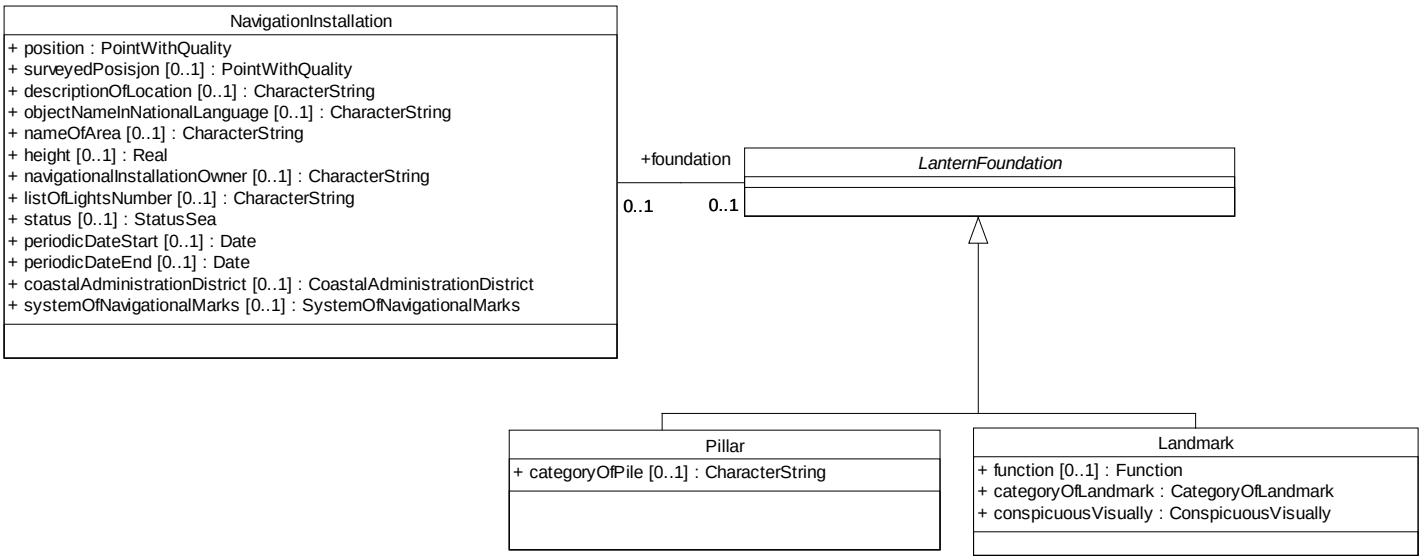
Navigation installation

Floating navigation marks



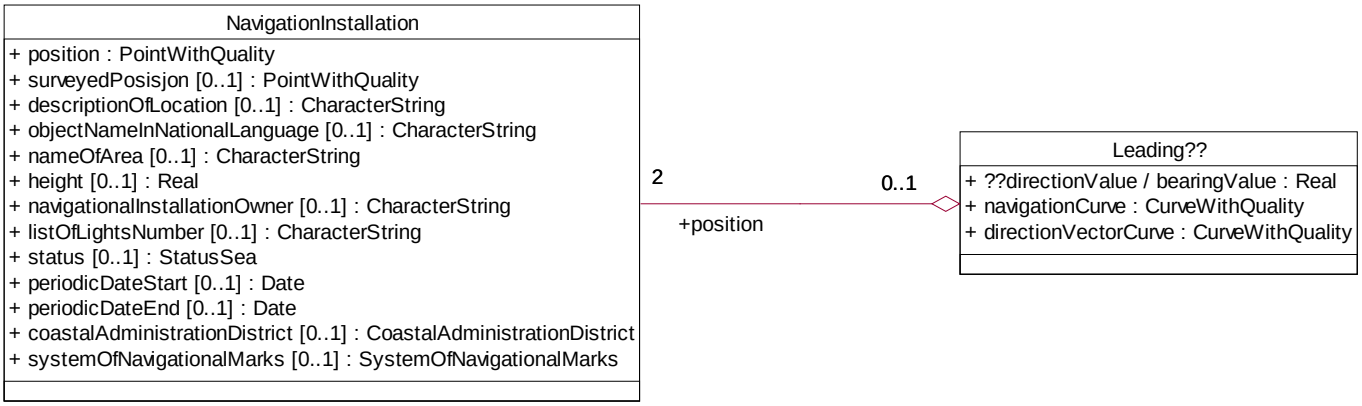
Navigation installation

Latern foundation



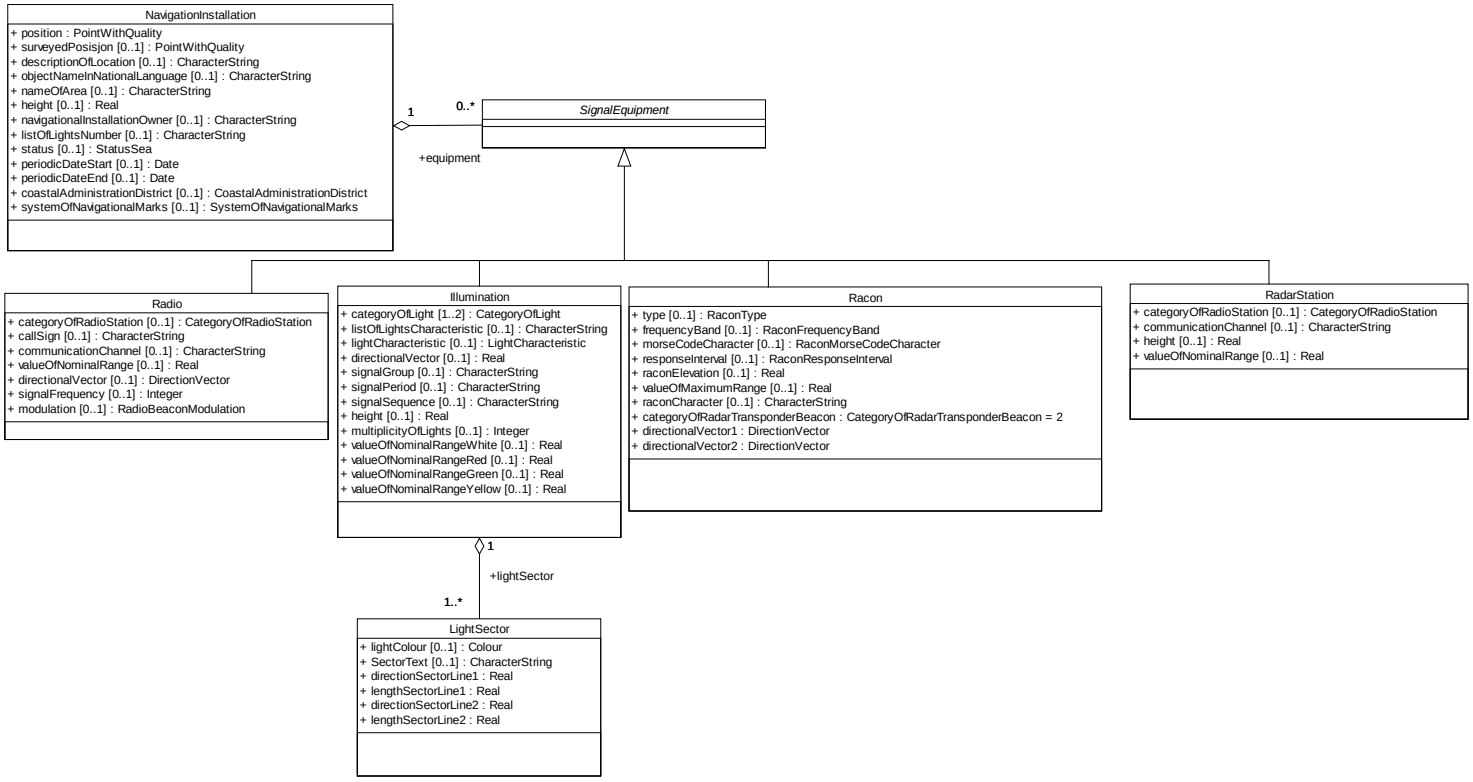
Navigation installation

Leading



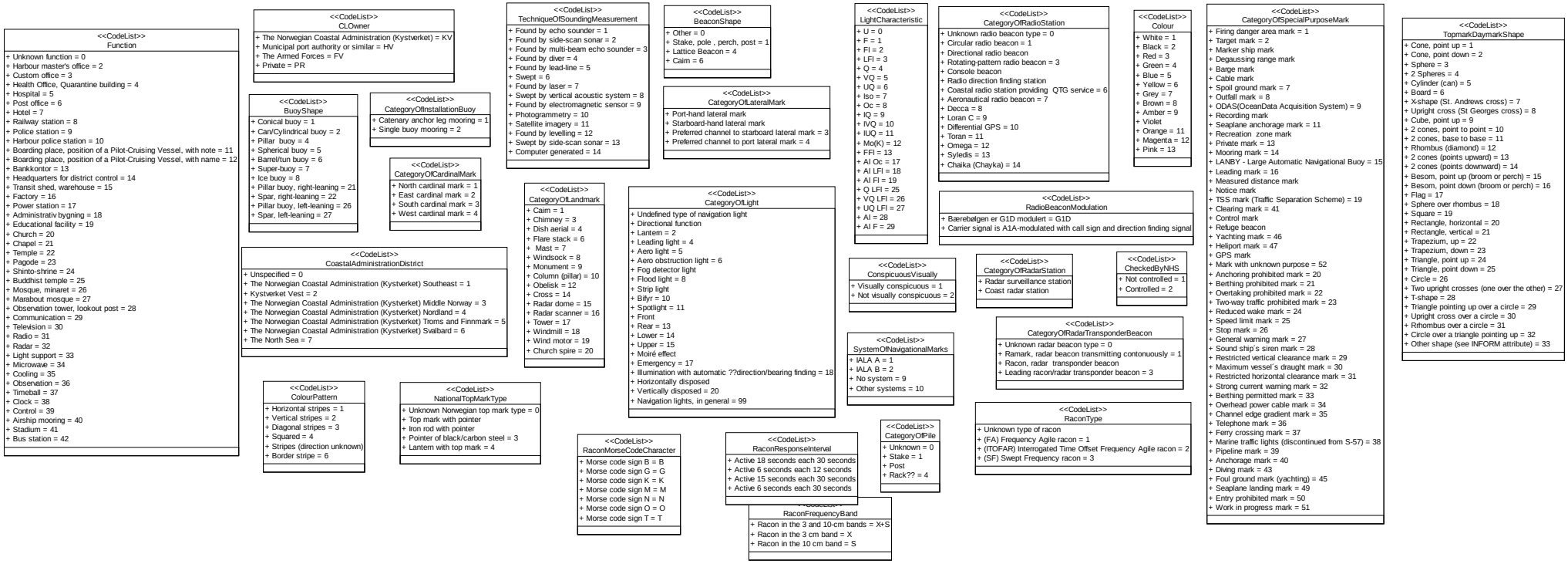
Navigation installation

Signal equipment



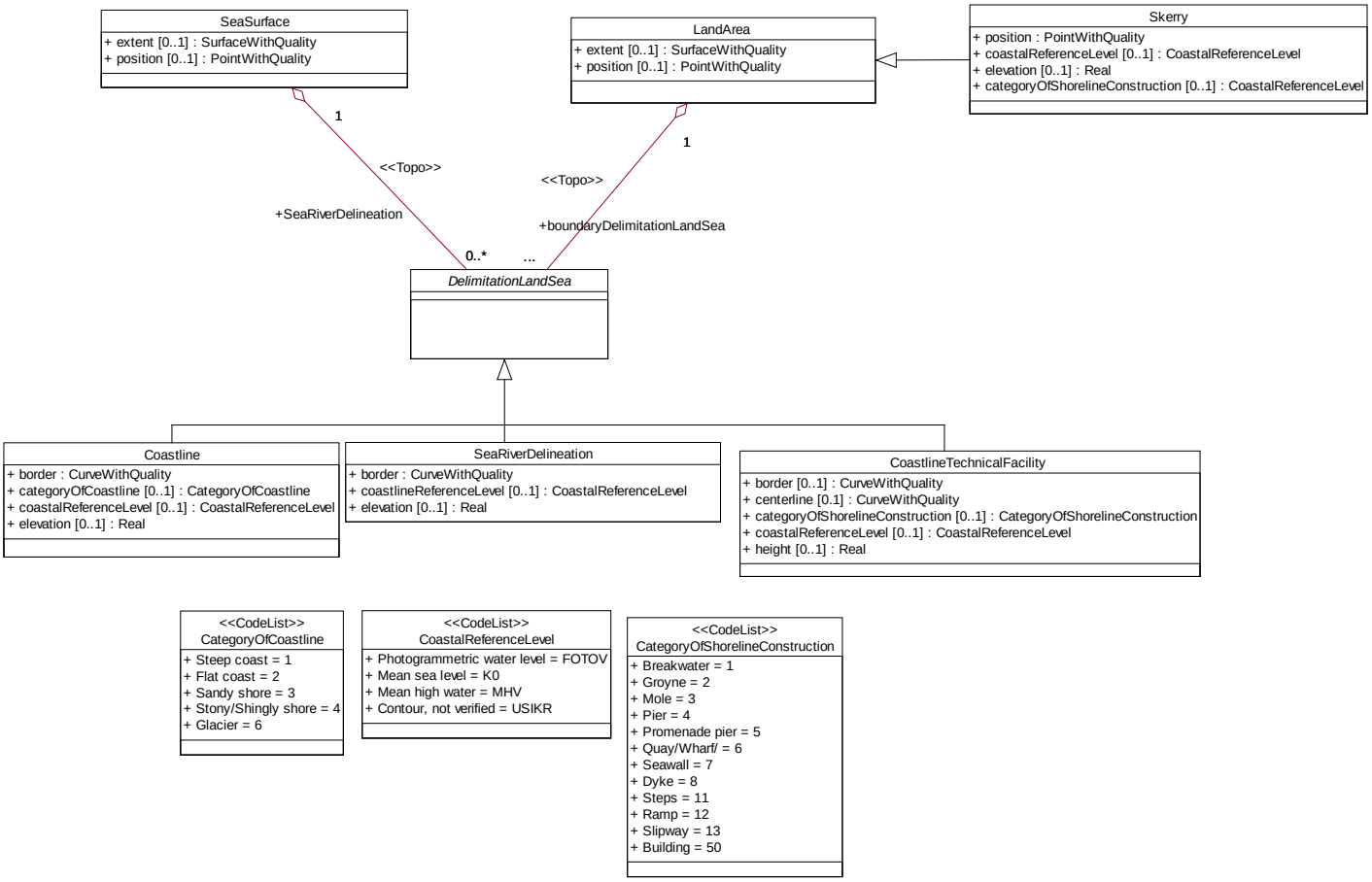
Navigation installation

CodeLists



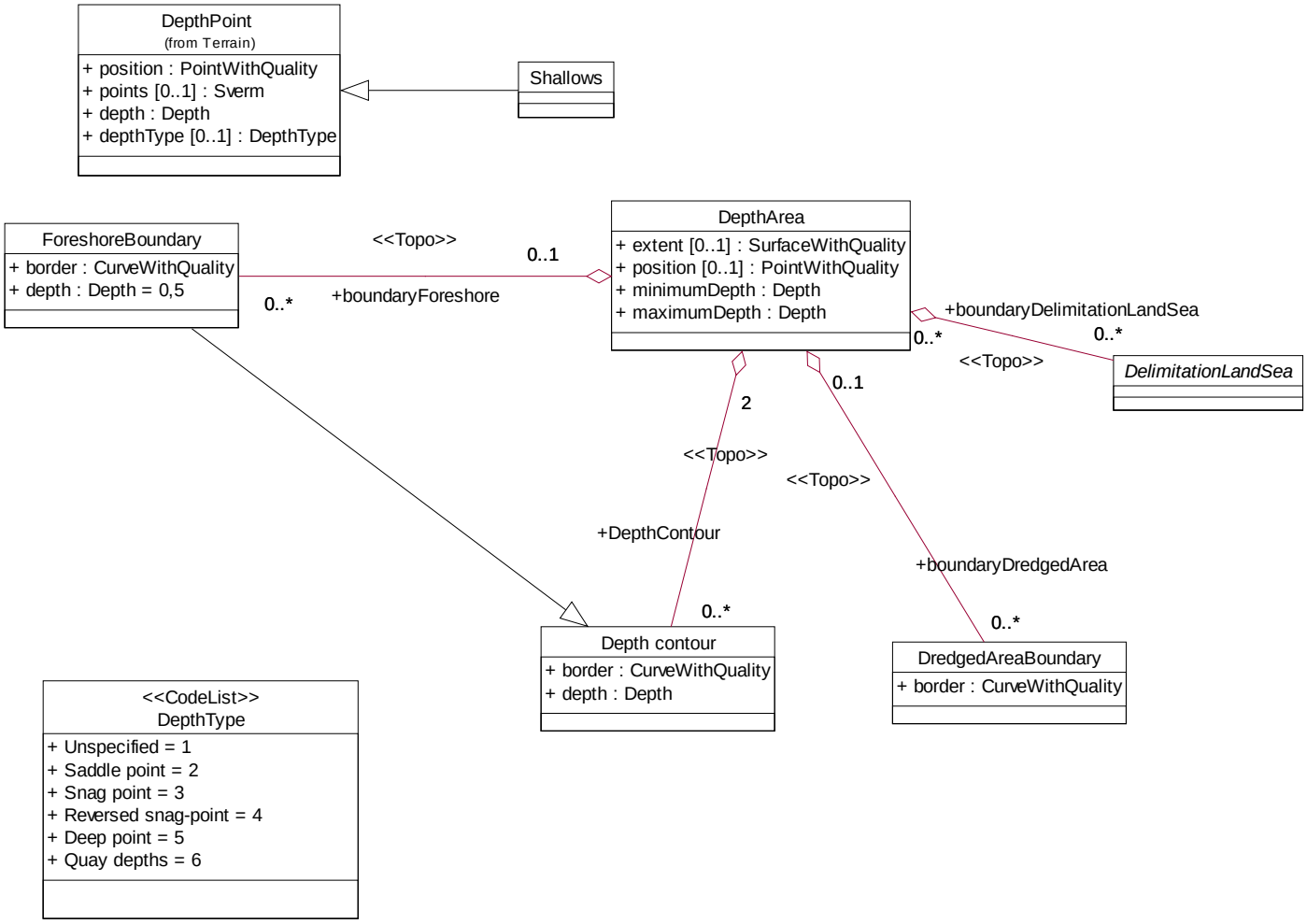
Topography

Delimination land/sea



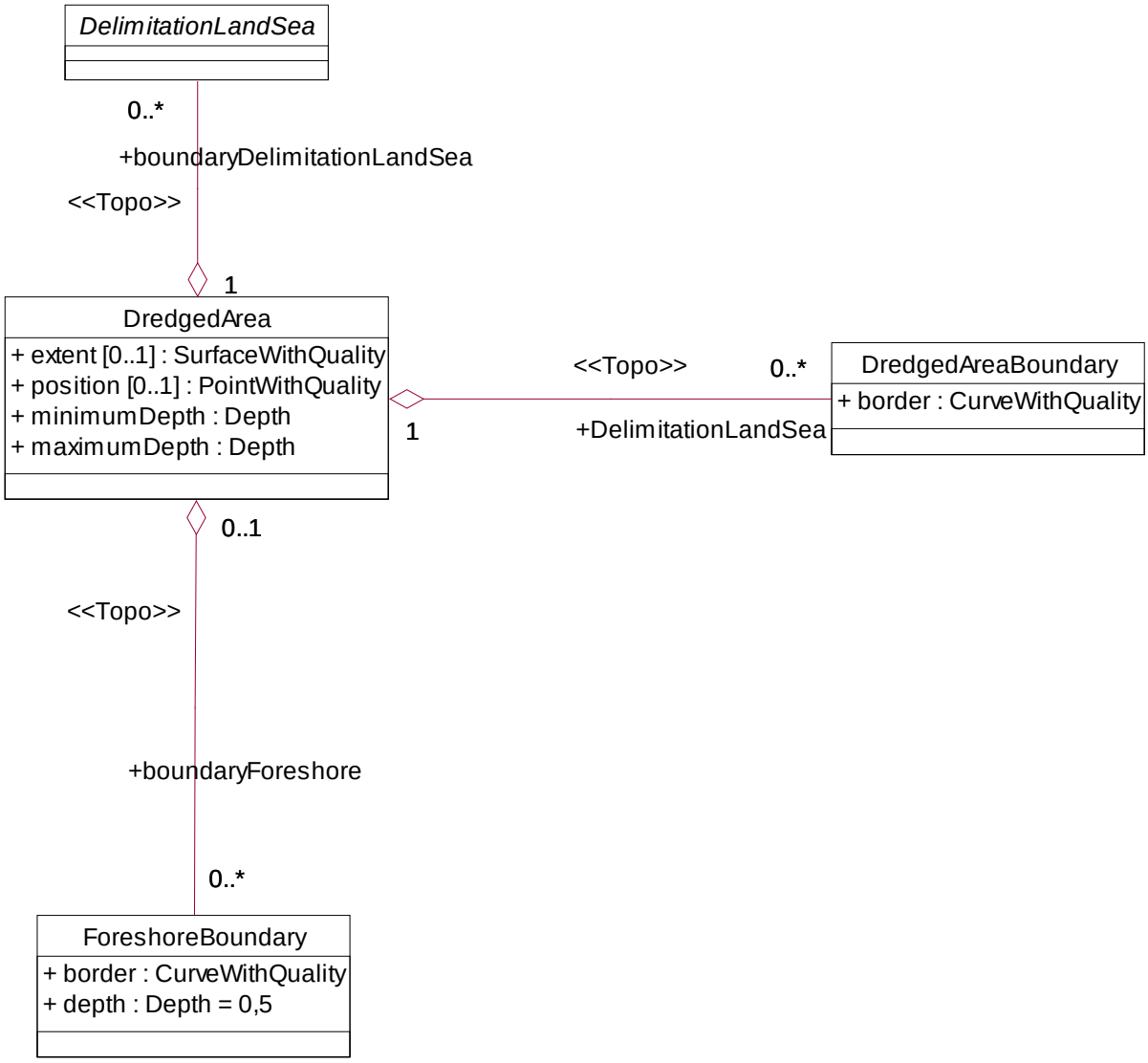
Topography

Depth area



Topography

Dredged area

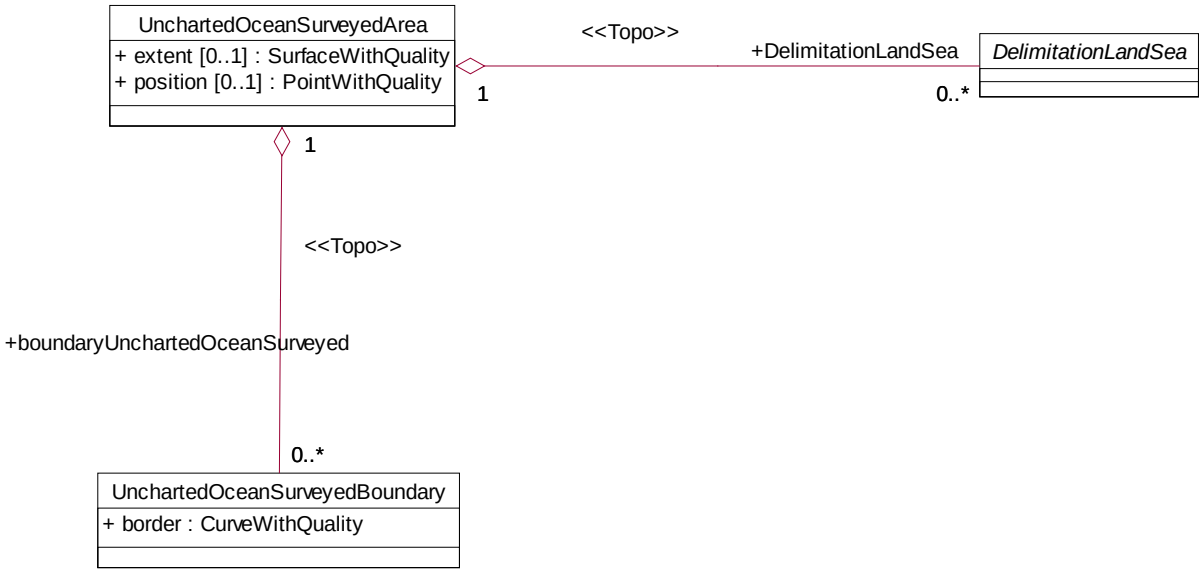


Topography

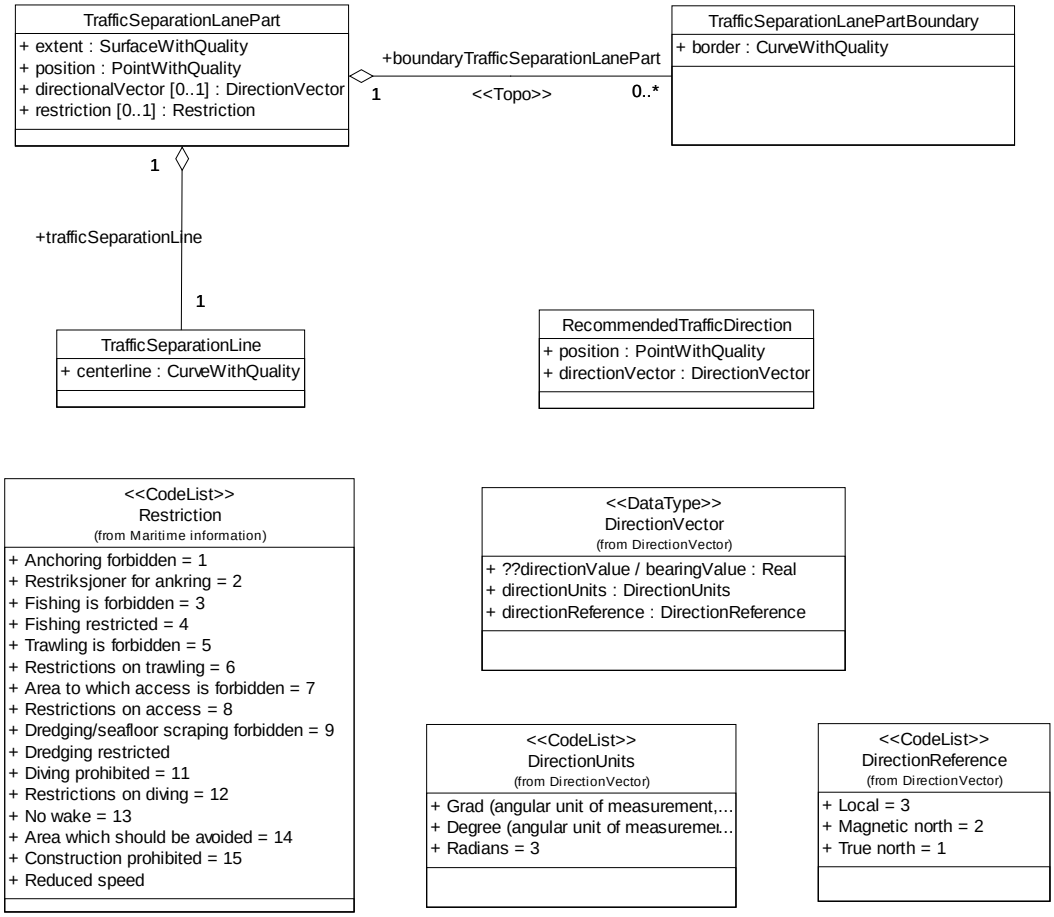
Foreshore

Topography

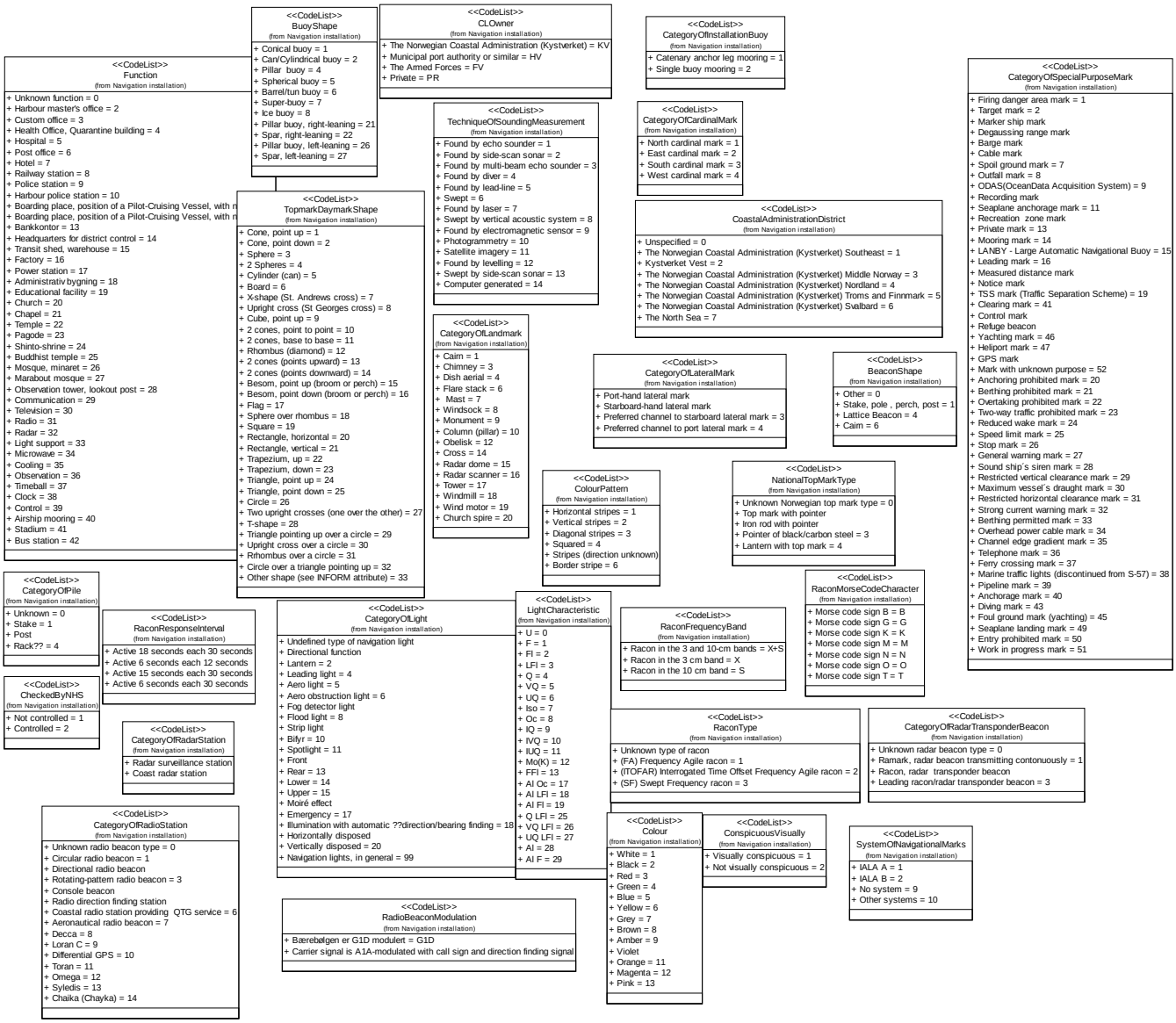
Uncharted ocean serceyed area



Traffic separation information



CodeLists


<<CodeList>>
Function
(from Navigation installation)
+ Unknown function = 0
+ Harbour master's office = 2
+ Custom office = 3
+ Health Office, Quarantine building = 4
+ Hospital = 5
+ Post office = 6
+ Hotel = 7
+ Railway station = 8
+ Police station = 9
+ Harbour police station = 10
+ Boarding place, position of a Pilot-Cruising Vessel, with r
+ Boarding place, position of a Pilot-Cruising Vessel, with r
+ Bankkontor = 13
+ Headquarters for district control = 14
+ Transit shed, warehouse = 15
+ Factory = 16
+ Power station = 17
+ Administrativ bygning = 18
+ Educational facility = 19
+ Church = 20
+ Chapel = 21
+ Temple = 22
+ Pagode = 23
+ Shinto-shrine = 24
+ Buddhist temple = 25
+ Mosque, minaret = 26
+ Marabout mosque = 27
+ Observation tower, lookout post = 28
+ Communication = 29
+ Television = 30
+ Radio = 31
+ Radar = 32
+ Light support = 33
+ Microwave = 34
+ Cooling = 35
+ Observation = 36
+ Timeball = 37
+ Clock = 38
+ Control = 39
+ Airship mooring = 40
+ Stadium = 41
+ Bus station = 42
<<CodeList>>
BuoyShape
(from Navigation installation)
+ Conical buoy = 1
+ Can/Cylindrical buoy = 2
+ Pillar buoy = 4
+ Spherical buoy = 5
+ Barrel/tun buoy = 6
+ Super-buoy = 7
+ Ice buoy = 8
+ Pillar buoy, right-leaning = 21
+ Spar, right-leaning = 22
+ Pillar buoy, left-leaning = 26
+ Spar, left-leaning = 27
<<CodeList>>
CLOwner
(from Navigation installation)
+ The Norwegian Coastal Administration (Kystverket) = KV
+ Municipal port authority or similar = HV
+ The Armed Forces = FV
+ Private = PR
<<CodeList>>
CategoryOfInstallationBuoy
(from Navigation installation)
+ Catenary anchor leg mooring = 1
+ Single buoy mooring = 2
<<CodeList>>
CategoryOfSpecialPurposeMark
(from Navigation installation)
+ Firing danger area mark = 1
+ Target mark = 2
+ Marker ship mark
+ Degaussing range mark
+ Barge mark
+ Cable mark
+ Spoil ground mark = 7
+ Outfall mark = 8
+ ODAS(OceanData Acquisition System) = 9
+ Recording mark
+ Seaplane anchorage mark = 11
+ Recreation zone mark
+ Private mark = 13
+ Mooring mark = 14
+ LANBY - Large Automatic Navigational Buoy = 15
+ Leading mark = 16
+ Measured distance mark
+ Notice mark
+ TSS mark (Traffic Separation Scheme) = 19
+ Clearing mark = 41
+ Control mark
+ Refuge beacon
+ Yachting mark = 46
+ Heliport mark = 47
+ GPS mark
+ Mark with unknown purpose = 52
+ Anchoring prohibited mark = 20
+ Berthing prohibited mark = 21
+ Overtaking prohibited mark = 22
+ Two-way traffic prohibited mark = 23
+ Reduced wake mark = 24
+ Speed limit mark = 25
+ Stop mark = 26
+ General warning mark = 27
+ Sound ship´s siren mark = 28
+ Restricted vertical clearance mark = 29
+ Maximum vessel´s draught mark = 30
+ Restricted horizontal clearance mark = 31
+ Strong current warning mark = 32
+ Berthing permitted mark = 33
+ Overhead power cable mark = 34
+ Channel edge gradient mark = 35
+ Telephone mark = 36
+ Ferry crossing mark = 37
+ Marine traffic lights (discontinued from S-57) = 38
+ Pipeline mark = 39
+ Anchorage mark = 40
+ Diving mark = 43
+ Foul ground mark (yachting) = 45
+ Seaplane landing mark = 49
+ Entry prohibited mark = 50
+ Work in progress mark = 51
<<CodeList>>
TechniqueOfSoundingMeasurement
(from Navigation installation)
+ Found by echo sounder = 1
+ Found by side-scan sonar = 2
+ Found by multi-beam echo sounder = 3
+ Found by diver = 4
+ Found by lead-line = 5
+ Swept = 6
+ Found by laser = 7
+ Swept by vertical acoustic system = 8
+ Found by electromagnetic sensor = 9
+ Photogrammetry = 10
+ Satellite imagery = 11
+ Found by levelling = 12
+ Swept by side-scan sonar = 13
+ Computer generated = 14
<<CodeList>>
CategoryOfCardinalMark
(from Navigation installation)
+ North cardinal mark = 1
+ East cardinal mark = 2
+ South cardinal mark = 3
+ West cardinal mark = 4
<<CodeList>>
CoastalAdministrationDistrict
(from Navigation installation)
+ Unspecified = 0
+ The Norwegian Coastal Administration (Kystverket) Southeast = 1
+ Kystverket Vest = 2
+ The Norwegian Coastal Administration (Kystverket) Middle Norway = 3
+ The Norwegian Coastal Administration (Kystverket) Nordland = 4
+ The Norwegian Coastal Administration (Kystverket) Troms and Finnmark = 5
+ The Norwegian Coastal Administration (Kystverket) Svalbard = 6
+ The North Sea = 7
<<CodeList>>
TopmarkDaymarkShape
(from Navigation installation)
+ Cone, point up = 1
+ Cone, point down = 2
+ Sphere = 3
+ 2 Spheres = 4
+ Cylinder (can) = 5
+ Board = 6
+ X-shape (St. Andrews cross) = 7
