

Paper for Consideration by TSMAD

S-100 Metadata

<i>Submitted by:</i>	S-101 Work Item Leader
<i>Executive Summary:</i>	There is a need to harmonize the metadata in S-101 with that in S-100. In a review project it was determined that S-100 may need some corrections and extensions to accommodate the needs of S-101
<i>Related Documents:</i>	TSMAD 23 – XX S-101 Metadata
<i>Related Projects:</i>	S-101

Introduction / Background

At TSMAD 20 and 21 the group began to review the essential metadata needed for S-101. While general agreement was reached on most of the items, it was pointed out that the current structure needed to be reviewed against S-100 and ISO 19115 to ensure that the proposed S-101 metadata fields were in compliance.

Analysis/Discussion

In August 2011, NOAA contracted with IIC to review the S-101 metadata. As a result, it found that some of the proposed metadata fields in S-101 did not have an S-100 equivalent or they are included in the S-100 Part 4A Annex D-2 – Elements of an Exchange Set. In attempting to harmonize S-101 metadata with S-100 it appears that many of the fields are harmonized that there were inconsistencies between the two. While S-101 can be extended beyond S-100, many of these metadata fields may be useful in other S-100 based products.

The following contains proposed corrections and clarifications to S-100 metadata.

D-1 Elements of the exchange set

D-1.1 S100_ExchangeSet

An S-100 Exchange Set is an aggregation of all the various elements required to support the interchange of geospatial data and metadata. The MultiAggregation association introduces the concept of using subsets which could be domain oriented e.g. packaged by scale, producer, region etc.

Role Name	Name	Description	Mult	Type	Remarks
Class	S100_ExchangeSet	Aggregation of the elements comprising an exchange set for the transfer of data	-	-	-
Role	aggregateFile	Collection of support files in the exchange set	0..*	-	
Role	partOf	Collection of datasets which are part of the exchange set	0..*	-	
Role	aggregateCatalogue	Collection of catalogues	0..*	-	
Role	superSet	The master container exchange set which can contain a subSet of exchange sets			
Role	subSet	Exchange set which is part of the superSet			

Comment [JLP1]: PROPOSED CHANGE: S100_ExchangeSet

PROPOSED CHANGE: Should be S100_ExchangeSet

D-1.2 S100_ExchangeCatalogue

Each exchange set has a single S-100_ExchangeCatalogue which contains meta information for the data and support files in the exchange set.

Role Name	Name	Description	Mult	Type	Remarks
Class	S-100_ExchangeCatalogue	An exchange catalogue contains the discovery metadata about the exchange datasets and support files	-	-	-
Attribute	identifier	Uniquely identifies this exchange catalogue	1	S-100_CatalogueIdentifier	
Attribute	contact	Details about the issuer of this exchange catalogue	1	S-100_CataloguePointOfContact	
Attribute	productSpecification	Details about the product specifications used for the datasets contained in the exchange catalogue	0..1	S-100_ProductSpecification	Conditional on all the datasets using the same product specification
Attribute	exchangeCatalogueName	Catalogue filename	1	CharacterString	In S-101 it would be CATLOG.101
Attribute	exchangeCatalogueDescription	Description of what the exchange catalogue contains	1	CharacterString	

Comment [JLP2]: This is added because it is required by S-101 and is missing in S-100

Comment [JLP3]: This is added because it is required by S-101 and is missing in S-100

Attribute	ExchangeCatalogueComment	Any additional Information	0..1	CharacterString	
Attribute	compressionFlag	Is the data compressed	1	CharacterString	
Attribute	algorithmMethod		1	CharacterString	Eg. RAR or ZIP
Attribute	sourceMedia		1		
Attribute	replacedData	If a data file is cancelled is it replaced by another data file	1		
Attribute	dataReplacement	Cell name	0..1		

Comment [JLP4]: This is added because it is required by S-101 and is missing in S-100

Comment [JLP5]: These are required by S-63. Do they belong in S-100 or are they specific to S-101

PROPOSED changes: Add the Attributes shaded in green. They are required in S-101 and would be beneficial for other product specifications.

