

Paper for consideration by SNPWG17

Traceability Matrix

Submitted by:	SNPWG Chair group
Executive Summary:	Introduction of a traceability matrix
Related Documents:	http://www.iho.int/mtg_docs/com_wg/TSMAD/TSMAD26/TSMAD26_DIPWG_5_10.9B_S-101_RequirementsTraceabilityMatrix.pdf http://www.iho.int/mtg_docs/com_wg/SNPWG/SNPWG_Misc/ProdSpecDevelopment.htm
Related Projects:	S-100 Ed. 2.0.0 S-122, S-123, S-125, S-126, S-127

Introduction / Background

The TSMAD WG introduced a traceability matrix during their 26th meeting; see Annex.

Analysis/Discussion

A traceability matrix could be seen as a tool which lists different requirements of a

- Feature Catalogue,
- Portrayal Catalogue,
- System, and
- Product Specification

and compares them against different Product Specification references.

Conclusions

A traceability matrix sets the SNPWG in a position to improve the efficiency and transparency of the work. It helps to minimise the risk that certain requirements could be overseen.

Recommendations

SNPWG17 is invited to introduce a traceability matrix.

Justification and Impacts

The tool has no significant impact on the SNPWG work. Rather, the tool is helpful to avoid gaps in the product specification development.

Action required of SNPWG16

The SNPWG17 is invited to:

- a. discuss this paper.
- b. consider the need of a traceability matrix.

Annex

ID	Req. ID	Type	Requirement	S-101 Reference
	FC 1	Feature Catalogue	Feature Catalogue Creation	
	FC 1.1	Feature Catalogue	The system must be able to export a new feature catalogue in XML (version 1.0.0)	
	FC 1.2	Feature Catalogue	The system must be able to export a correction to the feature catalogue (1.0.1)	
	FC 1.3	Feature Catalogue	The system must be able to export a clarification to the feature catalogue (1.1.1)	
	FC 1.4	Feature Catalogue	The system must be able to export an extension to the feature catalogue (2.0.0)	
	FC 1.5	Feature Catalogue	The Feature catalogue must conform to S-100	
	PC 2	Portrayal Catalogue	Portrayal Catalogue Creation	
	PC 2.1	Portrayal Catalogue	The system must be able to export a new portrayal catalogue in XML (version 1.0.0)	
	PC 2.2	Portrayal Catalogue	The system must be able to export a correction to the portrayal catalogue (1.0.1)	
	PC 2.3	Portrayal Catalogue	The system must be able to export a clarification to the portrayal catalogue (1.1.1)	
	PC 2.4	Portrayal Catalogue	The system must be able to export an extension to the portrayal catalogue (2.0.0)	
	S 3	System	S-101 Enabled ECDIS	
	S 3.1	System	The system must be able to manage multiple versions of a Feature Catalogue	
	S 3.2	System	The system must be able to manage multiple versions of a Portrayal Catalogue	
	S 3.3	System	The system must be able to read and display data that is associated with multiple versions of a feature and portrayal catalogue	
	S 3.4	System	The system must display datasets in the chart display according to the rules and symbols set out in the S-101 Portrayal Catalogue	
	S 3.5	System	Application of a Feature Catalogue - The system must use the installed S-101 Feature Catalogue when listing Feature and Attribute	

Note: FOR REASONS OF ECONOMY, DELEGATES ARE KINDLY REQUESTED TO BRING THEIR OWN COPIES OF THE DOCUMENTS TO THE MEETING

			details.	
	S 3.6	System	Application of a Portrayal Catalogue - The system must use the installed S-101 Portrayal Catalogue when displaying features in the chart display. The application may convert the symbol rules contained in the XSLT file to internal code but must be able to output the same results file as the standalone XSLT file.	
		PS	S-101 Product Specification	Product specification has the following identifiers: PSD - Product Specification Dataset PSP - Product Specification Portrayal PSS - Product Specification System
	PS 1	PSD	Dataset Identification	3
	PS 1.1	PSD	The spatial resolution of the datasets (both minimum and maximum display scale) must be the scale values listed in clause 3.	3
	PS 2	PS	Data Content and Structure	4
	PS 2.1	PSD	The dataset must conform to S-100 Part 3 – General Feature Model	4,2
	PS 2.2	PSD	The Dataset must be covered by the skin of the earth features	4.3.2.1.1
	PS 2.2	PSP	The system must display the skin of the earth	4.3.2.1.1
	PS 2.3	PSS	The system must be able to override default metadata values defined by the data set descriptive records with values contained in meta features	4.3.2.2
	PS 2.4	PSS	The system must be able to handle associations between features	4.3.3.1
	PS 2.5	PSS	The system must be able to handle aggregations between features	4.3.3.2
	PS 2.6	PSS	The system must be able to handle compositions between features	4.3.3.3
	PS 2.7	PSS	The system must be able to handle information types	4.3.4
	PS 2.8	PSS	The system must be able to handle information types for spatial quality	4.3.4.1
	PS 2.9	PSS	The system must be able to handle complex attributes	4.3.5.2
	PS 2.10	PS	Feature Object Identifier	4,4
	PS 2.10.1	PSD	Each feature within a dataset must have a unique FOID	4,4

