Inland waters, rivers

Norwegian Mapping Authority
gerd.mardal@statkart.no

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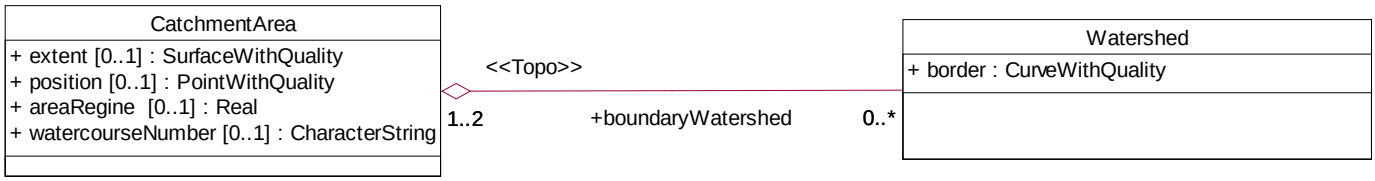
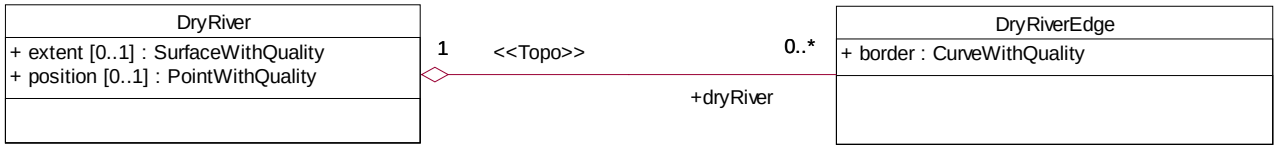
1.1 Application schema

