**Internationalization Tag Set (ITS) Version 2.0**

**Editor's Copy**

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**Abstract**

The technology described in this document - the *Internationalization Tag Set (ITS) 2.0* - enhances the foundation to integrate automated processing of human language into core Web technologies. ITS 2.0 bears many commonalities with is predecessor, [ITS 1.0](http://www.w3.org/TR/2007/REC-its-20070403/) but provides additional concepts that are designed to foster the automated creation and processing of multilingual Web content. ITS 2.0 focuses on HTML, XML-based formats in general, and can leverage processing based on the XML Localization Interchange File Format (XLIFF), as well as the Natural Language Processing Interchange Format (NIF).

**Status of this Document**

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**1 Introduction**

*This section is informative.*

ITS 2.0 is a technology to add metadata to Web content, for the benefit of localization, language technologies, and internationalization. The ITS 2.0 specification both identifies concepts (such as “Translate”) that are important for internationalization and localization, and defines implementations of these concepts (termed “ITS data categories”) as a set of elements and attributes called the *Internationalization Tag Set (ITS)*. The document provides implementations for HTML, serializations in [NIF (NLP Interchange Format)](http://nlp2rdf.org/nif-1-0), and provides definitions of ITS elements and attributes in the form of XML Schema [XML Schema] and RELAX NG [RELAX NG].

This document aims to realize many of the ideas formulated in the [ITS 2.0 Requirements document](http://www.w3.org/TR/2012/WD-its2req-20120524/), in [ITS REQ] and [Localizable DTDs].

Not all requirements listed there are addressed in this document. Those which are not addressed here are either covered in [XML i18n BP] (potentially in an as yet unwritten best practice document on multilingual Web content), or may be addressed in a future version of this specification.

**1.1 Relation to ITS 1.0 and New Principles**

**1.1.1 Relation to ITS 1.0**

ITS 2.0 has the following relations to ITS 1.0 [ITS 1.0]:

* It adopts and maintains the following principles from ITS 1.0:
  + It adopts the use of data categories to define discrete units of functionality
  + It adopts the separation of data category definition from the mapping of the data category to a given content format
  + It adopts the conformance principle of ITS1.0 that an implementation only needs to implement one data category to claim conformance to ITS 2.0
* ITS 2.0 supports all ITS 1.0 data category definitions and adds new definitions, with the exceptions of Directionality and Ruby.
* ITS 2.0 adds a number of new data categories not found in ITS 1.0.
* While ITS 1.0 addressed only XML, ITS 2.0 specifies implementations of data categories in *both* XML *and* HTML.

**1.1.2 Ruby and ITS 2.0**

ITS 1.0 provided the [Ruby data category](http://www.w3.org/TR/2007/REC-its-20070403/#ruby-annotation). ITS 2.0 does not provide ruby since at the time of writing, a stable model for ruby was not available. There are ongoing discussions about the [ruby model in HTML5](http://www.w3.org/TR/html51/text-level-semantics.html#the-ruby-element). Once these discussions are settled, in a subsequent version of ITS, the ruby data category may be re-introduced.

**1.1.3 New Principles**

ITS 2.0 also adds the following principles and features not found in ITS 1.0:

* ITS 2.0 data categories are intended to be format neutral, with support for XML, HTML, and NIF: a data category implementation only needs to support a single content format mapping in order to support a claim of ITS 2.0 conformance.
* ITS 2.0 provides algorithms to generate NIF out of HTML or XML with ITS 2.0 metadata.
* A global implementation of ITS 2.0 requires at least the XPath version 1.0. Other versions of XPath or other query languages (e.g., CSS Selectors) can be expressed via a dedicated queryLanguage attribute.

The new data categories included in ITS 2.0 are:

* Domain
* Text Analysis
* Locale Filter
* Provenance
* External Resource
* Target Pointer
* Id Value
* Preserve Space
* Localization Quality Issue
* Localization Quality Rating
* MT Confidence
* Allowed Characters
* Storage Size

**1.2 Motivation for ITS**

Content or software that is authored in one language (the source language) is often made available in additional languages or adapted with regard to other cultural aspects. This is done through a process called localization, where the original material is translated and adapted to the target audience.

In addition, document formats expressed by schemas may be used by people in different parts of the world, and these people may need special markup to support the local language or script. For example, people authoring in languages such as Arabic, Hebrew, Persian, or Urdu need special markup to specify directionality in mixed direction text.

From the viewpoints of feasibility, cost, and efficiency, it is important that the original material should be suitable for localization. This is achieved by appropriate design and development, and the corresponding process is referred to as internationalization. For a detailed explanation of the terms “localization” and “internationalization”, see [l10n i18n].

[Ed. note: Note: This should refer to the best practice document as well, when ready.]

The increasing usage of XML as a medium for documentation-related content (e.g., [DocBook](https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=docbook#technical)> and [DITA](https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=dita#technical) as formats for writing structured documentation, well suited to computer hardware and software manuals) and software-related content (e.g., the eXtensible User Interface Language [XUL]) creates challenges and opportunities in the domain of XML internationalization and localization.

**1.2.1 Typical Problems**

The following examples sketch one of the issues that currently hinder efficient XML-related localization: the lack of a standard, declarative mechanism that identifies which parts of an XML document need to be translated. Tools often cannot automatically perform this identification.

Example 1: Document with partially translatable content

In this document it is difficult to distinguish between those string elements that are translatable and those that are not. Only the addition of an explicit flag could resolve the issue.

**<resources>**

**<section** id="Homepage"**>**

**<arguments>**

**<string>**page**</string>**

**<string>**childlist**</string>**

**</arguments>**

**<variables>**

**<string>**POLICY**</string>**

**<string>**Corporate Policy**</string>**

**</variables>**

**<keyvalue\_pairs>**

**<string>**Page**</string>**

**<string>**ABC Corporation - Policy Repository**</string>**

**<string>**Footer\_Last**</string>**

**<string>**Pages**</string>**

**<string>**bgColor**</string>**

**<string>**NavajoWhite**</string>**

**<string>**title**</string>**

**<string>**List of Available Policies**</string>**

**</keyvalue\_pairs>**

**</section>**

**</resources>**

[Source file: [examples/xml/EX-motivation-its-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-motivation-its-1.xml)]

Example 2: Document with partially translatable content

Even when metadata are available to identify non-translatable text, the conditions may be quite complex and not directly indicated with a simple flag. Here, for instance, only the text in the nodes matching the expression //component[@type!='image']/data[@type='text'] is translatable.

**<dialogue** xml:lang="en-gb"**>**

**<rsrc** id="123"**>**

**<component** id="456" type="image"**>**

**<data** type="text"**>**images/cancel.gif**</data>**

**<data** type="position"**>**12,20**</data>**

**</component>**

**<component** id="789" type="caption"**>**

**<data** type="text"**>**Cancel**</data>**

**<data** type="position"**>**60,40**</data>**

**</component>**

**<component** id="792" type="string"**>**

**<data** type="text"**>**Number of files: **</data>**

**</component>**

**</rsrc>**

**</dialogue>**

[Source file: [examples/xml/EX-motivation-its-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-motivation-its-2.xml)]

**1.3 Users and Usages of ITS**

**1.3.1 Potential Users of ITS**

The ITS specification aims to provide different types of users with information about what markup should be supported to enable worldwide use and effective internationalization and localization of content. The following paragraphs sketch these different types of users, and their usage of ITS. In order to support all of these users, the information about what markup should be supported to enable worldwide use and effective localization of content is provided in this specification in two ways:

* abstractly in the data category descriptions: Section 8: Description of Data Categories
* concretely in the ITS schemas: Appendix D: Schemas for ITS

**1.3.1.1 Schema developers starting a schema from the ground up**

This type of user will find proposals for attribute and element names to be included in their new schema (also called "host vocabulary"). Using the attribute and element names proposed in the ITS specification may be helpful because it leads to easier recognition of the concepts represented by both schema users and processors. It is perfectly possible, however, for a schema developer to develop his own set of attribute and element names. The specification sets out, first and foremost, to ensure that the required markup is available, and that the behavior of that markup meets established needs.

**1.3.1.2 Schema developers working with an existing schema**

This type of user will be working with schemas such as DocBook, DITA, or perhaps a proprietary schema. The ITS Working Group has sought input from experts developing widely used formats such as the ones mentioned.

**Note:**

The question "How to use ITS with existing popular markup schemes?" is covered in more details (including examples) in a separate document: [XML i18n BP].

Developers working on existing schemas should check whether their schemas support the markup proposed in this specification, and, where appropriate, add the markup proposed here to their schema.

In some cases, an existing schema may already contain markup equivalent to that recommended in ITS. In this case it is not necessary to add duplicate markup since ITS provides mechanisms for associating ITS markup with markup in the host vocabulary that serves a similar purpose (see Section 5.6: Associating ITS Data Categories with Existing Markup). The developer should, however, check that the behavior associated with the markup in their own schema is fully compatible with the expectations described in this specification.

**1.3.1.3 Vendors of content-related tools**

This type of user includes companies that provide tools for authoring, translation or other flavors of content-related software solutions. It is important to ensure that such tools enable worldwide use and effective localization of content. For example, translation tools should prevent content marked up as not for translation from being changed or translated. It is hoped that the ITS specification will make the job of vendors easier by standardizing the format and processing expectations of certain relevant markup items, and allowing them to more effectively identify how content should be handled.

**1.3.1.4 Content producers**

This type of user comprises authors, translators and other types of content author. The markup proposed in this specification may be used by them to mark up specific bits of content. Aside: The burden of inserting markup can be removed from content producers by relating the ITS information to relevant bits of content in a global manner (see global, rule-based approach). This global work, however, may fall to information architects, rather than the content producers themselves.

Content producers often work with content management systems (CMS). In various CMS, some of the CMS fields only allow to store plain text. For these fields, the current ITS 2.0 data categories can only be applied globally and not with local attributes. This issue should be addressed in another way, apart from the ITS 2.0 standard. One way would be to allow HTML in these fields if possible, or using an extra field that allows HTML input and save the plain text of this extra field in the plain text field.

**1.3.1.5 Machine Translation Systems**

This type of service is intended for a broad user community ranging from developers and integrators through translation companies and agencies, freelance translators and post-editors to ordinary translation consumers and other types of MT employment. Data categories are envisaged for supporting and guiding the different automated backend processes of this service type, thereby adding substantial value to the service results as well as possible subsequent services. These processes include basic tasks, like parsing constraints and markup, and compositional tasks, such as disambiguation. These tasks consume and generate valuable metadata from and for third party users, for example, provenance information and quality scoring, and add relevant information for follow-on tasks, processes and services, such as MT post-editing, MT training and MT terminological enhancement.

**1.3.1.6 Text Analytics**

This type of service provides automatically generated metadata for improving localization, data integration or knowledge management workflows. This class of users comprises of developers and integrators of services that automate language technology tasks such as domain classification, named entity recognition and disambiguation, term extraction, language identification and others. Text analytics services generate data that contextualizes the raw content with more explicit information. This can be used to improve the output quality in machine translation systems, search result relevance in information retrieval systems, as well as management and integration of unstructured data in knowledge management systems.

**1.3.1.7 Localization Workflow Managers**

These types of users are concerned with localization workflows in which content goes through certain steps: preparation for localization, start of the localization process by e.g., a conversion into a bitext (aligned parallel text) format like [XLIFF], the actual localization by human translators or machine translation and other adaptations of content, and finally the integration of the localized content into the original format. That format is often based on XML or HTML; (Web) content management systems are widely used for content creation, and their integration with localization workflows is an important task for the workflow manager. For the integration of content creation and localization, metadata plays a crucial role. E.g., an ITS data category like translate can trigger the extraction of localizable text. "Metadata roundtripping", that is the availibility of metadata both before and after the localization process is crucial for many tasks of the localization workflow manager. An example is metadata based quality control, with checks like "Have all pieces of content set to translate="no" been left unchanged?". Other pieces of metadata are relevant for proper internationalization during the localization workflow, e.g., the availibility of Directionality markup for adequate visualization of bidirectional text.

**1.3.2 Ways to Use ITS**

The ITS specification proposes several mechanisms for supporting worldwide use and effective internationalization and localization of content. We will sketch them below by looking at them from the perspectives of certain user types. For the purpose of illustration, we will demonstrate how ITS can indicate that certain parts of content should or should not be translated.

* A content author uses an attribute on a particular element to say that the text in the element should not be translated.

Example 3: Use of ITS by content author

The its:translate="no" attributes indicate that the path and the cmd elements should not be translated.

