Paper for Consideration by TSMAD

GML Encoding in S-100

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Executive Summary:	This paper proposes that a profile of GML be developed for inclusion in S-100 as an additional encoding. A number of Product Specifications which may use GML are in development and this move is in line with the objectives of S-100.
Related Documents:	1. S-100 v1
	2. ISO 19136:2007
Related Projects:	1. S-100

Introduction / Background

1. S-100 part 10 provides specific encodings for use in S-100 Product Specifications. Currently only the ISO 8211 encoding used in S-101 is included as part 10a. S-100 states that;

As new encoding schema are developed they will be added as extensions to S-100 and will be documented in Parts 10a, 10b, 10c etc.

Currently a number of Product Specifications are in development which may use encodings other than ISO 8211. GML is one encoding format which is now part of the ISO 19100 series of standards (as ISO 19136:2007). Inclusion of a GML profile within S-100 would be in line with the primary objective of S-100 which is;

1) To comply with the emerging ISO standards for geographic information being produced by ISO TC 211;

Therefore this paper proposes that a GML profile is developed for inclusion within S-100 which should be capable of supporting a range of S-10x product specifications. Including those which are in development.

Analysis/Discussion

3. "Geography Markup Language is an XML grammar written in XML Schema for the description of application schemas as well as the transport and storage of geographic information." ISO 19136:2007 it meets the requirements for an S-100 encoding format but is a large and complex standard which would require profiling and possibly extension to meet the needs of S-100 Product Specifications. Therefore to tailor GML to the requirements of S-100 a GML Profile would need to be defined.

4. An number of S-100 based Product Specifications are in development; these include the DOALOS Maritime Limits and Boundaries Product Specification, the SNPWG MPA Product Specification and the IALA Aids to Navigation Product Specification. These Product Specifications do not require the updating functionality and minimal data volume offered by the ISO 8211 encoding. The use of GML offers enhanced interoperability with COTS and Open source GIS packages which is a benefit for these products. Therefore it is clear that there is a need for S-100 to support a GML profile.

5. The development of a GML profile for S-100 would be a significant but important task. There is a risk that if a common GML profile is defined different products could use existing profiles. It is likely that

existing profiles could be used as the basis for an S-100 profile with minimal modification and these options should be explored.

Conclusion

6. This paper outlines a clear requirement for an additional encoding within S-100, TSMAD should ask HSSC to add an item to the TSMAD work plan to support this work. A GML encoding will enhance the usability of the S-100 standard and improve interoperability which is a stated aim of the S-100 'project'.

Action Required of TSMAD

- To agree that a GML profile is required for S-100 and propose to HSSC that a new work item is added to the TSMAD work plan