+ Upright cross (St Georges cross) = 8
+ Cube, point up = 9
+ 2 cones, point to point = 10
+ 2 cones, base to base = 11
+ Rhombus (diamond) = 12
+ 2 cones (points upward) = 13
+ 2 cones (points downward) = 14
+ Besom, point up (broom or perch) = 15
+ Besom, point down (broom or perch) = 16
+ Flag = 17
+ Sphere over rhombus = 18
+ Square = 19
+ Rectangle, horizontal = 20
+ Rectangle, vertical = 21
+ Trapezium, up = 22
+ Trapezium, down = 23
+ Triangle, point up = 24
+ Triangle, point down = 25
+ Circle = 26
+ Two upright crosses (one over the other) = 27
+ T-shape = 28
+ Triangle pointing up over a circle = 29
+ Upright cross over a circle = 30
+ Rhombus over a circle = 31
+ Circle over a triangle pointing up = 32
+ Other shape (see INFORM attribute) = 33
<<CodeList>>
CategoryOfLandmark
(from Navigation installation)
+ Cairn = 1
+ Chimney = 3
+ Dish aerial = 4
+ Flare stack = 6
+ Mast = 7
+ Windsock = 8
+ Monument = 9
+ Column (pillar) = 10
+ Obelisk = 12
+ Cross = 14
+ Radar dome = 15
+ Radar scanner = 16
+ Tower = 17
+ Windmill = 18
+ Wind motor = 19
+ Church spire = 20
<<CodeList>>
CategoryOfLateralMark
(from Navigation installation)
+ Port-hand lateral mark
+ Starboard-hand lateral mark
+ Preferred channel to starboard lateral mark = 3
+ Preferred channel to port lateral mark = 4
<<CodeList>>
BeaconShape
(from Navigation installation)
+ Other = 0
+ Stake, pole , perch, post = 1
+ Lattice Beacon = 4
+ Cairn = 6
<<CodeList>>
ColourPattern
(from Navigation installation)
+ Horizontal stripes = 1
+ Vertical stripes = 2
+ Diagonal stripes = 3
+ Squared = 4
+ Stripes (direction unknown)
+ Border stripe = 6
<<CodeList>>
NationalTopMarkType
(from Navigation installation)
+ Unknown Norwegian top mark type = 0
+ Top mark with pointer
+ Iron rod with pointer
+ Pointer of black/carbon steel = 3
+ Lantern with top mark = 4
<<CodeList>>
CategoryOfPile
(from Navigation installation)
+ Unknown = 0
+ Stake = 1
+ Post
+ Rack?? = 4
<<CodeList>>
RaconResponseInterval
(from Navigation installation)
+ Active 18 seconds each 30 seconds
+ Active 6 seconds each 12 seconds
+ Active 15 seconds each 30 seconds
+ Active 6 seconds each 30 seconds
<<CodeList>>
CategoryOfLight
(from Navigation installation)
+ Undefined type of navigation light
+ Directional function
+ Lantern = 2
+ Leading light = 4
+ Aero light = 5
+ Aero obstruction light = 6
+ Fog detector light
+ Flood light = 8
+ Strip light
+ Bifyr = 10
+ Spotlight = 11
+ Front
+ Rear = 13
+ Lower = 14
+ Upper = 15
+ Moiré effect
+ Emergency = 17
+ Illumination with automatic ??direction/bearing finding = 18
+ Horizontally disposed
+ Vertically disposed = 20
+ Navigation lights, in general = 99
<<CodeList>>
LightCharacteristic
(from Navigation installation)
+ U = 0
+ F = 1
+ Fl = 2
+ LFl = 3
+ Q = 4
+ VQ = 5
+ UQ = 6
+ Iso = 7
+ Oc = 8
+ IQ = 9
+ IVQ = 10
+ IUQ = 11
+ Mo(K) = 12
+ FFl = 13
+ Al Oc = 17
+ Al LFl = 18
+ Al Fl = 19
+ Q LFl = 25
+ VQ LFl = 26
+ UQ LFl = 27
+ Al = 28
+ Al F = 29
<<CodeList>>
RaconFrequencyBand
(from Navigation installation)
+ Racon in the 3 and 10-cm bands = X+S
+ Racon in the 3 cm band = X
+ Racon in the 10 cm band = S
<<CodeList>>
RaconMorseCodeCharacter
(from Navigation installation)
+ Morse code sign B = B
+ Morse code sign G = G
+ Morse code sign K = K
+ Morse code sign M = M
+ Morse code sign N = N
+ Morse code sign O = O
+ Morse code sign T = T
<<CodeList>>
CheckedByNHS
(from Navigation installation)
+ Not controlled = 1
+ Controlled = 2
<<CodeList>>
CategoryOfRadarStation
(from Navigation installation)
+ Radar surveillance station
+ Coast radar station
<<CodeList>>
RaconType
(from Navigation installation)
+ Unknown type of racon
+ (FA) Frequency Agile racon = 1
+ (ITOFAR) Interrogated Time Offset Frequency Agile racon = 2
+ (SF) Swept Frequency racon = 3
<<CodeList>>
CategoryOfRadarTransponderBeacon
(from Navigation installation)
+ Unknown radar beacon type = 0
+ Ramark, radar beacon transmitting contonuously = 1
+ Racon, radar transponder beacon
+ Leading racon/radar transponder beacon = 3
<<CodeList>>
CategoryOfRadioStation
(from Navigation installation)
+ Unknown radio beacon type = 0
+ Circular radio beacon = 1
+ Directional radio beacon
+ Rotating-pattern radio beacon = 3
+ Console beacon
+ Radio direction finding station
+ Coastal radio station providing QTG service = 6
+ Aeronautical radio beacon = 7
+ Decca = 8
+ Loran C = 9
+ Differential GPS = 10
+ Toran = 11
+ Omega = 12
+ Syledis = 13
+ Chaika (Chayka) = 14
<<CodeList>>
Colour
(from Navigation installation)
+ White = 1
+ Black = 2
+ Red = 3
+ Green = 4
+ Blue = 5
+ Yellow = 6
+ Grey = 7
+ Brown = 8
+ Amber = 9
+ Violet
+ Orange = 11
+ Magenta = 12
+ Pink = 13
<<CodeList>>
ConspicuousVisually
(from Navigation installation)
+ Visually conspicuous = 1
+ Not visually conspicuous = 2
<<CodeList>>
SystemOfNavigationalMarks
(from Navigation installation)
+ IALA A = 1
+ IALA B = 2
+ No system = 9
+ Other systems = 10
<<CodeList>>
RadioBeaconModulation
(from Navigation installation)
+ Bærebølgen er G1D modulert = G1D
+ Carrier signal is A1A-modulated with call sign and direction finding signal

1.2 Description

Habours

1.2.1.1 ??HarbourArea/HarbourSegment