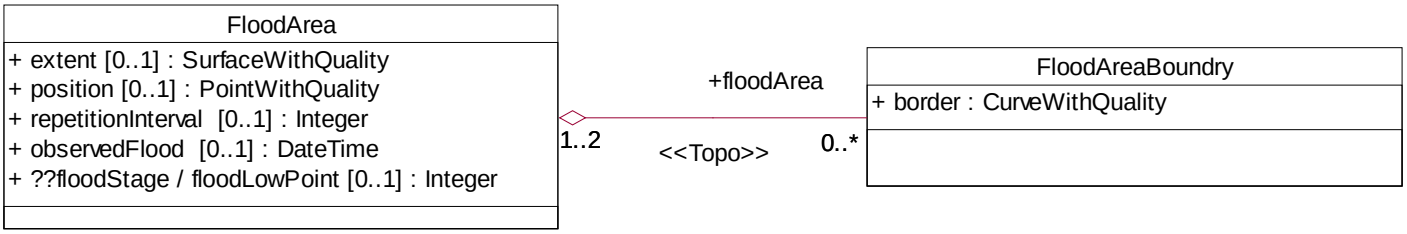
Catchmentarea

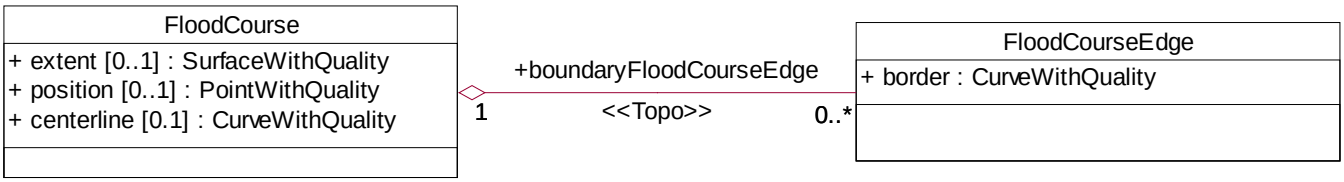


Dry lake/river

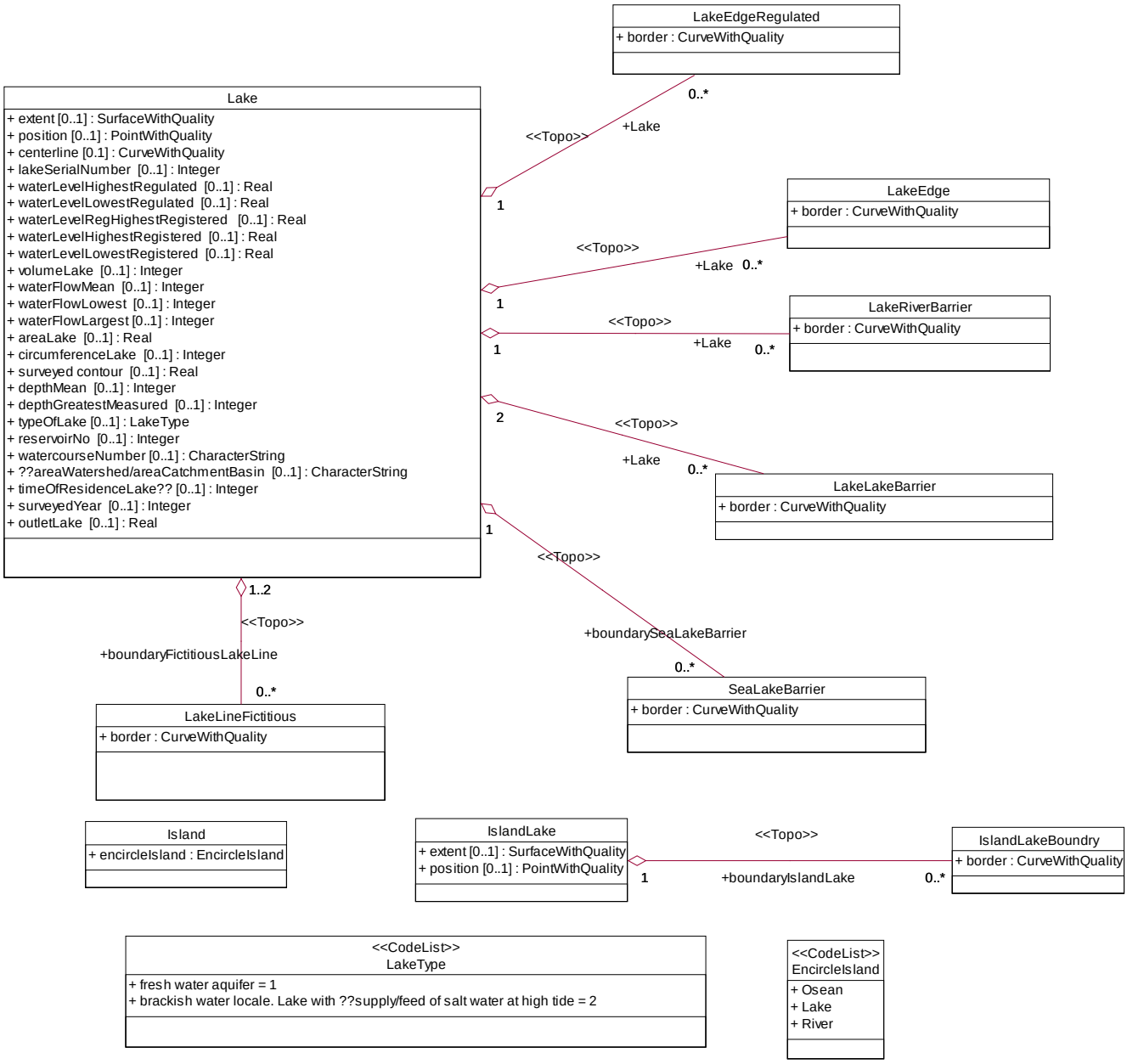


Flood





Lake


LakeEdgeRegulated
+ border : CurveWithQuality
Lake
+ extent [0..1] : SurfaceWithQuality
+ position [0..1] : PointWithQuality
+ centerline [0.1] : CurveWithQuality
+ lakeSerialNumber [0..1] : Integer
+ waterLevelHighestRegulated [0..1] : Real
+ waterLevelLowestRegulated [0..1] : Real
+ waterLevelRegHighestRegistered [0..1] : Real
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+ volumeLake [0..1] : Integer
+ waterFlowMean [0..1] : Integer
+ waterFlowLowest [0..1] : Integer
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+ circumferenceLake [0..1] : Integer
+ surveyed contour [0..1] : Real
+ depthMean [0..1] : Integer
+ depthGreatestMeasured [0..1] : Integer
+ typeOfLake [0..1] : LakeType
+ reservoirNo [0..1] : Integer
+ watercourseNumber [0..1] : CharacterString
+ ??areaWatershed/areaCatchmentBasin [0..1] : CharacterString
+ timeOfResidenceLake?? [0..1] : Integer
+ surveyedYear [0..1] : Integer
+ outletLake [0..1] : Real
0..*
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+Lake
1
LakeEdge
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+Lake
0..*
1
LakeRiverBarrier
+ border : CurveWithQuality
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+Lake
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LakeLakeBarrier
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0..*
SeaLakeBarrier
+ border : CurveWithQuality
1..2
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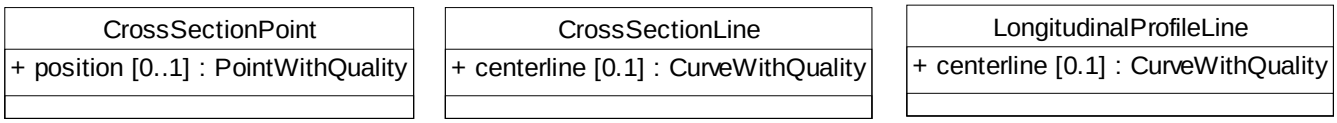
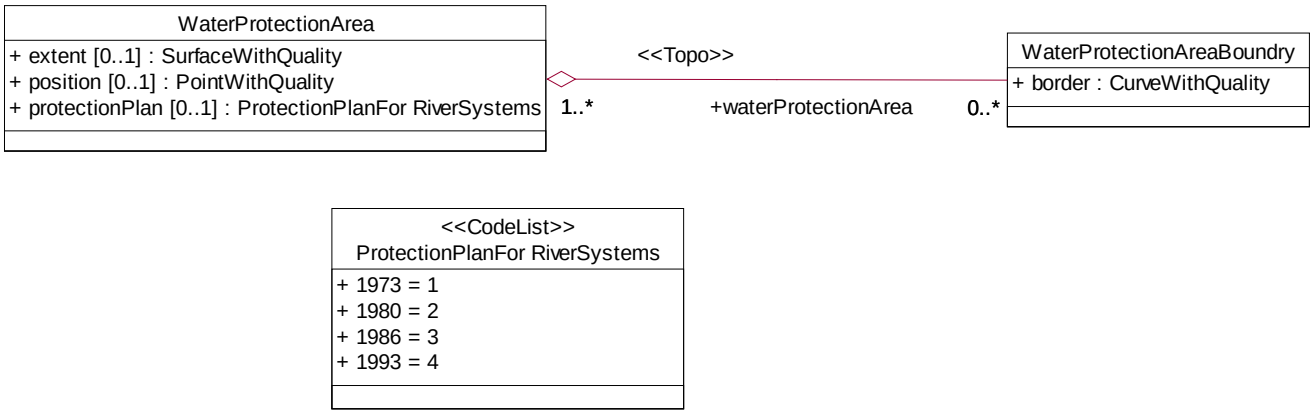
+boundaryFictitiousLakeLine
0..*
LakeLineFictitious
+ border : CurveWithQuality
Island
+ encircleIsland : EncircleIsland
IslandLake
+ extent [0..1] : SurfaceWithQuality
+ position [0..1] : PointWithQuality
<<Topo>>
1
+boundaryIslandLake
0..*
IslandLakeBoundry
+ border : CurveWithQuality
<<CodeList>>
LakeType
+ fresh water aquifer = 1
+ brackish water locale. Lake with ??supply/feed of salt water at high tide = 2
<<CodeList>>
EncircleIsland
+ Osean
+ Lake
+ River

