CSB Guidance Document

STATUS AND RECOMMENDATIONS

CSBWG-3 ROSTOCK, GERMANY

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CSBGD Overview and TORs

- CSB Guidance Document purpose:
  - Provides guidance to mariners to enable them to collect and contribute CSB data

- CSBWG Terms of Reference refresher:
  - Reference enhancements to the DCDB as a CSB data portal
  - Take into account lessons learned from pilot projects
  - Seek input from other organizations and industry
  - Seek input from HSSC working groups as needed
  - Describe metadata needed for mariners to contribute CSB data
  - Describe preferred formats for contributing data
  - Describe methods for assessing and designating data quality and uncertainty
  - Provide IRCC with general advice on legal issues

Efforts Completed, to Date:

- CSB Correspondence Groups established
  - Data Format and Metadata
  - Systems and Hardware
  - Uncertainty
  - Legal Issues
  - Trusted Node
- Sections drafted
- Initial edits completed
- First draft presented to IRCC

Current CSB Guidance Document Content and Suggestions

1. Introduction

- 1.1 The Need for Crowdsourced Bathymetry
  - Why it's important: lack of data, limited resources, great need for data to support many applications
- 1.2 Purpose and Scope of this Document
  - Purpose: provide guidance to mariners to help them collect and contribute data
  - Scope: devices, techniques, formats, uncertainty, legal issues
- 1.3 Target Audience
  - Collectors and contributors of data
  - Document also of use to Trusted Nodes and users of CSB (but not primary audience)
- 1.4 Document Structure
  - Overview of each section

Suggestions: use this section as a reminder of the purpose of, and audience for, the rest of the document. Add to/improve as necessary.

2. Overview of Systems and Sensors

- 2.1 Echo sounders
- 2.2 Positioning Systems
- 2.3 Motion Sensors
- 2.4 Data Loggers
- 2.5 Measuring Offsets

Suggestions: good outline, but need to finish drafting this chapter. Only section 2.1 currently has content. Maybe introduce the section with a short overview of seafloor mapping, and how the systems work together to collect CSB, as a transition from the first chapter.

3. Metadata

- 3.1 Introduction to Metadata
  - 3.1.1 What is Metadata?
  - 3.1.2 Why is Metadata Necessary?
- 3.2 Data and Metadata Descriptions
  - GeoJSON metadata tables

Suggestions: 3.1 is fairly complete, but 3.2 needs a segue for the GeoJSON tables, to help the mariner understand how they will collect the metadata information, and to describe GeoJSON and the content in the tables a bit more.

4. Data Collection

- 4.1 Introduction
- 4.2 CSB Data Collection Process
  - 4.2.1 Data Collection
  - 4.2.2 Storing the Data
  - 4.2.3 Data Exchange
- 4.3 Best Practices and Recommendations
  - 4.3.1 Keep the Data in the Original Format
  - 4.3.2 GPS Latency and Quality
  - 4.3.3 Real-time Clock
  - 4.3.4 Time Synchronization of Sensor Output
  - 4.3.5 Verifying Draft, Keel Depth
  - 4.3.6 Compliance with NMEA Specification and Specifically with Opto-isolation
  - 4.3.7 Continuity of Electrical Power
  - 4.3.8 Hands-Free Operation

Suggestions: Fairly complete. Appropriate for the audience, and breaks the information into easy-to-understand, but critical information. May benefit from a concluding paragraph. Suggest that the rest of the document follow a similar format.

5. Meaning, Sources, and Consequences of Uncertainty

- 5.1 The Meaning of Uncertainty
- 5.2 Sources of Uncertainty
- 5.3 Estimation and Expression of Uncertainty
- 5.4 Consequences of Uncertainty
- 5.5 Uncertainty for Individual Observers
- 5.6 Uncertainty for Trusted Nodes
- 5.7 Uncertainty for Database Users

Suggestions: Comprehensive, but may be too technical for the 'average mariner' in its current state. Suggest either condensing the sections and making it more appropriate for the primary audience, or treating it as a technical reference for Trusted Nodes, and include it as an appendix. The last few sections are incomplete.

6. Data Contribution

- 6.1 Methods for Contributing Data to the DCDB
  - 6.1.1 Transmission Protocol
  - 6.1.2 Data Aggregation
  - 6.1.3 Data Logging Rate
  - 6.1.4 Authentication Method
- 6.2 Data and Metadata Formats
  - 6.2.1 GeoJSON (try to avoid overlap with the Metadata chapter)
  - 6.2.2 CSV
- 6.3 Contributing Data
  - Bullet points only (incomplete)

Suggestions: section 6.3 needs to be completed, and other sections need more information.

7. The IHO DCDB

- 7.1 IHO DCDB Overview
- 7.2 Overview of CSB Data Flow through the IHO DCDB
  - 7.2.1 Data Discovery and Access (incomplete)
  - 7.2.2 Accommodating CSB Data (incomplete)

Suggestions: need a draft of the section on data flow through the DCDB

8. Legal Issues

- 8.1 Introduction
- 8.2 Liability
- 8.3 Logging in the Territorial Sea and EEZ
- 8.4 Ownership of Data

Suggestions from NGA:

- Consider whether it is within the scope of the WG to delve into these issues
- Disclaimer that the chapter is intended for informational purposes only, and does not provide legal advice
- Avoid supporting the conclusion that there are no liability issues
- Emphasize that this is an area that the IHO is continuing to review
- Logging in the EEZ: insert note that data logging will depend on national laws, and the mariner must keep current and comply with national laws. Remove sections on Agreed Consent and UNCLOS specifics - the IHO opining on these matters could be misinterpreted
- Remove section on Data Ownership; this is too complicated an issues

9. Conclusion

- Not currently in the document
- Need to draft a ‘wrap-up’/’in sum’ section

Appendix A – Echo Sounder Types and Technology

- No content yet; who is drafting this?

Appendix B – Data Contribution Format

- CSB JSON format (is this complete?)

Other Material

- List of Acronyms
- List of Figures
- List of Tables

Note: these can be completed by the Editors, once the rest of the document is finalized.

General Suggestions

- Write to the average mariner
- Provide some background information, but focus on specific guidance
- Be thorough but concise
- Avoid overly technical discussions or jargon
- Keep content practical and useful