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class ??HarbourArea/ HarbourSegment	a greater area dominated by harbour activity Note: Comprising sea area and land area, manoeuvring area at sea, staging area for goods and passengers on land, harbour terminals, shipyards, guest harbours, ??layover harbours, etc.				
1.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
1.2	position	location where the object exists	0	1	PointWithQuality	
1.3	harbourAreaNumber	consecutive numbering of habour districts/areas. Note: not S-57	0	1	Integer	
1.4	harbourAreaType	information about what type of ship traffic dominates in this harbour district/area Note: not S-57	0	1	CharacterString	
1.5	harbourAreaStatus	information about the importance of this harbour district/area Note: not S-57 STATUS	0	1	CharacterString	
1.6	Role (unnamed) HarbourTerminal		1	N	HarbourTerminal	
1.7	Role HarbourAreaBoundary	delimitation	0	N	HarbourAreaBoundary	Aggregration
1.8	Role boundaryHabour District		1	1	HarbourDistrict	

1.2.1.2 HarbourTerminal

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class HarbourTerminal	area for loading and unloading goods and/or passengers Note: This includes terminals for passengers and goods, harbour terminals for industrial centres, harbour terminals for fishing boats,				

		etc. One harbour terminal is a self-contained unit which functions independently of other adjacent terminals. Multiple adjacent quays which are used for similar purposes and which are under joint administration will be included in one harbour terminal.				
2.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
2.2	position	location where the object exists	0	1	PointWithQuality	
2.3	harbourTerminalNumber	consecutive numbering of harbour terminals. Note: not S-57	0	1	Integer	
2.4	harbourTerminalType	a statement of which type of shipping is predominant at the harbour terminal. For example: Goods, passengers, fishing, etc. Note: not S-57 CATHAF for HRBFAC	0	1	CharacterString	
2.5	harbourTerminalStatus	the importance of the harbour terminal. Note: not S-57 STATUS	0	1	CharacterString	
2.6	harbourTerminalISPSnumber	the harbour terminalXzXs ISPS (The International Ship and Port Facility Security Code) code number. Note: not S-57	0	1	Integer	
2.7	Role HarbourTerminalBoundary	delimitation	1	1	??HarbourArea/HarbourSegment	
2.8	Role boundaryHabourTerminal		0	N	HarbourTerminalBoundary	Aggregration

1.2.1.3 HarbourAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
3	Class HarbourAreaBoundary	delimitation of a greater area dominated by harbour activity				
3.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
3.2	Role (unnamed) ??HarbourArea/ HarbourSegment		1	1	??HarbourArea/HarbourSegment	

1.2.1.4 HarbourTerminalBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
4	Class HarbourTerminal Boundary	delimitation of an area for loading and unloading goods and/or passengers				
4.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
4.2	Role (unnamed) HarbourTerminal		1	1	HarbourTerminal	

1.2.1.5 Association ??HarbourArea/HarbourSegment-HarbourTerminal

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
5	Association ??HarbourArea/ HarbourSegment - HarbourTerminal					
5.1	Role (unnamed) HarbourTerminal		1	N	HarbourTerminal	
5.2	Role HarbourTerminal Boundary	delimitation	1	1	??HarbourArea/HarbourSegment	

1.2.1.6 Association <<Topo>> ??HarbourArea/HarbourSegment-HarbourAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
6	Association ??HarbourArea/ HarbourSegment - HarbourAreaBoundary					
6.1	Role HarbourAreaBoundary	delimitation	0	N	HarbourAreaBoundary	Aggregation
6.2	Role (unnamed) ??HarbourArea/ HarbourSegment		1	1	??HarbourArea/HarbourSegment	

1.2.1.7 Association <<Topo>> HarbourTerminal-HarbourTerminalBoundary

No	Name/	Description	Obligation/	Maximum	Type	Constraint

	Role name		Condition	Occurrence		
7	Association HarbourTerminal - HarbourTerminal Boundary					
7.1	Role boundaryHabour Terminal		0	N	HarbourTerminalBoundary	Aggregation
7.2	Role (unnamed) HarbourTerminal		1	1	HarbourTerminal	

1.2.1.8 Association <<Topo>> HarbourDistrict-HabourDisrictBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
8	Association HarbourDistrict-HabourDisrictBoundary					
8.1	Role boundaryHabour District		0	N	HabourDisrictBoundary	Aggregation
8.2	Role (unnamed) HarbourDistrict		1	1	HarbourDistrict	

1.2.1.9 Association HarbourDistrict-??HarbourArea/HarbourSegment

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
9	Association HarbourDistrict-??HarbourArea/ HarbourSegment					
9.1	Role (unnamed) ??HarbourArea/ HarbourSegment		1	N	??HarbourArea/HarbourSegment	
9.2	Role boundaryHabour District		1	1	HarbourDistrict	

1.2.1.10 Association HarbourDistrict-MunicipalityBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
10	Association HarbourDistrict-MunicipalityBoundary					
10.	Role		1	1	MunicipalityBo	Aggregatio

1	(unnamed) MunicipalityBoundary				undary	n
10.2	Role (unnamed) HarbourDistrict		1	1	HarbourDistrict	

Maritime information

1.2.1.11 CautionAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class CautionAreaBoundary	defined boundary of an area where mariners must exercise particular caution and where traffic flow direction may be recommended Note: Source DNL 1997				
1.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
1.2	Role (unnamed) CautionArea		1	1	CautionArea	

