**Paper for Consideration by S-100 TSM5**

# Proposal to enhance language describing the S-100 and ISO 191xx connection

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| ***Submitted by:*** | NOAA; Eivind Mong; Raphael Malyankar |
| ***Executive Summary:*** | Proposal to revise and enhance the language describing the connection between S-100 and ISO TC211 standards to underline the lineage of S-100 and that they must be utilized together as S-100 profiles and use TC211 concepts that are themselves built on other parts of the TC211 series. Therefore, all details are not included in S-100 and the two must be used together for a complete understanding of S-100. |
| ***Related Documents:*** | S-100 |
| ***Related Projects:*** | S-100 |

## Introduction / Background

S-100 profiles several ISO standards, and specifically the TC211 series of Geographical Information standards, also known as the 19100 series of standards. The means of profiling these standards varies throughout S-100, depending on several circumstances such as particular needs and authors preferences. During the development of the first version of S-100, there was debate about how much of base ISO standards needed to be included in S-100, but no firm decision was reached. This contributes to the varying practice. With these circumstances in mind, it has been noted in test bed discussions about implementation trials of S-100 that there is no common understanding about the relationship and importance of ISO standards. Due to the importance of the ISO standards for the full S-100 understanding, it is necessary to review and enhance the language that describe the connection between S-100 and ISO standards.

## Challenges with current situation

In the S-100 scope statement there are references to ISO TC211 and how S-100 relates, these read;

‹ S-100 conforms as far as is reasonably possible to the ISO TC 211 series of geographical information standards, and where necessary has been tailored to suit hydrographic requirements.

And;

S-100 comprises multiple parts that profile standards developed by the ISO Technical Committee 211. ISO TC 211 is responsible for the ISO series of standards for geographic information. The objective is that, together, the standards will form a framework for the development of sector specific applications that use geographic information. S-100 is an example of such an application.

The challenge is that there is no firm statement regarding the way to read S-100 in relation to TC211, e.g. is S-100 a complete standalone application, or does it require the reader to read it with ISO. It should be noted that it is implied when reading various parts of S-100 that consulting TC211 is good practice, however this can be missed and it should therefore be stated explicitly.

These challenges have become evident in proposals such as the addition of a General Data Model to explain the General Feature Model, and with product specification teams developing their own metadata instead of using the ISO process, which is described in Part 4, for extending metadata.

## Examples of S-100 referencing ISO standards concepts

The application schema for coverage is described in Part 3-7 and includes few details and a reference to ISO 19123 as the location to obtain definitions of the models presented. Implied by this is that ISO 19123 must be consulted for development of coverage application schemas.

Part 7 describes vector geometry in significant details, but refers to ISO 19107 as the base standard and as the place to seek details of the possible geometry element configurations. The level of detail provided is significant, and likely gives enough detail that consulting 19107 is not necessary in most circumstances.

Part 10b states that it is a subset of the constructs defined in the ISO 19100 XML implementation schema found in ISO 19136 (10b-7). Not stated, but implied is that it is therefore necessary to review ISO 19136 to have a full understanding of how the GML encoding relates to General Feature Model, Spatial Schema and other parts. Moreover, this part provides significant level of details for how to develop a GML based encoding, and it may therefore be missed that consulting ISO 19136 is likely to be quite necessary when implementing S-100 GML support.

**Proposed changes to S-100**

As part of regular maintenance there should be a review and subsequent revision of the scope statements of all S-100 parts to determine the level of the individual part's symbiosis with ISO standards and plainly state how significant reading together with referenced ISO standards is to the overall understanding. Moreover, it is recommended to include a blanket statement in the scope statement of S-100 that clarifies the need to read S-100 together with referenced ISO standards. A proposal for such a statement is;

S-100 references the associated ISO standards in the various parts that comprise S-100. It has not always been possible to include all the details of the ISO standards, and it is therefore recommended to read S-100 in conjunction with the referenced ISO standards to ensure complete understanding of the concepts and constructions described in S-100.

**Conclusions**

The variety of methods employed in referencing ISO standards within S-100 is significant and can in some circumstances be misunderstood to mean that S-100 contain all significant details. It is therefore important enhance some parts of S-100 to clarify the significance of having ISO standards available when utilizing S-100.

**Recommendations**

It is recommended that the proposed statement be added to S-100, and that as each part comes up for maintenance, these should be reviewed for level of compliance with ISO standards and a clarification be added to describe the specific ISO relationship, or state that it conforms with the overall blanket statement.

**Action Requested of TSM5**

The TSM5 group is invited to:

a. Discuss the paper
b. Endorse the recommendation of the paper