

Terrain



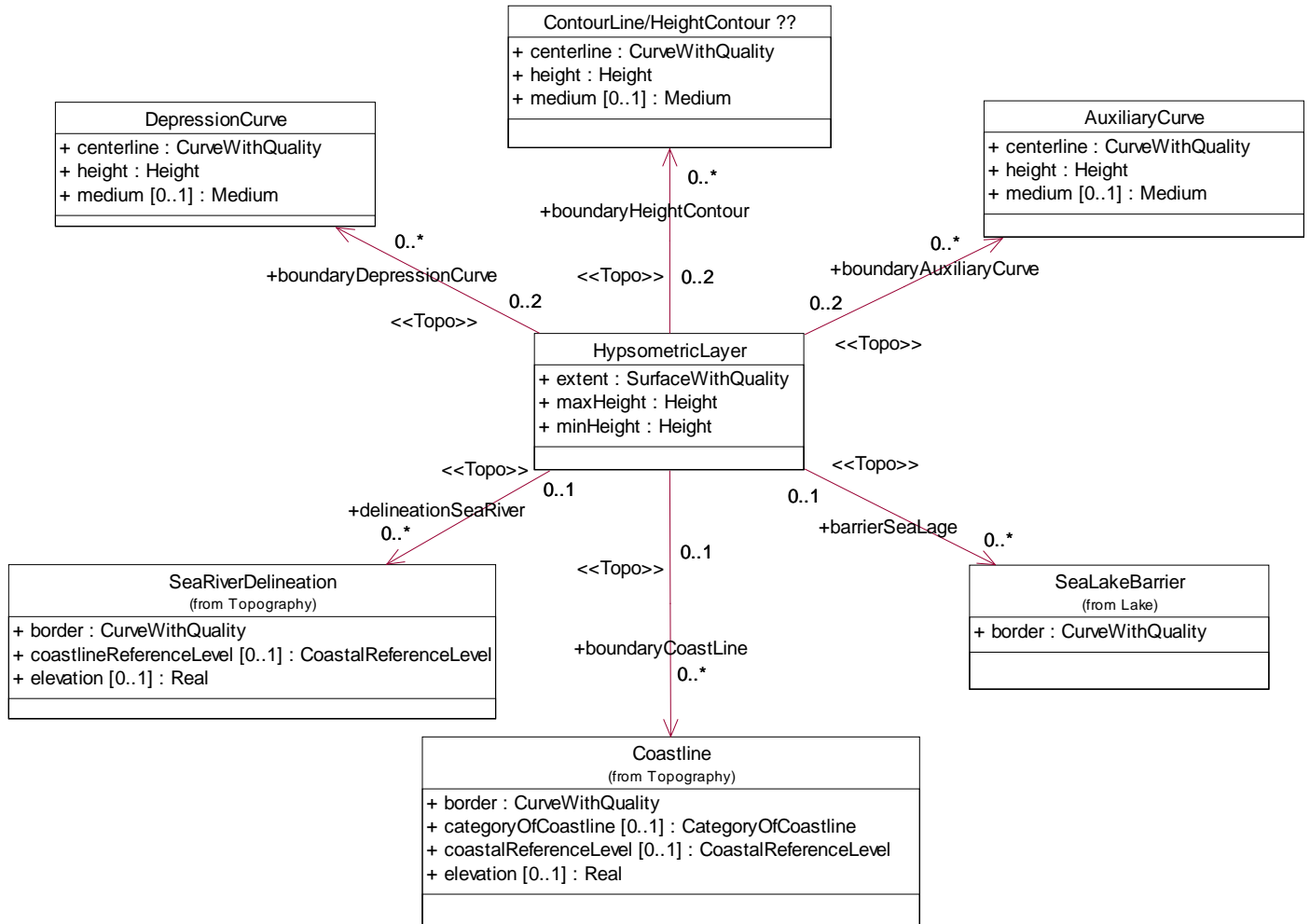
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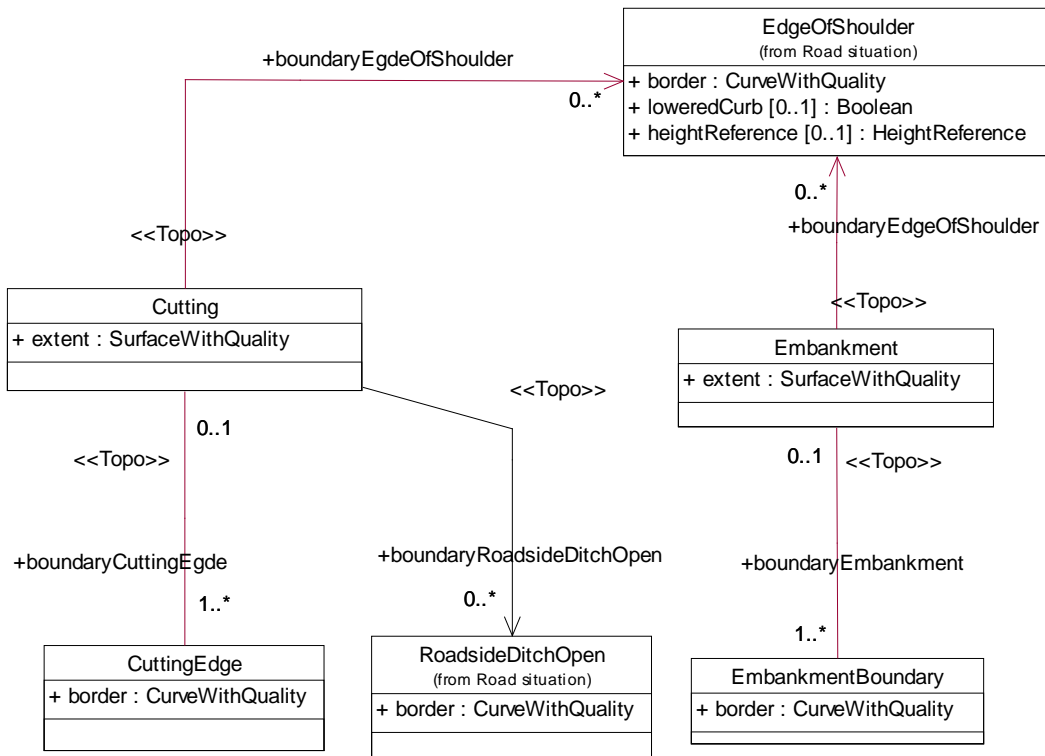
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1.1 Application schema