**<help** xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<head>**

**<title>**Building the Zebulon Toolkit**</title>**

**</head>**

**<body>**

**<p>**To re-compile all the modules of the Zebulon toolkit you need to go in the **<path**

its:translate="no"**>**\Zebulon\Current Source\binary**</path>** directory. Then from there, run

batch file **<cmd** its:translate="no"**>**Build.bat**</cmd>**.**</p>**

**</body>**

**</help>**

[Source file: [examples/xml/EX-ways-to-use-its-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-ways-to-use-its-1.xml)]

* A content author or information architect uses markup at the top of the document to identify a particular type of element or context in which the content should not be translated.

Example 4: Use of ITS by information architect

The translateRule element is used in the header of the document to indicate that none of the path or cmd elements should be translated.

**<help** xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<head>**

**<title>**Building the Zebulon Toolkit**</title>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:translateRule** selector="//path | //cmd" translate="no"**/>**

**</its:rules>**

**</head>**

**<body>**

**<p>**To re-compile all the modules of the Zebulon toolkit you need to go in the

**<path>**\Zebulon\Current Source\binary**</path>** directory. Then from there, run batch file

**<cmd>**Build.bat**</cmd>**.**</p>**

**</body>**

**</help>**

[Source file: [examples/xml/EX-ways-to-use-its-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-ways-to-use-its-2.xml)]

* A processor may insert markup at the top of the document that links to ITS information outside of the document.

Example 5: Use of ITS by processor

A rules element is inserted in the header of the document. It has a XLink href attribute used to link to an ITS external rule document.

**<help** xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<head>**

**<title>**Building the Zebulon Toolkit**</title>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"

xmlns:xlink="http://www.w3.org/1999/xlink" xlink:href="EX-ways-to-use-its-4.xml"**/>**

**</head>**

**<body>**

**<p>**To re-compile all the modules of the Zebulon toolkit you need to go in the

**<path>**\Zebulon\Current Source\binary**</path>** directory. Then from there, run batch file

**<cmd>**Build.bat**</cmd>**.**</p>**

**</body>**

**</help>**

[Source file: [examples/xml/EX-ways-to-use-its-3.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-ways-to-use-its-3.xml)]

Example 6: ITS rule file shared by different documents

The rules element contains several ITS rules that are common to different documents. One of them is a translateRule element that indicates that no path or cmd element should be translated.

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:translateRule** selector="//path | //cmd" translate="no"**/>**

**</its:rules>**

[Source file: [examples/xml/EX-ways-to-use-its-4.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-ways-to-use-its-4.xml)]

* A schema developer integrates ITS markup declarations in his schema to allow users to indicate that specific parts of the content should not be translated.

[Ed. note: Following schema example has to updated once we have final XSD schema for ITS 2.0]

Example 7: An XSD schema with ITS declaration

The declarations for the translate attribute is added to a group of common attributes commonAtts. This allows to use the translate attribute within the documents like in Example 3.

**<xs:schema** xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:its="http://www.w3.org/2005/11/its"

elementFormDefault="qualified"**>**

**<xs:import** namespace="http://www.w3.org/2005/11/its" schemaLocation="its.xsd"**/>**

**<xs:attributeGroup** name="commonAtts"**>**

**<xs:attributeGroup** ref="its:att.local.with-ns.attribute.translate"**/>**

**<xs:attribute** name="id" type="xs:ID" use="optional"**/>**

**</xs:attributeGroup>**

**<xs:element** name="help"**>**

**<xs:complexType>**

**<xs:sequence>**

**<xs:element** name="head"**>**

**<xs:complexType>**

**<xs:sequence>**

**<xs:element** name="title" type="xs:string"**/>**

**</xs:sequence>**

**<xs:attributeGroup** ref="commonAtts"**/>**

**</xs:complexType>**

**</xs:element>**

**<xs:element** name="body"**>**

**<xs:complexType>**

**<xs:choice** minOccurs="1" maxOccurs="unbounded"**>**

**<xs:element** name="p"**>**

**<xs:complexType** mixed="true"**>**

**<xs:choice** minOccurs="0" maxOccurs="unbounded"**>**

**<xs:element** ref="path"**/>**

**<xs:element** ref="cmd"**/>**

**</xs:choice>**

**<xs:attributeGroup** ref="commonAtts"**/>**

**</xs:complexType>**

**</xs:element>**

**</xs:choice>**

**</xs:complexType>**

**</xs:element>**

**</xs:sequence>**

**<xs:attributeGroup** ref="its:att.version.attribute.version"**/>**

**</xs:complexType>**

**</xs:element>**

**<xs:element** name="path"**>**

**<xs:complexType** mixed="true"**>**

**<xs:attributeGroup** ref="commonAtts"**/>**

**</xs:complexType>**

**</xs:element>**

**<xs:element** name="cmd"**>**

**<xs:complexType** mixed="true"**>**

**<xs:attributeGroup** ref="commonAtts"**/>**

**</xs:complexType>**

**</xs:element>**

**</xs:schema>**

[Source file: [examples/xml/EX-ways-to-use-its-5.xsd](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-ways-to-use-its-5.xsd)]

The first two approaches above can be likened to the use of CSS in [XHTML 1.0]. Using a style attribute, an XHTML content author may assign a color to a particular paragraph. That author could also have used the style element at the top of the page to say that all paragraphs of a particular class or in a particular context would be colored red.

**1.4 Usage in HTML**

For applying ITS 2.0 data categories to HTML, four aspects must be considered:

1. referencing global rules
2. specifities of inserting local ITS 2.0 data categories
3. relationship between HTML markup and data categories, and
4. HTML version.

In the following sections these aspects are briefly discussed.

**1.4.1 Referencing global rules**

To account for the so-called “global approach” in HTML, this specification (see Section 6.2: Global rules) defines a link type for referring to external files with global rules and an approach to have inline global rules in the HTML script element. It is preferred to use external global rules linked via the link element than to have inline global rules in the HTML document.

Example 8: Using ITS global rules in HTML

The link element points to the rules file EX-translateRule-html5-1.xml The rel attribute identifies the ITS specific link relation its-rules.

**<!DOCTYPE html>**

**<html>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Translate flag global rules example**</title>**

**<link** href=EX-translateRule-html5-1.xml rel=its-rules**>**

**</head>**

**<body>**

**<p>**This sentence should be translated, but code names like the **<code>**span**</code>** element should not be translated.

Of course there are always exceptions: certain code values should be translated,

e.g., to a value in your language like **<code** translate=yes**>**warning**</code>**.**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-translate-html5-global-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-translate-html5-global-1.html)]

Example 9: ITS rules file linked from HTML

The rules file linked in Example 8.

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"

xmlns:h="http://www.w3.org/1999/xhtml"**>**

**<its:translateRule** translate="no" selector="//h:code"**/>**

**</its:rules>**

[Source file: [examples/html5/EX-translateRule-html5-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-translateRule-html5-1.xml)]

**1.4.2 Specifities of inserting local ITS 2.0 data categories**

In HTML, an ITS 2.0 local data category is realized with the specific prefix its-\*. The general mapping of the XML based ITS 2.0 attributes to their HTML its-\* counterparts is defined in Section 6.1: Mapping of Local Data Categories to HTML. An informative table in Appendix G: List of ITS 2.0 Global Elements and Local Attributes provides an overview of the mapping for all data categories.

**1.4.3 Relation between HTML markup and ITS 2.0 data categories**

There are four ITS 2.0 data categories, which have direct counterparts in HTML markup. For theses data categories, ITS 2.0 defines the following specific behaviour:

* The Language Information data category has the HTML lang attribute counterpart; in XHTML this is the xml:lang attribute. These attributes act as local markup for the Language Information data category in HTML and take precedence over language information conveyed via a global langRule.
* The Id Value data category has the HTML or XHTML id attribute. This attribute acts as local markup for the Id Value data category in HTML and take precedence over id information conveyed via a global idValueRule.
* The Elements within Text data category has a set of HTML elements defined as [phrasing content](http://www.w3.org/TR/html51/dom.html#phrasing-content-1). In the absence of an Elements within Text local attribute or global rules selecting the element in question, these elements are always interpreted as withinText="yes" by default, except for the elements iframe, noscript, script and textarea, which are interpreted as withinText="nested".
* The Translate data category has a direct counterpart in [HTML5], namely the HTML5 translate attribute. ITS 2.0 does not define its own behaviour for HTML5 translate, but just refers to [the HTML5 definition](http://www.w3.org/TR/html51/dom.html#the-translate-attribute).

Example 10: The Language Information, Id Value, Elements within Text and Translate ITS 2.0 data categories used with HTML native markup.

The html element is interpreted to convey the Language Information value "en". The p element is interpreted to convey the Id Value of "p1". The em element is interpreted to be withinText="yes". The img element is set to be translatable via an [HTML5] translate attribute. Here the alt attribute will also be translatable.

**<!DOCTYPE html>**

**<html** lang=en**>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**HTML native markup expressing three ITS 2.0 data categories**</title>**

**</head>**

**<body>**

**<p** id="p1" translate="yes"**>**This is a **<em>**motherboard**</em>** and image:

**<img** src="http://example.com/myimg.png" alt="My image"**/>**.**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-its-and-existing-HTML5-markup.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-its-and-existing-HTML5-markup.html)]

There are also some HTML markup elements that have similar, but not always identical, roles and behaviour than certain ITS 2.0 data categories. For example, the HTML dfn element could be used to identify a term in the sense of the Terminology data category. However, this is not always the case and it depends on the intentions of the content author. To accomodate this situation, users of ITS 2.0 are encouraged to specifiy the association of existing HTML markup with a dedicated global rules file. For an example rules file see the [XML I18N Best Practices](http://www.w3.org/TR/2008/NOTE-xml-i18n-bp-20080213/#relating-its-plus-xhtml) document.

**1.4.4 Standoff Markup in HTML5**

The Provenance and the Localization Quality Issue data categories allow for using standoff markup. In HTML such standoff markup is put into a script element. The constraints for Provenance standoff markup in HTML and Localization quality issue markup in HTML need to be taken into account. Examples of standoff markup in HTML for the two data categories are Example 66 and Example 81.

**1.4.5 Version of HTML**

ITS 2.0 does not define how to use ITS in HTML versions prior version 5. Users are encouraged to migrate their content to HTML5 or XHTML. While it is possible to use its-\* attributes introduced for [HTML5] in older versions of HTML (such as 3.2 or 4.01) and pages using these attributes will work without any problems, its-\* attributes will be marked as invalid in validators.

**1.5 ITS and XLIFF**

ITS 2.0 has no normative dependency on [XLIFF] (XML Interchange File format). Nevertheless, important usage scenarios for ITS 2.0 are 1) XLIFF generation with e.g., HTML as an input file containing ITS 2.0 metadata, and 2) Direct representation of ITS 2.0 data categories within XLIFF files. See [MLW US IMPL] for more information on these and other usage scenarios for ITS 2.0. For both scenarios, a [non-normative definition of how to represent ITS 2.0 data categories in XLIFF 1.2 or XLIFF 2.0](http://www.w3.org/International/its/wiki/XLIFF_Mapping) is being defined within the [Internationalization Tag Set Interest Group](http://www.w3.org/International/its/ig/). Readers of this specification are encouraged to evaluate whether that mapping fulfills their needs and to provide comments in the [ITS IG mailing list (public archive)](http://lists.w3.org/Archives/Public/public-i18n-its-ig).

**1.6 Out of Scope**

The definition of what a localization process or localization parameters must address is outside the scope of this standard and it does not address all of the mechanisms or data formats (sometimes called localization project parameters) that may be needed to configure localization workflows or process specific formats. However, it does define standard data categories that may be used in defining localization workflows or processing specific formats.

**Note:**

“XML localization project parameters” is a generic term to name the mechanisms and data formats that allow localization tools to be configured in order to process a specific XML format. Examples of XML localization project parameters are the Trados “DTD Settings” file, and the SDLX “Analysis” file.

**1.7 Important Design Principles**

Abstraction via *data categories*: ITS defines data categories as an abstract notion for information needed for the internationalization and localization of XML documents and HTML documents. This abstraction is helpful in realizing independence from any one particular implementation (e.g., as an element or attribute). (See Section 3.2: Data category for a definition of the term data categories, Section 8: Description of Data Categories for the definition of the various ITS data categories, and subsections in Section 8: Description of Data Categories for the data category implementations.)

Powerful *selection mechanism:* For ITS markup that appears in an XML instance, the XML nodes to which the ITS-related information pertains must be clearly defined. Thus, ITS defines selection mechanisms to specify to what parts of an XML document an ITS data category and its values should be applied. Selection relies on the information that is given in the XML Information Set [XML Infoset]. ITS applications may implement inclusion mechanisms such as XInclude or DITA's [DITA 1.0] conref.

