

Comment template for theme 'Elevation'

	1	2	(3)	4	5	(6)	(7)
Id ¹	Name	Chapter, section or clause no./ Subclause No./ Annex ²	Paragraph / Figure / Table / Note ³	Type of comment ⁴	Comment (justification for change)	Proposed change ⁵	WG A observations on each comment submitted
1	Swisstopo	Whole document			No comments		
2	NSI Lithuania	Whole document			No comments		
3	Hydrographic Service of France (Shom), also on behalf of the IHO/EU Network Working Group (IENWG)	Executive summary		G	Focus is on land territory. However it is also advised to provide a coarse (medium scale) DTM on territorial waters.	Change text : having precise data covering the shoreline is mandatory to understand for example the effect of climate changes on the coasts and so it is required to support public policies	<p>NA</p> <p>The case of shoreline is already under “. In addition, most detailed data is necessary on hot spots, such as urban areas <u>or flood risk zones.</u>”</p> <p>Flood risk zones include areas close to the shoreline.</p>
4	Shom/IENWG	Glossary		G	The level of details is expressed using scales : this is much more relevant for maps (paper maps)	Express the levels of detail using resolution	<p>NA</p> <p>It is common template used for all core themes, most of them being vector data. In Scale remains most relevant way to express levels of detail.</p>
5	Shom/IENWG	Other terms		T	<p>Bathymetry and depth : adopt the definition from the IHO dictionary</p> <p>IHO = International Hydrographic Organisation</p>	<p>Bathymetry : The determination of ocean depths.</p> <p>Depths : The vertical distance from a given water level to the bottom</p>	<p>NA</p> <p>Bathymetry is expected to be used in any kind of water body, not only oceans.</p> <p>A</p> <p>Regarding depth, the IHO definition has been added to the INSPIRE one.</p>

¹ For internal use only. Not to be completed by reviewers.

² Use "3.1" instead of "Clause 3.1" or "Chapter 6.1". This makes grouping of comments easier.

³ E.g., Table 1

⁴ Type of comment can be G (general), E (editorial), T (technical), or Q (question)

⁵ The proposed change must be as precise and concrete as possible.

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6	Hydrographic Service of the Royal Netherlands Navy (RNLN), also on behalf of the IHO/EU Network Working Group (IENWG)	2.5.2	Table	G	Please be reminded that a water level based origin for a vertical reference is not based on the gravity field of Earth.	Remove “and based on the gravity field of Earth” from the definition of elevation	AwM This is not fully true: a water level based origin is not independent from gravity. However, to be more rigorous, the order has been changed to make clear that “based on gravity field of Earth” applies to the elevation itself rather than to the vertical reference.
7	RNLN/IENWG	3.1	Paragraph	G	Please be reminded that a water level based origin for a vertical reference is not based on the gravity field of Earth.	Remove “and based on the gravity field of Earth” from the definition of elevation	AwM This is not fully true: a water level based origin is not independent from gravity. However, to be more rigorous, the order has been changed to make clear that “based on gravity field of Earth” applies to the elevation itself rather than to the vertical reference.
8	RNLN/IENWG	3.1	Paragraph	Q	Definition: Elevation is vertically-constrained dimensional property of a spatial object consisting of an absolute measure referenced to a well-defined surface which is commonly taken as origin (e.g. geoid or water level)	The definition of a certain water level as reference (e.g. Mean Sea Level or Lowest Astronomical Tide) varies over (a long period of) time. Along the south North Sea coast the MSL is now 20 cm higher than 100 years ago. Please be aware of these changes.	A A NOTE has been added to mention this issue.
9	RNLN/IENWG	3.2	Paragraph	G	Elevation is vital to determine the legal Baseline of a Coastal State and the associated limit of the Territorial Sea.	Add this to the use case.	A
10	RNLN/IENWG	4.1	Core Recommendation 1	G	Core Recommendation 1 specifies what characteristics a DTM or DSM should have to meet the criteria for Master Level 0 data.	It is suggested that a quality check should be done and its result reported in the metadata field if the DTM or DSM meets the expected criteria. Likewise for Core Recommendation 2 and 3.	A A NOTE has been added in the metadata chapter.
11	Shom/IENWG	4.1		T	Change : 10 m depth is the limit of LIDAR visibility	LIDAR visibility can extend to 30 meters in the optically clear coastal waters, but is frequently limited to 10 – 15 meters.	A
12	RNLN/IENWG	4.2	Note 2	Q	...it is recommended to use the maximum value of elevation	In bathymetry at sea, usually the shallowest depth relative to the origin is chosen for safety of navigation.	NA Note 2 in chapter 4.2 is addressing land territory.

