

Paper for Consideration by S-100WG5**Inclusion of S-1xx cancellation guidance in exchange set gap correspondence group**

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Executive Summary:	Proposal to include S-1xx cancellation guidance in the exchange set gap correspondence group.
Related Documents:	TSM7_2019_5.19_GapAnalysis_for_S-100_ExchangeSetModel
Related Projects:	

Introduction / Background

At the TSM7 meeting an exchange set gap analysis was presented. It was decided to approach the S100WG meeting suggesting forming an exchange set gap correspondence group aiming for implementing solutions in edition 6 of S -100.

At the same meeting a study of S-1xx cancellation strategies was presented. The following action was given: Develop general guidance on managing dataset cancellation and dataset withdrawal for inclusion in S-100. As the cancellation strategies are based upon information defined in the exchange catalogue and discovery metadata, it would be beneficial to include the work on developing such a guidance with the work to be done by the suggested correspondence group.

Analysis/Discussion

As the cancellation study outlined, there are different approaches for implementing cancellation mechanisms in several product specifications. As the mechanisms used are directly related to the S100_ExchangeCatalogue, S100_DatasetDiscoveryMetadata and S100_SupportFileDiscoveryMetadata it would be beneficial to include the cancellation strategies work in the work the proposed exchange set gap correspondence group will do.

As a start, an early draft version of general guidance on managing dataset cancellation and dataset withdrawal has been included in Annex A.

Conclusions

The work on developing a guidance on managing dataset cancellation and dataset withdrawal for inclusion in S-100 should be part of the work expected done by the exchange set gap correspondence group.

Action Required of S-100WG5

The S-100WG is invited to:

Discuss the proposal within this paper.

Annex A

Draft guidance on managing dataset cancellation and dataset withdrawal

Introduction

The ability to cancel datasets is crucial in an operational service making use of S-100 products. The ability to convey information to the end user system that a dataset is cancelled, is essential. It is crucial that the end user do not use, and trust data being outdated, erroneous or withdrawn.

Some products, like weather forecasts, are only relevant in a limited time frame, and expires when the end of the forecast period is reached. Other products, like ENCs, are not limited by specific time frames but are still subject to cancellation occasionally. There are different reasons for cancelling such products. They may not be kept up to date and withdrawn, or they are replaced by brand new products.

In S-100 there is a difference in cancellation mechanisms whether the product is considered being static or dynamic. This difference is the anticipated functionality within the end user system to withdraw dynamic data when they reach the time limit for when they are considered valid.

The definitions of static and dynamic data are:

Static data: Data that do not carry an expiration date/time.

Dynamic data: Data that carries an expiration date/time.

In other words, dynamic data are replaced or expires at regular intervals, and static data are replaced or expires at uneven intervals. Static data usually have a longer life than dynamic data, but not always. E.g. A two-week forecast could live for two weeks, but an S-101 ENC or an S-102 high resolution bathymetry product could live for a shorter time period. The difference is that the forecast has a predefined length of life, opposite to static products that lacks such definition.

In an operational service delivering dynamic data it is logical to anticipate that data will be replaced with newer data regularly. For a vessel operating within a defined geographical area, dynamic data like weather information, ice information and tidal water information will be received and installed regularly replacing existing data in the vessels navigation/planning systems. However, if for some reason the data delivered contains critical errors, there needs to be a mechanism for informing the vessel and withdraw the data even if there are no new data ready to replace the old. This is crucial to avoid safety critical situations caused by using the erroneous data. This means that all data, both static and dynamic, needs a cancel mechanism defined that not solely rely on data being replaced.

Cancellation and withdrawal mechanism.

A data product developed on the S-100 framework must contain information as to which purpose it serves, meaning in this context not what it is intended used for, but what type of data product it is. There are five type purposes defined:

1. New dataset
2. New edition
3. Update
4. Re-issue
5. Cancellation

Not all those purposes are used in all S-100 products. E.g. S-101 use updates and re-issues but S-102 do not. However, all S-100 products must have the purposes New dataset and Cancellation defined.

To assure a common approach across S-100 products, the purpose numbers should be used, meaning if a product has new dataset, update and cancellation defined, the numbers 1,2 and 5 must be used.

This figure shows the purpose field as defined in S-100_DatasetDiscoveryMetadata:

Attribute	purpose	The purpose for which the dataset has been issued	0..1	MD_Identifier>purpose CharacterString	For example new, re-issue, new edition, update etc.
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For supporting the above described solution, the purpose field should be changed accordingly:

Attribute	purpose	The purpose for which the dataset has been issued	0..1	MD_Identifier>purpose CharacterString	1. New dataset 2. New edition 3. Update 4. Re-issue 5. Cancellation
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Replacement mechanism

As it was decided to remove the existing mechanism (replacedData and dataReplacement) from the S100_ExchangeCatalogue, the assumption would be that it is moved to the discovery metadata.

replacedData and dataReplacement explanation:

replacedData: Boolean value indicating whether a cancelled dataset file is replaced by another dataset file or not.

dataReplacement: If a cancelled dataset is replaced by another, the name of this other dataset is encoded here.

Attribute	replacedData	If a dataset is cancelled is it replaced by another dataset	0..1	Boolean	Yes or No
Attribute	dataReplacement	Description of dataset to be replaced (e.g. cell name)	0..1	CharacterString	

There should be no need to change this mechanism, except from moving it from S100_ExchangeCatalogue to the discovery metadata.