Profiles

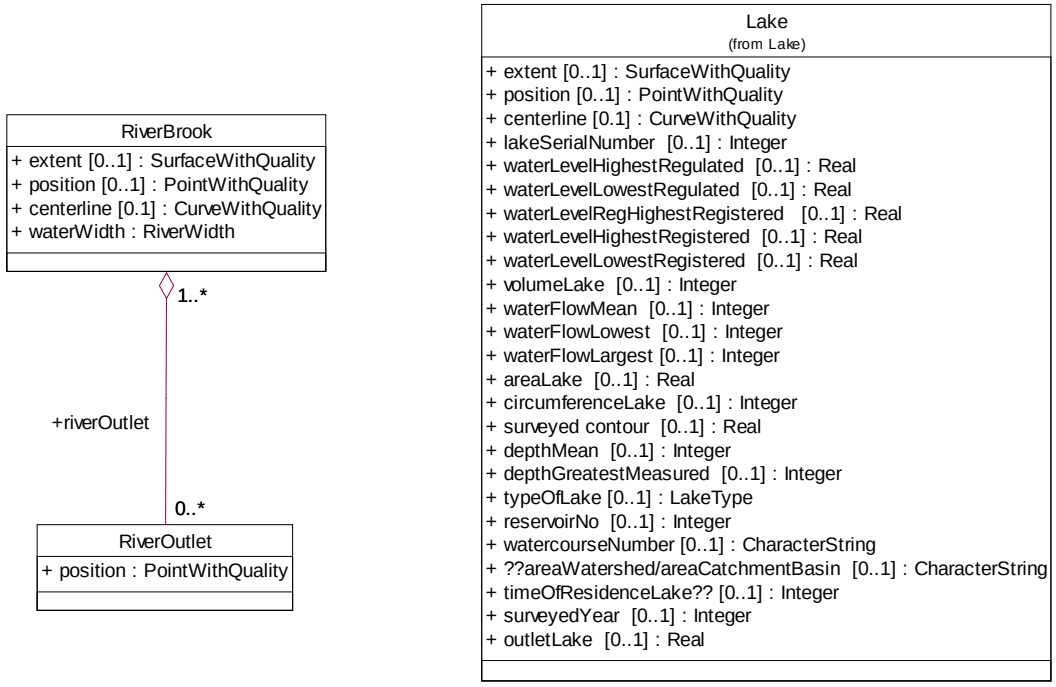


Protected area

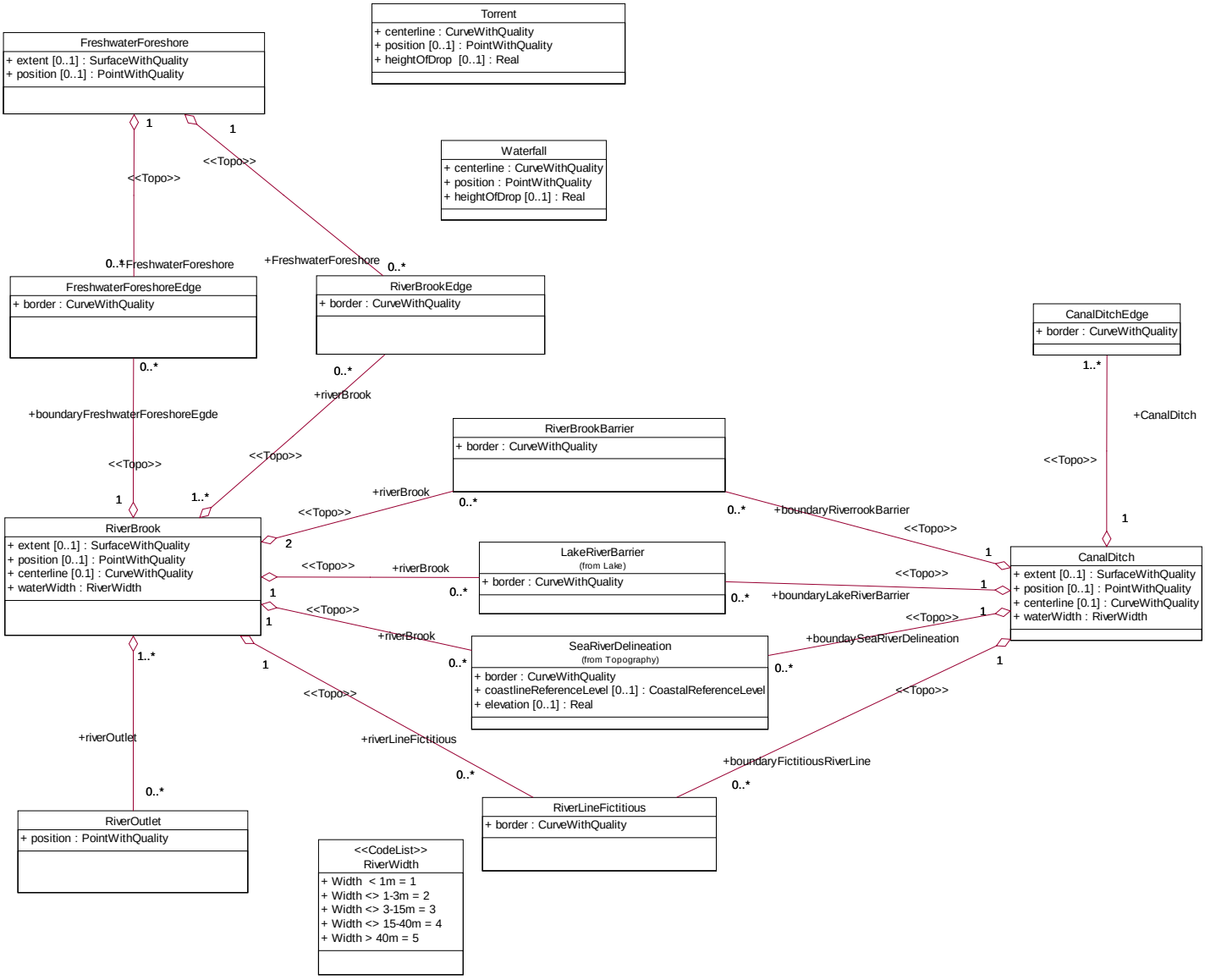


Rivers and brooks

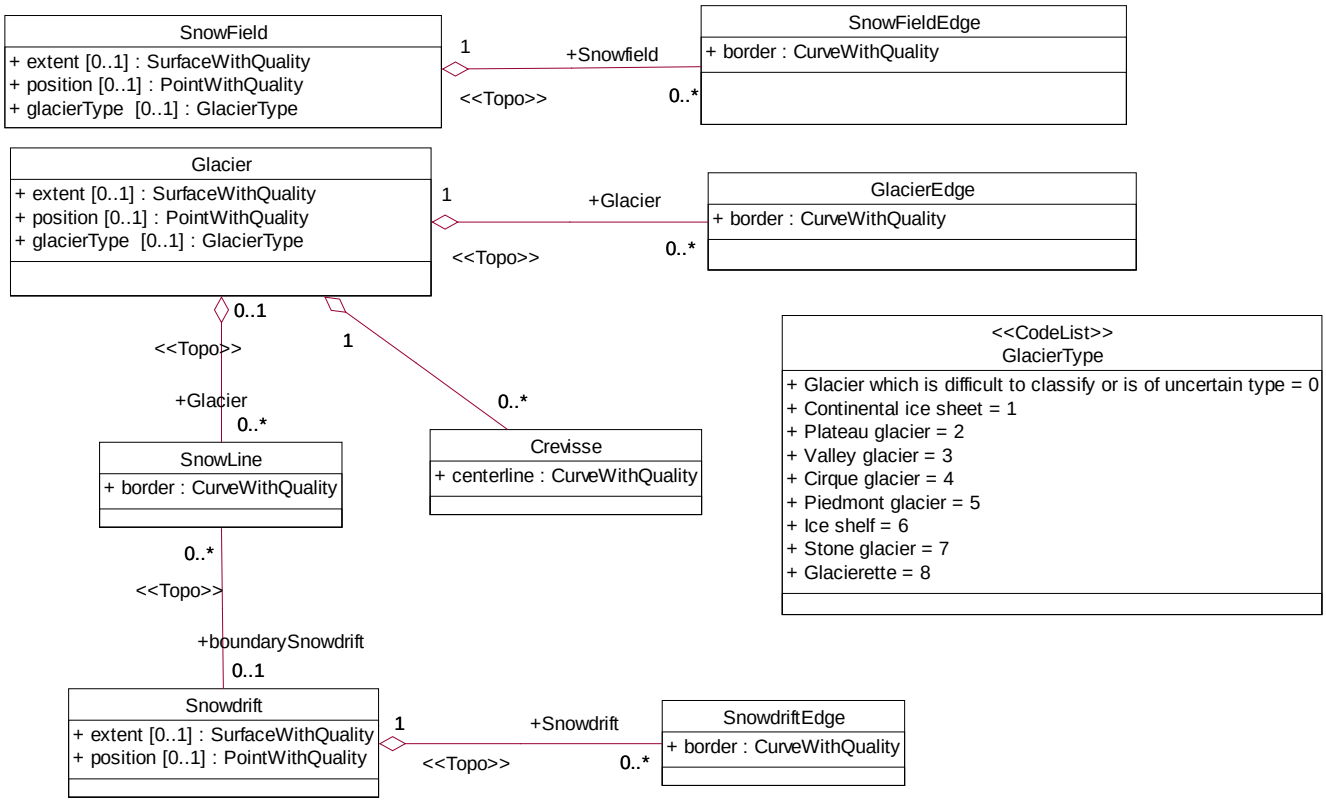
River network



Main Rivers and brooks



Snowfield and Glacier



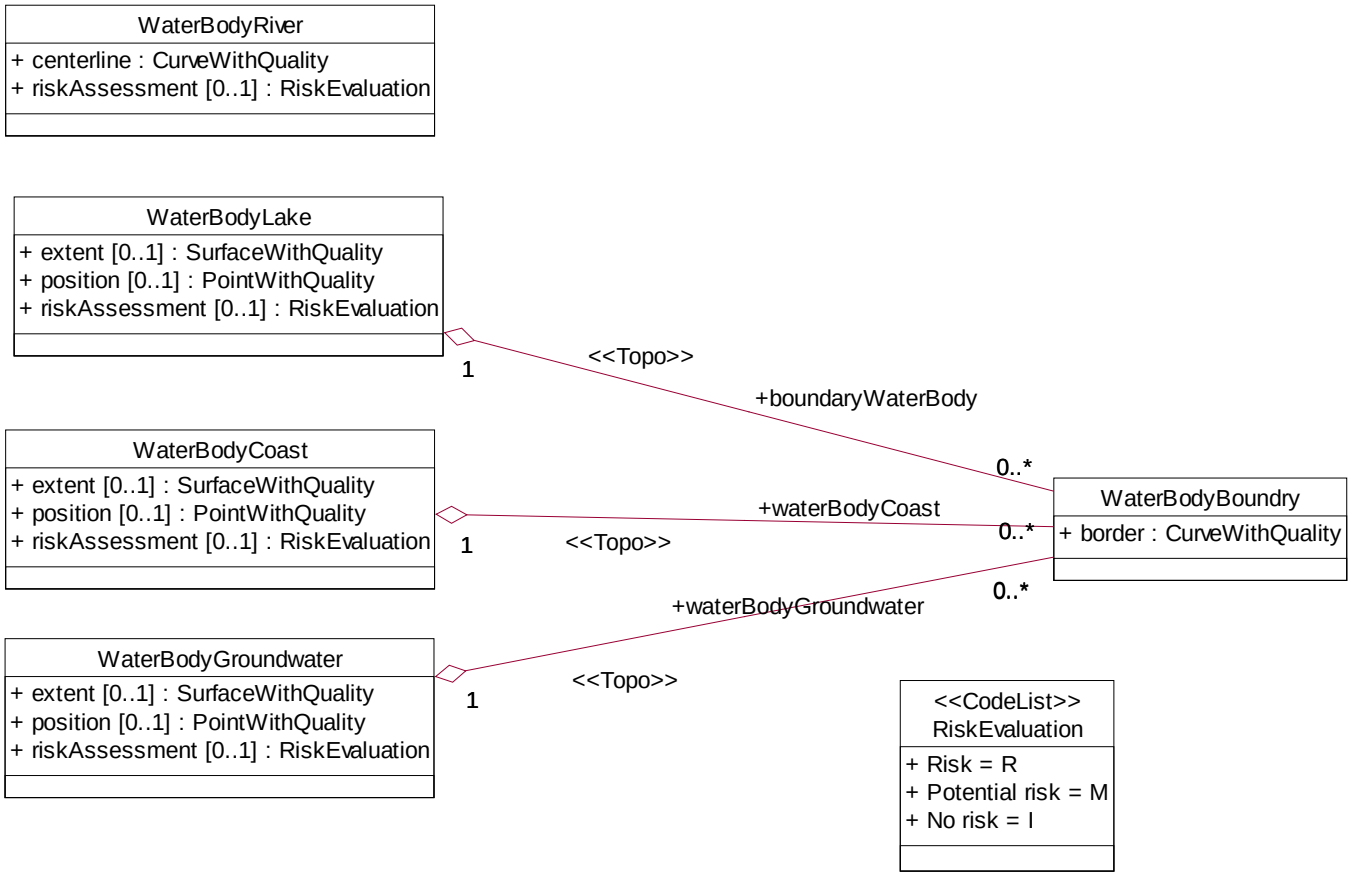
Station

GaugingStation