1.2.1.12 AnchorageArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class AnchorageArea	site for anchorage and/or laying up of ships				Subtype of <<< Tom klasse, klassen det arves fra er sannsynlig vis ikke lastet inn!! >>>
2.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
2.2	position	location where the object exists	0	1	PointWithQuality	
2.3	categoryOfAnchorage	the category of the anchorage. Note: S-57 CATACH	0	N	CategoryOfAnchorage	
2.4	restriction	limitations on traffic or use of maritime areas. Note: S-57 RESTRN	0	N	Restriction	
2.5	anchorageUsage	the category for the anchorage use as defined by the Norwegian Coastal Administration	0	1	AnchorageUsage	

2.6	status	the status of the object used for maritime objects. Note: S-57 STATUS	0	1	StatusSea	
2.7	seafloorType	the category for the materials on the seafloor used by the Norwegian Hydrographic Service. Note: Not S-57 NATSUR	0	1	SeafloorType	
2.8	Role AnchorageAreaBoundary	delimitation	0	N	AnchorageAreaBoundary	Aggregration

1.2.1.13 SeafloorSituation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
3	Class SeafloorSituation	description of seafloor conditions				
3.1	position	location where the object exists	0	1	PointWithQuality	
3.2	extent	area over which an object extends	0	1	SurfaceWithQuality	
3.3	seafloorType	the category for the materials on the seafloor used by the Norwegian Hydrographic Service. Note: Not S-57 NATSUR	1	1	SeafloorType	
3.4	Role SeafloorSituationBoundary	delimitation	0	N	SeafloorSituationBoundary	Aggregration

1.2.1.14 DumpingGround

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
4	Class DumpingGround	site for scuttling/dumping at sea				
4.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
4.2	position	location where the object exists	0	1	PointWithQuality	
4.3	categoryOfDumpingGround	the category of the dumping ground. Note: S-57 CATDPG	1	N	CategoryOfDumpingGround	
4.4	restriction	limitations on traffic or use of maritime areas. Note: S-57 RESTRN	0	N	Restriction	
4.5	categoryOfDumpingArea	information about what can be dumped in this dumping area (the categories used by the Norwegian Coastal Administration). Note: not S-57 CATDPG	0	1	CategoryOfDumpingArea	

4.6	Role DumpingGroundBoundary	delimitation	0	N	DumpingGroundBoundary	Aggregration

1.2.1.15 Fartsmil

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
5	Class Fartsmil	angitt strekning mellom to overettlinjer med kjent lengde som brukes til å bestemme fartøyets fart				
5.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	

1.2.1.16 RadioReportPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
6	Class RadioReportPoint	position where vessels must hail coastal traffic centre Note: Corresponds to RDOCAL in S-57				
6.1	position	location where the object exists	0	1	PointWithQuality	
6.2	directionalVector	line segment with length and orientation. Note: from SOSI 4.0 chapter about General Types, slightly related to S-57 ORIENT: Orientation	1	1	DirectionVector	
6.3	communicationChannel	a channel number assigned to a specific radio frequency, frequencies or frequency band Note: S-57 COMCHA	0	1	Integer	
6.4	trafficFlow	the direction of the traffic flow used for maritime objects. Note: S-57 TRAFIC (used by FAIRWY, RDOCAL and RECTRC)	1	1	TrafficFlow	

1.2.1.17 RestrictionArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
7	Class RestrictionArea	area where special restrictions apply Note: Corresponds to RESARE in S-57				
7.1	extent	area over which an object extends	0	1	SurfaceWithQuality	

7.2	position	location where the object exists	0	1	PointWithQuality	
7.3	restriction	limitations on traffic or use of maritime areas. Note: S-57 RESTRN	0	N	Restriction	
7.4	categoryOfRestrictedArea	the category of the restricted area. Note: S-57 CATREA	1	1	CategoryOfRestrictedArea	
7.5	Role RestrictionAreaBoundary	delimitation	0	N	RestrictionAreaBoundary	Aggregration

1.2.1.18 SeaplaneHarbour

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
8	Class SeaplaneHarbour	landing area for seaplanes				
8.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
8.2	position	location where the object exists	0	1	PointWithQuality	
8.3	Role SeaplaneHarbourBoundary	delimitation	0	N	SeaplaneHarbourBoundary	Aggregration

1.2.1.19 UnderwaterCableArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
9	Class UnderwaterCableArea	area with underwater cables Note: Corresponds to CBLARE in S-57				
9.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
9.2	position	location where the object exists	0	1	PointWithQuality	
9.3	categoryOfCable	the category of the cable. Note: S-57 CATCBL	1	1	CategoryOfCable	
9.4	Role UnderwaterCableAreaBoundary	delimitation	0	N	UnderwaterCableAreaBoundary	Aggregration

1.2.1.20 AnchorageAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
10	Class AnchorageAreaBoundary	boundary for area/site for anchorage and/or laying up of ships				
10.1	border	course following the transition between different real world	1	1	CurveWithQuality	

		phenomena				
10.2	Role (unnamed) AnchorageArea		1	1	AnchorageArea	

1.2.1.21 DumpingGroundBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
11	Class DumpingGroundBoundary	boundary for area/site for scuttling/dumping at sea				
11.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
11.2	Role (unnamed) DumpingGround		1	1	DumpingGround	

1.2.1.22 RestrictionAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
12	Class RestrictionAreaBoundary	boundary of area in which special restrictions on navigation apply				
12.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
12.2	Role (unnamed) RestrictionArea		1	1	RestrictionArea	

1.2.1.23 SeaplaneHarbourBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
13	Class SeaplaneHarbourBoundary	boundary of landing area for seaplanes				
13.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
13.2	Role (unnamed) SeaplaneHarbour		1	1	SeaplaneHarbour	

1.2.1.24 UnderwaterCableAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrenc	Type	Constraint

				e		
14	Class UnderwaterCableAreaBoundary	boundary of area with underwater cables				
14.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
14.2	Role (unnamed) UnderwaterCableArea		1	1	UnderwaterCableArea	

1.2.1.25 CautionArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
15	Class CautionArea	defined area where mariners must exercise particular caution and where traffic flow direction may be recommended Note: Corresponds to CTNARE in S-57				
15.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
15.2	position	location where the object exists	0	1	PointWithQuality	
15.3	Role CautionAreaBoundary	delimitation	0	N	CautionAreaBoundary	Aggregration

1.2.1.26 ??SmallBoatHarbour/SmallBoatMarina

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
16	Class ??SmallBoatHarbour/SmallBoatMarina	place with services of general interest for small boats Note: Corresponds to SMCFAC in S-57				
16.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
16.2	position	location where the object exists	0	1	PointWithQuality	
16.3	categoryOfSmallCraftFacility	the category of the small craft facility. Note: S-57 CATSCF	0	N	CategoryOfSmallCraftFacility	
16.4	Role SmallBoatHarbourBoundary	delimitation	0	N	SmallBoatHarbourBoundary	Aggregration

1.2.1.27 SmallBoatHarbourBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrenc	Type	Constraint

				e		
17	Class SmallBoatHarbourBoundary	delimitation of a place with services of general interest for small boats				
17.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
17.2	Role (unnamed) ??SmallBoatHarbour/SmallBoatMarina		1	1	??SmallBoatHarbour/SmallBoatMarina	

1.2.1.28 SeafloorSituationBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
18	Class SeafloorSituationBoundary	statement of boundary for seafloor conditions				
18.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
18.2	Role (unnamed) SeafloorSituation		1	1	SeafloorSituation	

1.2.1.29 RadioReportPointBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
19	Class RadioReportPointBoundary					

1.2.1.30 PipelineArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
20	Class PipelineArea	??representation/indication of area for pipelines Note: Corresponds to PIRARE in S-57				
20.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
20.2	position	location where the object exists	0	1	PointWithQuality	
20.3	categoryOfPipe	the category of the pipeline or pipe. Note: S-57 CATPIP	0	1	CategoryOfPipe	
20.4	Role PipelineAreaBou	areaBoundary	0	N	PipelineAreaBoundary	Aggregration

	ndary					

1.2.1.31 PipelineAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
21	Class PipelineAreaBoundary	description of border for a pipeline area				
21.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
21.2	Role (unnamed) PipelineArea		1	1	PipelineArea	

1.2.1.32 HazardArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
22	Class HazardArea	general hazard, wave breaking slope (old term for area near land where the waves break, i.e. where the force of the sea may strike against the seafloor). Note: Corresponds to OBSTRN in S-57				
22.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
22.2	position	location where the object exists	0	1	PointWithQuality	
22.3	Role HazardAreaBoundary	delimitation	0	N	HazardAreaBoundary	Aggregration

1.2.1.33 HazardAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
23	Class HazardAreaBoundary	boundary for general hazard or wave breaking slope (old term for area near land where the waves break, i.e. where the force of the sea may strike against the seafloor)				
23.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
23.	Role		1	1	HazardArea	

2	(unnamed) HazardArea					

1.2.1.34 ObstructionFoulSeafloor

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
24	Class ObstructionFoulSeafloor	area with foul seafloor Note: Not dangerous for the voyage. (Cf. INT 1 IK 31) Corresponds to OBSTRN in S-57				
24.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
24.2	position	location where the object exists	0	1	PointWithQuality	
24.3	Role ObstructionFoulSeafloorBoundary	delimitation	0	N	HarbourTerminalBoundary	Aggregration

1.2.1.35 HarbourTerminalBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
25	Class HarbourTerminalBoundary	delimitation of an area for loading and unloading goods and/or passengers				
25.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
25.2	Role (unnamed) ObstructionFoulSeafloor		1	1	ObstructionFoulSeafloor	

1.2.1.36 Wreck

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
26	Class Wreck	remains of vessel which has run aground or sunk and has been abandoned in useless condition Note: Corresponds to WRECKS in S-57				
26.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
26.2	position	location where the object exists	0	1	PointWithQuality	
26.3	categoryOfWreck	the category of the wreck. Note: S-57 CATWRK	1	1	CategoryOfWreck	
26.4	Role WreckBoundary	delimitation	0	N	WreckBoundary	Aggregration

1.2.1.37 MooringBuoy

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
27	Class MooringBuoy	buoy for mooring vessels				
27.1	position	location where the object exists	1	1	PointWithQuality	

1.2.1.38 WreckBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
28	Class WreckBoundary	delimitation of remains of vessel which has run aground or sunk and has been abandoned in useless condition				
28.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
28.2	Role (unnamed) Wreck		1	1	Wreck	

1.2.1.39 Association <<Topo>> AnchorageArea-AnchorageAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
29	Association AnchorageArea-AnchorageAreaBoundary					
29.1	Role AnchorageAreaBoundary	delimitation	0	N	AnchorageAreaBoundary	Aggregation
29.2	Role (unnamed) AnchorageArea		1	1	AnchorageArea	

1.2.1.40 Association <<Topo>> DumpingGround-DumpingGroundBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
30	Association DumpingGround-DumpingGroundBoundary					
30.1	Role DumpingGroundBoundary	delimitation	0	N	DumpingGroundBoundary	Aggregation

30.2	Role (unnamed) DumpingGround		1	1	DumpingGround	

1.2.1.41 Association <<Topo>> RestrictionArea-RestrictionAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
31	Association RestrictionArea-RestrictionAreaBoundary					
31.1	Role RestrictionAreaBoundary	delimitation	0	N	RestrictionAreaBoundary	Aggregation
31.2	Role (unnamed) RestrictionArea		1	1	RestrictionArea	

1.2.1.42 Association <<Topo>> HazardArea-HazardAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
32	Association HazardArea-HazardAreaBoundary					
32.1	Role HazardAreaBoundary	delimitation	0	N	HazardAreaBoundary	Aggregation
32.2	Role (unnamed) HazardArea		1	1	HazardArea	

1.2.1.43 Association <<Topo>> FisheryProtectionZone-FisheryProtectionZoneBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
33	Association FisheryProtectionZone-FisheryProtectionZoneBoundary					
33.1	Role avgrensning		0	N	FisheryProtectionZoneBoundary	Aggregation
33.2	Role (unnamed) FisheryProtectionZone		1	2	FisheryProtectionZone	

1.2.1.44 Association <<Topo>> UnderwaterCableArea-UnderwaterCableAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
34	Association UnderwaterCableArea-UnderwaterCableAreaBoundary					
34.1	Role UnderwaterCableAreaBoundary	delimitation	0	N	UnderwaterCableAreaBoundary	Aggregation
34.2	Role (unnamed) UnderwaterCableArea		1	1	UnderwaterCableArea	

1.2.1.45 Association <<Topo>> SeaplaneHarbour-SeaplaneHarbourBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
35	Association SeaplaneHarbour-SeaplaneHarbourBoundary					
35.1	Role SeaplaneHarbourBoundary	delimitation	0	N	SeaplaneHarbourBoundary	Aggregation
35.2	Role (unnamed) SeaplaneHarbour		1	1	SeaplaneHarbour	

1.2.1.46 Association <<Topo>> ObstructionFoulSeafloor - HarbourTerminalBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
36	Association ObstructionFoulSeafloor - HarbourTerminalBoundary					
36.1	Role ObstructionFoulSeafloorBoundary	delimitation	0	N	HarbourTerminalBoundary	Aggregation
36.2	Role (unnamed) ObstructionFoulSeafloor		1	1	ObstructionFoulSeafloor	

1.2.1.47 Association <<Topo>> CautionArea-CautionAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
37	Association CautionArea-CautionAreaBoundary					
37.1	Role CautionAreaBoundary	delimitation	0	N	CautionAreaBoundary	Aggregation
37.2	Role (unnamed) CautionArea		1	1	CautionArea	

1.2.1.48 Association <<Topo>> ??SmallBoatHarbour/SmallBoatMarina-SmallBoatHarbourBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
38	Association ??SmallBoatHarbour/SmallBoatMarina-SmallBoatHarbourBoundary					
38.1	Role SmallBoatHarbourBoundary	delimitation	0	N	SmallBoatHarbourBoundary	Aggregation
38.2	Role (unnamed) ??SmallBoatHarbour/SmallBoatMarina		1	1	??SmallBoatHarbour/SmallBoatMarina	

1.2.1.49 Association <<Topo>> MilitaryPracticeArea-MilitaryPracticeAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
39	Association MilitaryPracticeArea-MilitaryPracticeAreaBoundary					
39.1	Role MilitaryPracticeAreaBoundary	delimitation	0	N	MilitaryPracticeAreaBoundary	Aggregation
39.2	Role (unnamed) MilitaryPracticeArea		1	1	MilitaryPracticeArea	

1.2.1.50 Association <<Topo>> SeafloorSituation-SeafloorSituationBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
40	Association SeafloorSituation - SeafloorSituation Boundary					
40.1	Role SeafloorSituation Boundary	delimitation	0	N	SeafloorSituationBoundary	Aggregation
40.2	Role (unnamed) SeafloorSituation		1	1	SeafloorSituation	

1.2.1.51 Association <<Topo>> PipelineArea-PipelineAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
41	Association PipelineArea-PipelineAreaBoundary					
41.1	Role PipelineAreaBoundary	areaBoundary	0	N	PipelineAreaBoundary	Aggregation
41.2	Role (unnamed) PipelineArea		1	1	PipelineArea	

1.2.1.52 Association <<Topo>> Wreck-WreckBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
42	Association Wreck-WreckBoundary					
42.1	Role WreckBoundary	delimitation	0	N	WreckBoundary	Aggregation
42.2	Role (unnamed) Wreck		1	1	Wreck	

1.2.1.53 CodeLists

1.2.1.53.1 <<CodeList>> SeafloorType

Nr	Code name	Definition/Description	Code
1	CodeList SeafloorType	the category for the materials on the seafloor used by the Norwegian Hydrographic Service. Note: Not S-57 NATSUR	
1.1	Mussels (Note		Ms
1.2	Pebbles and sand (Note		"P S"
1.3	Sand and clay (Note		"S Cy"
1.4	Shells and sand (Note		"Sh S"
1.5	Coarse		c
1.6	Medium large stones 64.0 - 256.0 mm		Cb
1.7	Chalk		Ck
1.8	Coral		Co
1.9	Coarse sand 0.5 - 2.0 mm		cS
1.10	Clay < 0.002 mm		Cy
1.11	Fine		f
1.12	Fine sand 0.0625 - 0.125 mm		fS
1.13	Gravel 2.0 - 4.0 mm		G
1.14	Hard		h
1.15	Mud		M
1.16	Medium-fine sand 0.25 - 0.5 mm		
1.17	Oysters		Oy
1.18	Pebbles 4.0 - 64.0 mm		P
1.19	Rock > 256 mm		R
1.20	Sand		S
1.21	Shells		Sh
1.22	Silt 0.002 - 0.0625 mm		Si
1.23	Small		sm
1.24	Soft		so
1.25	Stones		St
1.26	Kelp, Seaweed		Wd

