Paper for Consideration by S-100WG4

Roles and Association Management by S-100 FCB

Submitted by:	Republic of Korea (KHOA)
Executive Summary:	This paper describes the management process for feature association and roles for S-10X feature catalogue
Related Documents:	S-100, S-99, S-100WG2-10.10
Related Projects:	KHOA S-100 Test Bed Project

Introduction / Background

KHOA reported a progress on S-100 Feature Catalogue Builder (FCB) in S-100WG2 meeting held in Italy in 2017 and noted that there was a gap, which was a standardized management procedure for defining feature associations and roles within the FCB. There was also no mechanism to register them in the S-100 GI Registry. Therefore, the meeting agreed to develop functions and procedures in the FCB as KHOA suggested.

This paper reports a management process for the feature associations and roles according to the S-100WG3 Action Items 8 and 9.

Analysis/Discussion

History of S-10X Feature Catalogue and S-100 FCB

KHOA investigated a management process for the feature association and role for the S-10X feature catalogue according to the S-100WG2 Action Item 37 "*Include functionality for managing the creation of the roles and feature associations to be included in a Feature Catalogue in the next iteration of the S-100 FCB"* and defined the procedure within the FCB.

Figure 1 presents a new management tool for the association and role in S-100 FCB. This new function enables to register and modify them with S-10X Product Specification.
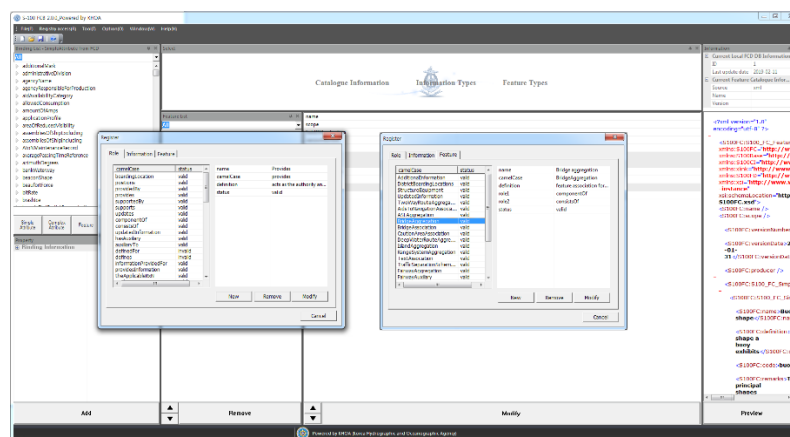

Figure 1. Management tool for feature association and role

Management Process

The FCB accessed the Feature Concept Dictionary register for binding features and attributes with its product specification. However, the association and role could not get them from the register because there was no data in the database. It identified that the association and role were only necessary for the product level. Accordingly, the tables for them were created in the FC database for the S-10X FC.

The management function is only allowed to the Register Manager (RM) by means of the simplest and the most efficiency way. Therefore, if the S-10X PS developer identifies any requirement to add or modify them, they should contact the Register Manager (IHO Sec.) or the FCB manager (KHOA) by e-mail with relevant information.

Fig.2 presents the overall procedure for the management of the association and role. After reviewing the proposal, the Registry Manager registers or modifies existing data using the feature association and role management tool in

the S-100 FCB. Once the registration is completed, the S-10X standard developer can immediately see the updated information through the S-100 FCB, and then can use them for binding its feature catalogue.

Figure 2.Management procedures for the feature association and role

Validate association binding

With regard to the association binding, the current S-10X DCEG document designed to present both directions for feature/information association. It can cause some inconsistency such as class, role, and multiplicity for both directions in the document and for the FC as well if the document is significantly large such as S-101 PS especially.

A new binding validation tool for the association was developed to discover the discrepancy. The tool facilitates validating the FC whether there is any inconsistency on the association binding which is highlighted in red as shown on Figure 3.

Figure 3. Validation function for the association binding

Conclusions

In accordance with outcomes from the previous S-100WG meeting, the management tool for the feature association and role have been implemented in the S-100 FCB and the management process was designed to register or modify items required by S-10X PS.

The validation function for feature/information association for both directions has been introduced to decrease human error which can occur during the DCEG development.

Action Required of S-100WG

The S-100WG4 is invited to:
    a. Note this paper.