Paper for Consideration by S-102PT15

S100_DatasetDiscoveryMetadata attributes replacedData and dataReplacement
Conditional mandatory proposal

Submitted by:	PRIMAR
Executive Summary:	The intended use of the metadata attributes replacedData and dataReplacement is clarified at S-100 level. There is a need for defining a conditional mandatory implementation of the attributes in the S-102 Product Specification.
Related Documents:	S-100 5.1.0 Part 17 S-101 1.2.0 (link to draft redline September 2023)
Related Projects:	

Introduction / Background

PRIMAR is preparing for the S-100 future developing services supporting S-100 product distribution. The PRIMAR S-100 service already has S-102 and S-111 products available.

A future S-100 product (E.g., S-102) provision service to the end users is designed as a service granting access to a product for a certain period of time and is never provided as a one-time purchase. It is very important to have a mechanism in the S-102 Product Specification for the S-102 service provision continuity. The lack of this mechanism today causes the need for unnecessary and time-consuming manual operations at the RENC level. With S-100 5.1.0 this mechanism is now available.

This paper proposes to mandate the use of this mechanism to ensure a continued, and more automated, customer friendly S-102 service.

Analysis/Discussion

In a service like the one provided by PRIMAR, end users are purchasing access to a product for a specific time period. We call this a subscription period. Currently we provide the option to subscribe to an S-102 product for a period of 3-, 6-, 9- or 12-months.

When a customer purchases a product, he expects to have access during the entire subscription period. Data producers sometimes cancel a product. Due to internal processes, they may want to replace an existing dataset with a new one. In those situations, it is important that the end user already subscribing to the cancelled product can get access to the new one for the remaining time of the subscription period. PRIMAR grants this access on behalf of the data producer (based upon an agreement between PRIMAR and the data producer).

Currently, due to the lack of standardized mechanisms, this process is very much manually operated and requires unnecessary and time-consuming work effort both at the data producer and at the RENC level. The producing authority carries responsibility to plan the service provision and continuity of their products in the service and should be positive to make use of an automated and less resource demanding approach.

With the new S-100 5.1.0 standard it is now possible to define this information at the production level by using the S102_DatasetDiscoveryMetadata attributes replacedData and dataReplacement:

S100_DatasetDiscoveryMetadata

Attribute	replacedData	Indicates if a cancelled dataset is replaced by another data file(s)	0..1	Boolean	See Note
Attribute	dataReplacement	Datasetname	0..*	CharacterString	A dataset may be replaced by 1 or more datasets See Note
Attribute	navigationPurpose	Classification of intended navigation purpose (for Catalogue indexing purposes)	0..3	S100_NavigationPurpose	If Product Specification is intended for creation of navigational products this attribute should be mandatory
Role	resourceMaintenance	Information about the frequency of resource updates, and the scope of those updates	0..1	MD_MaintenanceInformation	S-100 restricts the multiplicity to 0..1 and adds specific restrictions on the ISO 19115 structure and content. See clause MD_MaintenanceInformation later in this Part Format: PnYnMnDTnHnMnS (XML built-in type for ISO 8601 *duration*). See clause 17-4.9

NOTE: replacedData and dataReplacement: The intended use of the attributes replacedData and dataReplacement could be, for example, to provide a mechanism for service providers to build automation when providing replacement data sets to customers within existing subscription periods.

The encoding of those attributes must be conditionally based, only to be encoded when an S-102 product is cancelled. To ensure an efficient and consistent encoding across different producers, the encoding of those attributes must be conditionally mandated in the product specification. We propose to implement the mandate of those attributes based on the following conditions:

1. When the datasets *S100_DatasetDiscoveryMetadata* attribute *purpose (S100_Purpose)* is encoded as *5 (cancellation)*, then the attribute *replacedData* **becomes mandatory**.
2. When the *S100_DatasetDiscoveryMetadata* attribute *replacedData* is populated as *True*, then the attribute *dataReplacement* **becomes mandatory**, and must include at least one, real dataset name entry - issued by an authorized S-102 Producer and made available for the service).

It is proposed to change the S102_DatasetDiscoveryMetadata attributes replacedData and dataReplacement accordingly (changes in Descriptions and Remarks column are copied from S-100 5.1.0):

Role name	Name	Description	Mult	Type	Remarks
Attribute	replacedData	~~If a data file is cancelled, it is replaced by another data file.~~ Indicates if a cancelled dataset is replaced by another data file(s)	0..1	Boolean	See Note
Attribute	dataReplacement	~~Cell~~ Dataset name	0..*	CharacterString	A dataset may be replaced by 1 or more datasets. See Note
Attribute	navigationPurpose	Classification of intended navigation purpose (for Catalogue indexing purposes)	1..3	S100_NavigationPurpose	If Product Specification is intended for creation of navigational products, this attribute should be mandatory. **Mandatory in S-102**
Role	resourceMaintenance	Information about the frequency and scope of resource updates	0..1		S-100 restricts the multiplicity to 0..1 and adds specific restrictions on the ISO 19115 structure and content. See <iho-s100,part=17>>. Format: PnYnMnDTnHnMnS (XML built-in type for ISO 8601 duration). See S-100, Part 17, Clause 17–4.9. **S-102 discovery metadata blocks should populate maintenance information if and only if the date of the next edition is definite, whether it is due on a regular or irregular schedule.**

a   S-100 5.0.0 uses an incorrect term: "**Marine** Resource Name".

NOTE: replacedData and dataReplacement: The attribute replacedData is mandatory if the attribute purpose (see clause 12.5) is set to value *5* (cancellation). The attribute dataReplacement is mandatory if replacedData = *True*.

(The proposed change reflects the similar change done to S-101 1.2.0)

Several use cases from our existing S-57 service demonstrate situations where cancelation and replacement ENCs impact more than one ENC Producer.

When populating replacedData = True, and the dataset name in the attribute dataReplacement includes a producer code different than the producer code of the cancellation dataset, it is implied that the producer of the cancellation dataset has legal agreements with the replacement products producer to mandate free use of the replacement dataset throughout the remaining subscription period. At the RENC level a check could be implemented to discover those situations to ensure sufficient agreements exist.

Conclusions

- The *S100_DatasetDiscoveryMetadata* attributes *replacedData* and *dataReplacement* in the S-102 product Specification must be conditional mandatory for the S-102 cancellation datasets.
    - When the datasets *S100_DatasetDiscoveryMetadata* attribute *purpose (S100_Purpose)* is encoded as *5 (cancellation)*, then the attribute *replacedData* **becomes mandatory.**
    - When the *S100_DatasetDiscoveryMetadata* attribute *replacedData* is populated as *True*, then the attribute *dataReplacement* **becomes mandatory**, and must include at least one, real dataset name entry - issued by an authorized S-102 Producer and made available for the service.
- By encoding *replacedData = **True*** the producer of the cancellation dataset grants usage of the replacement dataset for free until the end of a customer's subscription period.

Actions Required of S-102PT15:

S-102PT15 is invited to:
Note the paper and discuss proposed changes.