1.2.1.53.2 <<CodeList>> CategoryOfDumpingGround

Nr	Code name	Definition/Description	Code
2	CodeList CategoryOfDumpingGround	the category of the dumping ground. Note: S-57 CATDPG	
2.1	General dumping ground	generell	1
2.2	Chemical waste dumping ground	(IN 24; 442.1-3;)	2
2.3	Nuclear waste dumping ground		3
2.4	Explosives dumping ground	(IN 23.1-2; 442.1-3;)	4
2.5	Spoil ground	(IN 62.1-2; 446.1-2;)	5
2.6	Shipwreck Vessel dumping ground		6
2.7	Oil installations		7
2.8	Ballast water		9

1.2.1.53.3 <<CodeList>> TrafficFlow

Nr	Code name	Definition/Description	Code
3	CodeList TrafficFlow	the direction of the traffic flow used for maritime objects. Note: S-57 TRAFIC (used by FAIRWY, RDOCAL and RECTRC)	
3.1	Inbound		1
3.2	Outbound		2
3.3	One-way		3
3.4	Two-way		4

1.2.1.53.4 <<CodeList>> AnchorageUsage

Nr	Code name	Definition/Description	Code
4	CodeList AnchorageUsage	classification of anchorage used by the Norwegian Coastal Administration (Kystverket)	
4.1	Important anchorage areas for vessels		1
4.2	Areas for laying up vessels		2
4.3	Anchorage/Lay-up areas for petroleum installations		3

1.2.1.53.5 <<CodeList>> CategoryOfSmallCraftFacility

Nr	Code name	Definition/Description	Code

5	CodeList CategoryOfSmallCraftFacility	the category of the small craft facility. Note: S-57 CATSCF	
5.1	Visitor's berth		1
5.2	Nautical club		2
5.3	Boat hoist		3
5.4	Sail maker		4
5.5	Boatyard		5
5.6	Public inn		6
5.7	Restaurant		7
5.8	Chandler		8
5.9	Provisions		9
5.10	Doctor		10
5.11	Pharmacy		11
5.12	Water tap		12
5.13	Fuel station		13
5.14	Electricity		14
5.15	Bottle gas		15
5.16	Showers		1
5.17	Launderette		17
5.18	Public toilet		18
5.19	Post box		19
5.20	Public telephone		20
5.21	Refuse bin		21
5.22	Car park		22
5.23	Parking for boats and trailers		23
5.24	Caravan site		24
5.25	Camping site		25
5.26	Emptying of septic tank Sewerage pump-out station		26
5.27	Emergency telephone		27
5.28	Landing/launching place for boats		28
5.29	Visitors mooring		29
5.30	Scrubbing berth		30
5.31	Picnic area		31
5.32	Mechanics workshop		32

5.33	Guard and/or security service		33

1.2.1.53.6 <<CodeList>> CategoryOfDumpingArea

Nr	Code name	Definition/Description	Code
6	CodeList CategoryOfDumpingArea	information about what can be dumped in this dumping area (the categories used by the Norwegian Coastal Administration). Note: not S-57 CATDPG	
6.1	Dredged masses, soil and rock		1
6.2	Ships with metal hulls		2
6.3	Other ships		3
6.4	Fish waste from onshore processing		4
6.5	Other waste/materia		5
6.6	Ammunition		6

1.2.1.53.7 <<CodeList>> Restriction

Nr	Code name	Definition/Description	Code
7	CodeList Restriction	limitations on traffic or use of maritime areas. Note: S-57 RESTRN	
7.1	Anchoring forbidden		1
7.2	Restriksjoner for ankring		2
7.3	Fishing is forbidden		3
7.4	Fishing restricted		4
7.5	Trawling is forbidden		5
7.6	Restrictions on trawling		6
7.7	Area to which access is forbidden		7
7.8	Restrictions on access		8
7.9	Dredging/seafloor scraping forbidden		9
7.10	Dredging restricted		
7.11	Diving prohibited		11
7.12	Restrictions on diving		12
7.13	No wake		13
7.14	Area which should be avoided		14
7.15	Construction prohibited		15
7.16	Reduced speed		

1.2.1.53.8 <<CodeList>> CategoryOfAnchorage

Nr	Code name	Definition/Description	Code
8	CodeList CategoryOfAnchorage	the category of the anchorage. Note: S-57 CATACH	
8.1	Anchorage allowed/recommended/required		1
8.2	Deep water anchorage		2
8.3	Tanker anchorage		3
8.4	Explosives anchorage		4
8.5	Quarantine anchorage		5
8.6	Sea plane anchorage		6
8.7	Small craft mooring area		7
8.8	Small craft anchorage		8
8.9	Short-term anchorage ??berth/space		9

1.2.1.53.9 <<CodeList>> CategoryOfCable

Nr	Code name	Definition/Description	Code
9	CodeList CategoryOfCable	the category of the cable. Note: S-57 CATCBL	
9.1	Power line		
9.2	High-voltage power line		
9.3	Telephone line		
9.4	Telegraph line		
9.5	Mooring cable / chain		

1.2.1.53.10 <<CodeList>> CategoryOfRestrictedArea

Nr	Code name	Definition/Description	Code
10	CodeList CategoryOfRestrictedArea	the category of the restricted area. Note: S-57 CATREA	
10.1	Offshore safety zone		1
10.2	Nature reserve		4
10.3	Bird sanctuary		5
10.4	Game reserve		6
10.5	Seal sanctuary		7

10.6	Degaussing area		8
10.7	Military area		9
10.8	Historic wreck area		10
10.9	Navigsational aid safety zone		12
10.10	Minefield		14
10.11	Dredging area		21

1.2.1.53.11 <<CodeList>> CategoryOfPipe

Nr	Code name	Definition/Description	Code
11	CodeList CategoryOfPipe	the category of the pipeline or pipe. Note: S-57 CATPIP	
11.1	Outlet		1
11.2	Inlet		2
11.3	Sewer		3
11.4	Supply pipe		6

1.2.1.53.12 <<CodeList>> CategoryOfWreck

Nr	Code name	Definition/Description	Code
12	CodeList CategoryOfWreck	the category of the wreck. Note: S-57 CATWRK	
12.1	Non-dangerous wreck		1
12.2	Dangerous wreck		2
12.3	Distributed remains of wreck		3
12.4	Wreck showing masts		4
12.5	Wreck showing any portion of hull or superstructure		5

1.2.1.53.13 <<CodeList>> StatusSea

Nr	Code name	Definition/Description	Code
13	CodeList StatusSea	the status of the object used for maritime objects. Note: S-57 STATUS	
13.1	Permanent		1
13.2	Spesial needs		2
13.3	Recommended		3

13.4	Not in use 4		
13.5	Periodic/intermittent		5
13.6	Reserved		6
13.7	Temporary		7
13.8	Private		8
13.9	Mandatory		9
13.10	Havarert		10
13.11	Extinguished		11
13.12	Illuminated		12
13.13	Historic		13
13.14	Public		14
13.15	Synchronized		15
13.16	Watched		16
13.17	Un-watched		17
13.18	Existence Doubtful		18
13.19	Operational		30
13.20	Discontinued/Omitted		31
13.21	Planned		32

Military information

1.2.1.54 MilitaryPracticeAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class MilitaryPracticeAreaBoundary	boundary for area used by the armed forces for exercises				
1.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
1.2	Role (unnamed) MilitaryPracticeArea		1	1	MilitaryPracticeArea	

1.2.1.55 MilitaryPracticeArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class MilitaryPracticeArea	area used by the armed forces for exercises Note: Corresponds to MIPARE in S-57				
2.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
2.2	position	location where the object exists	0	1	PointWithQuality	
2.3	categoryOfMilitaryPracticeArea	the category of the military practice area. Note: S-57 CATMPA	0	1	CategoryOfMilitaryPracticeArea	
2.4	restriction	limitations on traffic or use of maritime areas. Note: S-57 RESTRN	0	1	Restriction	

2.5	status	the status of the object used for maritime objects. Note: S-57 STATUS	0	1	StatusSea	
2.6	Role MilitaryPracticeAreaBoundary	delimitation	0	N	MilitaryPracticeAreaBoundary	Aggregration

1.2.1.55.1 CodeLists

1.2.1.55.2 <<CodeList>> CategoryOfMilitaryPracticeArea

Nr	Code name	Definition/Description	Code
1	CodeList CategoryOfMilitaryPracticeArea	the category of the military practice area. Note: S-57 CATMPA	
1.1	Torpedo exercise area		2
1.2	Submarine exercise area		3
1.3	General practice range		4
1.4	Mine-laying practice area		5
	Small arms firing range		6

Navigation installation

1.2.1.56 NavigationInstallation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class NavigationInstallation	object which helps mariners to navigate at sea				
1.1	position	location where the object exists	1	1	PointWithQuality	
1.2	surveyedPosisjon		0	1	PointWithQuality	
1.3	descriptionOfLocation	the detailed description of the location as used in the Norwegian List of Lights publication. Note: not BELIGG from SOSI 4.0 LEDN chapter about Ledningsnett	0	1	CharacterString	
1.4	objectNameInNationalLanguage	the name of the object in the national language. Note: S-57 NOBJNM and also NAVN from the SOSI 4.0 chapter about General Types, and not S-57 OBJNAM which is the objectXzXs name in English	0	1	CharacterString	
1.5	nameOfArea	the name of the general area in which the object is located, as used in the Norwegian List of Lights publication. Note: not S-57	0	1	CharacterString	
1.6	height	the value of the vertical distance to the highest point of the object. Note: S-57 HEIGHT	0	1	Real	
1.7	navigationalInstallationOwner	specification of who owns the installation. Note: not S-57	0	1	CharacterString	
1.8	listOfLightsNumber	the identification number of the installation used in the Norwegian List of Lights publication	0	1	CharacterString	
1.9	status	the status of the object used for maritime objects. Note: S-57 STATUS	0	1	StatusSea	
1.10	periodicDateStart	the start of the active period for a seasonal object (e.g. a buoy). Note: S-57 PERSTA	0	1	Date	

1.11	periodicDateEnd	the end of the active period for a seasonal object (e.g. a buoy). Note: S-57 PEREND	0	1	Date	
1.12	coastalAdministrationDistrict	the Norwegian Coastal AdministrationXzXs district or region. Note: not S-57	0	1	CoastalAdministrationDistrict	
1.13	systemOfNavigationalMarks	the system of the maritime buoyage and beaconage used for the object. Note: S-57 MARSYS	0	1	SystemOfNavigationalMarks	
1.14	Role equipment		0	N	SignalEquipment	Aggregration
1.15	Role foundation		0	1	LanternFoundation	
1.16	Role (unnamed) Leading??		0	1	Leading??	

1.2.1.57 NavigationMark

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class NavigationMark	??beacon/mark which serves as a guide for navigation				Abstract Subtype of NavigationInstallation
2.1	retroReflector	an indication of whether there is a means of distinguishing unlighted marks at night. Note: not an S-57 attribute, but generates the S-57 object RETRFL, retro-reflector.	0	1	Boolean	
2.2	topmarkDaymarkShape	the category of the IMO topmark / daymark shape. Note: S-57 TOPSHP	0	1	TopmarkDaymarkShape	
2.3	nationalTopMarkType	the category of the Norwegian topmarks. Note: not S-57's TOPSHP	0	1	NasjonalToppmerketype	
2.4	navigationalMarkListNumber	the Norwegian Coastal Administration's identification number for the mark	0	1	integer	
2.5	depth	the depth of an object. Note: S-57 uses a 3-D encoding of the depth on the geometry. Compatible with DYBDE from the SOSI 4.0 chapter about General Types?	0	1	Real	
2.6	techniqueOfSoundingMeasurement	the technique used for the sounding measurement. Note: S-57 TECSOU	0	1	TechniqueOfSoundingMeasurement	

2.7	colour1	generell fargeangivelse, tilsvarer S-57 COLOUR	1	1	Colour	
2.8	colour2	generell fargeangivelse, tilsvarer S-57 COLOUR	1	1	Colour	
2.9	colour3	generell fargeangivelse, tilsvarer S-57 COLOUR	1	1	Colour	
2.10	colourPattern	the category of the colour pattern. Note: S-57 COLPAT	0	1	ColourPattern	

1.2.1.58 BuildingPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
3	Class BuildingPoint	(S57 BUISGL)				Subtype of LanternFoundation
3.1	status	angivelse av bygningspunktets status (fra S57)	0	1	StatusSea	
3.2	bygningsfunksjon		0	1	Function	

1.2.1.59 Pillar

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
4	Class Pillar	Note: S-57 PILPNT				Subtype of LanternFoundation
4.1	categoryOfPile	the category of the pile. Note: S-57 CATPLE	0	1	CharacterString	

1.2.1.60 Landmark

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
5	Class Landmark	Note: S-57 LNDMRK				Subtype of LanternFoundation
5.1	function	the category of the objectXzXs function. Note: S-57 FUNCTN	0	1	Function	
5.2	categoryOfLandmark	the category of the landmark. Note: S-57 CATLMK	1	1	CategoryOfLandmark	
5.3	conspicuousVisually	the category of the visual conspicuousness. Note: S-57 CONVIS	1	1	ConspicuousVisually	

1.2.1.61 IsolatedDangerBuoy

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
6	Class	buoyant navigation mark				Subtype of

	IsolatedDangerBuoy	anchored to a dangerous shoal of modest scope, passable outside of the ??obstruction/hindrance Note: S-57 BOYISD				FloatingNavigationMark

1.2.1.62 ??SafeWaterBuoy

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
7	Class ??SafeWaterBuoy					Subtype of FloatingNavigationMark

1.2.1.63 LateralBuoy

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
8	Class LateralBuoy					Subtype of FloatingNavigationMark
8.1	systemOfNavigationalMarks	the system of the maritime buoyage and beaconage used for the object. Note: S-57 MARSYS	1	1	SystemOfNavigationalMarks	

1.2.1.64 RadarStation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
9	Class RadarStation	Note: S-57 RADSTA				Subtype of SignalEquipment
9.1	categoryOfRadioStation	the category of the radio station. Note: S-57 CATROS	0	1	CategoryOfRadioStation	
9.2	communicationChannel	a channel number assigned to a specific radio frequency, frequencies or frequency band Note: S-57 COMCHA	0	1	CharacterString	
9.3	height	the value of the vertical distance to the highest point of the object. Note: S-57 HEIGHT	0	1	Real	
9.4	valueOfNominalRange	the nominal range at which an object can be seen or a signal detected, in units of 0.1 nautical miles. Note: S-57 VALNMR	0	1	Real	

1.2.1.65 LateralMark

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
10	Class LateralMark					Subtype of FixedNavigationMark
10.1	categoryOfLateralMark	the category of the lateral mark. Note: S-57 CATLAM	1	1	CategoryOfLateralMark	

1.2.1.66 IsolatedDangerMark

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
11	Class IsolatedDangerMark	Note: S-57 BCNISD				Subtype of FixedNavigationMark

1.2.1.67 CardinalBuoy

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
12	Class CardinalBuoy	Note: S57 BOYCAR				Subtype of FloatingNavigationMark
12.1	categoryOfCardinalMark	the category of the cardinal mark. Note: S-57 CATCAM	1	1	categoryOfCardinalMark	

1.2.1.68 SpecialMark

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
13	Class SpecialMark					Subtype of FixedNavigationMark
13.1	categoryOfSpecialPurposeMark	the category of the special purpose mark. Note: S-57 CATSPM	1	1	CategoryOfSpecialPurposeMark	

1.2.1.69 SignalEquipment

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
14	Class SignalEquipment					Abstract
14.1	Role (unnamed) NavigationInstallation		1	1	NavigationInstallation	