Content authors, for example, need a simple way to work with the Translate data category in order to express whether the content of an element or attribute should be translated or not. Localization managers, on the other hand, need an efficient way to manage translations of large document sets based on the same schema. These needs could by realized by a specification of defaults for the Translate data category along with exceptions to those defaults (e.g., all p elements should be translated, but not p elements inside of an index element).

To meet these requirements this specification introduces mechanisms that add ITS information to XML documents, see Section 5: Processing of ITS information. These mechanisms also provide a means for specifying ITS information for attributes (a task for which no standard means previously existed).

The ITS selection mechanisms allows you to provide information about content locally (specified at the XML or HTML element to which it pertains) or globally (specified in another part of the document). Global selection mechanisms can be in the same document, or in a separate file.

*No dedicated extensibility*: It may be useful or necessary to extend the set of information available for internationalization or localization purposes beyond what is provided by ITS. This specification does not define a dedicated extension mechanism, since ordinary XML mechanisms (e.g., XML Namespaces [XML Names]) may be used.

*Ease of integration*:

* ITS follows the example from [section 4](http://www.w3.org/TR/2001/REC-xlink-20010627/#att-method) of [XLink 1.1], by providing mostly global attributes for the implementation of ITS data categories. Avoiding elements for ITS purposes as much as possible ensures ease of integration into existing markup schemes, see [section 3.14](http://www.w3.org/TR/itsreq/#impact) in [ITS REQ].
* ITS has no dependency on technologies that are still under development.
* ITS fits with existing work in the W3C architecture (e.g., use of [XPath 1.0] for the selection mechanism and use of IRI's [RFC 3987] as references to relevant external resources).

**1.8 ITS 2.0 and Unicode Normalization**

As a general guidance, implementations of ITS 2.0 should use a [normalizing transcoder](http://www.w3.org/TR/2012/WD-charmod-norm-20120501/#sec-NormalizingTranscoder). Further information on the topic of Unicode normalization is provided by [Charmod Norm].

**2 Basic Concepts**

*This section is informative.*

**2.1 Selection**

Information (e.g., "translate this") captured by ITS markup (e.g., its:translate='yes') always pertains to one or more XML or HTML nodes, primarily element and attribute nodes, as defined in [XPath 1.0]. In a sense, ITS markup “selects” the relevant node(s). Selection may be explicit or implicit. ITS distinguishes two approaches to selection: (1) local, and (2) using global rules.

The mechanisms defined for ITS selection resemble those defined in [CSS 2.1]. The local approach can be compared to the style attribute in HTML/XHTML, and the approach with global rules is similar to the style element in HTML/XHTML. ITS usually uses XPath for identifying nodes although CSS Selectors and other query languages can be used if supported by the application. Thus,

* the local approach puts ITS markup in the relevant element of the host vocabulary (e.g., the author element in DocBook)
* the rule-based, global approach puts the ITS markup in elements defined by ITS itself (namely the rules element)

ITS markup can be used with XML documents (e.g., a DocBook article), or schemas (e.g., an XML Schema document for a proprietary document format).

The following two examples sketch the distinction between the local and global approaches, using the translate as one example of ITS markup.

**2.1.1 Local Approach**

The document in Example 11 shows how a content author may use the ITS translate attribute to indicate that all content inside the author element should be protected from translation. Translation tools that are aware of the meaning of this attribute can then screen the relevant content from the translation process.

Example 11: ITS markup on elements in an XML document (local approach)

**<article** xmlns="http://docbook.org/ns /docbook"

xmlns:its="http://www.w3.org/2005/11/its"

its:version="2.0" version="5.0" xml:lang="en"**>**

**<info>**

**<title>**An example article**</title>**

**<author** its:translate="no"**>**

**<personname>**

**<firstname>**John**</firstname>**

**<surname>**Doe**</surname>**

**</personname>**

**<affiliation>**

**<address><email>**foo@example.com**</email></address>**

**</affiliation>**

**</author>**

**</info>**

**<para>**This is a short article.**</para>**

**</article>**

[Source file: [examples/xml/EX-basic-concepts-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-basic-concepts-1.xml)]

For this example to work, the schema developer will need to add the translate attribute to the schema as a common attribute or on all the relevant element definitions. Note how there is an expectation in this case that inheritance plays a part in identifying which content does have to be translated and which does not. Tools that process this content for translation will need to implement the expected inheritance.

The local approach cannot be applied on a particular attribute. It can be applied for the content of the current element and all its inherited nodes as described in Section 8.1: Position, Defaults, Inheritance and Overriding of Data Categories.

**2.1.2 Global Approach**

The document in Example 12 shows a different approach to identifying non-translatable content, similar to that used with a style element in [XHTML 1.0], but using an ITS-defined element called rules. It works as follows: A document can contain a rules element (placed where it does not impact the structure of the document, e.g., in a “head” section). It contains one or more ITS rule elements (for example translateRule). Each of these specific elements contains a selector attribute. As its name suggests, this attribute selects the node or nodes to which a corresponding ITS information pertains. The values of ITS selector attributes are XPath absolute location paths (or CSS Selectors if queryLanguage is set to "css"). Information for the handling of namespaces in these path expressions is taken from namespace declarations [XML Names] at the current rule element.

Example 12: ITS global markup in an XML document (rule-based approach)

**<myTopic** xmlns="http://mynsuri.example.com" id="topic01" xml:lang="en-us"**>**

**<prolog>**

**<title>**Using ITS**</title>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:translateRule** selector="//n:term" translate="no" xmlns:n="http://mynsuri.example.com"**/>**

**</its:rules>**

**</prolog>**

**<body>**

**<p>**ITS defines **<term>**data category**</term>** as an abstract concept for a particular type of

information for internationalization and localization of XML schemas and documents.**</p>**

**</body>**

**</myTopic>**

[Source file: [examples/xml/EX-basic-concepts-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-basic-concepts-2.xml)]

For this approach to work, the schema developer needs to add the rules element and associated markup to the schema. In some cases global rules may be sufficient to allow the schema developer to avoid adding other ITS markup (such as an translate attribute) to the elements and attributes in the schema. However, it is likely that authors will want to use attributes on markup from time to time to override the general rule.

For specification of the Translate data category information, the contents of the rules element would normally be designed by an information architect familiar with the document format and familiar with, or working with someone familiar with, the needs of the localization group.

The global, rule-based approach has the following benefits:

* Content authors do not have to concern themselves with creating additional markup or verifying that the markup was applied correctly. ITS data categories are associated with sets of nodes (for example all p elements in an XML instance)
* Changes can be made in a single location, rather than by searching and modifying local markup throughout a document (or documents, if the rules element is stored as an external entity)
* ITS data categories can designate attribute values as well as elements.
* It is possible to associate ITS markup with existing markup (for example the term element in DITA)

The commonality in both examples above is the markup translate='no'. This piece of ITS markup can be interpreted as follows:

* it pertains to the Translate data category
* the attribute translate holds a value of "no"

The ITS selector attribute allows:

* ITS data category attributes to appear in global rules (even outside of an XML document or schema)
* ITS data categories attributes to pertain to sets of XML nodes (for example all p elements in an XML document)
* ITS markup to pertain to attributes
* ITS markup to associate with existing markup (for example the term element in DITA)

**2.2 Overriding and Inheritance**

The power of the ITS selection mechanisms comes at a price: rules related to overriding/precedence, and inheritance, have to be established.

The document in Example 13 shows how inheritance and overriding work for the Translate data category. By default elements are translatable. Here, the translateRule element declared in the header overrides the default for the head element inside text and for all its children. Because the title element is actually translatable, the global rule needs to be overridden by a local its:translate="yes". Note that the global rule is processed first, regardless of its position inside the document. In the main body of the document, the default applies, and here it is its:translate="no" that is used to set “faux pas” as non-translatable.

Example 13: Overriding and Inheritance

**<text** xmlns:its="http://www.w3.org/2005/11/its"**>**

**<head>**

**<revision>**Sep-10-2006 v5**</revision>**

**<author>**Ealasaidh McIan**</author>**

**<contact>**ealasaidh@hogw.ac.uk**</contact>**

**<title** its:translate="yes"**>**The Origins of Modern Novel**</title>**

**<its:rules** version="2.0"**>**

**<its:translateRule** translate="no" selector="/text/head"**/>**

**</its:rules>**

**</head>**

**<body>**

**<div** xml:id="intro"**>**

**<head>**Introduction**</head>**

**<p>**It would certainly be quite a **<span** its:translate="no"**>**faux pas**</span>** to start a

dissertation on the origin of modern novel without mentioning the **<tl>**Epic of

Gilgamesh**</tl>**...**</p>**

**</div>**

**</body>**

**</text>**

[Source file: [examples/xml/EX-basic-concepts-3.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-basic-concepts-3.xml)]

**2.3 Adding Information or Pointing to Existing Information**

For some data categories, special attributes add or point to information about the selected nodes. For example, the Localization Note data category can add information to selected nodes (using a locNote element), or point to existing information elsewhere in the document (using a locNotePointer attribute).

The data category overview table, in Section 8.1: Position, Defaults, Inheritance and Overriding of Data Categories, provides an overview of what data categories allow to point to existing information or to add information.

The functionalities of adding information and pointing to existing information are *mutually exclusive*. That is to say, attributes for pointing and adding the same information must not appear at the same rule element.

**3 Notation and Terminology**

*This section is normative.*

**3.1 Notation**

The keywords “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC 2119].

The namespace URI that MUST be used by implementations of this specification is:

http://www.w3.org/2005/11/its

The namespace prefix used in this specification for XML implementations of ITS for the above URI is "its". It is recommended that XML implementations of this specification use this prefix, unless there is existing dedicated markup in use for a given data category. In HTML there is no namespace prefix: "its-" is used instead to indicate ITS 2.0 attributes in HTML documents. See Section 6.1: Mapping of Local Data Categories to HTML for details.

In addition, the following namespaces are used in this document:

* http://www.w3.org/2001/XMLSchema for the XML Schema namespace, here used with the prefix “xs”
* http://www.w3.org/1999/xlink for the XLink namespace, here used with the prefix “xlink”
* http://www.w3.org/1999/xhtml for the HTML namespace, here used with the prefix “h”

**3.2 Data category**

[Definition: ITS defines data category as an abstract concept for a particular type of information for internationalization and localization of XML schemas and documents.] The concept of a data category is independent of its implementation in an XML and HTML environment (e.g., using an element or attribute).

For each data category, ITS distinguishes between the following:

* the prose description, see Section 8: Description of Data Categories
* schema language-independent formalization, see the "implementation" subsections in Section 8: Description of Data Categories
* schema language-specific implementations, see Appendix D: Schemas for ITS

Example 14: A data category and its implementation

The Translate data category conveys information as to whether a piece of content should be translated or not.

The simplest formalization of this prose description on a schema language-independent level is a translate attribute with two possible values: "yes" and "no". An implementation on a schema language-specific level would be the declaration of the translate attribute in, for example, an XML Schema document or a RELAX NG document. A different implementation would be a translateRule element that allows for specifying global rules about the Translate data category.

**3.3 Selection**

[Definition: selection encompasses mechanisms to specify to what parts of an XML or HTML document an ITS data category and its values should be applied to.] Selection is discussed in detail in Section 5: Processing of ITS information. Selection can be applied globally, see Section 5.2.1: Global, Rule-based Selection, and locally, see Section 5.2.2: Local Selection in an XML Document. As for global selection, ITS information can be added to the selected nodes, or it can point to existing information that is related to selected nodes.

**Note:**

The selection of the ITS data categories applies to textual values contained within element or attribute nodes. In some cases these nodes form pointers to other resources; a well-known example is the src attribute on the img element in HTML. The ITS Translate data category applies to the text of the pointer itself, not the object to which it points. Thus in the following example, the translation information specified via the translateRule element applies to the filename "instructions.jpg", and is not an instruction to open the graphic and change the words therein.

Example 15: Selecting the text of a pointer to an external object

**<text>**

**<its:rules** version="2.0"

xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:translateRule** translate="yes" selector="//p/img/@src"**/>**

**</its:rules>**

...

**<p** xmlns:its="http://www.w3.org/2005/11/its"**>**As you can see in

**<img** src="instructions.jpg"**/>**, the truth is not always out there.**</p>**

**</text>**

[Source file: [examples/xml/EX-notation-terminology-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-notation-terminology-1.xml)]

**3.4 ITS Local Attributes**

[Definition: ITS Local Attributes are all attributes defined in Section 8: Description of Data Categories as a local markup.]