+ position : PointWithQuality + typeOfStation : GaugingStationType + stationParameter : GaugingStationParameter

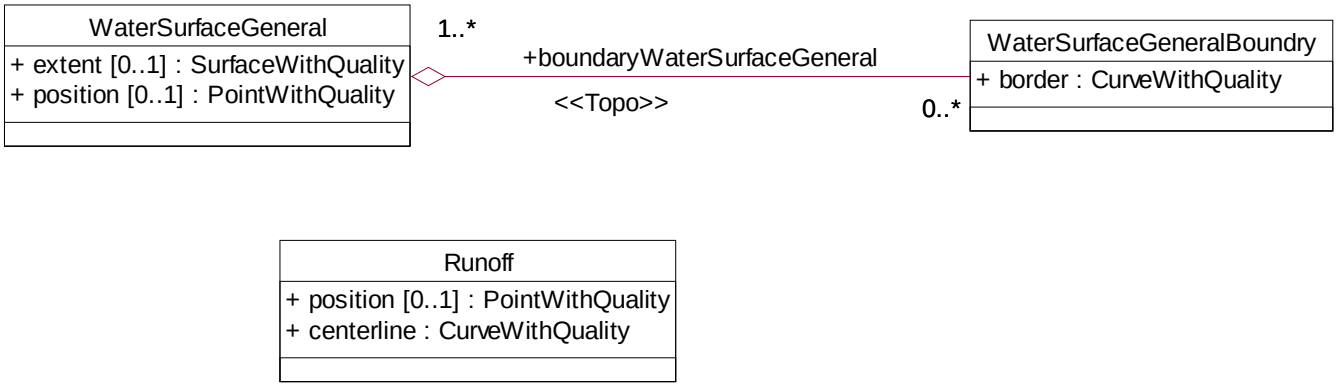
<<CodeList>> GaugingStationType
+ measuring/metering station with automatic measurements + measuring/metering station with remotely transmitted measurements + measuring/metering station with manual measurements