1.2.1.70 Racon

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
15	Class Racon	Note: S-57 RTPBCN				Subtype of SignalEquipment
15.1	type	the racon types as described in the Norwegian List of Lights publication. Note: not S-57	0	1	RaconType	
15.2	frequencyBand	a categorization of a racon based on the distance between two successive peaks (or other points of identical phase) on an electromagnetic wave in the radar band of the electromagnetic spectrum. Note: related to S-57 RADWAL. Used by in the Norwegian List of Lights publication.	0	1	RaconFrequencyBand	
15.3	morseCodeCharacter	the number of signals, the combination of signals or the morse character(s) within one period of full sequence. Implemented as one Morse code letter, but without brackets, so it is not equivalent to S-57XzXs SIGGRP for racons.	0	1	RaconMorseCodeCharacter	
15.4	responseInterval	the Norwegian Coastal AdministrationXzXs signal response interval as described in its	0	1	RaconResponseInterval	
15.5	raconElevation	the altitude of the ground level of an object, measured from a specified vertical datum. Note: S-57 ELEVAT	0	1	Real	
15.6	valueOfMaximumRange	the extreme distance at which an object can be seen or a signal detected, in units of 0.1 nautical miles. Note: S-57 VALMXR	0	1	Real	
15.7	raconCharacter	the text used to describe the signature of a radar transponder beacon (racon) on Norwegian nautical charts, i.e., Racon (x) where x is the Morse	0	1	CharacterString	

		code letter. Note: not S-57				
15.8	categoryOfRadarTransponderBeacon	the category of the radar transponder beacon. Note: S-57 CATRTB	1	1	CategoryOfRadarTransponderBeacon	Init Value =2
15.9	directionalVector1	line segment with length and orientation. Note: from SOSI 4.0 chapter about General Types, slightly related to S-57 ORIENT: Orientation	1	1	DirectionVector	
15.10	directionalVector2	line segment with length and orientation. Note: from SOSI 4.0 chapter about General Types, slightly related to S-57 ORIENT: Orientation	1	1	DirectionVector	

1.2.1.71 Illumination

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
16	Class Illumination	Note: S-57 LIGHTS				Subtype of SignalEquipment
16.1	categoryOfLight	the category of the light. Note: S-57 CATLIT	1	2	CategoryOfLight	
16.2	listOfLightsCharacteristic	the light characteristic as used in the Norwegian List of Lights publication. Note: not S-57 LITCHR	0	1	CharacterString	
16.3	lightCharacteristic	the category of the navigational light characteristic. Note: S-57 LITCHR	0	1	LightCharacteristic	
16.4	directionalVector	line segment with length and orientation. Note: from SOSI 4.0 chapter about General Types, slightly related to S-57 ORIENT: Orientation	0	1	Real	
16.5	signalGroup	the number of signals, the combination of signals or the morse character(s) within one period of full sequence. The signal group of a light is encoded using brackets to separate the individual groups. Note: S-57 SIGGRP	0	1	CharacterString	
16.6	signalPeriod	the time occupied by an entire cycle of intervals of light and eclipse in units of 0.01 seconds. Note: S-57 SIGPER	0	1	CharacterString	

16.7	signalSequence	the sequence of times occupied by intervals of light and eclipse for all "light characteristics" except for occulting where the sequence of times is occupied by intervals of eclipse and light. Note: S-57 SIGSEQ	0	1	CharacterString	
16.8	height	the value of the vertical distance to the highest point of the object, from sea level, in this case. Note: S-57 HEIGHT	0	1	Real	
16.9	multiplicityOfLights	the number of lights of identical character that exist as a co-located group. Note: S-57 MLTYLT	0	1	Integer	
16.10	valueOfNominalRangeWhite	the nominal range at which an object can be seen or a signal detected, in units of 0.1 nautical miles. Note: S-57 VALNMR: Value of nominal range	0	1	Real	
16.11	valueOfNominalRangeRed	the nominal range at which an object can be seen or a signal detected, in units of 0.1 nautical miles. Note: S-57 VALNMR: Value of nominal range	0	1	Real	
16.12	valueOfNominalRangeGreen	the nominal range at which an object can be seen or a signal detected, in units of 0.1 nautical miles. Note: S-57 VALNMR: Value of nominal range	0	1	Real	
16.13	valueOfNominalRangeYellow	the nominal range at which an object can be seen or a signal detected, in units of 0.1 nautical miles. Note: S-57 VALNMR: Value of nominal range	0	1	Real	
16.14	Role lightSector	sector	1	N	LightSector	Aggregration

1.2.1.72 Radio

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
17	Class Radio	Note: S-57 RDOSTA				Subtype of SignalEquipment
17.1	categoryOfRadioStation	the category of the radio station. Note: S-57	0	1	CategoryOfRadioStation	

		CATROS				
17.2	callSign	the designated call-sign of a radio station. Note: S-57 CALSGN	0	1	CharacterString	
17.3	communicationChannel	a channel number assigned to a specific radio frequency, frequencies or frequency band Note: S-57 COMCHA	0	1	CharacterString	
17.4	valueOfNominalRange	the nominal range at which an object can be seen or a signal detected, in units of 0.1 nautical miles. Note: S-57 VALNMR	0	1	Real	
17.5	directionalVector	line segment with length and orientation. Note: from SOSI 4.0 chapter about General Types, slightly related to S-57 ORIENT: Orientation	0	1	DirectionVector	
17.6	signalFrequency	the frequency of a signal for use by maritime transportation. Note: S-57 SIGFRQ	0	1	Integer	
17.7	modulation	the Norwegian Coastal AdministrationXzXs categories for modulation of the radio signal as described in its Norwegian List of Lights publication 2002 and 2004. Note: not S-57	0	1	RadioBeaconModulation	

1.2.1.73 FloatingNavigationMark

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
18	Class FloatingNavigationMark					Abstract Subtype of Navigation Mark
18.1	buoyShape	the category of a buoyXzXs shape. The principal shapes are those recommended in the	1	1	BuoyShape	

1.2.1.74 FixedNavigationMark

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
19	Class FixedNavigationMark	fixed (not floating) navigation marks (cairns, beacons, iron rods, etc.)				Abstract Subtype of

						Navigation Mark
19.1	beaconShape	the category of the characteristic geometric form of the beacon. Note: S57 BCNSHP	1	1	BeaconShape	

1.2.1.75 LightSector

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
20	Class LightSector	Note: S-57 LIGHTS				
20.1	lightColour	generell fargeangivelse, tilsvarer S-57 COLOUR	0	1	Colour	
20.2	SectorText		0	1	CharacterString	
20.3	directionSectorLine1	S57 SECTR1 SOSI:Retninger gitt i grader, 0-360, med 0 mot sant nord. Angitt fra sjø mot fyr	1	1	Real	
20.4	lengthSectorLine1	Length, sector line 1	1	1	Real	
20.5	directionSectorLine2	S57 SECTR2 SOSI: Retninger gitt i grader, 0-360, med 0 mot sant nord. Angitt fra sjø mot fyr	1	1	Real	
20.6	lengthSectorLine2	Length, sector line 2	1	1	Real	
20.7	Role (unnamed) Illumination		1	1	Illumination	

1.2.1.76 OtherFixedMarks

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
21	Class OtherFixedMarks	Note: S-57 BCNISD				Subtype of FixedNavigationMark

1.2.1.77 LanternFoundation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
22	Class LanternFoundation	Note: Non-navigation marks				Abstract
22.1	Role (unnamed) NavigationInstallation		0	1	NavigationInstallation	

1.2.1.78 Installasjonsbøye

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
23	Class Installasjonsbøye					Subtype of FloatingNavigationMark
23.1	installasjonsbøyekategori		0	1	Installasjonsbøyekategori	

1.2.1.79 Leading??

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
24	Class Leading??	aggregate object containing 2 navigation devices, a solid leading line and a navigation line (solid and dotted leading line) Note: Corresponds to C_AGGR in S-57				
24.1	??directionValue/ bearingValue	a general element stating ??direction/bearing	1	1	Real	
24.2	navigationCurve		1	1	CurveWithQuality	
24.3	directionVectorCurve		1	1	CurveWithQuality	
24.4	Role position		2	2	NavigationInstallation	Aggregration

1.2.1.80 Association SignalEquipment-NavigationInstallation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
25	Association SignalEquipment - NavigationInstallation					
25.1	Role (unnamed) NavigationInstallation		1	1	NavigationInstallation	
25.2	Role equipment		0	N	SignalEquipment	Aggregation

1.2.1.81 Association LightSector-Illumination

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
26	Association LightSector-					

	Illumination					
26.1	Role (unnamed) Illumination		1	1	Illumination	
26.2	Role lightSector	sector	1	N	LightSector	Aggregation

1.2.1.82 Association NavigationInstallation-LanternFoundation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
27	Association NavigationInstallation-LanternFoundation					
27.1	Role foundation		0	1	LanternFoundation	
27.2	Role (unnamed) NavigationInstallation		0	1	NavigationInstallation	

1.2.1.83 Association NavigationInstallation-Leading??

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
28	Association NavigationInstallation-Leading??					
28.1	Role (unnamed) Leading??		0	1	Leading??	
28.2	Role position		2	2	NavigationInstallation	Aggregation

1.2.1.83.1 CodeLists

1.2.1.83.2 <<CodeList>> BeaconShape

Nr	Code name	Definition/Description	Code
1	CodeList BeaconShape	he category of the characteristic geometric form of the beacon. Note: S57 BCNSHP	
1.1	Other		0
1.2	Stake, pole , perch, post		1
1.3	Lattice Beacon		4
1.4	Cairn		6

1.2.1.83.3 <<CodeList>> ColourPattern

Nr	Code name	Definition/Description	Code
2	CodeList ColourPattern	the category of the pattern of the colors. Note: S57 COLPAT	
2.1	Horizontal stripes		1
2.2	Vertical stripes		2
2.3	Diagonal stripes		3
2.4	Squared		4
2.5	Stripes (direction unknown)		
2.6	Border stripe		6

1.2.1.83.4 <<CodeList>> BuoyShape

Nr	Code name	Definition/Description	Code
3	CodeList BuoyShape	the category of a buoy's shape. The principal shapes are those recommended in the International Association of Lighthouse Authorities - IALA System. Note: S-57 BOYSHP	
3.1	Conical buoy		1
3.2	Can/Cylindrical buoy		2
3.3	Pillar buoy		4
3.4	Spherical buoy		5
3.5	Barrel/tun buoy		6
3.6	Super-buoy		7
3.7	Ice buoy		8
3.8	Pillar buoy, right-leaning		21

3.9	Spar, right-leaning		22
3.10	Pillar buoy, left-leaning		26
3.11	Spar, left-leaning		27

1.2.1.83.5 <<CodeList>> SystemOfNavigationalMarks

Nr	Code name	Definition/Description	Code
4	CodeList SystemOfNavigationalMarks	he system of the maritime buoyage and beaconage used for the object. Note: S-57 MARSYS	
4.1	IALA A	(Int. Association of Lighthouse Authorities A)	1
4.2	IALA B	(Int. Association of Lighthouse Authorities B)	2
4.3	No system		9
4.4	Other systems		10

1.2.1.83.6 <<CodeList>> CLOwner

Nr	Code name	Definition/Description	Code
5	CodeList CLOwner	(not S-57) Not a codelist in PDB or in S57	
5.1	The Norwegian Coastal Administration (Kystverket)		KV
5.2	Municipal port authority or similar		HV
5.3	The Armed Forces		FV
5.4	Private		PR

1.2.1.83.7 <<CodeList>> CategoryOfLateralMark

Nr	Code name	Definition/Description	Code
6	CodeList CategoryOfLateralMark	the category of the lateral mark. Note: S-57 CATLAM	
6.1	Port-hand lateral mark		
6.2	Starboard-hand lateral mark		
6.3	Preferred channel to starboard lateral mark	Merknad: Ingen i Norge (INT1 s.72)	3
6.4	Preferred channel to port lateral mark	Merknad: Ingen i Norge (INT1 s.72)	4

1.2.1.83.8 <<CodeList>> CheckedByNHS

Nr	Code name	Definition/Description	Code
7	CodeList CheckedByNHS	Note: not S-57	
7.1	Not controlled		1
7.2	Controlled		2

1.2.1.83.9 <<CodeList>> RaconType

Nr	Code name	Definition/Description	Code
8	CodeList RaconType	the racon types as described in the Norwegian List of Lights publication. Note: not S-57	
8.1	Unknown type of racon		
8.2	(FA) Frequency Agile racon		1
8.3	(ITOFAR) Interrogated Time Offset Frequency Agile racon		2
8.4	(SF) Swept Frequency racon		3

1.2.1.83.10 <<CodeList>> CoastalAdministrationDistrict

Nr	Code name	Definition/Description	Code
9	CodeList CoastalAdministrationDistrict	the Norwegian Coastal Administration's district or region. Note: not S-57	
9.1	Unspecified		0
9.2	The Norwegian Coastal Administration (Kystverket) Southeast		1
9.3	Kystverket Vest		2
9.4	The Norwegian Coastal Administration (Kystverket) Middle Norway		3
9.5	The Norwegian Coastal Administration (Kystverket) Nordland		4
9.6	The Norwegian Coastal Administration (Kystverket) Troms and Finnmark		5
9.7	The Norwegian Coastal		6

	Administration (Kystverket) Svalbard		
9.8	The North Sea		7

1.2.1.83.11 <<CodeList>> CategoryOfLight

Nr	Code name	Definition/Description	Code
10	CodeList CategoryOfLight	the category of the light. Note: S-57 CATLIT	
10.1	Undefined type of navigation light	(ikke en S57 CATLIT verdi)	
10.2	Directional function		
10.3	Lantern	(kun 1 sektor, oftest rundtlysende -- ikke S57 CATLIT)	2
10.4	Leading light		4
10.5	Aero light		5
10.6	Aero obstruction light		6
10.7	Fog detector light		
10.8	Flood light		8
10.9	Strip light		
10.10	Bifyr		10
10.11	Spotlight	meget liten flate	11
10.12	Front		
10.13	Rear		13
10.14	Lower		14
10.15	Upper		15
10.16	Moiré effect		
10.17	Emergency	reservelys	17
10.18	Illumination with automatic ??direction/bearing finding		18
10.19	Horizontally disposed		
10.20	Vertically disposed		20
10.21	Navigation lights, in general	med sektorer; ikke S57 CATLIT	99

1.2.1.83.12 <<CodeList>> CategoryOfRadarTransponderBeacon

Nr	Code name	Definition/Description	Code
11	CodeList CategoryOfRadarTransponderBeacon	the category of the radar transponder beacon. Note: S-57 CATRTB	

11.1	Unknown radar beacon type	ikke en S57 CATRTB verdi	0
11.2	Ramark, radar beacon transmitting contonuously	ramark) (INT1, IS 2	1
11.3	Racon, radar transponder beacon	(racon) (INT1, IS 3.1-6)	
11.4	Leading racon/radar transponder beacon	(INT1, IS 3.5)	3

1.2.1.83.13 <<CodeList>> Colour

Nr	Code name	Definition/Description	Code
12	CodeList Colour	the category of the colour used on lights/marks which are used for navigation. Note: S-57 COLOUR	
12.1	White		1
12.2	Black		2
12.3	Red		3
12.4	Green		4
12.5	Blue		5
12.6	Yellow		6
12.7	Grey		7
12.8	Brown		8
12.9	Amber		9
12.10	Violet		
12.11	Orange		11
12.12	Magenta		12
12.13	Pink		13

1.2.1.83.14 <<CodeList>> CategoryOfCardinalMark

Nr	Code name	Definition/Description	Code
13	CodeList CategoryOfCardinalMark	the category of the cardinal mark. Note: S-57 CATCAM	
13.1	North cardinal mark		1
13.2	East cardinal mark		2
13.3	South cardinal mark		3
13.4	West cardinal mark		4

1.2.1.83.15 <<CodeList>> LightCharacteristic

Nr	Code name	Definition/Description	Code
14	CodeList LightCharacteristic	the category of the navigational light characteristic. Note: S-57 LITCHR	
14.1	U	Udefinert	0
14.2	F	Fast lys	1
14.3	Fl	Blinkende lys	2
14.4	LFl	Langt blink (>2 sek)	3
14.5	Q	Hurtigblink (50-79/minutt)	4
14.6	VQ	Kontinuerlig rask hurtigblink (80-160/min)	5
14.7	UQ	Kontinuerlig ultra hurtigblink(>160/min.)	6
14.8	Iso	Isofase	7
14.9	Oc	Okkulterende	8
14.10	IQ	Avbrutt hurtigblink	9
14.11	IVQ	Avbrutt rask hurtigblink	10
14.12	IUQ	Avbrutt ultra hurtigblink	11
14.13	Mo(K)	Morsekode	12
14.14	FFl	Fast med blinkende	13
14.15	Al Oc	Vekslende og okkulterende	17
14.16	Al LFl	Vekslende og langt blink	18
14.17	Al Fl	Vekslende og blinkende	19
14.18	Q LFl	Hurtigblink og Langt blink	25
14.19	VQ LFl	Rask hurtigblink og Langt blink	26
14.20	UQ LFl	Ultra hurtigblink og Langt blink	27
14.21	Al	Vekslende	28
14.22	Al F	Fast og Vekslende blinker	29