D-1.3 S100_CatalogueIdentifier

Role Name	Name	Description	Mult	Type	Remarks
Class	S-100_CatalogueIdentifier	An exchange catalogue contains the discovery metadata about the exchange datasets and support files	-	-	-
Attribute	identifier	Uniquely identifies this exchange catalogue	1	CharacterString	
Attribute	editionNumber	The edition number of this exchange catalogue	1	CharacterString	
Attribute	date	Creation date of the exchange catalogue	1	Date	

D-1.4 S100_CataloguePointofContact

Role Name	Name	Description	Mult	Type	Remarks
Class	S-100_CataloguePointOfContact	Contact details of the issuer of this exchange catalogue	-	-	-
Attribute	organization	The organization distributing this exchange catalogue	1	CharacterString	This could be an individual producer, value added reseller, etc.
Attribute	phone	The edition number of this exchange catalogue	0..1	CI_Telephone	
Attribute	address	Creation date of the exchange catalogue	0..1	CI_Address	

PROPOSED Change: Change Creation date of the exchange catalogue to The address of the organization

D-1.5 S100_Dataset

Role Name	Name	Description	Mult	Type	Remarks
Class	S100_Dataset		-	-	-
Role	composedOf	An exchange set is composed of 0 or more datasets	0..*	-	
Role	datasetCatalogue	Catalogue which is related to this dataset	0..*	-	

D-1.6 S100_DatasetDiscoveryMetadata

Role Name	Name	Description	Mult	Type	Remarks
Class	S-100_DatasetDiscoveryMetadata	Metadata about the individual datasets in the exchange catalogue	-	-	-
Attribute	fileName	Dataset file name	1	CharacterString	
Attribute	filePath	Full path from the exchange set root directory	1	CharacterString	
Attribute	description	Short description giving the area or location covered by the dataset	1	CharacterString	E.g. a harbour or port name, between two named locations etc.
Attribute	dataProtection	Indicates if the data is encrypted	1	CharacterString	e.g. Encrypted or Unencrypted
Attribute	purpose	The purpose for which the dataset has been issued	1	MD_Identification>purpose CharacterString	E.g. new, re-issue, new edition, update etc.
Attribute	specificUsage	The use for which the dataset is intended	1	CharacterString	E.g. in the case of ENC's this would be a navigation purpose classification.
Attribute	editionNumber	The edition number of the dataset	1	CharacterString	when a data set is initially created, the edition number 1 is assigned to it. The edition number is increased by 1 at each new edition. Edition number remains the same for a re-issue.
Attribute	updateNumber	Update number assigned to the dataset and increased by one for each subsequent update	1	CharacterString	Update number 0 is assigned to a new dataset.
Attribute	updateApplicationDate	this date is only used for the base cell files (i.e. new data sets, re-issue and new edition), not update cell files. All updates dated on or before this date must have been applied by the producer	0..1	Date	
Attribute	issueDate	date on which the data was made available by the data producer	1	Date	
Attribute	productSpecification	The product specification used to create this dataset	1	S-100_ProductSpecification	
Attribute	producingAgency		1	CI_ResponsibleParty	
Attribute	optimumDisplayScale	The scale with which the data is optimally displayed	1	double	Example: A scale of 1:25000 is encoded as 25000
Attribute	maximumDisplayScale	The maximum scale with which the data is displayed	1	Double	
Attribute	minimumDisplayScale	The minimum scale with which the data is displayed	1	Double	
Attribute	horizontalDatum	Value taken from the attribute HORDAT	1	double	
Attribute	verticalDatum	Vertical Datum of the entire dataset	1	S100_VerticalAndSoundingDatum	
Attribute	soundingDatum	Sounding Datum of the entire dataset	1	S100_VerticalAndSoundingDatum	
Attribute	dataType	The encoding format of the dataset	1	S-100_DataFormat	
Attribute	otherDataTypeDescription	Encoding format other than those listed.	0..1	CharacterString	

Comment [JLP6]: Should this be a codelist?

Comment [JLP7]: Does this need to be a code list????

Comment [JLP8]: Aligns with S-101

Comment [JLP9]: Conversely we can leave display scale and add in the three that are needed for S-101.

Comment [JLP10]: Aligns with S-101

Comment [JLP11]: Aligns with S-101

Comment [JLP12]: Should be a value from the EPSG register. Most products won't recognize HORDAT

Role Name	Name	Description	Mult	Type	Remarks
Attribute	dataTypeVersion	The version number of the dataType.	1	CharacterString	
Attribute	boundingBox	The extent of the cell limits	1	EX_GeographicBoundingBox	
Attribute	boundingPolygon	A polygon which defines the actual data limit	1..*	EX_BoundingPolygon	
Attribute	comment		0..1	CharacterString	
Attribute	cyclicRedundancyCheck	The Cyclic Redundancy Checksum for the file	1	CharacterString	
Attribute	layerId	Identifies the relationship to other layers that are required to view the complete data set.	1..*	CharacterString	Eg – Scale Independent or Dependents

Comment [JLP13]: You can have more than one bounding polygon in a dataset. We also need to change this in the UML and I think in the spatial.