<<CodeList>> GaugingStationParameter
+ precipitation = 0 + evaporation = 1 + relative humidity = 2 + water vapour pressure = 3 + air pressure at the ??place/point of measurement = 4 + global radiation = 6 + net radiation = 7 + short-wave radiation = 8 + long-wave radiation = 9 + cloud cover 1/8 = 12 + cloud cover 1/10 = 13 + wind direction = 14 + wind speed = 15 + wind speed 10 m = 16 + air temperature = 17 + air temperature 10 m = 18 + water level = 1000 + water flow = 1001 + water speed = 1002 + water temperature = 1003 + reservoir volume = 1004 + ice thickness = 1005 + conductivity = 1006 + pH = 1007 + overflow = 1008 + hatchway = 1009 + total discharge = 1010 + specific ??drain/drainage/discharge = 1011 + transmission = 1015 + salinity = 1017 + seepage = 1050 + ??operation water flow = 1055 + diversion flow = 1057 + pumping = 1075 + konsentrasjon suspendert min. materiale = 1200 + concentration, suspended min. material = 1202 + directly measured bedload transport = 1204 + indirectly measured bedload transport = 1206 + concentration organic material = 1208 + suspended solids = 1209 + transport organic material = 1210 + cumulative grain size distribution curve, suspended material 1 = 1212 + cumulative grain size distribution curve, suspended material = 1214 + ground water level = 2000 + ground dampness = 2001 + snow depth = 2002 + water equivalent of the snow = 2003 + ??lower/maximum frost depth = 2004 + pore pressure = 2005 + ground temperature = 2006 + meltwater = 2010 + meltwater and precipitation = 2011 + groundwater temperature = 2015 + ??upper/minimum frost depth = 2018 + tension = 2020 + snow density = 2024 + resistance soil water measurement = 5011 + ice report = 5100 + ice map = 5101 + ice memorandum = 5102 + frost mist = 5110 + dew point temperature = 8311

Waterbody



Watersurface general



1.2 Description

1.2.1 Catchmentarea

1.2.1.1 CatchmentArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class CatchmentArea	area with one common outlet point for its runoff. The outlet point is defined for e.g. outlets into fjords and lakes or where to rivers confluence				
1.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
1.2	position		0	1	PointWithQuality	
1.3	areaRegine	area calculated for a ??(watershed/catchment basin) from NVEXzXs REGINE - REGIster of YzzYNEdbørfeltYzzY (watersheds) Previously NVEAREAL	0	1	Real	
1.4	watercourseNumber	unik identifikasjon på NedbørFelt som et hierarkisk system i henhold til NVEs REGINE (REGister over Nedbørfelt)	0	1	CharacterString	
1.5	Role boundaryWatershed		0	N	Watershed	Aggregration

1.2.1.2 Watershed

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class Watershed	boundry between two catchment areas				
2.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
2.2	Role (unnamed) CatchmentArea		1	2	CatchmentArea	

1.2.2 Dry lake/river

1.2.2.1 DryRiver

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class DryRiver	periodically dry river				
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	Role dryRiver	DryRiverEdge	0	N	DryRiverEdge	Aggregration

1.2.2.2 DryRiverEdge

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class DryRiverEdge	demarkation line between dry river and land				
2.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
2.2	Role (unnamed) DryRiver		1	1	DryRiver	

1.2.2.3 DryLake

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
3	Class DryLake	periodically dry lake				
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 dryLake	DryLakeEdge	1	1	DryLakeEdge	Aggregration

1.2.2.4 DryLakeEdge

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
4	Class DryLakeEdge	demarkation line between dry lake and land				
4.1	border	course following the transition between different real world	1	1	CurveWithQuality	

		phenomena				
4.2	Role (unnamed) DryLake		0	N	DryLake	

1.2.3 Rivers and brooks

1.2.3.1 RiverBrook

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class RiverBrook	Water course for running water.				
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	centerline	course followed by the central part of the Object	0	1	CurveWithQuality	
1.4	waterWidth	rough classification of watercourses according to average width over longer expanses	1	1	RiverWidth	
1.5	Role riverBrook	RiverBrookEdge	0	N	RiverBrookEdge	Aggregration
1.6	Role riverBrook	FreshwaterForeshoreEdge	0	N	SeaRiverDelineation	Aggregration
1.7	Role riverBrook	SeaRiverBarrier	0	N	LakeRiverBarrier	Aggregration
1.8	Role riverBrook		0	N	RiverBrookBarrier	Aggregration
1.9	Role riverOutlet		0	N	RiverOutlet	Aggregration
1.10	Role (unnamed) RiverLineFictitious		0	N	RiverLineFictitious	Aggregration
1.11	Role boundaryFreshwaterForeshoreEgde		0	N	FreshwaterForeshoreEdge	Aggregration

1.2.3.2 RiverBrookEdge

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class RiverBrookEdge	Demarkation line between land and river surface.				
2.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	

2.2	Role (unnamed) RiverBrook		1	N	RiverBrook	
2.3	Role (unnamed) FreshwaterForeshore		1	1	FreshwaterForeshore	

1.2.3.3 RiverLineFictitious

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
3	Class RiverLineFictitious	Fictious partition line in a river or canal. Note: Also used where parts of the river edge is unknown to be able to create a river surface.				
3.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
3.2	Role riverLineFictitious	RiverBrook	1	1	RiverBrook	
3.3	Role (unnamed) CanalDitch		1	1	CanalDitch	
3.4	Role (unnamed) CanalDitch		1	1	CanalDitch	

1.2.3.4 RiverBrookBarrier

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
4	Class RiverBrookBarrier	Construction line for delimitation of river surface where it confluences with another river or canal surface.				
4.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
4.2	Role (unnamed) RiverBrook		2	2	RiverBrook	
4.3	Role (unnamed) CanalDitch		1	1	CanalDitch	