1.2.1.83.16 <<CodeList>> CategoryOfInstallationBuoy

Nr	Code name	Definition/Description	Code
15	CodeList CategoryOfInstallationBuoy	the category of the installation buoy. Note: S57 CATINB	

15.1	Catenary anchor leg mooring	(CALM)	1
15.2	Single buoy mooring	(SBM or SPM)	2

1.2.1.83.17 <<CodeList>> CategoryOfRadioStation

Nr	Code name	Definition/Description	Code
16	CodeList CategoryOfRadioStation	the category of the radio station. Note: S-57 CATROS	
16.1	Unknown radio beacon type	(ikke en S57 CATROS verdi)	0
16.2	Circular radio beacon	(RC)	1
16.3	Directional radio beacon	(RD)	
16.4	Rotating-pattern radio beacon	(RW)	3
16.5	Console beacon	(Consol)	
16.6	Radio direction finding station	(RG)	
16.7	Coastal radio station providing QTG service	(R)	6
16.8	Aeronautical radio beacon	(Aero RC)	7
16.9	Decca	(utgått?)	8
16.10	Loran C	(utgått?)	9
16.11	Differential GPS	(DGPS)	10
16.12	Toran	(utgått?)	11
16.13	Omega	(utgått)	12
16.14	Syledis	(utgått?)	13
16.15	Chaika (Chayka)	(utgått?)	14

1.2.1.83.18 <<CodeList>> CategoryOfSpecialPurposeMark

Nr	Code name	Definition/Description	Code
17	CodeList CategoryOfSpecialPurposeMark	the category of the special purpose mark. Note: S-57 CATSPM	
17.1	Firing danger area mark		1
17.2	Target mark		2
17.3	Marker ship mark		
17.4	Degaussing range mark		
17.5	Barge mark		
17.6	Cable mark		
17.7	Spoil ground mark		7

17.8	Outfall mark		8
17.9	ODAS(OceanData Acquisition System)		9
17.10	Recording mark		
17.11	Seaplane anchorage mark		11
17.12	Recreation zone mark		
17.13	Private mark		13
17.14	Mooring mark		14
17.15	LANBY - Large Automatic Navigational Buoy		15
17.16	Leading mark		16
17.17	Measured distance mark		
17.18	Notice mark		
17.19	TSS mark (Traffic Separation Scheme)		19
17.20	Clearing mark		41
17.21	Control mark		
17.22	Refuge beacon		
17.23	Yachting mark		46
17.24	Heliport mark		47
17.25	GPS mark		
17.26	Mark with unknown purpose		52
17.27	Anchoring prohibited mark		20
17.28	Berthing prohibited mark		21
17.29	Overtaking prohibited mark		22
17.30	Two-way traffic prohibited mark		23
17.31	Reduced wake mark		24
17.32	Speed limit mark		25
17.33	Stop mark		26
17.34	General warning mark		27
17.35	Sound ship´s siren mark		28
17.36	Restricted vertical clearance mark		29
17.37	Maximum vessel´s draught mark		30
17.38	Restricted horizontal clearance mark		31
17.39	Strong current warning mark		32

17.40	Berthing permitted mark		33
17.41	Overhead power cable mark		34
17.42	Channel edge gradient mark		35
17.43	Telephone mark		36
17.44	Ferry crossing mark		37
17.45	Marine traffic lights (discontinued from S-57)		38
17.46	Pipeline mark		39
17.47	Anchorage mark		40
17.48	Diving mark		43
17.49	Foul ground mark (yachting)		45
17.50	Seaplane landing mark		49
17.51	Entry prohibited mark		50
17.52	Work in progress mark		51

1.2.1.83.19 <<CodeList>> TechniqueOfSoundingMeasurement

Nr	Code name	Definition/Description	Code
18	CodeList TechniqueOfSoundingMeasurement	the technique used for the sounding measurement. Note: S-57 TECSOU	
18.1	Found by echo sounder		1
18.2	Found by side-scan sonar		2
18.3	Found by multi-beam echo sounder		3
18.4	Found by diver		4
18.5	Found by lead-line		5
18.6	Swept		6
18.7	Found by laser		7
18.8	Swept by vertical acoustic system		8
18.9	Found by electromagnetic sensor		9
18.10	Photogrammetry		10
18.11	Satellite imagery		11
18.12	Found by levelling		12
18.13	Swept by side-scan sonar		13
18.14	Computer generated		14

1.2.1.83.20 <<CodeList>> TopmarkDaymarkShape

Nr	Code name	Definition/Description	Code
19	CodeList TopmarkDaymarkShape	the category of the IMO topmark / daymark shape. Note: S-57 TOPSHP	
19.1	Cone, point up		1
19.2	Cone, point down		2
19.3	Sphere		3
19.4	2 Spheres		4
19.5	Cylinder (can)		5
19.6	Board		6
19.7	X-shape (St. Andrews cross)		7
19.8	Upright cross (St Georges cross)		8
19.9	Cube, point up		9
19.10	2 cones, point to point		10
19.11	2 cones, base to base		11
19.12	Rhombus (diamond)		12
19.13	2 cones (points upward)		13
19.14	2 cones (points downward)		14
19.15	Besom, point up (broom or perch)		15
19.16	Besom, point down (broom or perch)		16
19.17	Flag		17
19.18	Sphere over rhombus		18
19.19	Square		19
19.20	Rectangle, horizontal		20
19.21	Rectangle, vertical		21
19.22	Trapezium, up		22
19.23	Trapezium, down		23
19.24	Triangle, point up		24
19.25	Triangle, point down		25
19.26	Circle		26
19.27	Two upright crosses (one over the other)		27
19.28	T-shape		28
19.29	Triangle pointing up over a circle		29

19.30	Upright cross over a circle		30
19.31	Rrhombus over a circle		31
19.32	Circle over a triangle pointing up		32
19.33	Other shape (see INFORM attribute)		33

1.2.1.83.21 <<CodeList>> NationalTopMarkType

Nr	Code name	Definition/Description	Code
20	CodeList NationalTopMarkType	the category of the Norwegian topmarks. Note: not S-57XzXs TOPSHP	
20.1	Unknown Norwegian top mark type		0
20.2	Top mark with pointer		
20.3	Iron rod with pointer		
20.4	Pointer of black/carbon steel		3
20.5	Lantern with top mark		4

1.2.1.83.22 <<CodeList>> CategoryOfLandmark

Nr	Code name	Definition/Description	Code
21	CodeList CategoryOfLandmark	the category of the landmark. Note: S-57 CATLMK	
21.1	Cairn		1
21.2	Chimney		3
21.3	Dish aerial		4
21.4	Flare stack		6
21.5	Mast		7
21.6	Windsock		8
21.7	Monument		9
21.8	Column (pillar)		10
21.9	Obelisk		12
21.10	Cross		14
21.11	Radar dome		15
21.12	Radar scanner		16
21.13	Tower		17
21.14	Windmill		18
21.15	Wind motor		19
21.16	Church spire		20

1.2.1.83.23 <<CodeList>> CategoryOfPile

Nr	Code name	Definition/Description	Code
22	CodeList CategoryOfPile	the category of the pile. Note: S-57 CATPLE	
22.1	Unknown	(ikke en S57 CATPLE verdi) : VARCHAR2(2)	0
22.2	Stake	(ikke brukt av L&M) : VARCHAR2(2)	1
22.3	Post	(INT1--IF22) : VARCHAR2(2)	
22.4	Rack??	VARCHAR2(2)	4

1.2.1.83.24 <<CodeList>> RaconFrequencyBand

Nr	Code name	Definition/Description	Code
23	CodeList RaconFrequencyBand	a categorization of a racon based on the distance between two successive peaks (or other points of identical phase) on an electromagnetic wave in the radar band of the electromagnetic spectrum. Note: related to S-57 RADWAL. Used by in the Norwegian List of Lights publication.	
23.1	Racon in the 3 and 10-cm bands		X+S
23.2	Racon in the 3 cm band	mellom 9320 og 9500 MHz	X
23.3	Racon in the 10 cm band	mellom 2900 og 3100 MHz	S

1.2.1.83.25 <<CodeList>> RaconMorseCodeCharacter

Nr	Code name	Definition/Description	Code
24	CodeList RaconMorseCodeCharacter	the number of signals, the combination of signals or the morse character(s) within one period of full sequence. Implemented as one Morse code letter, but without brackets, so it is not equivalent to S-57XzXs SIGGRP for racons.	
24.1	Morse code sign B		B
24.2	Morse code sign G		G
24.3	Morse code sign K		K
24.4	Morse code sign M		M
24.5	Morse code sign N		N
24.6	Morse code sign O		O
24.7	Morse code sign T		T

1.2.1.83.26 <<CodeList>> RaconResponseInterval

Nr	Code name	Definition/Description	Code

25	CodeList RaconResponseInterval	the Norwegian Coastal AdministrationXzXs signal response interval as described in its Norwegian List of Lights publication. Note: not S-57	
25.1	Active 18 seconds each 30 seconds		
25.2	Active 6 seconds each 12 seconds		
25.3	Active 15 seconds each 30 seconds		
25.4	Active 6 seconds each 30 seconds		

1.2.1.83.27 <<CodeList>> RadioBeaconModulation

Nr	Code name	Definition/Description	Code
26	CodeList RadioBeaconModulation	the Norwegian Coastal AdministrationXzXs categories for modulation of the radio signal as described in its Norwegian List of Lights publication 2002 and 2004. Note: not S-57	
26.1	Bærebølgen er G1D modulert	(sendekanal er for utsendelse av DGPS korreksjoner)	G1D
26.2	Carrier signal is A1A-modulated with call sign and direction finding signal		

1.2.1.83.28 <<CodeList>> Function

Nr	Code name	Definition/Description	Code
27	CodeList Function	the category of the object's function. Note: S-57 FUNCTN	
27.1	Unknown function	(ikke en S57 FUNCTN verdi)	0
27.2	Harbour master's office	(INT1, IF.60)	2
27.3	Custom office	(INT, IF.61)	3
27.4	Health Office, Quarantine building	(INT1, IF.62.1)	4
27.5	Hospital	(INT1, IF.62.2)	5
27.6	Post office	(INT1, IF.63)	6
27.7	Hotel		7
27.8	Railway station	(INT1, ID.13)	8
27.9	Police station		9
27.10	Harbour police station		10
27.11	Boarding place, position of a Pilot-Cruising Vessel, with note	(INT1, IT.3)	11
27.12	Boarding place, position of a Pilot-Cruising Vessel, with name	(INT1, IT.2)	12
27.13	Bankkontor		13
27.14	Headquarters for district control		14

27.15	Transit shed, warehouse	(INT1, IF.51)	15
27.16	Factory		16
27.17	Power station		17
27.18	Administrativ bygning		18
27.19	Educational facility		19
27.20	Church	(INT1, IE.10.1)	20
27.21	Chapel	(INT1, IE.11)	21
27.22	Temple	(INT1, IE.13)	22
27.23	Pagode	(INT1, IE.14)	23
27.24	Shinto-shrine	(INT1, IE.15)	24
27.25	Buddhist temple	(INT1, IE.16)	25
27.26	Mosque, minaret	(INT1, IE.17)	26
27.27	Marabout mosque	(INT1, IE.18)	27
27.28	Observation tower, lookout post	(INT1, IG.77)	28
27.29	Communication		29
27.30	Television		30
27.31	Radio		31
27.32	Radar		32
27.33	Light support		33
27.34	Microwave		34
27.35	Cooling		35
27.36	Observation		36
27.37	Timeball		37
27.38	Clock		38
27.39	Control		39
27.40	Airship mooring		40
27.41	Stadium		41
27.42	Bus station		42

1.2.1.83.29 <<CodeList>> ConspicuousVisually

Nr	Code name	Definition/Description	Code
28	CodeList ConspicuousVisually	the category of the visual conspicuousness. Note: S-57 CONVIS	
28.1	Visually conspicuous		1
28.2	Not visually conspicuous		2

1.2.1.83.30 <<CodeList>> CategoryOfRadarStation

Nr	Code name	Definition/Description	Code
29	CodeList CategoryOfRadarStation	the category of the radar station. Note: S-57 CATRAS	
29.1	Radar surveillance station		
29.2	Coast radar station		

Topography

1.2.1.84 DepthArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class DepthArea	sea area where all of the depths are within a designated depth interval Note: Corresponds to DEPARE in S-57				
1.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
1.2	position	location where the object exists	0	1	PointWithQuality	
1.3	minimumDepth		1	1	Depth	
1.4	maximumDepth		1	1	Depth	
1.5	Role DepthContour	delimitation	0	N	Depth contour	Aggregration
1.6	Role boundaryForeshore		0	N	ForeshoreBoundary	Aggregration
1.7	Role boundaryDredgedArea		0	N	DredgedAreaBoundary	Aggregration
1.8	Role (unnamed) SeaSurface		1	1	SeaSurface	
1.9	Role boundaryDelimitationLandSea		0	N	DelimitationLandSea	Aggregration

1.2.1.85 Shallows

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class Shallows	??(a rise/an elevation) on the seafloor which differs significantly from the depth of the surroundings (NHS dictionary). Comprising the former object classes UnderwaterRock, SkerryIntermittentlyDry, RockAwash and SoundingShot with (depth type) DYBDTYP=2.				Subtype of DepthPoint

1.2.1.86 SeaSurface

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
3	Class SeaSurface	sea area which is delimited by				

		??Coastline/CoastalContour, CoastDelineation, SeaRiverDelineation and CoastalTechnicalFacility				
3.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
3.2	position	location where the object exists	0	1	PointWithQuality	
3.3	Role SeaRiverDelineation	seaSurfaceLandDelimitation	0	N	DelimitationLandSea	Aggregration
3.4	Role havflateDataavgrensning		0	N	DataDelimitation	Aggregration
3.5	Role (unnamed) Foreshore		1	1	Foreshore	Aggregration
3.6	Role (unnamed) DepthArea		1	1	DepthArea	Aggregration
3.7	Role MudretOmråde		0	N	DredgedArea	Aggregration

1.2.1.87 Depth contour

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
4	Class Depth contour	line between points with the same depth in relation to designated reference level Note: Corresponds to DEPCNT in S-57				
4.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
4.2	depth		1	1	Depth	
4.3	Role (unnamed) DepthArea		2	2	DepthArea	

1.2.1.88 Coastline

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
5	Class Coastline	boundary between land and sea, defined as the mean high ??tide/water line Note: Corresponds to COALNE in S-57				Subtype of DelimitationLandSea
5.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	

5.2	categoryOfCoastline	the category of the coastline. Note: S-57 CATCOA	0	1	CategoryOfCoastline	
5.3	coastalReferenceLevel	the coastline's reference level. Note: not S-57's VERDAT but distantly related	0	1	CoastalReferenceLevel	
5.4	elevation	The altitude of the ground level of an object, measured from a specified vertical datum. Note: S-57 ELEVAT	0	1	Real	
5.5	Role (unnamed) HypsometricLayer		0	1	HypsometricLayer	

1.2.1.89 SeaRiverDelineation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
6	Class SeaRiverDelineation	a fictitious line which defines the border between sea and river at the same level as ??coastline/CoastalContour (mean high ??tide/water) Note: This is identical to the same line referred to in the chapter on Lakes and watercourses).				Subtype of DelimitationLandSea
6.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
6.2	coastlineReferenceLevel	the coastline reference level. Note: not S-57 VERDAT but distantly related	0	1	CoastalReferenceLevel	
6.3	elevation	the altitude of the ground level of an object, measured from a specified vertical datum. Note: S-57 ELEVAT	0	1	Real	
6.4	Role (unnamed) RiverBrook		1	1	RiverBrook	
6.5	Role (unnamed) CanalDitch		1	1	CanalDitch	
6.6	Role (unnamed) HypsometricLayer		0	1	HypsometricLayer	