Comment [JLP14]: This could be applicable to other datasets other than S-101

PROPOSED CHANGE: All those highlighted in Green are proposed changes to bring S-100 and S-101 into alignment

D-1.7 S100_VerticalAndSoundingDatum

Role Name	Name	Description	Mult	Type	Remarks
Class	S100_VerticalAndSoundingDatum				
Value	Mean low water springs		-	-	-
Value	Mean lower low water springs		-	-	-
Value	Mean sea level		-	-	-
Value	Lowest low water		-	-	-
Value	Mean low water		-	-	-
Value	Lowest low water springs		-	-	-
Value	Approximate mean low water springs		-	-	-
Value	Indian spring low water		-	-	-
Value	Low water springs		-	-	-
Value	Approximate lowest astronomical tide		-	-	-
Value	Nearly lowest low water		-	-	-
Value	Mean lower low water		-	-	-
Value	Low water		-	-	-
Value	Approximate mean low water		-	-	-
Value	Approximate mean lower low water		-	-	-
Value	Approximate mean lower low water		-	-	-
Value	Mean high water		-	-	-

Value	Mean high water springs		-	-	-
Value	High water		-	-	-
Value	Approximate mean sea level		-	-	-
Value	High water springs		-	-	-
Value	Approximate mean sea level		-	-	-
Value	High water springs		-	-	-
Value	Mean higher high water		-	-	-
Value	Equinoctial spring low water		-	-	-
Value	Lowest astronomical tide		-	-	-
Value	Local datum		-	-	-
Value	International Great Lakes Datum 1985		-	-	-
Value	Mean water level		-	-	-
Value	Lower low water large tide		-	-	-
Value	Higher high water large tide		-	-	-
Value	Nearly highest high water		-	-	-
Value	Highest astronomical tide (HAT)		-	-	-

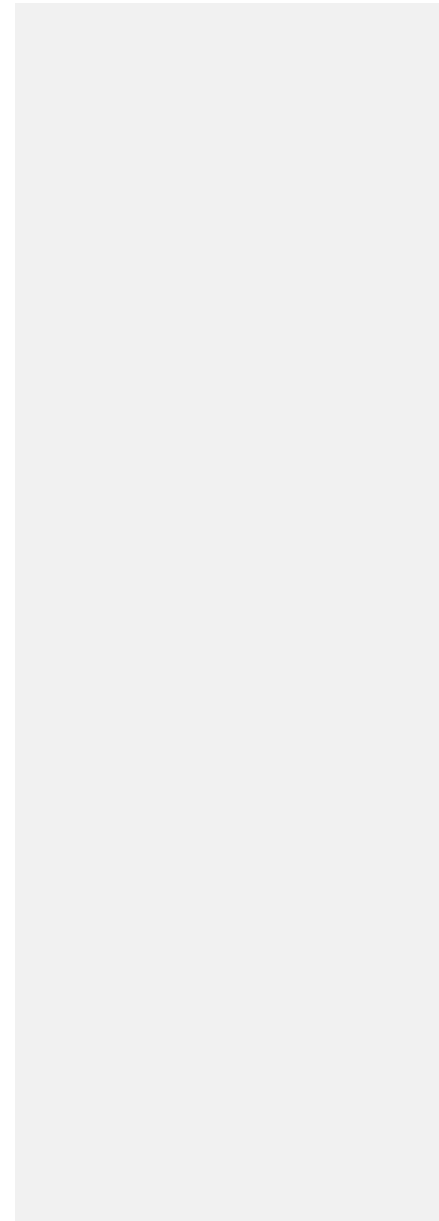
PROPOSED CHANGE: Added a code list for Vertical and Sounding Datums so the reference to SORDAT and VERDAT can be removed.