Hypsometric layer



Terrain extent



Terrain line

ContourLine/HeightContour ??
+ centerline : CurveWithQuality
+ height : Height
+ medium [0..1] : Medium

AuxiliaryCurve
+ centerline : CurveWithQuality
+ height : Height
+ medium [0..1] : Medium

DepressionCurve
+ centerline : CurveWithQuality
+ height : Height
+ medium [0..1] : Medium

TerrainLine
+ centerline : CurveWithQuality

TerrainLineBuilding
+ centerline : CurveWithQuality

TerrainLineRoad
+ centerline : CurveWithQuality

BreakLine
+ centerline : CurveWithQuality

Terrain point

TerrainPoint
+ position : PointWithQuality
+ height : Height
+ medium [0..1] : Medium

TopPoint
+ position : PointWithQuality
+ height : Height
+ medium [0..1] : Medium

DTMPoint
+ position : PointWithQuality
+ height : Height

DepressionPoint
+ position : PointWithQuality
+ height : Height
+ medium [0..1] : Medium

DepthPoint
+ position : PointWithQuality
+ points [0..1] : Sverm
+ depth : Depth
+ depthType [0..1] : DepthType

Codelists

<<CodeList>> Medium (from SOSI_Object)
+ Always in water = V + In Building/ building-related installation = B + In air = L + On glacier = I + On the seafloor = S + In the terrain/at ground level = T + On the water surface = O + Sporadically underwater = D + Under glacier = J + Under the seafloor + Under the terrain = U + Unknown = X

<<CodeList>> DepthType (from Topography)
+ Unspecified = 1 + Saddle point = 2 + Snag point = 3 + Reversed snag-point = 4 + Deep point = 5 + Quay depths = 6

1.2 Description

1.2.1 BreakLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class BreakLine	line which describes sharp lines of [slope] discontinuity in the terrain				
1.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	

1.2.2 DTMPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class DTMPoint	height-bearing point which describes the surface of the terrain in relation to the designated reference level. The points may be placed in a regular grid (square or rectangular) or an irregular network.				
2.1	position	location where the object exists	1	1	PointWithQuality	
2.2	height	indication of the height of the point above the height reference in metres - to be given with decimals if necessary	1	1	Height	