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13	RNLN/IENWG	4.3	Note 1	G	The territorial sea is the part of the sea between the coastline and the outer limit (usually 12 nautical miles from the legal baseline).	Change note to: The territorial sea is the part of the sea between the coastline and the outer limit (usually 12 nautical miles from the legal baseline).	AwM Territorial sea is defined under the UNCLOS as the 12-nautical mile zone <u>from the baseline</u> or low-water line along the coast.
14	Shom/IENWG	4.1 4.2 4.3		G		Add metadata to describe data sets : it is mandatory	NA Metadata is considered in chapter 5.2
15	RNLN/IENWG	4.3	Note 2	E	DTM on sea	DTM at sea	A
16	RNLN/IENWG	4.3	Note 3	E	Note 3 appears twice	Change Note 3 to Note 4	A
17	Shom/IENWG	4.3	Note 2		DTM at sea is required for navigation : it is not exact	delete	A However, this looks a bit contradictory with comment 12 where navigation is mentioned as use case of bathymetric data
18	RNLN/IENWG	4.3	Note 3	G	Existing standards for quality of elevation should be followed, notably IHO S-44 for bathymetric data.	Add Core Recommendation: Existing standards for quality of elevation should be followed, notably IHO S-44 for bathymetric data.	AwM The proposed sentence has been added to the NOTE.
19	RNLN/IENWG	4.3	Note 3	G	The EMODnet Bathymetry theme is the European contribution to the IHO Data Center for Digital bathymetry (DCDB) and the IHO/IOC General Bathymetric Chart of the Oceans (GEBCO). GEBCO contributes through the Seabed 2030 project to UN SDG14.	Add to note: The EMODnet Bathymetry theme is the European contribution to the IHO Data Center for Digital bathymetry (DCDB) and the IHO/IOC General Bathymetric Chart of the Oceans (GEBCO). GEBCO contributes through the Seabed 2030 project to UN SDG14.	A
20	RNLN/IENWG	4.3	Note 3	E	The EMODnet DTM product for the Bathymetry theme is called Bathymetry View and Download Service.	Change "European product Emodnet Bathy" to "EMODnet Bathymetry View and Download Service of the European Commission"	NA This deliverable focuses on data content. The mention of delivery modes is not the main information to be provided.

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21	RNLN/IENWG	4.4	Good Practice 2	G	The inland water surface may be very variable, depending on the tides, seasons, and other hydrological processes.	Reconsider if this really is an advisable practice.	This remains an advisable practice as the capture some inland water surface will be easier than capturing the water body bottom. A NOTE will be added to mention the issue you have raised.
22	RNLN/IENWG	4.4	Good Practice 2	E	Nobody can ensure the characteristics of the water surface.	Replace with: ensure if the water surface is horizontal.	NA The idea is to "force" this horizontality, by removing the small discrepancies that may occur at the surface of a still waterbody, such as a lake
23	RNLN/IENWG	4.4	Good practise 3	G	If a DTM is produced for other than the expected purpose "open the bridges", this should be reported in the metadata field.	Allow metadata fields to enable to describe this.	NA The purpose is not about "open the bridge" but about "dealing with inundation risk". The possibility of documenting DTM (or DSM) specificities is already offered in NOTE 2 of chapter 5.2.
24	RNLN/IENWG	4.4	Paragraph	G	A bridge does not have to partly/fully span over a water surface.	Remove: (roads or railways above water)	AwM It has been replaced by "(e.g. roads or railways above water)" that is a frequent case and the one of importance for this paragraph.
25	RNLN/IENWG	5.1.1	Paragraph	G	A shoreline can, in the definition of the INSPIRE Technical Guidelines for Theme III.15 Sea Areas, be associated with many different water levels. For the term coastline, INSPIRE follows the IHO definition of MHW.	Replace the term shoreline with coastline.	A