**3.5 Rule Elements**

[Definition: Rule Elements are all elements defined in Section 8: Description of Data Categories as elements for global rules.]

**3.6 Usage of Internationalized Resource Identifiers in ITS**

All attributes that have the type anyURI in the normative RELAX NG schema in Appendix D: Schemas for ITS MUST allow the usage of Internationalized Resource Identifiers (IRIs, [RFC 3987] or its successor) to ease the adoption of ITS in international application scenarios.

**3.7 The Term HTML**

This specification uses the term HTML to refer to HTML5 or its successor in HTML syntax [HTML5].

**3.8 The Term CSS Selectors**

This specification uses the term CSS Selectors in the sense of Selectors as specified in [Selectors Level 3] to prevent confusion with the generic use of the word "selector". [Selectors Level 3].

**4 Conformance**

*This section is normative.*

The usage of the term *conformance clause* in this section is in compliance with [QAFRAMEWORK].

This specification defines three types of conformance: conformance of 1) ITS markup declarations , conformance of 2) processing expectations for ITS Markup and conformance of 3) processing expectations for ITS Markup in HTML. Also special conformance class is defined for using ITS markup in HTML5 documents, HTML5+ITS, which serves as an *applicable specification* in the sense specified in the [Extensibility section](http://www.w3.org/TR/html5/infrastructure.html#extensibility) of [HTML5]. These conformance types and classes complement each other. An implementation of this specification MAY use them separately or together.

**4.1 Conformance Type 1: ITS Markup Declarations**

*Description:* ITS markup declarations encompass all declarations that are part of the Internationalization Tag Set. They do not concern the *usage* of the markup in XML documents. Such markup is subject to the conformance clauses in Section 4.2: Conformance Type 2: The Processing Expectations for ITS Markup.

*Definitions related to this conformance type:* ITS markup declarations are defined in various subsections in in a schema language independent manner.

*Who uses this conformance type:* Schema designers integrating ITS markup declarations into a schema. All conformance clauses for this conformance type concern the position of ITS markup declarations in that schema, and their status as mandatory or optional.

*Conformance clauses:*

* *1-1:* At least one of the following MUST be in the schema:
  + rules element
  + one of the local ITS attributes
  + span element
* *1-2:* If the rules element is used, it MUST be part of the content model of at least one element declared in the schema. It SHOULD be in a content model for meta information, if this is available in that schema (e.g., the head element in [XHTML 1.0]).
* *1-4:* If the span element is used, it SHOULD be declared as an inline element.

Full implementations of this conformance type will implement all markup declarations for ITS. Statements related to this conformance type MUST list all markup declarations they implement.

*Examples:* Examples of the usage of ITS markup declarations in various existing schemas are given in a separate document [XML i18n BP].

**4.2 Conformance Type 2: The Processing Expectations for ITS Markup**

*Description:* Processors need to compute the ITS information that pertains to a node in an XML document. The ITS processing expectations define how the computation has to be carried out. Correct computation involves support for selection mechanism, defaults / inheritance / overriding characteristics, and precedence. The markup MAY be valid against a schema that conforms to the clauses in Section 4.1: Conformance Type 1: ITS Markup Declarations.

*Definitions related to this conformance type:* The processing expectations for ITS markup make use of selection mechanisms defined in Section 5: Processing of ITS information. The individual data categories defined in Section 8: Description of Data Categories have defaults / inheritance / overriding characteristics, and allow for using ITS markup in various positions (global and local).

*Who uses this conformance type:* Applications that need to process the nodes captured by a data category for internationalization or localization. Examples of this type of application are: ITS markup-aware editors, or translation tools that make use of ITS markup to filter translatable text as an input to the localization process.

**Note:**

Application-specific processing (that is processing that goes beyond the computation of ITS information for a node), such as automated filtering of translatable content based on the Translate data category, is not covered by the conformance clauses below.

*Conformance clauses:*

* *2-1:* A processor MUST implement at least *one* data category. For each implemented data category, the following MUST be taken into account:
  + *2-1-1:* processing of at least one selection mechanism (global or local).
  + *2-1-2:* the default selections for the data category.
  + *2-1-3:* the precedence definitions for selections defined in Section 5.5: Precedence between Selections, for the type of selections it processes.
* *2-2:* If an application claims to process ITS markup for the global selection mechanism, it MUST process an XLink href attribute found on a rules elements.
* *2-3:* If an application claims to process ITS markup implementing the conformance clauses 2-1, 2-2 and 2-3, it MUST process that markup with XML documents.
* *2-4:* After processing ITS information on the basis of conformance clauses 2-1 and 2-2, an application MAY convert an XML document to NIF, using the algorithm described in Section 5.7: Conversion to NIF.
* *2-5:* Non-ITS elements and attributes found in ITS elements MAY be ignored.

**Note:**

The conformance clause 2-4 essentially means that the conversion to NIF is an optional feature of ITS 2.0, and that the conversion is independent of whether ITS information has been made available via the global or local selection mechanisms, see conformance clause 2-1-1.

Statements related to this conformance type MUST list all data categories they implement, and for each data category which type of selection they support, whether they support processing of XML. If the implementation provides the conversion to NIF (see conformance clause 2-4), this MUST be stated.

**Note:**

The above conformance clauses are directly reflected in the [ITS 2.0 test suite](https://github.com/finnle/ITS-2.0-Testsuite/). All tests specify which data category is processed (clause 2-1); they are relevant for (clause 2-1-1) global or local selection, or both; they require the processing of defaults and precedence of selections (clauses 2-1-2 and 2-1-3); for each data category there are tests with linked rules (2-2); and all types of tests are given for XML (clause 2-3). In addition, there are test cases for conversion to NIF (clause 2-4). Implementers are encouraged to organize their documentation in a similar way, so that users of ITS 2.0 easily can understand the processing capabilities available.

**4.3 Conformance Type 3: Processing Expectations for ITS Markup in HTML**

*Description:* Processors need to compute the ITS information that pertains to a node in an HTML document. The ITS processing expectations define how the computation has to be carried out. Correct computation involves support for selection mechanism, defaults / inheritance / overriding characteristics, and precedence.

*Definitions related to this conformance type:* The processing expectations for ITS markup make use of selection mechanisms defined in Section 5: Processing of ITS information. The individual data categories defined in Section 8: Description of Data Categories have defaults / inheritance / overriding characteristics, and allow for using ITS markup in various positions (local, external global and inline global).

*Who uses this conformance type:* Applications that need to process the nodes captured by a data category for internationalization or localization. Examples of this type of application are ITS markup-aware editors or translation tools that make use of ITS markup to filter translatable text as an input to the localization process.

**Note:**

Application-specific processing (that is processing that goes beyond the computation of ITS information for a node) such as automated filtering of translatable content based on the Translate data category is not covered by the conformance clauses below.

*Conformance clauses:*

* *3-1:* A processor MUST implement at least *one* data category. For each implemented data category, the following MUST be taken into account:
  + *3-1-1:* processing of at least one selection mechanism (global or local).
  + *3-1-2:* the default selections for the data category.
  + *3-1-3:* the precedence definitions for selections defined in Section 6.4: Precedence between Selections, for the type of selections it processes.
* *3-2:* If an application claims to process ITS markup for the global selection mechanism, it MUST process a href attribute found on a link element that has a rel attribute with the value its-rules.
* *3-3:* If an application claims to process ITS markup implementing the conformance clauses 3-1 and 3-2, it MUST process that markup within HTML documents.

Statements related to this conformance type MUST list all data categories they implement and, for each data category, which type of selection they support.

**4.4 Conformance Class for HTML5+ITS documents**

Conforming HTML5+ITS documents are those that comply with all the conformance criteria for documents as defined in [HTML5] with the following exception:

* [Global attributes](http://dev.w3.org/html5/spec/single-page.html#global-attributes) that can be used on all HTML elements are extended by attributes for local data categories as defined in Section 6.1: Mapping of Local Data Categories to HTML.

**5 Processing of ITS information**

*This section is normative.*

**Note:**

Additional definitions about processing of HTML are given in Section 6: Using ITS Markup in HTML.

**5.1 Indicating the Version of ITS**

The version of the ITS schema defined in this specification is "2.0". The version is indicated by the ITS version attribute. This attribute is mandatory for the rules element, where it MUST be in no namespace.

If there is no rules element in an XML document, a prefixed ITS version attribute (e.g., its:version) MUST be provided on the element where the ITS markup is used, or on one of its ancestors.

If there is no rules element and there are elements with standoff ITS markup in an XML document, an ITS version attribute MUST be provided on element with standoff ITS markup or a prefixed ITS version attribute (e.g., its:version) MUST be provided on one of its ancestors.

There MUST NOT be two different versions of ITS in the same document.

External, linked rules can have different versions than internal rules.

**5.2 Locations of Data Categories**

ITS data categories can appear in two places:

* Global rules: the selection is realized within a rules element. It contains rule elements for each data category. Each rule element has a selector attribute and possibly other attributes. The selector attribute contains an absolute selector as defined in Section 5.3: Query Language of Selectors.
* Locally in a document: the selection is realized using ITS local attributes, which are attached to an element node, or the span element. There is no additional selector attribute. The default selection for each data category defines whether the selection covers attributes and child elements. See Section 8.1: Position, Defaults, Inheritance and Overriding of Data Categories.

The two locations are described in detail below.

**5.2.1 Global, Rule-based Selection**

Global, rule-based selection is implemented using the rules element. The rules element contains zero or more rule elements. Each rule element has a mandatory selector attribute. This attribute and all other possible attributes on rule elements are in the empty namespace and used without a prefix.

If there is more than one rules element in an XML document, the rules from each section are to be processed at the same precedence level. The rules sections are to be read in document order, and the ITS rules with them processed sequentially. The versions of these rules elements MUST NOT be different.

Depending on the data category and its usage, there are additional attributes for adding information to the selected nodes, or for pointing to existing information in the document. For example, the Localization Note data category can be used for adding notes to selected nodes, or for pointing to existing notes in the document. For the former purpose, a locNote element can be used. For the latter purpose, a locNotePointer attribute can be used.

The data category overview table, in Section 8.1: Position, Defaults, Inheritance and Overriding of Data Categories, provides an overview of what data categories allow to point to existing information or to add information.

The functionalities of adding information and pointing to existing information are *mutually exclusive*. That is: markup for pointing and adding the same information MUST NOT appear in the same rule element.

Global rules can appear in the XML document they will be applied to, or in a separate XML document. The precedence of their processing depends on these variations. See also Section 5.5: Precedence between Selections.

**5.2.2 Local Selection in an XML Document**

Local selection in XML documents is realized with ITS local attributes or the span element. span serves just as a carrier for the local ITS attributes.

The data category determines what is being selected. The necessary data category specific defaults are described in Section 8.1: Position, Defaults, Inheritance and Overriding of Data Categories.

Example 16: Defaults for various data categories

By default the content of all elements in a document is translatable. The attribute its:translate="no" in the head element means that the content of this element, including child elements, should not be translated. The attribute its:translate="yes" in the title element means that the content of this element, should be translated (overriding the its:translate="no" in head). Attribute values of the selected elements or their children are not affected by local translate attributes. By default they are not translatable.

The default directionality of a document is left-to-right. The its:dir="rtl" in the quote element means that the directionality of the content of this element, including child elements and attributes, is right-to-left. Note that xml:lang indicates only the language, not the directionality.

**<text** xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0" xml:lang="en"**>**

**<head** its:translate="no"**>**

**<author>**Sven Corneliusson**</author>**

**<date>**2006-09-26T17:34:04Z**</date>**

**<title** its:translate="yes" role="header"**>**Bidirectional Text**</title>**

**</head>**

**<body>**

**<par>**In Arabic, the title **<quote** xml:lang="ar" its:dir="rtl"**>**نشاط التدويل، W3C**</quote>** means

**<quote>**Internationalization Activity, W3C**</quote>**.**</par>**

**</body>**

**</text>**

[Source file: [examples/xml/EX-selection-local-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-selection-local-1.xml)]

**Note:**

The dir and translate attributes are not listed in the ITS attributes to be used in HTML. The reason is that these two attributes are available in HTML natively, so there is no need to provide them as its- attributes. The definition of the two attributes in HTML is compatibly, that is it provides the same values and interpretation, as the definition for the two data categories Translate and Directionality.

