**S-100 – Part 18**

**Language Packs**

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# Scope

***Observations***

* *How does this relate to the registry and the work done to internationalise S-32?*
* *I don’t think we need to include the original text in the LP. If it is wrong the Xpath won’t match – the Xpath is sufficient to define which entry is being translated. Some values are LONG (definition) and this would be VERY error prone.*
* *Not sure I understand “status”?*
* *Maybe need header/version number in LP? And a match to which FC it relates (including version numbers?).*
* *Feature Catalogue, others? CATALOG.XML?*
* *Codelists? If these are external it could be problematic (only in CATALOG.XML though, as currently FC ones are encoded just like enums (no way to internationalise other: values)*
* *GML encoding of enumeration/codelist values will have to use code (not labels), this can be fed into the GML revision of Part 10b.*
* *Dates?*

S-100 part 18.

[Description of Purpose]

This part of S-100 details how multi-llingual support for XML elements of the framework may be implemented.

This is designed to provide multi-lingual instances of supporting XML resources for end users. It does not detail how multi-lingual support may be added to instances of S-100 product specifications (through datasets and any external resources they reference), but how elements of the S-100 framework can be adapted for multi-lingual use.

This part of S-100 provides a methodology for implementing such support in a generic way, as well as specific implementations for S-100 Feature Catalogues. (and CATALOG.XML?) as defined in S-100 Part XX.

# Normative References

The following referenced documents are required for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including amendments) applies.

* XML Schema
* XPath Specification
* ISO 639-2 for specification of languages.

# General Description

Under S-100 XML content is generated in support of product specifications. Instances of S-100 product specifications, datasets are encoded and promulgated to end users along with any supporting resources within exchange sets defined under Part 17.

XML content associated with product specifications can be transformed by means of any number of “language packs”. An S-100 language pack is a set of specifications, itself encoded in XML, which enables transformation of certain locations from one language to another.

A language pack is a set of XML location specifiers, together with translations of the XML element values in a specified language.

A dedicated S-100 schema defines the structure and content of language packs.

Given S-100 XML content and an applicable language pack, an implementing system is able to produce a version of the content in the language specified by the language pack

An implementing system may therefore support any number of language packs for use by end users.

The primary goal of such language packs is the construction of multi-lingual alternatives for S-100 Feature Catalogues. Using the feature catalogue as an example, the implementation of a language pack is shown in the following diagram:

[DIAG: Version of this ]

Diagram, box and whisker chart

Description automatically generated

**How it works**

* Feature catalogue (FC) is first exported as eng
* Language pack(s) (LP) are created. Each maps Xpath locations in the Fceng to new values for the element content. LP has an attribute defining the language which it implements
* LPs conform to the LP schema
* This defines a transformation process to be carried out…
* ECDIS gets Fceng and LPfre + others (LPdeu LPkor Lpjpa )[1]? Or ECDIS gets FCeng , FCdeu, FCfre etc..?[2]
* Suspect [1] is the best option. This leaves the OEM to switch to alternative languages as required by the user. It also means the OEM doesn’t have to match up the two FCs with each other.
* IHO, then, doesn’t ever need to produce FCfre for example although FCB (or other tools) should be enhanced to provide the ability to do so for data production and testing?
* This is all over and above internationalisation of datasets (via language sub-attribute(s)). This should be clarified in the S-100 part, that internationalisation of the framework and datasets uses different mechanisms.

Figure : translate this diagram into something more S-100-like...

# Description of entities

There are several entities to consider in support for multiple languages.

## S-100

S-100 defines broadly how language packs enable multi-language support in S-100 by

* Specifying the mechanism for its implementation
* Specification of normative schemas for language pack content
* Specification of content for individual S-100 entities required for language pack implementation for
  + Feature Catalogues

S-100 Part 17 Exchange Catalogue enables the inclusion of 0..\* language packs in S-100 exchange sets for distribution to end users. Such language packs can be included alongside the content to which they refer or independently to supplement pre-installed content on the end user system.

Where they are delivered alongside the content to which they refer, then they shall be referenced to the content by association in the exchange catalogue.

## Implementer

The implementer of the S-100 system is responsible for correctly interpreting the language pack in the context of the XML content and performing the value substitution correctly. The implementer is also responsible for providing support for multiple language packs and any harmonization with multi-lingual support within S-100 datasets.

## Language Pack Author

Language Pack authors are responsible for

* Definition of translated content for a particular language

## Product Specification Manufacturer

# Description of Operation

# Implementation – S-100 Feature Catalogue

* Fields which can/must/should be translated
* How to refer to them, normative list of xPaths?

# Implementation in other contexts

* How multi-lingual is dealt with in data?
* Other XML parts of the S-100 framework?

# Language Pack Schema Description.

[Holger – Schema description using tables.]

# Examples (Informative)

Parts of S-101 feature catalogue, before and after?

[Holger] – suggest French and German is used?