1.2.3.5 RiverOutlet

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

				e		
5	Class RiverOutlet	Outlet of a river into the sea or a lake.				
5.1	position	location where the object exists	1	1	PointWithQuality	
5.2	Role (unnamed) RiverBrook		1	N	RiverBrook	

1.2.3.6 FreshwaterForeshoreEdge

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
6	Class FreshwaterForeshoreEdge	Demarkation line for FreshwaterForeshoreEdge				
6.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
6.2	Role (unnamed) FreshwaterForeshore		1	1	FreshwaterForeshore	
6.3	Role (unnamed) RiverBrook		1	1	RiverBrook	

1.2.3.7 Torrent

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
7	Class Torrent	quoted height of fall for torrent				
7.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	
7.2	position	location where the object exists	0	1	PointWithQuality	
7.3	heightOfDrop	stated height of drop in waterfalls and rapids	0	1	Real	

1.2.3.8 Waterfall

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
8	Class Waterfall	Quoted height of fall for waterfall and cascades.				
8.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	
8.2	position	location where the object exists	1	1	PointWithQuality	
8.3	heightOfDrop	designated height of drop in waterfalls and rapids	0	1	Real	

1.2.3.9 CanalDitch

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
9	Class CanalDitch	running water where the water course is made by humans				
9.1	extent	objektets utstrekning	0	1	SurfaceWithQuality	
9.2	position	location where the object exists	0	1	PointWithQuality	
9.3	centerline	course followed by the central part of the Object	0	1	CurveWithQuality	
9.4	waterWidth	gives information about how a river/brook and a channel/trench are classified according to width	1	1	RiverWidth	
9.5	Role CanalDitch	CanalDitchEdge	1	N	CanalDitchEdge	Aggregration
9.6	Role boundaryRiverrookBarrier		0	N	RiverBrookBarrier	Aggregration
9.7	Role boundaySeaRiverDelineation		0	N	SeaRiverDelineation	Aggregration
9.8	Role boundaryLakeRiverBarrier		0	N	LakeRiverBarrier	Aggregration
9.9	Role (unnamed) RiverLineFictitious		1	1	RiverLineFictitious	Aggregration
9.10	Role boundaryFictitiousRiverLine		0	N	RiverLineFictitious	Aggregration

1.2.3.10 CanalDitchEdge

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
10	Class CanalDitchEdge	demarcation line of the water surface for a canal or ditch. Note: here, water surface means the normal water level in the canal/ditch				
10.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
10.2	Role (unnamed) CanalDitch		1	1	CanalDitch	

1.2.3.11 FreshwaterForeshore

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
11	Class FreshwaterForeshore	Banks of sand or sediments in rivers and brooks which is flooded during high water levels.				
11.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
11.2	position	location where the object exists	0	1	PointWithQuality	
11.3	Role FreshwaterForeshore	RiverBrookEdge	0	N	FreshwaterForeshoreEdge	Aggregration
11.4	Role FreshwaterForeshore	FreshwaterForeshoreEdge	0	N	RiverBrookEdge	Aggregration

1.2.3.12 Association <<Topo>> RiverBrook-SeaRiverDelineation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
12	Association RiverBrook-SeaRiverDelineation					
12.1	Role riverBrook	FreshwaterForeshoreEdge	0	N	SeaRiverDelineation	Aggregation
12.2	Role (unnamed) RiverBrook		1	1	RiverBrook	

1.2.3.13 Association <<Topo>> RiverBrook-LakeRiverBarrier

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
13	Association RiverBrook-LakeRiverBarrier					
13.1	Role riverBrook	SeaRiverBarrier	0	N	LakeRiverBarrier	Aggregation
13.2	Role (unnamed) RiverBrook		1	1	RiverBrook	

1.2.3.14 Association <<Topo>> RiverBrook-RiverBrookBarrier

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
14	Association RiverBrook-RiverBrookBarrie					

	r					
14.1	Role riverBrook		0	N	RiverBrookBarrier	Aggregation
14.2	Role (unnamed) RiverBrook		2	2	RiverBrook	

1.2.3.15 Association <<Topo>> CanalDitch-RiverBrookBarrier

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
15	Association CanalDitch-RiverBrookBarrier					
15.1	Role boundaryRiverrookBarrier		0	N	RiverBrookBarrier	Aggregation
15.2	Role (unnamed) CanalDitch		1	1	CanalDitch	

1.2.3.16 Association <<Topo>> kystsperre

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
16	Association kystsperre					
16.1	Role boundaySeaRiverDelineation		0	N	SeaRiverDelineation	Aggregation
16.2	Role (unnamed) CanalDitch		1	1	CanalDitch	

1.2.3.17 Association <<Topo>> CanalDitch-LakeRiverBarrier

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
17	Association CanalDitch-LakeRiverBarrier					
17.1	Role boundaryLakeRiverBarrier		0	N	LakeRiverBarrier	Aggregation
17.2	Role (unnamed) CanalDitch		1	1	CanalDitch	

1.2.3.18 Association RiverBrook-RiverOutlet

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

	RiverBrook-RiverOutlet					
18.1	Role riverOutlet		0	N	RiverOutlet	Aggregation
18.2	Role (unnamed) RiverBrook		1	N	RiverBrook	

1.2.3.19 Association <<Topo>> RiverBrook-RiverLineFictitious

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

1.2.3.20 Association CanalDitch-RiverLineFictitious

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
20	Association CanalDitch-RiverLineFictitious					
20.1	Role (unnamed) RiverLineFictitious		1	1	RiverLineFictitious	Aggregation
20.2	Role (unnamed) CanalDitch		1	1	CanalDitch	

1.2.3.21 Association <<Topo>> RiverBrook-FreshwaterForeshoreEdge

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
21	Association RiverBrook-FreshwaterForeshoreEdge					
21.1	Role boundaryFreshwaterForeshoreEgde		0	N	FreshwaterForeshoreEdge	Aggregation
21.2	Role (unnamed) RiverBrook		1	1	RiverBrook	

1.2.3.22 Association <<Topo>> RiverBrookEdge-FreshwaterForeshore

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
22	Association RiverBrookEdge-FreshwaterForeshore					
22.1	Role (unnamed) FreshwaterForeshore		1	1	FreshwaterForeshore	
22.2	Role FreshwaterForeshore	FreshwaterForeshoreEdge	0	N	RiverBrookEdge	Aggregation

1.2.3.23 Association <<Topo>> RiverLineFictitious-CanalDitch

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

1.2.4 Snowfield and glacier

1.2.4.1 Glacier

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class Glacier	a mass of snow and ice which lies mainly on land, and which is in or has been in movement				
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	glacierType		0	1	GlacierType	
1.4	Role Glacier	Crevasse	0	N	GlacierEdge	Aggregration
1.5	Role Glacier	GlacierEdge	0	N	SnowLine	Aggregration
1.6	Role (unnamed)		0	N	Crevisse	Aggregration