**5.3 Query Language of Selectors**

**5.3.1 Choosing Query Language**

Rule elements have attributes that contain absolute and relative selectors. Interpretation of these selectors depends on the actual query language. The query language is set by queryLanguage attribute on rules element. If queryLanguge is not specified XPath 1.0 is used as a default query language.

**5.3.2 XPath 1.0**

XPath 1.0 is identified by xpath value in queryLanguage attribute.

**5.3.2.1 Absolute selector**

The absolute selector MUST be an XPath expression that starts with "/". That is, it must be an [AbsoluteLocationPath](http://www.w3.org/TR/xpath/#NT-AbsoluteLocationPath) or union of [AbsoluteLocationPath](http://www.w3.org/TR/xpath/#NT-AbsoluteLocationPath)s as described in XPath 1.0. This ensures that the selection is not relative to a specific location. The resulting nodes MUST be either element or attribute nodes.

Context for evaluation of the XPath expression is as follows:

* Context node is set to [Root Node](http://www.w3.org/TR/xpath/#root-node).
* Both context position and context size are 1.
* All variables defined by param elements are bind.
* All functions defined in the [XPath Core Function Library](http://www.w3.org/TR/xpath/#corelib) are available. It is an error for an expression to include a call to any other function.
* The set of namespace declarations are those in scope on the element that has the attribute in which the expression occurs. This includes the implicit declaration of the prefix xml required by the XML Namespaces Recommendation; the default namespace (as declared by xmlns) is not part of this set.

Example 17: XPath expressions with namespaces

The term element from the TEI is in a namespace http://www.tei-c.org/ns/1.0.

*<!-- Definitions for TEI -->*

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:termRule** selector="//tei:term" term="yes" xmlns:tei="http://www.tei-c.org/ns/1.0"**/>**

**</its:rules>**

[Source file: [examples/xml/EX-selection-global-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-selection-global-1.xml)]

Example 18: XPath expressions without namespaces

The term element from DocBook V4.5 is in no namespace.

*<!-- Definitions for DocBook -->*

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:termRule** selector="//term" term="yes"**/>**

**</its:rules>**

[Source file: [examples/xml/EX-selection-global-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-selection-global-2.xml)]

**5.3.2.2 Relative selector**

The relative selector MUST use a [RelativeLocationPath](http://www.w3.org/TR/xpath/#NT-RelativeLocationPath) or an [AbsoluteLocationPath](http://www.w3.org/TR/xpath/#NT-AbsoluteLocationPath) as described in XPath 1.0. The XPath expression is evaluated relative to the nodes selected by the selector attribute.

The following attributes point to existing information: allowedCharactersPointer, taClassRefPointer, taIdentPointer, taIdentRefPointer, taSourcePointer, domainPointer, externalResourceRefPointer, langPointer, locNotePointer, locNoteRefPointer, locQualityIssuesRefPointer, provenanceRecordsRefPointer, storageEncodingPointer, storageSizePointer, targetPointer, termInfoPointer, termInfoRefPointer.

Context for evaluation of the XPath expression is that same as for an absolute selector with the following changes:

* Nodes selected by the expression in the selector attribute form the current node list.
* Context node comes from the current node list.
* The context position comes from the position of the current node in the current node list; the first position is 1.
* The context size comes from the size of the current node list.

**5.3.3 CSS Selectors**

**Note:**

The term CSS Selectors is used throughout the specification in the sense of Selectors as specified in [Selectors Level 3] to prevent confusion with the generic use of the word "selector". See The term CSS Selector.

**Note:**

The working group will not provide a CSS Selectors-based implementation; nevertheless there are several existing libraries that can translate CSS Selectors to XPath so that XPath selector-based implementations can be used.

**Note:**

CSS selectors have no ability to point to attributes.

CSS Selectors are identified by the css value in the queryLanguage attribute.

**5.3.3.1 Absolute selector**

An absolute selector MUST be interpreted as a selector as defined in [Selectors Level 3]. Both simple selectors and groups of selectors can be used.

**5.3.3.2 Relative selector**

A relative selector MUST be interpreted as a selector as defined in [Selectors Level 3]. A selector is not evaluated against the complete document tree but only against subtrees rooted at nodes selected by the selector in the selector attribute.

**5.3.4 Additional query languages**

ITS processors MAY support additional query languages. For each additional query language the processor MUST define:

* the identifier of the query language used in queryLanguage;
* rules for evaluating an absolute selector for a collection of nodes;
* rules for evaluating a relative selector for a collection of nodes.

Because future versions of this specification are likely to define additional query languages, the following query language identifiers are reserved: xpath, css, xpath2, xpath3, xquery, xquery3, xslt2, xslt3.

**5.3.5 Variables in selectors**

A param element (or several ones) can be placed as the first child element(s) of the rules element to define the default values of variables used in the various selectors used in the rules.

An implementation MUST support the param element for all query languages it supports and at the same time define how variables are bound for evaluation of the selector expression. Implementations SHOULD also provide means for changing the default values of the param elements. Such means are implementation-specific.

The param element has a required name attribute. The value of the name attribute is a [QName](http://www.w3.org/TR/2009/REC-xml-names-20091208/#NT-QName), see [XML Names]. The content of the element is a string used as default value for the corresponding variable.

Example 19: Using the param element to define the default value of a variable in a selector attribute.

The param element defines the default value for the $LCID variable. In this case, only the msg element with the attribute lcid set to "0x049" is seen as translatable.

**<doc** its:version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:rules** version="2.0"**>**

**<its:param** name="LCID"**>**0x0409**</its:param>**

**<its:translateRule** selector="/doc" translate="no"**/>**

**<its:translateRule** selector="//msg[@lcid=$LCID]" translate="yes"**/>**

**</its:rules>**

**<msg** lcid="0x0409" num="1"**>**Create a folder**</msg>**

**<msg** lcid="0x0411" num="1"**>**フォルダーを作成する**</msg>**

**<msg** lcid="0x0407" num="1"**>**Erstellen Sie einen Ordner**</msg>**

**<msg** lcid="0x040c" num="1"**>**Créer un dossier**</msg>**

**</doc>**

[Source file: [examples/xml/EX-param-in-global-rules-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-param-in-global-rules-1.xml)]

**Note:**

In XSLT-based applications, it may make sense to map ITS parameters directly to XSLT parameters. To avoid naming conflicts one can use a prefix with the parameter name's value to distinguish between the ITS parameters and the XSLT parameters.

**5.4 Link to External Rules**

One way to associate a document with a set of external ITS rules is to use the optional XLink [XLink 1.1] href attribute in the rules element. The referenced document must be a valid XML document containing at most one rules element. That rules element can be the root element or be located anywhere within the document tree (for example, the document could be an XML Schema).

The rules contained in the referenced document MUST be processed as if they were at the top of the rules element with the XLink href attribute.

Example 20: External file EX-link-external-rules-1.xml with global rules:

The example demonstrates how metadata can be added to ITS rules.

**<myFormatInfo>**

**<desc>**ITS rules used by the Open University**</desc>**

**<hostVoc>**http://www.tei-c.org/ns/1.0**</hostVoc>**

**<rulesId>**98ECED99DF63D511B1250008C784EFB1**</rulesId>**

**<rulesVersion>**v 1.81 2006/03/28 07:43:21**</rulesVersion>**

...

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:translateRule** selector="//header" translate="no"**/>**

**<its:translateRule** selector="//term" translate="no"**/>**

**<its:termRule** selector="//term" term="yes"**/>**

**<its:withinTextRule** withinText="yes" selector="//term | //b"**/>**

**</its:rules>**

**</myFormatInfo>**

[Source file: [examples/xml/EX-link-external-rules-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-link-external-rules-1.xml)]

Example 21: Document with a link to EX-link-external-rules-1.xml

**<myDoc>**

**<header>**

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"

xmlns:xlink="http://www.w3.org/1999/xlink" xlink:href="EX-link-external-rules-1.xml"**>**

**<its:translateRule** selector="//term" translate="yes"**/>**

**</its:rules>**

**<author>**Theo Brumble**</author>**

**<lastUpdate>**Apr-01-2006**</lastUpdate>**

**</header>**

**<body>**

**<p>**A **<term>**Palouse horse**</term>** has a spotted coat.**</p>**

**</body>**

**</myDoc>**

[Source file: [examples/xml/EX-link-external-rules-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-link-external-rules-2.xml)]

The result of processing the two documents above is the same as processing the following document.

Example 22: Document with identical rules as in the case of included rules

**<myDoc>**

**<header>**

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:translateRule** selector="//header" translate="no"**/>**

**<its:translateRule** selector="//term" translate="no"**/>**

**<its:termRule** selector="//term" term="yes"**/>**

**<its:withinTextRule** withinText="yes" selector="//term | //b"**/>**

**<its:translateRule** selector="//term" translate="yes"**/>**

**</its:rules>**

**<author>**Theo Brumble**</author>**

**<lastUpdate>**Apr-01-2006**</lastUpdate>**

**</header>**

**<body>**

**<p>**A **<term>**Palouse horse**</term>** has a spotted coat.**</p>**

**</body>**

**</myDoc>**

[Source file: [examples/xml/EX-link-external-rules-3.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-link-external-rules-3.xml)]

Example 23: External rules file with the rules element as the root element.

As with Example 20, these rules can be applied to Example 21. The only difference is that in Example 23 the rules element is the root element of the external file.

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:translateRule** selector="//header" translate="no"**/>**

**<its:translateRule** selector="//term" translate="no"**/>**

**<its:termRule** selector="//term" term="yes"**/>**

**<its:withinTextRule** withinText="yes" selector="//term | //b"**/>**

**</its:rules>**

[Source file: [examples/xml/EX-link-external-rules-4.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-link-external-rules-4.xml)]

Applications processing global ITS markup MUST recognize the XLink href attribute in the rules element; they MUST load the corresponding referenced document and process its rules element before processing the content of the rules element where the original XLink href attribute is.

External rules may also have links to other external rules (see Example 21). The linking mechanism is recursive in a depth-first approach, and subsequently after the processing the rules MUST be read top-down (see Example 22).

**5.5 Precedence between Selections**

The following precedence order is defined for selections of ITS information in various positions (the first item in the list has the highest precedence):

1. Selection via explicit (i.e., not inherited) local ITS markup in documents (ITS local attributes on a specific element)
2. Global selections in documents (using a rules element).  Inside each rules element the precedence order is:
   1. Any rule inside the rules element
   2. Any rule linked via the XLink href attribute

**Note:**  ITS does not define precedence related to rules defined or linked based on non-ITS mechanisms (such as processing instructions for linking rules).

1. Selection via inherited values. This applies only to element nodes. The inheritance rules are laid out in a dedicated datacategory overview table: see the column "Inheritance for element nodes". Selection via inheritance takes precedence over default values, see below item.
2. Selections via defaults for data categories, see Section 8.1: Position, Defaults, Inheritance and Overriding of Data Categories

In case of conflicts between global selections via multiple rules elements, the last rule has higher precedence.

**Note:**

The precedence order fulfills the same purpose as the built-in template rules of [XSLT 1.0]. Override semantics are always complete, that is all information provided via lower precedence is overriden by the higher precedence. E.g., defaults are overridden by inherited values and these are overriden by nodes selected via global rules, which are in turn overridden by local markup.

Example 24: Conflicts between selections of ITS information resolved using the precedence order

The two elements title and author of this document should be treated as separate content when inside a prolog element, but in other contexts as part of the content of their parent element. In order to make this distinction two withinTextRule elements are used:

The first rule specifies that title and author in general should be treated as an element within text. This overrides the default.

The second rule indicates that when title or author are found in a prolog element their content should be treated separately. This is normally the default, but the rule is needed to override the first rule.

**<text>**

**<prolog>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:withinTextRule** withinText="yes" selector="//title|//author"**/>**

**<its:withinTextRule** withinText="no" selector="//prolog/title|//prolog/author"**/>**

**</its:rules>**

**<title>**Designing User Interfaces**</title>**

**<author>**Janice Prakash**</author>**

**<keywords>**user interface, ui, software interface**</keywords>**

**</prolog>**

**<body>**

**<p>**The book **<title>**Of Mice and Screens**</title>** by **<author>**Aldus Brandywine**</author>** is one of

the best introductions to the vast topic of designing user interfaces.**</p>**

**</body>**

**</text>**

[Source file: [examples/xml/EX-selection-precedence-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-selection-precedence-1.xml)]

**5.6 Associating ITS Data Categories with Existing Markup**

Some markup schemes provide markup that can be used to express ITS data categories. ITS data categories can be associated with such existing markup, using the global selection mechanism described in Section 5.2.1: Global, Rule-based Selection.

