



Section 3 - Data and Metadata

Day 2 - Morning Session

IHO, Monaco 13th – 17th September 2021



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PROPOSED AMENDMENTS

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Reference to the text	Edition 2.0.3 text	Updated text	Writing team notes
Section 3.2	(new addition to section)	It is this working group's guidance that raw data, with a good indication of what the observer's offsets and context were, are preferable as a contribution to the DCDB.	This phrase, modified from the original Section 3.2.1 text, applies to fields beyond Tidal Corrections
Section 3.2.1 Tidal Corrections	Crowdsourced bathymetry that is submitted to the IHO DCDB should not have tidal corrections applied. This keeps the data in a standard format. If the data collector provides information about the time and date when a depth measurement was collected, it allows future data users to apply tidal corrections to the data, if they so choose.	Raw data, without tidal corrections and with a good indication of what the observer's offsets and context were, are preferable as a contribution to the DCDB. If the data collector provides information about the time and date when a depth measurement was collected, it allows future data users to apply tidal corrections to the data, if they so choose. If corrections are made, detailed information should be captured in optional metadata fields as outlined in section 3.3.2.	Phrase "This keeps the data in a standard format" is not clear. Refined submission guidance to reflect that raw data is preferable, but not required.

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Reference to the text	Edition 2.0.3 text	Updated text	Writing team notes
Section 3.2.3 Sound Speed	(new section)	<p>The speed of sound below the ship is used to convert from the raw measurement of how long it takes the sound to reach the seafloor and return to an estimate of the depth. Knowing the local sound speed is thus very important for accurate depth estimation.</p> <p>Many echosounders assume a fixed sound speed and apply it uniformly, although it can sometimes be set by the user to better match local conditions. The default assumption for IHO DCDB is that the manufacturer's assumed speed of sound has been used, but the metadata should be used to record if a modification has been made.</p>	Additional discussion necessary regarding appropriate optional metadata fields to add to Table 2: Optional Metadata (to follow)



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Table 1. Required Information Date & Timestamp	The date and UTC time stamp for the depth measurement. This can be extracted from the NMEA RMC string.	The date and UTC time stamp for the depth measurement as well as can be determined, ideally to millisecond precision in RFC3339. This can be extracted from the NMEA RMC string.	Additional discussion to follow regarding “this can be extracted from the NMEA RMC string”
Table 2. Optional Metadata Sensor Type Sounder	This indicates the type of echo-sounder. The only current option is ‘Sounder.’ ‘Sounders’ are simple single beam echosounders. In the future, ‘Multibeam’ may be added as an option. ‘Multibeam’ refers to vessels equipped with swath sonar.	This indicates the type of echo-sounder. ‘Sounder’ indicates a simple single beam echo sounder. ‘Multibeam’ refers to vessels equipped with swath sonar systems.	Additional discussion to follow regarding sounder vs. echosounder vs. sonar vs. depth sensor convention



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Table 3. Trusted Node Metadata	Organization Name: Sea ID Provider Email: support@sea-id.org Unique Vessel ID: SEAID-UUID	Organization Name: Example Cruises Inc. Provider Email: support@example.com Unique Vessel ID: EXAMPLE-UUID	Removed reference to commercial companies.
Table 3. Trusted Node Metadata Unique Vessel ID	... The first five characters identify the Trusted Node, followed by a hyphen (-), and then the vessel's unique identifier....	... The characters preceding the hyphen (-) identify the Trusted Node, followed by a hyphen (-), and then the vessel's unique identifier....	The prefix does not have to be five characters.



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AMENDMENTS FOR FURTHER DISCUSSION

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Reference to the text	Points for discussion	Origin	Major or minor
(throughout)	<p><u>How should this terminology should be standardized</u> as this document becomes more instrument agnostic? Multiple options identified, however this should be standardized throughout the document:</p> <ul style="list-style-type: none">• Sonar• Sounder• Echo-sounder• Depth Sensor	(general)	m
Table 1. Required Information	Current version specifies that the information can be extracted from the NMEA RMC string. B. Calder highlighted that the RMC string is not issued at the same time as the DBT string, so the timestamp could be considerably different.	UNH/CC OM	m
Date & Timestamp	<p>A good solution would involve some level of interpolation of the time information available to the time of reception of the DBT. Doing this can be hard.</p> <p><u>Does the text in B-12 need to be updated</u> in light of this?</p>		



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Table 2. Optional Metadata Depth Sensor Model	<u>Should the following text still be included:</u> In the future, a list of sonar models may be provided through Trusted Nodes		m
Table 2. Optional Metadata Depth Sensor Frequency	<u>Should the following text still be included?</u> Group noted that it would be difficult to provide a categorical list of transducer frequencies, since each manufacturer has a choice of how to run their system: In the future, a list of transducer frequencies may be provided through Trusted Nodes.	UNH/CC OM	m



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Table 2. Optional Metadata (potential addition)	Potential Trusted Nodes have requested a field to indicate TNs or vessels that are known to provide high-quality data. <u>Is this a feasible request?</u>	DCDB	m
Table 2. Optional Metadata (potential addition)	Group proposed adding “Reference point for Time” as NMEA0183 messages for depth (and others) don’t usually have an integral timestamp. This must be rectified based on some basis. <u>Text for description field is needed.</u>	UNH/CCOM	m
Table 2. Optional Metadata (potential addition)	Group initially proposed adding a “Sound Velocity Value” field to complement “Sound Speed Applied.” However, it would also be necessary to specify a method (tables, harmonic mean, actual profile, etc). <u>Should “Sound Velocity Value” be added, and if so how could the associated information be captured?</u>	Fugro, UNH/CCOM	M



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Reference to the text	Points for discussion	Origin	Major or minor
Table 2. Optional Metadata (potential addition)	DCDB proposed adding “Level of Processing” to indicate raw/processed/final. M2Ocean proposed instead including raw/processed/grid (corrected)/grid (uncorrected). <u>Which is preferable?</u>	DCDB, M2Ocean	m
Table 2. Optional Metadata Potential additional table	<p>If data is processed or cleaned it would be beneficial to capture additional metadata fields, ideally without creating confusion for TNs submitting only raw data (as is preferred). B. Calder separately suggested a lineage section. <u>Could additional table(s) be added to show recommended metadata fields for processed and cleaned files?</u></p> <p>M2Ocean proposes that fields could include:</p> <ul style="list-style-type: none">• GeodeticRefSystem• SoundingReductionMethod• TideObs• TideModel• VDatum• SepModel <p><u>What additional fields would be beneficial? Proposed description and example for each?</u></p>	M2Ocean, UNH/CCOM	M