D-1.8 S100_DataFormat

Role Name	Name	Description	Mult	Type	Remarks
Class	S-100_DataFormat	The encoding format	-	-	-
Value	ISO/IEC 8211 ASCII		-	-	-
Value	ISO/IEC 8211 BINARY		-	-	-
Value	GML		-	-	-
Value	Other		-	-	-

D-1.9 S100_ProductSpecification

Role Name	Name	Description	Mult	Type	Remarks
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Class	S-100_CataloguePointOfContact	An exchange catalogue contains the discovery metadata about the exchange datasets and support files	-	-	-
Attribute	name	The name of the product specification used to create the datasets	1	CharacterString	
Attribute	version	The version number of the product specification	1	CharacterString	
Attribute	date	The version date of the product specification	1	Date	

D-1.10 S100_SupportFile

Role Name	Name	Description	Mult	Type	Remarks
Class	S100_SupportFile		-	-	-
Role	aggregateFile	Collection of support files	0..*	-	
Role	supportFile	File which has information about a dataset	0..*	-	

D-1.11 S100_SupportFileDiscoveryMetadata

Role Name	Name	Description	Mult	Type	Remarks
Class	S-100_SupportFileDiscoveryMetadata	Metadata about the individual support files in the exchange catalogue	-	-	-
Attribute	fileName	Full path from the exchange set root directory	1	CharacterString	
Attribute	filePath	Full path from the exchange set root directory	1	CharacterString	
Attribute	purpose	The purpose for which the dataset has been issued	1	S-100_SupportFilePurpose	E.g. new, re-issue, new edition, update etc.
Attribute	editionNumber	The edition number of the dataset	1	CharacterString	when a data set is initially created, the edition number 1 is assigned to it. The edition number is increased by 1 at each new edition. Edition number remains the same for a re-issue.
Attribute	issueDate	date on which the data was made available by the data producer	1	Date	
Attribute	productSpecification	The product specification used to create this file	1	S-100_ProductSpecification	
Attribute	dataType	The encoding format of the dataset	1	S-100_SupportFileFormat	
Attribute	otherDataTypeDescription	Encoding format other than those listed.	0..1	CharacterString	
Attribute	dataTypeVersion	The version number of the dataType.	1	CharacterString	
Attribute	comment		0..1	CharacterString	
Attribute	crc	The Cyclic Redundancy Checksum for the file	1	CharacterString	

Comment [JLP15]: Wrong Description

Comment [JLP16]: Missing from S100

Comment [JLP17]: Multiplicity is missing

Comment [JLP18]: Spell out

PROPOSED CHANGE: Those that are in Green to align S-100 and S-101

D-1.12 S100_SupportFileFormat

Role Name	Name	Description	Mult	Type	Remarks
Class	S-100_SupportFormat	The format used in the support file	-	-	-
Value	Text		-	-	
Value	JPEG2000		-	-	
Value	HTML		-	-	
Value	XML		-	-	
Value	XSLT		-	-	
Value	VIDEO		-	-	
Value	Other		-	-	

D-1.13 S100_SupportFilePurpose

Role Name	Name	Description	Mult	Type	Remarks
Class	S-100_SupportFilePurpose	The format used in the support file	-	-	-
Value	new	A file which is new	-	-	Signifies a new file.
Value	replacement	A file which replaces an existing file	-	-	Signifies a replacement for a file of the same name
Value	deletion	Deletes an existing file	-	-	Signifies deletion of a file of that name

D-1.14 S100_Catalogue

Role Name	Name	Description	Mult	Type	Remarks
Class	S-100_Catalogue		-	-	-
Attribute	name	The name for the catalogue	1	CharacterString	
Attribute	scope	Subject domain of the catalogue	1..*		
Attribute	fieldOfApplication	Description of the use to which this catalogue may be put	0..*		
Attribute	versionNumber	The version number of the product specification	1	CharacterString	
Attribute	versionDate	The version date of the product specification	1	Date	
Attribute	language	The language used for this catalogue	0..1	CharacterString	
Attribute	locale		0..1	PT_Locale	
Attribute	characterSet	Character set used in the catalogue	0..1	MD_CharacterSetCode	value=utf8

Conclusions

Any conclusions that may be drawn from the analysis/discussion.

Recommendations

Any resultant recommendations.

Justification and Impacts

Justification for any proposed action or recommendations. This should include:

identifying the benefits which would accrue from any proposed action;

identifying any resource implications resulting from the recommendations, such as the number of working group sessions, expertise, need for expert consultants, funding, et cetera;

identifying which HSSC working group(s) are essential to completing any proposed new work items; and

the date when any proposed new work item is expected to be completed;

the proposed priority (high, medium, low);

any related activities that may impact on a proposed work item or decision.

Action Required of [HSSC] [Relevant HSSC WG]

The [HSSC] [Relevant HSSC WG] is invited to:

- a. endorse
- b. agree
- c. note
- et cetera.