Associating existing markup with ITS data categories can be done only if the processing expectations of the host markup are the same as, or greater than, those of ITS. For example, the [DITA 1.0] format can use its translate attribute to apply to “transcluded” content, going beyond the ITS 2.0 local selection mechanism, but not contradicting it.

Example 25: Association of the ITS data categories Translate and Terminology with DITA 1.0 markup

In this example, there is an existing translate attribute in DITA, and it is associated with the ITS semantics using the its:rules section. Similarly, the DITA dt and term elements are associated with the ITS Terminology data category.

**<topic** id="myTopic"**>**

**<title>**The ITS Topic**</title>**

**<prolog>**

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:translateRule** selector="//\*[@translate='no']" translate="no"**/>**

**<its:translateRule** selector="//\*[@translate='yes']" translate="yes"**/>**

**<its:termRule** selector="//term | //dt" term="yes"**/>**

**</its:rules>**

**</prolog>**

**<body>**

**<dl>**

**<dlentry** id="tDataCat"**>**

**<dt>**Data category**</dt>**

**<dd>**ITS defines **<term>**data category**</term>** as an abstract concept for a particular type of

information related to internationalization and localization of XML schemas and

documents.**</dd>**

**</dlentry>**

**</dl>**

**<p>**For the implementation of ITS, apply the rules in the order:**</p>**

**<ul>**

**<li>**Defaults**</li>**

**<li>**Rules in external files**</li>**

**<li>**Rules in the document**</li>**

**<li>**Local attributes**</li>**

**</ul>**

**<p><ph** translate="no" xml:lang="fr"**>**Et voilà !**</ph>**.**</p>**

**</body>**

**</topic>**

[Source file: [examples/xml/EX-associating-its-with-existing-markup-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-associating-its-with-existing-markup-1.xml)]

Global rules can be associated with a given XML document using different means:

* By using an rules element in the document itself:
  + with the rules directly inside the document, as shown in Example 25
  + with a link to an external rules file using the XLink href attribute, as shown in Example 20
* By associating the rules and the document through a tool-specific mechanism. For example, in the case of a command-line tool, by providing the paths of both the XML document to process and its corresponding external rules file.

**5.7 Conversion to NIF**

This section defines an algorithm to convert XML or HTML documents (or their DOM representations) that contain ITS metadata to the RDF-based format based on [NIF]. The conversion results in RDF triples.

**Note:**

The algorithm is intended to extract the text from the XML/HTML/DOM for an NLP tool. It can produce a lot of "phantom" predicates from excessive whitespace, which 1) increases the size of the intermediate mapping and 2) extracts this whitespace as text, and therefore might decrease NLP performance. It is strongly recommended to normalize whitespace in the input XML/HTML/DOM in order to minimize such phantom predicates. A normalized example is given below. Since the whitespace normalization algorithm itself is format dependent (for example, it differs for HTML compared to general XML), no normative algorithm for whitespace normalization is given as part of this specification.

**Note:**

The output of the algorithm shown below uses the ITS RDF ontology [ITS RDF] and its namespace [http://www.w3.org/2005/11/its/rdf#](http://www.w3.org/2005/11/its/rdf)  This ontology is not a normative part of the ITS 2.0 specification and is being discussed in the [ITS Interest Group](http://www.w3.org/International/its/wiki/ITS-RDF_mapping).

Example 26: Example (see [source code](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-HTML-whitespace-normalization.html)) of an HTML document with whitespace character normalization as preparation for the conversion to NIF

**<html><body><h2** translate="yes"**>**Welcome to **<span**

its-ta-ident-ref="http://dbpedia.org/resource/Dublin" its-within-text="yes"

translate="no"**>**Dublin**</span>** in **<b** translate="no" its-within-text="yes"**>**Ireland**</b>**!**</h2></body></html>**

The conversion algorithm to generate NIF consists of seven steps.

* STEP 1: Get an ordered list of all text nodes of the document.
* STEP 2: Generate an XPath expression for each non-empty text node of all leaf elements and memorize them.
* STEP 3: Get the text for each node and make a tuple with the XPath expressions (X,T). Since the text nodes have a certain order we now have a list of ordered tuples ((x0,t0), (x1,t1), ..., (xn,tn)).
* STEP 4 (optional): Serialize as XML or as RDF. The list with the XPath-to-text mapping can also be kept in memory. Part of a serialization example is given below. Note that in the example consists both of an RDF part and XML part (the mappings element).

@prefix itsrdf: <http://www.w3.org/2005/11/its/rdf#> .

<http://example.com/exampledoc.html#xpath(x0)>

nif:convertedFrom <http://example.com/exampledoc.html#char=b0,e0>

<http://example.com/exampledoc.html#xpath(x1)>

nif:convertedFrom <http://example.com/exampledoc.html#char=b1,e1>

# ...

<http://example.com/exampledoc.html#xpath(xn)>

nif:convertedFrom <http://example.com/exampledoc.html#char=bn,en>

<mappings>

<mapping x="xpath(x0)" b="b0" e="e0" />

<mapping x="xpath(x1)" b="b1" e="e1" />

<!-- ... -->

<mapping x="xpath(xn)" b="bn" e="en" />

</mappings>

where

b0 = 0

e0 = b0 + (Number of characters of t0)

b1 = e0 +1

e1 = b1 + (Number of characters of t1)

...

bn = e(n-1) +1

en = bn + (Number of characters of tn)

Example (continued)

@prefix itsrdf: <http://www.w3.org/2005/11/its/rdf#> .

# "Welcome to "

<http://example.com/exampledoc.html#xpath(/html/body[1]/h2[1]/text()[1])>

itsrdf:nif <http://example.com/exampledoc.html#char=0,11> .

# "Dublin"

<http://example.com/exampledoc.html#xpath(/html/body[1]/h2[1]/span[1]/text()[1])>

itsrdf:nif <http://example.com/exampledoc.html#char=11,17> .

# " in "

<http://example.com/exampledoc.html#xpath(/html/body[1]/h2[1]/text()[2])>

itsrdf:nif <http://example.com/exampledoc.html#char=17,21> .

# "Ireland"

<http://example.com/exampledoc.html#xpath(/html/body[1]/h2[1]/b[1]/text()[1])>

itsrdf:nif <http://example.com/exampledoc.html#char=21,28> .

# "!"

<http://example.com/exampledoc.html#xpath(/html/body[1]/h2[1]/text()[3])>

itsrdf:nif <http://example.com/exampledoc.html#char=28,29> .

# "Welcome to Dublin Ireland!"

<http://example.com/exampledoc.html#xpath(/html/body[1]/h2[1]/text())>

itsrdf:nif <http://example.com/exampledoc.html#char=0,29> .

<mappings>

<mapping x="xpath(/html/body[1]/h2[1]/text()[1])" b="0" e="11" />

<mapping x="xpath(/html/body[1]/h2[1]/span[1]/text()[1])" b="11" e="17" />

<mapping x="xpath(/html/body[1]/h2[1]/text()[2])" b="17" e="21" />

<mapping x="xpath(/html/body[1]/h2[1]/b[1]/text()[1])" b="21" e="28" />

<mapping x="xpath(/html/body[1]/h2[1]/text()[3])" b="28" e="29" />

<mapping x="xpath(/html/body[1]/h2[1])" b="0" e="29" />

</mappings>

* STEP 5: Create a context URI and attach the whole concatenated text of the document as reference.
* STEP 6: Attach any ITS metadata annotations from the XML/HTML/DOM input to the respective NIF URIs.
* STEP 7: Omit all URIs that do not carry annotations (to avoid bloating the data).

@prefix itsrdf: <http://www.w3.org/2005/11/its/rdf#> .

@prefix nif: <http://persistence.uni-leipzig.org/nlp2rdf/ontologies/nif-core#>

<http://example.com/exampledoc.html#char=0,29>

rdf:type nif:Context ;

rdf:type nif:RFC5147String ;

# concatenate the whole text

nif:isString "$(t0+t1+t2+...+tn)" ;

itsrdf:translate "yes";

nif:sourceUrl <http://example.com/exampledoc.html> .

<http://example.com/exampledoc.html#char=11,17>

rdf:type nif:String;

rdf:type nif:RFC5147String ;

itsrdf:translate "no";

itsrdf:taIdentRef <http://dbpedia.org/resource/Dublin> ;

nif:referenceContext <http://example.com/exampledoc.html#char=0,29> .

<http://example.com/exampledoc.html#char=21,28>

rdf:type nif:String;

rdf:type nif:RFC5147String ;

itsrdf:translate "no";

nif:referenceContext <http://example.com/exampledoc.html#char=0,29> .

A complete sample output in RDF/XML format after step 7, given the input document Example 26, is available at [examples/nif/EX-nif-conversion-output.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/nif/EX-nif-conversion-output.xml).

**Note:**

The conversion to NIF is a possible basis for a natural language processing (NLP) application that creates, for example, named entity annotations. A non-normative algorithm to integrate these annotations into the original input document is given in Appendix F: Conversion NIF2ITS. This algorithm is non-normative because many decisions depend on the particular NLP application being used.

**5.8 ITS Tools Annotation**

In some cases, it may be important for instances of data categories to be associated with information about the processor that generated them. For example, the score of the MT Confidence data category (provided via the mtConfidence attribute) is meaningful only when the consumer of the information also knows which MT engine produced it, because the score provides the relative confidence of translations from the same MT engine but does not provide a score that can be reliably compared between MT engines. The same is true for confidence provided for the Text Analysis data category, providing confidence information via the taConfidence attribute, or the Terminology data category, providing confidence information via the termConfidence attribute.

ITS 2.0 provides a mechanism to associate such processor information with the use of individual data categories in a document, independently from data category annotations themselves.

The attribute annotatorsRef provides a way to associate all the annotations of a given data category within the element with information about the processor that generated those data category annotations.

**Note:**

* Three cases of providing tool information can be expected:
  1. information about tools used for creating or modifying the textual content;
  2. information about tools that do 1), but also create ITS annotations, see Appendix G: List of ITS 2.0 Global Elements and Local Attributes;
  3. information about tools that don’t modify or create content, but just create ITS annotations.
* annotatorsRef is only meant to be used when actual ITS annotation is involved, that is for 2) and 3). To express tool information related only to the creation or modification of textual content and independent of ITS data categories, that is case 1), one should use the tool or toolRef attribute provided by the Provenance data category.
* An example of case 2) is an MT engine that modifies content and creates ITS MT Confidence annotations. Here the situation may occur that several tools are involved in creating MT Confidence annotations: the MT engine and the tool inserting the markup. The annotatorsRef attribute should identify the tool most useful in further processes, in this case the MT engine.

The value of annotatorsRef is a space-separated list of references where each reference is composed of two parts: a data category identifier and an IRI. These two parts are separated by a | (VERTICAL LINE (U+007C)) character.

* The data category identifier MUST be one of the identifiers specified in the data category overview table.
* The IRI indicates information about the processor used to generate the data category annotation. No single means is specified for how this IRI should be used to indicate processor information. Possible mechanisms are: to encode information directly in the IRI, e.g., as parameters; to reference an external resource that provides such information, e.g., an XML file or an RDF declaration; or to reference another part of the document that provides such information.

In HTML documents, the mechanism is implemented with the its-annotators-ref attribute.

The attribute applies to the content of the element where it is declared (including its children elements) and to the attributes of that element.

On any given node, the information provided by this mechanism is a space-separated list of the accumulated references found in the annotatorsRef attributes declared in the enclosing elements and sorted by data category identifiers. For each data category, the IRI part is the one of the innermost declaration.

Example 27: Accumulation and Overriding of the annotatorsRef Values

In this example, the text shows the computed tools reference information for the given node. Note that the references are ordered alphabetically and that the IRI values are always the ones of the inner-most declaration.

**<doc** its:version="2.0" xmlns:its="http://www.w3.org/2005/11/its"

its:annotatorsRef="mt-confidence|MT1"

**>**doc node: "mt-confidence|MT1"

**<group** its:annotatorsRef="terminology|ABC"

**>**group node: "mt-confidence|MT1 terminology|ABC"

**<p** its:annotatorsRef="text-analysis|Tool3"

**>**This p node: "text-analysis|Tool3 mt-confidence|MT1 terminology|ABC"**</p>**

**<p** its:annotatorsRef="mt-confidence|MT123"

**>**This p node: "mt-confidence|MT123 terminology|ABC"**</p>**

**</group>**

*<!-- To make this example usable in real life, we would have*

*annotations of the three data categories—text-analysis, mt-confidence and terminology— in the document -->*

**<p** its:annotatorsRef="text-analysis|XYZ"

**>**This p node: "text-analysis|XYZ mt-confidence|MT1"**</p>**

**</doc>**

[Source file: [examples/xml/EX-its-tool-annotation-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-its-tool-annotation-1.xml)]

Example 28: Example of ITS Tools Annotation

The annotatorsRef attribute is used in this XML document to indicate that information about the processor that generated the mtConfidence values for the first two p elements are found in element with id="T1" in the external document tools.xml, while that information for the third p element is found in the element with id="T2" in the same document. In addition, annotatorsRef is used to identify a Web resource with information about the QA tool used to generate the Localization Quality Issue annotation in the document.