Note: FOR REASONS OF ECONOMY, DELEGATES ARE KINDLY REQUESTED TO BRING THEIR OWN COPIES OF THE DOCUMENTS TO THE MEETING

PS 2.10.2	PSD	The FOID may be used to identify that the same feature has instances in separate datasets	4,4
PS 2.10.3	PSD	FOIDs must not be repeated in a dataset	4,4
PS 2.10.4	PSD	Where a feature is repeated in different datasets the FOID should be repeated	4,4
PS 2.10.5	PSD	FOIDs must not be reused by another feature, even when a feature has been deleted	4,4
PS 2.11	PS	Dataset	4,5
PS 2.11.1	PSD	Datasets may contain more than one dataCoverage	4.5.1
PS 2.11.2	PSS	The system must portrayal datasets that contain more than one coverage	4.5.1
PS 2.11.3	PSD	Multiple dataCoverage's within a dataset must not overlap	4.5.1
PS 2.11.4	PSD	ENC updates must not change the limits of a dataset	4.5.1
PS 2.11.5	PSD	Datasets must not cross the 180 degree meridian	4.5.1
PS 2.11.6	PSD	Datasets must not exceed 10MB	4.5.1.1
PS 2.11.7	PSD	Updates must not be larger than 200KB	4.5.1.1
PS 2.12	PSD	Display Scale Range	4,6
PS 2.12.1	PSD	The smallest display scale must be set in the minimum display scale	4,6
PS 2.13	PS	Dataset loading and unloading	4,7
PS 2.13.1	PSS	The system must load and unload data using the minimum guidance set out in Clause 4.7.1	4.7.1
PS 2.14	PS	Geometry	4,8
PS 2.14.1	PSD	The system must support S-100 Level 3a geometry	4.8.1
PS 2.14.2	PSD,PSP	The system must support masking	4.8.2
PS 3	PS	Coordinate Reference Systems	5
PS 3.1	PSS	The system must display data in a Mercator projection unless otherwise indicated.	5,2
PS 3.2	PSS	The system must display polar data in a polar stereographic projection	#####
PS 3.3	PS	Vertical CRS for Soundings	5,3
PS 3.3.1	PSD	The system may have different vertical datums	5,3
PS 3.3.2	PSS	The system must indicate where a different vertical datum is.	5,3
PS 4	PS	Data Quality	6

Note: FOR REASONS OF ECONOMY, DELEGATES ARE KINDLY REQUESTED TO BRING THEIR OWN COPIES OF THE DOCUMENTS TO THE MEETING

PS 4.1	PSD	The data must conform to all mandatory checks in S-58 for S-101	6.1.1
PS 4.2	PSP	The system must display different data quality indicators	6.1.2,6.1.3,6.1.4
PS 5	PS	Portrayal	9
PS 5.1	PSP	The system must be able to display datasets in conformance to the portrayal catalogue	9
PS 6	PS	Data Product Format	10
PS 6.1	PSD	The dataset must conform to S-100 profile of ISO/IEC 8211	10,1
PS 6.2	PSD	The dataset must set the coordinate multiplication factors for latitude and longitude (CMFX and CMFY) to 10 ⁷	10.1.1
PS 6.3	PSD	The dataset must set the depth resolution (CMFZ) to 100	10.1.2
PS 6.4	PSD	The floating point or integer attribute values in the dataset must not be padded by non-significant zeros	10.1.3
PS 6.5	PSD	The dataset must use ISO 10646-1 in UTF-8 for character strings	10.1.4
PS 7	PS	Data Product Delivery	11
PS 7.1	PSD	The dataset must be in an exchange set	11,2
PS 7.2	PSD	The exchange set may contain supplementary files	11,2
PS 7.3	PSD	The exchange set may deliver S-101 Feature Catalogues	11,2
PS 7.4	PSD	The exchange set may deliver S-101 portrayal catalogues	11,2
PS 7.5	PSD	The dataset may be an update	11.3.1
PS 7.6	PSD	The dataset may be a re-issue	11.3.1
PS 7.7	PSD	The dataset may be a new dataset or a new edition of the dataset	11.3.1
PS 7.8	PSD	The dataset must use the proper sequencing for New Editions, updates and reissues	11.3.3
PS 7.9	PSS	The system must check the sequencing of S-101 datasets for New editions, updates and reissues	11.3.3
PS 7.10	PSD	The dataset must be able to be cancelled via an update dataset file where the edition number must be set to 0	11.3.3
PS 7.11	PSS	The system must be able to cancel a dataset	11.3.3

Note: FOR REASONS OF ECONOMY, DELEGATES ARE KINDLY REQUESTED TO BRING THEIR OWN COPIES OF THE DOCUMENTS TO THE MEETING

PS 7.12	PSD	The dataset support files must be one of the following formats: TXT HTM XML TIFF - baseline TIFF 6.0	11,4
PS 7.13	PSS	The system must be able to read the following formats for support files: TXT HTM XML TIF - baseline TIFF 6.0	11,4
PS 7.14	PSD	The support file must carry an issue date and CRC value calculated on the content	11.4.2
PS 7.15	PSS	The system must be able to delete the support file if the "deletion" flag is tagged in the XML catalogue metadata file	11.4.2
PS 7.16	PSS	The system should store support files in a separate folder within the exchange set	11.4.2
PS 7.17	PSD	The exchange catalogue must be named CATALOG.101	11,5
PS 7.18		The dataset must have a CRC value	11.6.1
PS 8	PS	Metadata	12
PS 8.1	PSD	The dataset metadata catalogue must comply with all the mandatory metadata elements	12
PS 8.2	PSS	The system must be able to read the XML metadata catalogue	12
S-101 Implementation Guidance (Annex C)			