1.2.3 DepthPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
3	Class DepthPoint	a point in water (freshwater/saltwater) with a value (z value) which indicates the depth at a specific point in relation to the designated reference level				
3.1	position	location where the object exists	1	1	PointWithQuality	
3.2	points		0	1	Sverm	
3.3	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	1	1	Depth	

		about General Types?				
3.4	depthType	type of depth point	0	1	DepthType	

1.2.4 DepressionCurve

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
4	Class DepressionCurve	line in the terrain with a fixed height value (z value) which describes a depression in the terrain				
4.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	
4.2	height	indicates the depression curve's height above the height reference in metres - to given with decimals if necessary	1	1	Height	
4.3	medium	the location of the object relative to the earth's surface	0	1	Medium	
4.4	Role (unnamed) HypsometricLayer		0	2	HypsometricLayer	

1.2.5 DepressionPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
5	Class DepressionPoint	a point with a measured height value, located in a pronounced depression in the terrain				
5.1	position	location where the object exists	1	1	PointWithQuality	
5.2	height	indicates the depression curve's height above the height reference in metres - to given with decimals if necessary	1	1	Height	
5.3	medium	the location of the object relative to the earth's surface	0	1	Medium	

1.2.6 Embankment

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
6	Class Embankment	Embankment on the original terrain delimited by the embankment slope and the datum line/edge/formation of the				

		road				
6.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
6.2	Role boundaryEmbankment		1	N	EmbankmentBoundary	
6.3	Role boundaryEdgeOfShoulder		0	N	EdgeOfShoulder	

1.2.7 EmbankmentBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
7	Class EmbankmentBoundary	delimitation of embankment				
7.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
7.2	Role (unnamed) Embankment		0	1	Embankment	

1.2.8 AuxiliaryCurve

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
8	Class AuxiliaryCurve	line which follows the terrain with a fixed height value (z value), and which is used to provide a better description of the terrain between the ordinary ??(contour lines / height contours)				
8.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	
8.2	height	indication of the depression curve's height above the height reference in metres - to be given with decimals if necessary	1	1	Height	
8.3	medium	the location of the object relative to the earth's surface	0	1	Medium	
8.4	Role (unnamed) HypsometricLayer		0	2	HypsometricLayer	

1.2.9 ContourLine/HeightContour ??

No	Name/	Description	Obligation/	Maximum	Type	Constraint
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	Role name		Condition	Occurrence		
9	Class ContourLine/HeightContour ??	line in the terrain with a fixed height value (z value) above the reference height				
9.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	
9.2	height	indication of the depression curve's height above the height reference in metres - to be given with decimals if necessary	1	1	Height	
9.3	medium	the location of the object relative to the earth's surface	0	1	Medium	
9.4	Role (unnamed) HypsometricLayer		0	2	HypsometricLayer	

1.2.10 Cutting

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
10	Class Cutting	excavation in original terrain delimited by the cutting slope and the ??datum line/edge/formation of the road				
10.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
10.2	Role boundaryCuttingEdge		1	N	CuttingEdge	
10.3	Role boundaryEdgeOfShoulder		0	N	EdgeOfShoulder	
10.4	Role boundaryRoadsideDitchOpen		0	N	RoadsideDitchOpen	

1.2.11 CuttingEdge

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
11	Class CuttingEdge	delimitation of cutting				
11.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
11.2	Role (unnamed)		0	1	Cutting	

	Cutting					
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1.2.12 TerrainLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
12	Class TerrainLine	line used where the terrain pronouncedly changes slope and/or direction (across the terrain line). Terrain lines are typically to be used in depressions, on ridges and peaks, at the bottom of depressions, saddles or on flat areas with little other height information				
12.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	

1.2.13 TerrainLineBuilding

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
13	Class TerrainLineBuilding	indication of terrain level around the base of buildings registered right outside the projection of the roof edge onto the ground (not right along the building wall)				
13.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	

1.2.14 TerrainPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
14	Class TerrainPoint	point in the terrain with a measured height value used to indicate the height on pronounced surfaces in the terrain, such as saddles and large surfaces, in road and street intersections and other intersections between transportation lines, in courtyards outside main entrances and in car parks				
14.1	position	location where the object exists	1	1	PointWithQuality	
14.	height	indication of the height of	1	1	Height	

2		the point, to be given with decimals if necessary				
14.3	medium	the location of the object relative to the earth's surface	0	1	Medium	

1.2.15 TopPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
15	Class TopPoint	point with a measured height value located on a pronounced elevation or peak in the terrain				
15.1	position	location where the object exists	1	1	PointWithQuality	
15.2	height	indication of the peak point's height above the height reference in metres, to be given with decimals if necessary	1	1	Height	
15.3	medium	the location of the object relative to the earth's surface	0	1	Medium	