**<doc** its:version="2.0"

its:annotatorsRef="mt-confidence|file:///tools.xml#T1 localization-quality-issue|http://www.qalsp-ex.com/qatools/transcheckv1.3"

xmlns:its="http://www.w3.org/2005/11/its"**>**

**<p** its:mtConfidence="0.78"**>**Text translated with tool T1**</p>**

**<p** its:mtConfidence="0.55" its:locQualityIssueType="typographical"

its:locQualityIssueComment="Sentence without capitalization"

its:locQualityIssueSeverity="50"**>**text also translated with tool T1**</p>**

**<p** its:mtConfidence="0.34" its:annotatorsRef="mt-confidence|file:///tools.xml#T2"**>** Text translated

with tool T2**</p>**

**</doc>**

[Source file: [examples/xml/EX-its-tool-annotation-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-its-tool-annotation-2.xml)]

Example 29: Example of ITS Tool Annotation

The its-annotators-ref attributes are used in this HTML document to indicate that the MT Confidence annotation on the first two span elements come from one MT (French to English) engine, while the annotation on the third comes from another (Italian to English) engine. Both its-annotators-ref attributes refer to a Web resource for information about the engine generating the MT Confidence annotation.

**<!DOCTYPE html>**

**<html** lang=en**>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Sentences about capital cities

machine translated into English with mtConfidence defined

locally.**</title>**

**</head>**

**<body** its-annotators-ref="mt-confidence|http://www.exmt-prov.com/2012/11/9/fr-t-en"**>**

**<p>**

**<span** its-mt-confidence=0.8982**>**Dublin is the capital of Ireland.**</span>**

**<span** its-mt-confidence=0.8536**>**The capital of the Czech Republic is Prague.**</span>**

**<span** its-mt-confidence=0.7009

its-annotators-ref="mt-confidence|http://www.exmt-prov.com/2012/11/9/it-t-en"**>**

The capital Italia is Roma.**</span>**

**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-its-tool-annotation-html5-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-its-tool-annotation-html5-1.html)]

**6 Using ITS Markup in HTML**

*This section is normative.*

**Note:**

Please note that the term HTML refers to HTML5 or its successor in HTML syntax [HTML5].

**6.1 Mapping of Local Data Categories to HTML**

All data categories defined in Section 8: Description of Data Categories and having local implementation may be used in HTML with the exception of the Translate, Directionality and Language Information data categories.

**Note:**

The above-mentioned data categories are excluded because HTML has native markup for them.

In HTML data categories are implemented as attributes. The name of the HTML attribute is derived from the name of the attribute defined in the local implementation by using the following rules:

1. The attribute name is prefixed with its-
2. Each uppercase letter in the attribute name is replaced by - (U+002D) followed by a lowercase variant of the letter.

Example 53 demonstrates the Elements Within Text data category with the local XML attribute withinText. Example 54 demonstrates the counterpart in HTML, i.e., the local attribute its-within-text.

Values of attributes that correspond to data categories with a predefined set of values MUST be matched ASCII-case-insensitively.

**Note:**

Case of attribute names is also irrelevant given the nature of HTML syntax. So in HTML the terminology data category can be stored as its-term, ITS-TERM, its-Term etc. All of those attributes are treated as equivalent and will be normalized upon DOM construction.

Values of attributes that correspond to data categories that use [XML Schema double data type](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#double) MUST be also valid floating-point numbers as defined in [HTML5].

**6.2 Global rules**

Various aspects for global rules in general, external global rules, or inline global rules need to be taken into account. An example of an HTML5 document using global rules is Example 8. The corresponding rules file is Example 9.

**Note:**

By default XPath 1.0 will be used for selection in global rules. If users prefer an easier selection mechanism, they can switch query language to CSS selectors by using the queryLanguage attribute, see Section 5.3.1: Choosing Query Language.

**Note:**

The HTML5 parsing algorithm automatically puts all HTML elements into the XHTML namespace (http://www.w3.org/1999/xhtml). Selectors used in global rules must take this into account.

Linking to external global rules is specified in the href attribute of link elements, with the link relation its-rules.

**Note:**

Using XPath in global rules linked from HTML documents does not create an additional burden to implementers. Parsing HTML content produces a DOM tree that can be directly queried using XPath, functionality supported by all major browsers.

Inline global rules MUST be specified inside a script element that has a type attribute with the value application/its+xml. The script element itself SHOULD be a child of the head element. Comments MUST NOT be used inside global rules. Each script element MUST NOT contain more than one rules element.

**Note:**

It is preferred to use external global rules linked using the link element than to have global rules embedded in the document.

**6.3 Standoff Markup in HTML**

The constraints for Provenance standoff markup in HTML and Localization quality issues markup in HTML MUST be followed.

**6.4 Precedence between Selections**

The following precedence order is defined for selections of ITS information in various positions of HTML document (the first item in the list has the highest precedence):

1. Implicit local selection in documents (ITS local attributes on a specific element)
2. Global selections in documents (using the mechanism of external global rules or inline global rules), to be processed in document order, see Section 5.2.1: Global, Rule-based Selection for details.  **Note:**  ITS does not define precedence related to rules defined or linked based on non-ITS mechanisms (such as processing instructions for linking rules). Selection via inheritance takes precedence over default values (see below).
3. Selection via inherited values. This applies only to element nodes. The inheritance rules are laid out in a dedicated datacategory overview table (see the column "Inheritance for element nodes"). Selection via inheritance takes precedence over default values (see below).
4. Selections via defaults for data categories, see Section 8.1: Position, Defaults, Inheritance and Overriding of Data Categories.

In case of conflicts between global selections via multiple rules elements, the last rule has higher precedence.

Example 8, previously discussed, demonstrates the precedence: the code element with the translate attribute set to yes has precedence over the global rule setting all code elements as untranslatable.

**7 Using ITS Markup in XHTML**

*This section is normative.*

XHTML documents aimed at public consumption by Web browsers, including HTML5 documents in XHTML syntax, SHOULD use the syntax described in Section 6: Using ITS Markup in HTML in order to adhere to [DOM Consistency HTML Design Principle](http://www.w3.org/TR/html-design-principles/#dom-consistency).

Example 30: Using ITS 2.0 markup in XHTML

This examples illustrates the use of ITS 2.0 local markup in XHTML.

**<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">**

**<html** xmlns="http://www.w3.org/1999/xhtml" xml:lang="en"**>**

**<head>**

**<title>**XHTML and ITS2.0**</title>**

**</head>**

**<body>**

**<h1>**XHTML and ITS2.0**</h1>**

**<p>**Don't use **<span** its-loc-note="Internationalization Tag Set"**>**ITS**</span>** prefixed

attributes inside the content, like its:locNote.**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-xhtml-markup-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-xhtml-markup-1.html)]

**Note:**

Please note that this section defines how to use ITS in XHTML content that is directly served to Web browsers. Such XHTML is very often sent with an incorrect media type and parsed as HTML rather than XML in Web browsers. In such case it is more robust and safer to use HTML-like syntax for ITS metadata.

However when XHTML is not used as a delivery but rather as an exchange or storage format all XML features can be used in XHTML and it is advised to use XML syntax for ITS metadata.

**8 Description of Data Categories**

*This section is normative.*

**8.1 Position, Defaults, Inheritance and Overriding of Data Categories**

The following table summarizes for each data category which selection, default value, and inheritance and overriding behavior apply. It also provides data category identifiers used in Section 5.8: ITS Tools Annotation.

* *Default values* apply if both local and global selection are absent. The default value for the Translate data category, for example, mandates that elements are translatable, and attributes are not translatable if there is no translateRule element and no translate attribute available.
* *Inheritance* describes whether ITS information is applicable to child elements of nodes and attributes related to these nodes or their child notes. The inheritance for the Translate data category, for example, mandates that all child elements of nodes are translatable whereas all attributes related to these the nodes or their child notes are not translatable.
* For ITS data categories with inheritance, the information conveyed by the data category can be overridden. For example, a local translate attribute overrides the Translate information conveyed by a global translateRule.

**Note:**

An ITS application is free to decide what pieces of content it uses. For example:

* Terminology information is added to a term element. The information pertains only to the content of the element, since there is no inheritance for Terminology. Nevertheless an ITS application can make use of the complete element, e.g., including attribute nodes etc.
* Using Id value, a unique identifier is provided for a p element. An application can make use of the complete p element, including child nodes and attributes nodes. The application is also free to make use just of the string value of p. Nevertheless the id provided via ID value pertains only to the p element. It cannot be used to identify nested elements or attributes.
* Using target pointer, selected source elements have the ITS information that their translation is available in a target element; see Example 70. This information does not inherit to child elements of target pointer. E.g., the translation of a span element nested in source is not available in a specific target element. Nevertheless, an application is free to use the complete content of source, including span, and, e.g., present it to a translator.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Data category (identifier) | Local Usage | Global, rule-based selection | Global adding of information | Global pointing to existing information | Default Values | Inheritance for elements nodes | Examples |
| Translate (translate) | Yes | Yes | Yes | No | For XML: translate="yes" for elements, and translate="no" for attributes.  For [HTML5]: see HTLM5 Translate Handling. | For XML: Textual content of element, *including* content of child elements, but *excluding* attributes.  For [HTML5]: see HTLM5 Translate Handling. | local, global |
| Localization Note (localization-note) | Yes | Yes | Yes | Yes | None | Textual content of element, *including* content of child elements, but *excluding* attributes | local, global |
| Terminology (terminology) | Yes | Yes | Yes | Yes | term="no" | None | local, global |
| Directionality (directionality) | Yes | Yes | Yes | No | dir="ltr" | Textual content of element, *including* attributes and child elements | local, global |
| Language Information (language-information) | No | Yes | No | Yes | None | Textual content of element, *including* attributes and child elements | global |
| Elements Within Text (elements-within-text) | Yes | Yes | Yes | No | For XML content: withinText="no".  For [HTML5]: see HTLM5 Element Within Text Handling. | None | local, global |
| Domain (domain) | No | Yes | Yes | Yes | None | Textual content of element, *including* attributes and child elements | global |
| Text Analysis (text-analysis) | Yes | Yes | Yes | Yes | None | None | local, global |
| Locale Filter (locale-filter) | Yes | Yes | Yes | No | localeFilterList="\*", localeFilterType="include" | Textual content of element, *including* attributes and child elements | local, global |
| Provenance (provenance) | Yes | Yes | No | Yes | None | Textual content of element, *including* child elements and attributes | local, global |
| External Resource (external-resource) | No | Yes | No | Yes | None | None | global |
| Target Pointer (target-pointer) | No | Yes | No | Yes | None | None | global |
| Id Value (id-value) | No | Yes | No | Yes | None | None | global |
| Preserve Space (preserve-space) | Yes | Yes | Yes | No | default | Textual content of element, *including* attributes and child elements | local, global |
| Localization Quality Issue (localization-quality-issue) | Yes | Yes | Yes | Yes | None | Textual content of element, *including* child elements, but excluding attributes | local, global |
| Localization Quality Rating (localization-quality-rating) | Yes | No | No | No | None | Textual content of element, *including* child elements, but excluding attributes | local |
| MT Confidence (mt-confidence) | Yes | Yes | Yes | No | None | Textual content of element, *including* child elements, but excluding attributes | local, global |
| Allowed Characters (allowed-characters) | Yes | Yes | Yes | Yes | None | Textual content of element, *including* child elements, but excluding attributes | local, global |
| Storage Size (storage-size) | Yes | Yes | Yes | Yes | None | None | local, global |

Example 31: Defaults, inheritance and overriding behavior of data categories

In this example, the content of all the data elements is translatable and none of the attributes are translatable, because the default for the Translate data category in elements is "yes" and in attributes is "no", and neither of their values are overridden at all. The first translateRule is overridden by the local its:translate="no" attribute. The content of revision, profile, reviser and locNote elements are not translatable. This is because the default is overridden by the same its:translate="no" that these elements inherit from the local ITS markup in the prolog element. The exception is the field element where the second translateRule takes precedence over the inherited value. The last translateRule indicates that the content of type is not translatable because the global rule takes precedence over the default value.