1.2.1.90 LandArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
7	Class LandArea	the area on the "land" side of the ??(coastline/coastal contour), quay and data delineation lines Note: Corresponds to LNDARE in S-57				
7.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
7.2	position	location where the object exists	0	1	PointWithQuality	
7.3	Role boundaryDelimitationLandSea		0	N	DelimitationLandSea	Aggregration
7.4	Role landarealDataavgrensning		0	N	DataDelimitation	Aggregration

1.2.1.91 DredgedArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
8	Class DredgedArea	dredged facility or area with a continuously maintained depth Note: Corresponds to DRGARE in S-57				
8.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
8.2	position	location where the object exists	0	1	PointWithQuality	
8.3	minimumDepth		1	1	Depth	
8.4	maximumDepth		1	1	Depth	
8.5	Role DelimitationLandSea	delimitation	0	N	DredgedAreaBoundary	Aggregration
8.6	Role boundaryForeshore		0	N	ForeshoreBoundary	Aggregration
8.7	Role (unnamed) SeaSurface		1	1	SeaSurface	
8.8	Role boundaryDelimitationLandSea		0	N	DelimitationLandSea	Aggregration

1.2.1.92 Foreshore

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint

9	Class Foreshore	that part of the seafloor which extends from 0.5 metres below ??hydrographic/nautical chart zero up to the ??coastline/coastal contour Note: The foreshore area is delimited by the ??coastline/coastal contour and the foreshore line, which is the line at the 0.5 m level below ??hydrographic/nautical chart zero. Corresponds to DEPARE in S-57				Subtype of SeaSurface
9.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
9.2	position	location where the object exists	0	1	PointWithQuality	
9.3	Role boundaryForeshore		0	N	ForeshoreBoundary	Aggregration
9.4	Role (unnamed) SeaSurface		1	1	SeaSurface	
9.5	Role DelimitationLandSea	delimitation	0	N	DelimitationLandSea	Aggregration

1.2.1.93 ForeshoreBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
10	Class ForeshoreBoundary	boundary for foreshore area, curve with depth value of 0.5 m below K0, the zero level of the ??hydrographic/nautical chart Note: Corresponds to DEPCNT in S-57 -57 with standard depth value of 0.5 (m)				Subtype of Depth contour
10.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
10.2	depth		1	1	Depth	Init Value =0,5
10.3	Role (unnamed) Foreshore		1	1	Foreshore	
10.4	Role (unnamed) DepthArea		0	1	DepthArea	
10.	Role		0	1	DredgedArea	

5	(unnamed) DredgedArea					

1.2.1.94 DredgedAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
11	Class DredgedAreaBoundary	boundary for dredged facility or area with a continuously maintained depth				
11.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
11.2	Role (unnamed) DredgedArea		1	1	DredgedArea	
11.3	Role (unnamed) DepthArea		0	1	DepthArea	

1.2.1.95 PhotogrDelimitationShallowArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
12	Class PhotogrDelimitationShallowArea	photogrammetric line delimiting a shallow area. An approximate photogrammetric line separating deep and shallow water				
12.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	

1.2.1.96 CoastlineTechnicalFacility

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
13	Class CoastlineTechnicalFacility	indication of coastline where this consists of technical facilities, defined as mean high ??tide/water Note: Corresponds to SLCONS in S-57				Subtype of DelimitationLandSea
13.1	border	course following the transition between different real world phenomena	0	1	CurveWithQuality	
13.2	centerline	course followed by the central part of the Object	0	1	CurveWithQuality	
13.3	categoryOfShorelineConstruction	the category of the usage of the shoreline construction. Note: S-57	0	1	CategoryOfShorelineConstruction	

		CATSLC				
13.4	coastalReferenceLevel	the coastline reference level. Note: not S-57 VERDAT but distantly related	0	1	CoastalReferenceLevel	
13.5	height	the value of the vertical distance to the highest point of the object. Note: S-57 HEIGHT	0	1	Real	

1.2.1.97 UnchartedOceanSurveyedBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
14	Class UnchartedOceanSurveyedBoundary	boundary against an uncharted/non-surveyed area				
14.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
14.2	Role (unnamed) UnchartedOceanSurveyedArea		1	1	UnchartedOceanSurveyedArea	

1.2.1.98 UnchartedOceanSurveyedArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
15	Class UnchartedOceanSurveyedArea	area which is uncharted or which has not been surveyed				Subtype of DelimitationLandSea
15.1	extent	objektets utstrekning	0	1	SurfaceWithQuality	
15.2	position	location where the object exists	0	1	PointWithQuality	
15.3	Role boundaryUnchartedOceanSurveyed		0	N	UnchartedOceanSurveyedBoundary	Aggregration
15.4	Role DelimitationLandSea	delimitation	0	N	DelimitationLandSea	Aggregration

1.2.1.99 DelimitationLandSea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
16	Class DelimitationLandSea	abstract class which expresses that the boundary between land and sea consists of				Abstract

		Coastline, Coastal delimitation and CoastlineTechnicalFacility				
16.1	Role (unnamed) SeaSurface		1	1	SeaSurface	
16.2	Role (unnamed) LandArea		1	1	LandArea	
16.3	Role (unnamed) DepthArea		0	N	DepthArea	
16.4	Role (unnamed) Foreshore		1	1	Foreshore	
16.5	Role (unnamed) UnchartedOceanSurveyedArea		1	1	UnchartedOceanSurveyedArea	
16.6	Role (unnamed) DredgedArea		1	1	DredgedArea	

1.2.1.100 Skerry

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
17	Class Skerry	generalised point object for small islands or land area				Subtype of LandArea
17.1	position	location where the object exists	1	1	PointWithQuality	
17.2	coastalReferenceLevel	the coastline's reference level. Note: not S-57's VERDAT but distantly related	0	1	CoastalReferenceLevel	
17.3	elevation	The altitude of the ground level of an object, measured from a specified vertical datum. Note: S-57 ELEVAT	0	1	Real	
17.4	categoryOfShorelineConstruction	the category of the usage of the shoreline construction. Note: S-57 CATSLC	0	1	CoastalReferenceLevel	

1.2.1.101 Association <<Topo>> DepthArea-Depth contour

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
18	Association DepthArea-Depth contour					
18.	Role	delimitation	0	N	Depth contour	Aggregatio

1	DepthContour					n
18.2	Role (unnamed) DepthArea		2	2	DepthArea	

1.2.1.102 Association <<Topo>> Foreshore -ForeshoreBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
19	Association Foreshore - ForeshoreBoundary					
19.1	Role boundaryForeshore		0	N	ForeshoreBoundary	Aggregation
19.2	Role (unnamed) Foreshore		1	1	Foreshore	

1.2.1.103 Association <<Topo>> SeaSurface-DelimitationLandSea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
20	Association SeaSurface-DelimitationLandSea					
20.1	Role SeaRiverDelineation	seaSurfaceLandDelimitation	0	N	DelimitationLandSea	Aggregation
20.2	Role (unnamed) SeaSurface		1	1	SeaSurface	

1.2.1.104 Association <<Topo>> DredgedArea-DredgedAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
21	Association DredgedArea-DredgedAreaBoundary					
21.1	Role DelimitationLandSea	delimitation	0	N	DredgedAreaBoundary	Aggregation
21.2	Role (unnamed) DredgedArea		1	1	DredgedArea	

1.2.1.105 Association <<Topo>> LandArea -DelimitationLandSea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint

22	Association LandArea - DelimitationLandSea					
22.1	Role boundaryDelimitationLandSea		0	N	DelimitationLandSea	Aggregation
22.2	Role (unnamed) LandArea		1	1	LandArea	

1.2.1.106 Association <<Topo>> DepthArea-ForeshoreBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
23	Association DepthArea-ForeshoreBoundary					
23.1	Role boundaryForeshore		0	N	ForeshoreBoundary	Aggregation
23.2	Role (unnamed) DepthArea		0	1	DepthArea	

1.2.1.107 Association <<Topo>> DepthArea-DredgedAreaBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
24	Association DepthArea-DredgedAreaBoundary					
24.1	Role boundaryDredgedArea		0	N	DredgedAreaBoundary	Aggregation
24.2	Role (unnamed) DepthArea		0	1	DepthArea	

1.2.1.108 Association <<Topo>> LandArea -DataDelimitation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
25	Association LandArea - DataDelimitation					
25.1	Role landarealDataavgrensning		0	N	DataDelimitation	Aggregation
25.2	Role (unnamed) LandArea		0	1	LandArea	

1.2.1.109 Association <<Topo>> SeaSurface-DataDelimitation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
26	Association SeaSurface-DataDelimitation					
26.1	Role havflateDataavgrensning		0	N	DataDelimitation	Aggregation
26.2	Role (unnamed) SeaSurface		0	2	SeaSurface	

1.2.1.110 Association <<Topo>> DredgedArea-ForeshoreBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
27	Association DredgedArea-ForeshoreBoundary					
27.1	Role boundaryForeshore		0	N	ForeshoreBoundary	Aggregation
27.2	Role (unnamed) DredgedArea		0	1	DredgedArea	

1.2.1.111 Association SeaSurface-Foreshore

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
28	Association SeaSurface-Foreshore					
28.1	Role (unnamed) Foreshore		1	1	Foreshore	Aggregation
28.2	Role (unnamed) SeaSurface		1	1	SeaSurface	

1.2.1.112 Association SeaSurface-DepthArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
29	Association SeaSurface-DepthArea					
29.1	Role (unnamed) DepthArea		1	1	DepthArea	Aggregation

29.2	Role (unnamed) SeaSurface		1	1	SeaSurface	

1.2.1.113 Association SeaSurface-DredgedArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
30	Association SeaSurface-DredgedArea					
30.1	Role MudretOmråde		0	N	DredgedArea	Aggregation
30.2	Role (unnamed) SeaSurface		1	1	SeaSurface	

1.2.1.114 Association <<Topo>> DepthArea-DelimitationLandSea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
31	Association DepthArea-DelimitationLandSea					
31.1	Role boundaryDelimitationLandSea		0	N	DelimitationLandSea	Aggregation
31.2	Role (unnamed) DepthArea		0	N	DepthArea	

1.2.1.115 Association <<Topo>> UnchartedOceanSurveyedArea-UnchartedOceanSurveyedBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
32	Association UnchartedOceanSurveyedArea-UnchartedOceanSurveyedBoundary					
32.1	Role boundaryUnchartedOceanSurveyed		0	N	UnchartedOceanSurveyedBoundary	Aggregation
32.2	Role (unnamed) UnchartedOceanSurveyedArea		1	1	UnchartedOceanSurveyedArea	

1.2.1.116 Association <<Topo>> Foreshore -DelimitationLandSea

No	Name/	Description	Obligation/	Maximum	Type	Constraint

	Role name		Condition	Occurrence		
33	Association Foreshore - DelimitationLandSea					
33.1	Role DelimitationLandSea	delimitation	0	N	DelimitationLandSea	Aggregation
33.2	Role (unnamed) Foreshore		1	1	Foreshore	

1.2.1.117 Association <<Topo>> UnchartedOceanSurveyedArea-DelimitationLandSea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
34	Association UnchartedOceanSurveyedArea-DelimitationLandSea					
34.1	Role DelimitationLandSea	delimitation	0	N	DelimitationLandSea	Aggregation
34.2	Role (unnamed) UnchartedOceanSurveyedArea		1	1	UnchartedOceanSurveyedArea	

1.2.1.118 Association <<Topo>> DredgedArea-DelimitationLandSea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
35	Association DredgedArea-DelimitationLandSea					
35.1	Role boundaryDelimitationLandSea		0	N	DelimitationLandSea	Aggregation
35.2	Role (unnamed) DredgedArea		1	1	DredgedArea	

1.2.1.119 CodeLists

1.2.1.119.1 <<CodeList>> CategoryOfCoastline

Nr	Code name	Definition/Description	Code
1	CodeList CategoryOfCoastline	the category of the coastline. Note: S-57 CATCOA	
1.1	Steep coast		1
1.2	Flat coast		2
1.3	Sandy shore		3
1.4	Stony/Shingly shore		4
1.5	Glacier		6

1.2.1.119.2 <<CodeList>> CoastalReferenceLevel

Nr	Code name	Definition/Description	Code
2	CodeList CoastalReferenceLevel	the coastline's reference level. Note: not S-57's VERDAT but distantly related	
2.1	Photogrammetric water level		FOTOV
2.2	Mean sea level		K0
2.3	Mean high water		MHV
2.4	Contour, not verified		USIKR

1.2.1.119.3 <<CodeList>> DepthType

Nr	Code name	Definition/Description	Code
3	CodeList DepthType	classification of DepthPoint (not S-57)	
3.1	Unspecified	dybdepunkt som ikke tilhører en av de andre kategoriene	1
3.2	Saddle point	dybdepunkt hvor det er grunnere i to retninger og dypere i to retninger	2
3.3	Snag point	dybdepunkt som representerer en knekk i terrenget, hvor bunnen begynner å helle bratt nedover	3
3.4	Reversed snag-point	dybdepunkt som representerer en knekk i terrenget, hvor bunnen går over fra å helle bratt til å helle slakt. F eks innerste punktet i en dalbunn	4
3.5	Deep point	dybdepunkt som er dypeste punkt i et område	5
3.6	Quay depths	dybdemålinger utenfor en kai	6

1.2.1.119.4 <<CodeList>> CategoryOfShorelineConstruction

Nr	Code name	Definition/Description	Code
4	CodeList CategoryOfShorelineConstruction	the category of the usage of the shoreline construction. Note: S-57 CATSLC	
4.1	Breakwater	konstruksjon som beskytter et kystområde-,havn/havnebasseng eller ankringsområde mot bølger Merknad: Til forskjell fra molo: ikke brukbar til fortøyning av båter.	1
4.2	Groyne		2
4.3	Mole	kunstig eller naturlig oppbygning som demper eller tilintetgjør bølgebevegelser i sjøen	3
4.4	Pier		4
4.5	Promenade pier		5
4.6	Quay/Wharf/		6
4.7	Seawall		7
4.8	Dyke		8
4.9	Steps		11
4.10	Ramp		12
4.11	Slipway		13
4.12	Building		50

Traffic sepertaion information

1.2.1.120 TrafficSeparationLanePart

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class TrafficSeparationLanePart	part of traffic separation system, wherein the direction of traffic is the same				
1.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
1.2	position	location where the object exists	1	1	PointWithQuality	
1.3	directionalVector	line segment with length and orientation. Note: from SOSI 4.0 chapter about General Types, slightly related to S-57 ORIENT: Orientation	0	1	DirectionVector	
1.4	restriction	limitations on traffic or use of maritime areas. Note: S-57 RESTRN	0	1	Restriction	
1.5	Role trafficSeparationLine		1	1	TrafficSeparationLine	Aggregration
1.6	Role boundaryTrafficSeparationLanePart		0	N	TrafficSeparationLanePartBoundary	Aggregration

1.2.1.121 TrafficSeparationLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class TrafficSeparationLine	line which separates traffic (Cf. INT 1 IM 12)				
2.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	
2.2	Role (unnamed) TrafficSeparationLanePart		1	1	TrafficSeparationLanePart	

1.2.1.122 RecommendedTrafficDirection

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
3	Class RecommendedTrafficDirection	recommended direction of traffic between traffic separation systems (Cf.				

		INT 1, IM26.1)				
3.1	position	location where the object exists	1	1	PointWithQuality	
3.2	directionVector	line segment with length and orientation	1	1	DirectionVector	

1.2.1.123 TrafficSeparationLanePartBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
4	Class TrafficSeparationLanePartBoundary	delimitation of that part of the traffic separation system, wherein the direction of traffic is the same				
4.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
4.2	Role (unnamed) TrafficSeparationLanePart		1	1	TrafficSeparationLanePart	

1.2.1.124 Association TrafficSeparationLanePart-TrafficSeparationLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
5	Association TrafficSeparationLanePart-TrafficSeparationLine					
5.1	Role trafficSeparationLine		1	1	TrafficSeparationLine	Aggregation
5.2	Role (unnamed) TrafficSeparationLanePart		1	1	TrafficSeparationLanePart	

1.2.1.125 Association <<Topo>> TrafficSeparationLanePart-TrafficSeparationLanePartBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
6	Association TrafficSeparationLanePart-TrafficSeparationLanePartBoundary					
6.1	Role boundaryTrafficS		0	N	TrafficSeparationLanePartBo	Aggregation

	eparationLanePart				undary	
6.2	Role (unnamed) TrafficSeparationLanePart		1	1	TrafficSeparationLanePart	