Paper for Consideration by S-100 WG

Proposed Changes to S-100 Part 4a

Submitted by:	SevenCs GmbH
Executive Summary:	Proposal for amendment of S-100 Part 4a
Related Documents:	S-100 Part 4a
Related Projects:	

Introduction / Background

The following paper contains proposals that should be made to the document.
Part XX Discovery Metadata and Exchange Catalogues_5.0.0_Draft_20211215_CLEAN.doc circulated by e-mail on December 15th 2021.

Analysis/Discussion

Reasons for the proposed changes are different from typos to possible inconsistencies. Also, clarifications are made where they seem to be necessary.

Conclusions

All inconsistencies should be removed from the document and where clarifications are necessary, they should be made.
Note, that the topic ISO 19115 conformal metadata will be handled in a separate proposal.

Recommendations

The following table contains the proposed changes to the document.
TYPES: ED – Editorial
       IN – Inconsistency
       CL – Clarification
       CO – Correction

Clause	Type	Change	Justification
4a 1 Scope	ED	Remove one above	typo
Figure 4a-D-2	IN	Either all roles at S100_ExchangeSet should be aggregation or composition	It is not clear why the role for datasets is different than those for support files or catalogue files.
	CO	Association between S100_SupportFile and S100_SupportFileDiscoveryMetadata should be not 1 to 1. It should be 0 to 1.	In the case that a support file will be cancelled there is no file but a meta data record in the catalogue.
Figure 4a-D-3 – An S-100 Exchange Set Folder Structure	IN	Rename one of the two S-102 dataset files and move it to the correct location. *(Applies also to Figure 4a-D-4)*	Contains two S-102 dataset files, which have exactly the same filename. This would not be possible in an actual filesystem.
4a-4.2 S-100 Exchange Set	ED	Note 3: remove last part of the sentence "…, all other exchange	It is unclear what is meant with "all other".

Folder Structure		set files must be located in the S100_ROOT folder."	
	IN	Note 4: what is about the ISO conformal metadata file? Unclear: 1. Naming 2. Location 3. How it is represented in the catalogue? Specification of ISO conformal metadata in Note 5. is not sufficient.	ISO conformal support files are mainly overlooked in this document. A separate proposal will be made on this topic.
	CO	In the list of actions for the creation of the exchange set the points 3 and 4 must be switched	Encryption and/or compression must be done before the signature is created. This was an error in edition 4 and will be fixed in Part 15. The reason is a possible security issue since the data must be processed before the authentication is proved. The metadata allow to add optional signatures of the original data but this is not required.
4a-4.3 Storage and Management of External Resources	IN	The SUPPORT/FILES/<S-100 Product> must read <S-100 Product>/SUPPORT_FILES	Not in line with was defined in 4a-4.2
	IN	The entire point 2. "For every reference …" is misleading and difficult to understand. It is actually the other way around the reference to from the data sets metadata to the support file is ONLY required for such support file that are in the exchange set available. The sentence should read: If a reference to an external resource within a dataset is also contained within the exchange set, a reference to this resource may be added to the dataset's metadata by using its URI.	Logical consistency.
	CO	Change the example for File reference from .000 to .TXT.	In this context the URI of references support files are described, the

			example should be also made for a support file.
	CO	The third row should be removed.	The file hash is not contained in the catalogue.
Figure 4a-D-6 Exchange Set	CO	Make all Boolean member mandatory	Otherwise, the default must be specified for each of them (what is the behaviour if the element is not there)
	CO	Add an abstract base class to the model that contains the common members of S100_DatasetDiscoveryMetadata, S100_SupportFileDiscoveryMetadata, and S100_CalaogueDiscoveryMetadata	
4a-4.5 Elements of the exchange set	CO	The heading should read Elements of the exchanges set catalogue	Logical consistency
	CO	Add an element dataServerIdentifier to the class S100_ExchangeCatalogue	This information is currently hidden in some places in the contact element. This makes it very difficult for a system to use the information in order to handle multiple data server and their permits.
	CO	datums in S100_DatasetDiscoveryMetadata should be transformed to CRS - horizontalCRS - verticalCRS - soundingCRS	Definition be reference should be adequate.
	CO	Either - Remove horizontalDatumReference and rename horizontalDatumValue to horizontalCRS - Change the type of horizontalDatumValue to characterString	In the EPSG all references are integers. However, if the reference is not EPSG, an integer is not sufficient as identifier. If the reference is removed, this will enforce that EPSG is always used as reference.
	CO	Remove 'ID' of S100_DataCoverage	It is unclear where the id is referenced again.
	IN	The enumeration S100_Purpose should be split into several 'purposeTypes'	Different concepts are mixed in one enumeration. Especially

		Move Navigation/notForNavigation to a separate type NavigationalPurpose or add a Boolean element for this 'purpose'	the navigation/non navigation is different from the other values. That leads to problems with combinations that are allowed or illogical.

Action Required of [S-100 WG]

The S-100-WG is invited to:

      a.   endorse the paper

      b.   discuss the topics

      c.   conclude on the action list

      d.   decide on the next steps forward