**DQWG14-07A**

## Paper for Consideration by Data Quality Working Group

## Method to harmonize DQ aspects for S-1xx based Product Specifications

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| ***Submitted by:*** | DQWG Chair |
| ***Executive Summary:*** | Proposal to verify the data quality aspects are addressed in an appropriate and harmonized way for all S-100 based product specifications. |
| ***Related Documents:*** | S-97 part C – Data Quality, DQWG Terms of Reference (HSSC-9) |
| ***Related Projects:*** | Product Specifications of S-1xx. |

## Introduction / Background

DQWG is given the task by the HSSC to ensure that the data quality aspects are addressed in an appropriate and harmonized way for all S-100 based product specifications. As S-1xx Product Specifications (PS) are now in the process of testing (version 1.0.0), a verification is required that these PS are aligned with the recommendations provided in S-97 part C – Data Quality.

## Analysis/Discussion

When drafting a Product Specification, the Data Quality Checklist will serve as a guidance document to verify if the appropriate Data Quality Elements have been included in the Product Specification. A Data Quality Element is a quantitative component documenting the quality of a dataset. The applicability of a data quality element to a dataset depends on both the dataset’s content and its Product Specification, the result being that all available data quality elements may not be applicable to all datasets.

The place of data quality measures in dataset and exchange set metadata and the encoding of data quality in metadata is described in various ISO standards (ISO 19115, 19139, 19115-1/2/3, ISO 19157) and in S-100 Parts 4a–4c.

The components of Data Quality Measure can be divided into the following elements:

1. Completeness *(recommendation 1)*
2. Logical Consistency
* Conceptual consistency *(recommendation 2)*
* Domain consistency *(recommendation 3)*
* Format consistency *(recommendation 4)*
* Topological consistency *(recommendation 5)*
1. Positional Accuracy (*recommendation 6)*
2. Thematic Accuracy *(recommendation 7)*
3. Temporal Quality *(recommendation 8)*
4. Aggregation *(recommendation 9)*
5. Usability *(recommendation 10)*

In brackets are the ten recommendations from S-97.

All Product Specifications should have a paragraph describing Data Quality. To ensure harmonization across different Product Specifications, DQWG recommends that all Product Specifications share a common text as a template explaining the concept of Data Quality -> Introduction to Data Quality. The text below is a proposal for this common introduction:

“

Data quality allows users and user systems to assess fitness for use of the provided data. Data quality measures and the associated evaluation are reported as metadata of a data product. This metadata improves interoperability with other data products and provides usage by user groups that the data product was not originally intended for. The secondary users can make assessments of the data product usefulness in their application based on the reported data quality measures.

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## Conclusions

To improve interoperability between different S-1xx based products, appropriate Data Quality measures need to be included into the Product Specification.

## Recommendations

DQWG to verify any S-1xx version 1.0.0 (and later versions) of a published Product Specification if the appropriate recommendations from S-97 have been taken into account and report to the responsible Working Group as deemed necessary.

## Justification and Impacts

Harmonization of Data Quality measures allows the Hydrographic Offices to perform a Data Quality Evaluation and provide a Data Quality Result as Metadata to the end user. A core aim of this verification is to assist in creating harmonized product specifications that can be used in the e-Navigation eco-system. The term e-Navigation eco-system is meant to encompass all product specifications created for use in IMO defined e-Navigation systems, both on shore and at sea, such as ECDIS.

## Action Required of Data Quality Working Group

The DQWG is invited to:

a. note this report;

b. periodically review S-1xx based product specifications to ensure the data quality aspects have been taken into consideration;

c. provide input papers for WGs and PTs consideration if deemed necessary.