	Crevisse					

1.2.4.2 GlacierEdge

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class GlacierEdge	demarkation line for a mass of snow and ice which lies mainly on land, and which is in or has been in movement				
2.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
2.2	Role (unnamed) Glacier		1	1	Glacier	

1.2.4.3 SnowField

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
3	Class SnowField	snow or glacier and bare ground where it is uncertain if it is snow or glacier. Note: A snowfield can also be a part of perpetual snow, especially when the glacierXzXs edge cannot be defined and registered as a glacier				
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	glacierType		0	1	GlacierType	
3.4	Role Snowfield	SnowfieldEdge	0	N	SnowFieldEdge	Aggregration

1.2.4.4 SnowFieldEdge

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
4	Class SnowFieldEdge	demarkation line between snow or glacier and bare ground where it is uncertain if it is snow or glacier				
4.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
4.2	Role		1	1	SnowField	

	(unnamed) SnowField					

1.2.4.5 Snowdrift

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
5	Class Snowdrift	tightly packed snow which is not in movement				
5.1	extent	area over which an object extends	0	1	SurfaceWithQuality	
5.2	position	location where the object exists	0	1	PointWithQuality	
5.3	Role Snowdrift	SnowdriftEdge	0	N	SnowdriftEdge	Aggregration
5.4	Role boundarySnowdrift		0	N	SnowLine	

1.2.4.6 SnowdriftEdge

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
6	Class SnowdriftEdge	demarkation line for tightly packed snow which is not in movement and other surface				
6.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
6.2	Role (unnamed) Snowdrift		1	1	Snowdrift	

1.2.4.7 SnowLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
7	Class SnowLine	boundry between snow and ice on the glacier surface				
7.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
7.2	Role (unnamed) Glacier		0	1	Glacier	
7.3	Role (unnamed) Snowdrift		0	1	Snowdrift	

1.2.4.8 Crevisse

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
8	Class Crevisse	Temporary visible fissures on a glacier.				
8.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	
8.2	Role (unnamed) Glacier		1	1	Glacier	

1.2.4.9 Association <<Topo>> Snowdrift-SnowdriftEdge

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
9	Association Snowdrift-SnowdriftEdge					
9.1	Role Snowdrift	SnowdriftEdge	0	N	SnowdriftEdge	Aggregation
9.2	Role (unnamed) Snowdrift		1	1	Snowdrift	

1.2.4.10 Association <<Topo>> Glacier-SnowLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
10	Association Glacier-SnowLine					
10.1	Role Glacier	GlacierEdge	0	N	SnowLine	Aggregation
10.2	Role (unnamed) Glacier		0	1	Glacier	

1.2.4.11 Association <<Topo>> SnowLine-Snowdrift

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
11	Association SnowLine-Snowdrift					
11.1	Role (unnamed) Snowdrift		0	1	Snowdrift	
11.2	Role boundarySnowdrift		0	N	SnowLine	

1.2.4.12 Association Glacier-Crevisse

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
12	Association Glacier-Crevisse					
12.1	Role (unnamed) Crevisse		0	N	Crevisse	Aggregation
12.2	Role (unnamed) Glacier		1	1	Glacier	

1.2.5 Station

1.2.5.1 GaugingStation

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class GaugingStation	point, line or surface in terrain where one or several parameters are gauged or calculated one or several times				
1.1	position	location where the object exists	1	1	PointWithQuality	
1.2	typeOfStation	transfer of data from measuring station	1	1	GaugingStationType	
	stationParameter	measurement parameters for measuring station	1	1	GaugingStationParameter	

1.2.6 Waterbody

1.2.6.1 WaterBodyRiver

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class WaterBodyRiver	One river segment or a group of river segments with the same water type, pressure and risk evaluation.				
1.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	
1.2	riskAssessment	assessment of risk for water resource in river, lake or ocean	0	1	RiskEvaluation	

1.2.6.2 WaterBodyGroundwater

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class WaterBodyGroundwater	A demarkated area where a given amount of groundwater is available and with the same pressure.				
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	riskAssessment	assessment of risk for water resource in river, lake or ocean	0	1	RiskEvaluation	
2.4	Role waterBodyGroundwater	WaterBodyBoundry	0	N	WaterBodyBoundry	Aggregration

1.2.6.3 WaterBodyCoast

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
3	Class WaterBodyCoast	Coastal area with identical water type, pressure and risk evaluation.				
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	riskAssessment	assessment of risk for water resource in river, lake or ocean	0	1	RiskEvaluation	
3.4	Role waterBodyCoast	WaterBodyBoundry	0	N	WaterBodyBoundry	Aggregration

1.2.6.4 WaterBodyLake

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
4	Class WaterBodyLake	A lake where a pressure require measures to improve the status of the water quality, and all lakes larger than 0.5 km2 with or without pressure.				
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	riskAssessment	assessment of risk for water resource in river,	0	1	RiskEvaluation	

		lake or ocean				
4.4	Role boundaryWaterBody		0	N	WaterBodyBoundry	Aggregration

1.2.6.5 WaterBodyBoundry

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
5	Class WaterBodyBoundry	Demarkation line for water bodies.				
5.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
5.2	Role (unnamed) WaterBodyLake		1	1	WaterBodyLake	
5.3	Role (unnamed) WaterBodyCoast		1	1	WaterBodyCoast	
5.4	Role (unnamed) WaterBodyGroundwater		1	1	WaterBodyGroundwater	

1.2.6.6 Association <<Topo>> WaterBodyLake-WaterBodyBoundry

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
6	Association WaterBodyLake-WaterBodyBoundry					
6.1	Role boundaryWaterBody		0	N	WaterBodyBoundry	Aggregation
6.2	Role (unnamed) WaterBodyLake		1	1	WaterBodyLake	

1.2.6.7 Association <<Topo>> WaterBodyCoast-WaterBodyBoundry

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
7	Association WaterBodyCoast - WaterBodyBoundry					
7.1	Role waterBodyCoast	WaterBodyBoundry	0	N	WaterBodyBoundry	Aggregation
7.2	Role		1	1	WaterBodyCoa	

	(unnamed) WaterBodyCoast				st	

1.2.6.8 Association <<Topo>> WaterBodyGroundwater-WaterBodyBoundry

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
8	Association WaterBodyGroundwater-WaterBodyBoundry					
8.1	Role waterBodyGroundwater	WaterBodyBoundry	0	N	WaterBodyBoundry	Aggregation
8.2	Role (unnamed) WaterBodyGroundwater		1	1	WaterBodyGroundwater	

