**S-100 – Part 18**

**Language Packs**

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# Scope

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

This is designed to enable the provision of 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’ data (i.e through datasets and any external resources they reference), but how elements of the S-100 framework can be adapted for multi-lingual use by implementers and data producers.

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.

A language pack provides translations of elements contained within an XML document into a specific named language. A language pack contains an aggregation of translations into a single collection. This is combined with the original source by an implementer to enhance multi-lingual portrayal and behaviour.

# 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 accordance with a product specification’s feature catalogue. Data is encoded using one or more of S-100’s encodings and delivered to an end user along with any required supporting resources in an exchange set 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 fields 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. The language pack is applied by the system implementer to an XML file in order to generate the correct translations for the end user system’s user interface.

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. The implementing system is also then able to validate the translated content, that is, the translation into the destination language does not invalidate the content.

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 feature catalogue language pack is shown in the following diagram:

Graphical user interface

Description automatically generated with medium confidence

Figure 15-1a - Language Pack Creation and Use

# Language Pack Creation Process

The following is the set of steps taken to produce and consume a language pack.

* The published S-100 product specification contains a feature catalogue conforming to the S-100 feature catalogue XML Schema.
* S-100 Part 18 specifies the entities within the Feature Catalogue which may (optionally) be translated for language pack creation
* From all possible entities which may be translated those requiring translation for the destination language are identified.
* The elements are translated in the destination language and a language pack is constructed which conforms to the S-100 Language Pack XML Schema
* The implementing system receives datasets in an S-100 data encoding which conform to the Feature Catalogue content
* As required by the end user the implementing system produces translated elements in the given language for the feature catalogue elements.

## 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.

## Language Pack Author

Language Pack authors are responsible for

* Definition of translated content for a particular language

## Product Specification Manufacturer

## System 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.

# Feature Catalogue specifiers

The elements of S-100 Feature Catalogues which should be considered for translation are summarized in the following table:

|  |  |
| --- | --- |
| Element Description | Location (XPath) |
| Header   * Scope * Field Of Application * Classification |  |
|  |  |
| All FC Items   * Name * Definition   SimpleAttributes  ComplexAttributes  Roles  InformationAssociations  FeatureAssociations  FeatureTypes  InformationTypes |  |
| All listed Values   * Label * Definition |  |

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?**