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26	RNLN/IENWG	5.1.1	Core Recommendation 4	G	In the coastal zone area, data at sea is usually charted relative to the Chart Datum as selected by the national Hydrographic Office. This is usually not the same vertical reference that is used on land.	Re-consider this recommendation.	NA The use cases investigated to define core data have shown the necessity of continuous data between land and sea, at least around the coastline (or shoreline). To provide such continuous data to users, think about integrating coastal data from Hydrographic Office with land elevation data
27	Shom/IENWG	5.1.1	CR 4	T	When the delivered product is a digital land-sea model, then the same CRS is used. It is important to have the CRS in metadata in order to change the vertical reference files if needed	Change paragraph	Good Practice 8 (in chapter 5.2) recommends the use of INSPIRE metadata; the INSPIRE metadata profile includes the CRS information.
28	RNLN/IENWG	5.1.1.1	Good practise 4	T	Depth at sea is charted in CRS WGS 84 for horizontal component of CRS. There is a horizontal difference between ETRS89 and WGS84, increasing over time.	Be aware of the horizontal difference, this has an immediate effect on the positional accuracy of the product.	Good practice 4 is for Land Elevation Data, not for bathymetry.
29	Shom/IENWG	5.1.1.1	Good P. 4	T	Depth at sea is charted in WGS 84 (EPSG:4326) EMODnet DTM are in WGS 84		Good practice 4 is for Land Elevation Data. EMODnet DTM is bathymetric data; it is considered in chapter 5.1.2 (where use of WGS84 is mentioned and recognised as acceptable)
30	RNLN/IENWG	5.1.2	Paragraph	E	The EMODnet DTM product for the Bathymetry theme is called Bathymetry View and Download Service.	Change "European product Emodnet Bathy" to "EMODnet Bathymetry View and Download Service of the European Commission"	NA This deliverable focuses on data content. The mention of delivery modes is not the main information to be provided.
31	RNLN/IENWG	5.1.2	Paragraph	G	The EMODnet bathymetry projects follow the IHO Resolution on LAT, like INSPIRE, recommending LAT as the vertical reference surface for areas shallower than 200 m without appreciable tides.	Add: ... is using LAT as reference surface for areas shallower than 200 m without appreciable tides.	A

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32	RNLN/IENWG	7.2.1	Paragraph	E	Final sentence is unclear. (But be aware that water level based vertical references are not gravity based.)	Improve final sentence. (But be aware that water level based vertical references are not gravity based.)	A Intermediary explanations have been added to make the last sentence clearer. See comments 6 and 7 regarding water level reference and gravity based
33	RNLN/IENWG	7.2.2	Table	G	Territorial waters extend up to their outer limit (usually 12 nautical miles from the legal baseline).	Change text between brackets behind territorial waters to: (up to their outer limit (usually 12 nautical miles from the legal baseline)).	A
34	Shom/IENWG	7.2.2 Table		T	See the conclusion of the European coastal mapping project : We need Master level 0 for land-sea products covering the shoreline to prevent erosion, submersion to anticipate sea level rise and its consequences during storms for example The knowledge of the submarine relief of the shoreline is very important to understand the phenomena and their impact on land (wave set-up for example)	Add Master level 0 for land-sea DTM	AwM This is already the case of core Master level 0: this product is recommended for hot spots, including areas prone to floods, i.e. the areas around the limits between land and water (rivers or seas). See NOTE1 in chapter 4.1 NOTE 1: "Hot spots should include at least areas prone to flood (i.e. areas around rivers and coastlines) and urban areas" This is quite nice that the European coastal project is confirming the need of Master level 0 elevation data around the shoreline, as proposed by the UN-GGIM: Europe WG A.
35	RNLN/IENWG	7.2.3	Paragraph	E	georeferencement	georeferencing	A