1.2.16 HypsometricLayer

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
16	Class HypsometricLayer	area between two height indications				
16.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
16.2	maxHeight	the highest level of ??(contour lines / height contours) which delimits a hypsometric layer	1	1	Height	
16.3	minHeight	the lowest level of ??(contour lines / height contours) which delimits a hypsometric layer	1	1	Height	
16.4	Role boundaryHeightContour		0	N	ContourLine/HeightContour??	
16.5	Role boundaryCoastLine		0	N	Coastline	
16.6	Role barrierSeaLage		0	N	SeaLakeBarrier	
16.7	Role boundaryDepressionCurve		0	N	DepressionCurve	
16.	Role		0	N	AuxiliaryCurve	

8	boundaryAuxiliaryCurve					
16.9	Role delineationSeaRiver		0	N	SeaRiverDelineation	

1.2.17 TerrainLineRoad

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
17	Class TerrainLineRoad	line which describes characteristic break points in terrain formations along road constructions, such as median, traffic island, curb, hard shoulder, etc.				
17.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	

1.2.18 Association <<Topo>> Embankment-EmbankmentBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
18	Association Embankment-EmbankmentBoundary					
18.1	Role boundaryEmbankment		1	N	EmbankmentBoundary	
18.2	Role (unnamed) Embankment		0	1	Embankment	

1.2.19 Association <<Topo>> Cutting-CuttingEdge

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
19	Association Cutting-CuttingEdge					
19.1	Role boundaryCuttingEdge		1	N	CuttingEdge	
19.2	Role (unnamed) Cutting		0	1	Cutting	

1.2.20 Association <<Topo>> Embankment-EdgeOfShoulder

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
20	Association Embankment-					

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
20.1	EdgeOfShoulder Role boundaryEdgeOfShoulder		0	N	EdgeOfShoulder	
20.2	(unnamed) Role Embankment		1	1	Embankment	

1.2.21 Association <<Topo>> Cutting-EdgeOfShoulder

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
21	Association Cutting-EdgeOfShoulder					
21.1	Role boundaryEdgeOfShoulder		0	N	EdgeOfShoulder	
21.2	(unnamed) Role Cutting		1	1	Cutting	

1.2.22 Association <<Topo>> HypsometricLayer-ContourLine/HeightContour ??

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
22	Association HypsometricLayer-ContourLine/HeightContour ??					
22.1	Role boundaryHeightContour		0	N	ContourLine/HeightContour ??	
22.2	(unnamed) Role HypsometricLayer		0	2	HypsometricLayer	

1.2.23 Association <<Topo>> HypsometricLayer-Coastline

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
23	Association HypsometricLayer-Coastline					
23.1	Role boundaryCoastLine		0	N	Coastline	
23.2	(unnamed) Role HypsometricLayer		0	1	HypsometricLayer	

1.2.24 Association <<Topo>> HypsometricLayer-SeaLakeBarrier

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
24	Association HypsometricLayer- SeaLakeBarrier					
24.1	Role barrierSeaLage		0	N	SeaLakeBarrier	
24.2	Role (unnamed) HypsometricLayer		0	1	HypsometricLayer	

1.2.25 Association <<Topo>> HypsometricLayer-DepressionCurve

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
25	Association HypsometricLayer- DepressionCurve					
25.1	Role boundaryDepressionCurve		0	N	DepressionCurve	
25.2	Role (unnamed) HypsometricLayer		0	2	HypsometricLayer	

1.2.26 Association <<Topo>> HypsometricLayer-AuxiliaryCurve

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
26	Association HypsometricLayer- AuxiliaryCurve					
26.1	Role boundaryAuxiliaryCurve		0	N	AuxiliaryCurve	
26.2	Role (unnamed) HypsometricLayer		0	2	HypsometricLayer	

1.2.27 Association <<Topo>> HypsometricLayer-SeaRiverDelineation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
27	Association HypsometricLayer- SeaRiverDelineat					

	ion					
27.1	Role delineationSeaRiver		0	N	SeaRiverDelineation	
27.2	Role (unnamed) HypsometricLayer		0	1	HypsometricLayer	

1.2.28 Association <<Topo>> Cutting-RoadsideDitchOpen

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
28	Association Cutting- RoadsideDitchOpen					
28.1	Role boundaryRoadsideDitchOpen		0	N	RoadsideDitchOpen	
28.2	Role (unnamed) Cutting		1	1	Cutting	