1.2.7 Watersurface general

1.2.7.1 WaterSurfaceGeneral

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class WaterSurfaceGeneral	Unspecified water surface demarkated by coast line, water line 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	Role boundaryWaterSurfaceGeneral		0	N	WaterSurfaceGeneralBoundry	Aggregration

1.2.7.2 WaterSurfaceGeneralBoundry

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class WaterSurfaceGeneralBoundry	Demarkation line between unspecified water surface demarkated by coast line, water line etc. and other surfaces.				
2.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	

2.2	Role (unnamed) WaterSurfaceGeneral		1	N	WaterSurfaceGeneral	

1.2.7.3 Runoff

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
3	Class Runoff	Point or isoline which shows average runoff per year for a normalized period in millimetres. Note: The values in a point or along an isoline shows the average runoff (mm/24 hours) for the period 1961 - 1990. The runoff is the differanse between precipitat				
3.1	position	location where the object exists	0	1	PointWithQuality	
3.2	centerline	course followed by the central part of the object	1	1	CurveWithQuality	

1.2.7.4 Association <<Topo>> WaterSurfaceGeneral-WaterSurfaceGeneralBoundry

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
4	Association WaterSurfaceGeneral-WaterSurfaceGeneralBoundry					
4.1	Role boundaryWaterSurfaceGeneral		0	N	WaterSurfaceGeneralBoundry	Aggregation
4.2	Role (unnamed) WaterSurfaceGeneral		1	N	WaterSurfaceGeneral	

1.2.7.5 Codelist

1.2.7.5.1 <<CodeList>> RiverWidth

Nr	Code name	Definition/Description	Code
1	CodeList RiverWidth	rough classification of river system according to average width over longer sections.	
1.1	Width < 1m		1
1.2	Width <> 1-3m		2
1.3	Width <> 3-15m		3
1.4	Width <> 15-40m		4
	Width > 40m		5

1.2.7.5.2 <<CodeList>> GlacierType

Nr	Code name	Definition/Description	Code
2	CodeList GlacierType	Types of glaciers.	
2.1	Glacier which is difficult to classify or is of uncertain type		0
2.2	Continental ice sheet	continental ice sheet	1
2.3	Plateau glacier	covers a smaller area than a continental ice sheet Note: "Glaciers of the Norwegian type"	2
2.4	Valley glacier	follows a valley and its accumulation zone is usually well-defined, but may be comprised of more than one glacial cirques or glacier-filled side valleys	3
2.5	Cirque glacier	localized in a self-contained hollow or cirque in a mountainside	4
2.6	Piedmont glacier	glacier which fans out at the foot of an ice-covered area	5
2.7	Ice shelf	floating parts of glaciers	6
2.8	Stone glacier	glacier-shaped mass of rough boulders and smaller grain sizes, where the interstices are filled with ice and snow	7
	Glacierette	Continental ice sheet	8

1.2.7.5.3 <<CodeList>> GaugingStationType

Nr	Code name	Definition/Description	Code
3	CodeList GaugingStationType	Type of data transmission from gauging station.	
3.1	measuring/metering station with automatic measurements		
3.2	measuring/metering station with remotely transmitted measurements		
3.3	measuring/metering station with manual measurements		

1.2.7.5.4 <<CodeList>> GaugingStationParameter

Nr	Code name	Definition/Description	Code
4	CodeList GaugingStationParameter	Gauging parameter for gauging stations.	
4.1	precipitation		0
4.2	evaporation		1
4.3	relative humidity		2
4.4	water vapour pressure		3
4.5	air pressure at the ??place/point of measurement		4
4.6	global radiation		6
4.7	net radiation		7
4.8	short-wave radiation		8
4.9	long-wave radiation		9
4.10	cloud cover 1/8		12
4.11	cloud cover 1/10		13
4.12	wind direction		14
4.13	wind speed		15
4.14	wind speed 10 m		16
4.15	air temperature		17
4.16	air temperature 10 m		18
4.17	water level		1000
4.18	water flow		1001

4.19	water speed		1002
4.20	water temperature		1003
4.21	reservoir volume		1004
4.22	ice thickness		1005
4.23	conductivity		1006
4.24	pH		1007
4.25	overflow		1008
4.26	hatchway		1009
4.27	total discharge		1010
4.28	specific ??drain/drainage/discharge		1011
4.29	transmission		1015
4.30	salinity		1017
4.31	seepage		1050
4.32	??operation water flow		1055
4.33	diversion flow		1057
4.34	pumping		1075
4.35	konsentrasjon suspendert min. materiale		1200
4.36	concentration, suspended min. material		1202
4.37	directly measured bedload transport		1204
4.38	indirectly measured bedload transport		1206
4.39	concentration organic material		1208
4.40	suspended solids		1209
4.41	transport organic material		1210
4.42	cumulative grain size distribution curve, suspended material 1		1212
4.43	cumulative grain size distribution curve, suspended material		1214
4.44	ground water level		2000
4.45	ground dampness		2001
4.46	snow depth		2002
4.47	water equivalent of the snow		2003
4.48	??lower/maximum frost depth		2004
4.49	pore pressure		2005

4.50	ground temperature		2006
4.51	meltwater		2010
4.52	meltwater and precipitation		2011
4.53	groundwater temperature		2015
4.54	??upper/minimum frost depth		2018
4.55	tension		2020
4.56	snow density		2024
4.57	resistance soil water measurement		5011
4.58	ice report		5100
4.59	ice map		5101
4.60	ice memorandum		5102
4.61	frost mist		5110
4.62	dew point temperature		8311

1.2.7.5.5 <<CodeList>> RiskEvaluation

Nr	Code name	Definition/Description	Code
5	CodeList RiskEvaluation	evaluation of risk for not achieving a good ecological status for water bodies in river, lake, coast or groundwater.	
5.1	Risk	risk that an ??(aquifer/water resource) will not achieve the ecological status of good or better by 2015	R
5.2	Potential risk	potential risk that the ??(aquifer/water resource) will not achieve the ecological status of good or better by 2015	M
	No risk	no risk that the ??(aquifer/water resource) will not achieve the ecological status of good or better by 2015	I

1.2.7.5.6 <<CodeList>> RiskEvaluation

Nr	Code name	Definition/Description	Code
6	CodeList RiskEvaluation	evaluation of risk for not achieving a good ecological status for water bodies in river, lake, coast or groundwater.	
6.1	Risk	risk that an ??(aquifer/water resource) will not achieve the ecological status of good or better by 2015	R
6.2	Potential risk	potential risk that the ??(aquifer/water resource) will not achieve the ecological status of good	M

		or better by 2015	
	No risk	no risk that the ??(aquifer/water resource) will not achieve the ecological status of good or better by 2015	I