The localization note for the two first data elements is the text defined globally with the locNoteRule element. This note is overridden for the last data element by the local locNote attribute.

**<Res** xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<prolog** its:translate="no"**>**

**<revision>**Sep-07-2006**</revision>**

**<profile>**

**<reviser>**John Doe**</reviser>**

**<field>**Computing Engineering**</field>**

**</profile>**

**<its:rules** version="2.0"**>**

**<its:translateRule** selector="//prolog" translate="yes"**/>**

**<its:translateRule** selector="/Res/prolog/profile/field" translate="yes"**/>**

**<its:translateRule** selector="//msg/type" translate="no"**/>**

**<its:locNoteRule** locNoteType="description" selector="//msg/data"**>**

**<its:locNote>**The variable {0} is the name of the host.**</its:locNote>**

**</its:locNoteRule>**

**</its:rules>**

**</prolog>**

**<body>**

**<msg** id="HostNotFound"**>**

**<type>**Error**</type>**

**<data>**Host {0} cannot be found.**</data>**

**</msg>**

**<msg** id="HostDisconnected"**>**

**<type>**Error**</type>**

**<data>**The connection with {0} has been lost.**</data>**

**</msg>**

**<msg** id="FileNotFound"**>**

**<type>**Error**</type>**

**<data** its:locNote="{0} is a filename"**>**{0} not found.**</data>**

**</msg>**

**</body>**

**</Res>**

[Source file: [examples/xml/EX-datacat-behavior-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-datacat-behavior-1.xml)]

**Note:**

The data categories differ with respect to defaults. This difference is due to existing standards and practices. It is common practice for example that information about translation refers only to textual content of an element. Thus, the default selection for the Translate data category is the textual content.

**8.2 Translate**

**8.2.1 Definition**

The Translate data category expresses information about whether the content of an element or attribute should be translated or not. The values of this data category are "yes" (translatable) or "no" (not translatable).

**8.2.2 Implementation**

The Translate data category can be expressed with global rules, or locally on an individual element. Handling of inheritance and interaction between elements and attributes is different for XML content versus [HTML5] content.

For XML: for elements, the data category information inherits to the textual content of the element, *including* child elements, but *excluding* attributes. The default is that elements are translatable and attributes are not.

For HTML: The interpretation of the translate attribute is given in [HTML5](http://www.w3.org/TR/html51/dom.html#the-translate-attribute).

**Note:**

As of writing, the default in [HTML5] is that elements are translatable, and that translatable attributes inherit from the respective elements. There is pre-defined list of translatable attributes, for example alt or title.

GLOBAL: The translateRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A required translate attribute with the value "yes" or "no".

Example 32: The Translate data category expressed globally

The translateRule element specifies that the elements code must not be translated.

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:translateRule** translate="no" selector="//code"**/>**

**</its:rules>**

[Source file: [examples/xml/EX-translate-selector-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-translate-selector-1.xml)]

LOCAL: The following local markup is available for the Translate data category:

* A translate attribute with the value "yes" or "no".

In [HTML5] the native [HTML5] translate attribute MUST be used to express the Translate data category.

**Note:**

It is not possible to override the Translate data category settings of attributes using local markup. This limitation is consistent with the advised practice of not using translatable attributes. If attributes need to be translatable (e.g., an HTML alt attribute), then this must be declared globally.

Example 33: The Translate data category expressed locally

The local its:translate="no" specifies that the content of panelmsg must not be translated.

**<messages** its:version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<msg** num="123"**>**Click Resume Button on Status Display or **<panelmsg** its:translate="no"

**>**CONTINUE**</panelmsg>** Button on printer panel**</msg>**

**</messages>**

[Source file: [examples/xml/EX-translate-selector-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-translate-selector-2.xml)]

Example 34: The Translate data category expressed locally in HTML

The local translate="no" attribute specifies that the content of span must not be translated.

**<!DOCTYPE html>**

**<html>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Translate flag test: Default**</title>**

**</head>**

**<body>**

**<p>**The **<span** translate=no**>**World Wide Web Consortium**</span>** is

making the World Wide Web worldwide!**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-translate-html5-local-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-translate-html5-local-1.html)]

**8.3 Localization Note**

**8.3.1 Definition**

The Localization Note data category is used to communicate notes to localizers about a particular item of content.

This data category can be used for several purposes, including, but not limited to:

* Tell the translator how to translate parts of the content
* Expand on the meaning or contextual usage of a specific element, such as what a variable refers to or how a string will be used in the user interface
* Clarify ambiguity and show relationships between items sufficiently to allow correct translation (e.g., in many languages it is impossible to translate the word "enabled" in isolation without knowing the gender, number, and case of the thing it refers to.)
* Indicate why a piece of text is emphasized (important, sarcastic, etc.)

Two types of informative notes are needed:

* An alert contains information that the translator must read before translating a piece of text. Example: an instruction to the translator to leave parts of the text in the source language.
* A description provides useful background information that the translator will refer to only if they wish. Example: a clarification of ambiguity in the source text.

Editing tools may offer an easy way to create this type of information. Translation tools can be made to recognize the difference between these two types of localization notes, and present the information to translators in different ways.

**8.3.2 Implementation**

The Localization Note data category can be expressed with global rules, or locally on an individual element. For elements, the data category information inherits to the textual content of the element, *including* child elements, but *excluding* attributes.

GLOBAL: The locNoteRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A required locNoteType attribute with the value "description" or "alert".
* Exactly one of the following:
  + A locNote element that contains the note itself and allows for local ITS markup.
  + A locNotePointer attribute that contains a relative selector pointing to a node that holds the localization note.
  + A locNoteRef attribute that contains an IRI referring to the location of the localization note.
  + A locNoteRefPointer attribute that contains a relative selector pointing to a node that holds the IRI referring to the location of the localization note.

Example 35: The locNote element

The locNoteRule element associates the content of the locNote element with the message with the identifier 'DisableInfo' and flags it as important. This would also work if the rule is in an external file, allowing it to provide notes without modifying the source document.

**<myRes>**

**<head>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0" its:translate="no"**>**

**<its:locNoteRule** locNoteType="alert" selector="//msg[@id='DisableInfo']"**>**

**<its:locNote>**The variable {0} has three possible values: 'printer', 'stacker' and 'stapler

options'.**</its:locNote>**

**</its:locNoteRule>**

**</its:rules>**

**</head>**

**<body>**

**<msg** id="DisableInfo"**>**The {0} has been disabled.**</msg>**

**</body>**

**</myRes>**

[Source file: [examples/xml/EX-locNote-element-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-locNote-element-1.xml)]

Example 36: The locNotePointer attribute

The locNotePointer attribute is a relative selector pointing to a node that holds the note.

**<Res>**

**<prolog>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:translateRule** selector="//msg/notes" translate="no"**/>**

**<its:locNoteRule** locNoteType="description" selector="//msg/data" locNotePointer="../notes"**/>**

**</its:rules>**

**</prolog>**

**<body>**

**<msg** id="FileNotFound"**>**

**<notes>**Indicates that the resource file {0} could not be loaded.**</notes>**

**<data>**Cannot find the file {0}.**</data>**

**</msg>**

**<msg** id="DivByZero"**>**

**<notes>**A division by 0 was going to be computed.**</notes>**

**<data>**Invalid parameter.**</data>**

**</msg>**

**</body>**

**</Res>**

[Source file: [examples/xml/EX-locNotePointer-attribute-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-locNotePointer-attribute-1.xml)]

Example 37: The locNoteRef attribute

The locNoteRule element specifies that the message with the identifier 'NotFound' has a corresponding explanation note in an external file. The IRI for the exact location of the note is stored in the locNoteRef attribute.

**<myRes>**

**<head>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:locNoteRule** locNoteType="description" selector="//msg[@id='NotFound']"

locNoteRef="ErrorsInfo.html#NotFound"**/>**

**</its:rules>**

**</head>**

**<body>**

**<msg** id="NotFound"**>**Cannot find {0} on {1}.**</msg>**

**</body>**

**</myRes>**

[Source file: [examples/xml/EX-locNoteRef-attribute-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-locNoteRef-attribute-1.xml)]

Example 38: The locNoteRefPointer attribute

The locNoteRefPointer attribute contains a relative selector pointing to a node that holds the IRI referring to the location of the note.

**<dataFile>**

**<prolog>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:locNoteRule** locNoteType="description" selector="//data"

locNoteRefPointer="../@noteFile"**/>**

**</its:rules>**

**</prolog>**

**<body>**

**<string** id="FileNotFound" noteFile="Comments.html#FileNotFound"**>**

**<data>**Cannot find the file {0}.**</data>**

**</string>**

**<string** id="DivByZero" noteFile="Comments.html#DivByZero"**>**

**<data>**Invalid parameter.**</data>**

**</string>**

**</body>**

**</dataFile>**

[Source file: [examples/xml/EX-locNoteRefPointer-attribute-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-locNoteRefPointer-attribute-1.xml)]

LOCAL: The following local markup is available for the Localization Note data category:

* One of the following:
  + A locNote attribute that contains the note itself.
  + A locNoteRef attribute that contains an IRI referring to the location of the localization note.
* An optional locNoteType attribute with the value "description" or "alert". If the locNoteType attribute is not present, the type of localization note will be assumed to be "description".

Example 39: The Localization Note data category expressed locally

**<msgList** xmlns:its="http://www.w3.org/2005/11/its" xml:space="preserve" its:version="2.0"**>**

**<data** name="LISTFILTERS\_VARIANT" its:locNote="Keep the leading space!" its:locNoteType="alert"**>**

**<value>** Variant {0} = {1} ({2})**</value>**

**</data>**

**<data** its:locNote="%1\$s is the original text's date in the format YYYY-MM-DD HH:MM always in GMT"**>**

**<value>**Translated from English content dated **<span** id="version-info"**>**%1\$s**</span>** GMT.**</value>**

**</data>**

**</msgList>**

[Source file: [examples/xml/EX-locNote-selector-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-locNote-selector-2.xml)]

Example 40: The Localization Note data category expressed locally in HTML

**<!DOCTYPE html>**

**<html** lang=en**>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**LocNote test: Default**</title>**

**</head>**

**<body>**

**<p>**This is a **<span** its-loc-note="Check with terminology engineer" its-loc-note-type=alert**>**motherboard**</span>**.**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-locNote-html5-local-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-locNote-html5-local-1.html)]

**Note:**

It is generally recommended to avoid using attributes to store text, however, in this specific case, the need to provide the notes without interfering with the structure of the host document is outweighing the drawbacks of using an attribute.

**8.4 Terminology**

**8.4.1 Definition**

The Terminology data category is used to mark terms and optionally associate them with information, such as definitions. This helps to increase consistency across different parts of the documentation. It is also helpful for translation.

**Note:**

Existing terminology standards such as [ISO 30042] and its derived formats are about coding terminology data, while the ITS Terminology data category simply allows to identify terms in XML documents and optionally to point to corresponding information.

**8.4.2 Implementation**

The Terminology data category can be expressed with global rules, or locally on an individual element. There is no inheritance. The default is that neither elements nor attributes are terms.

GLOBAL: The termRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A required term attribute with the value "yes" or "no".
* None or exactly one of the following:
  + A termInfoPointer attribute that contains a relative selector pointing to a node that holds the terminology information.
  + A termInfoRef attribute that contains an IRI referring to the resource providing information about the term.
  + A termInfoRefPointer attribute that contains a relative selector pointing to a node that holds the IRI referring to the location of the terminology information.

Example 41: Usage of the termInfoPointer attribute

**<text>**

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:termRule** selector="//term" term="yes" termInfoPointer="id(@def)"**/>**

**</its:rules>**

**<p>**We may define **<term** def="TDPV"**>**discoursal point of view**</term>** as

**<gloss** xml:id="TDPV"**>**the relationship, expressed through discourse structure, between the

implied author or some other addresser, and the fiction.**</gloss></p>**

**</text>**

[Source file: [examples/xml/EX-terms-selector-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-terms-selector-1.xml)]

Example 42: Usage of the termInfoRef attribute

**<text>**

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:termRule** selector="//term[1]" term="yes"

termInfoRef="#TDPV"**/>**

**</its:rules>**

**<p>**We may define **<term>**discoursal point of view**</term>**

as **<gloss** xml:id="TDPV"**>**the relationship, expressed through discourse

structure, between the implied author or some other addresser,

and the fiction.**</gloss></p>**

**</text>**

[Source file: [examples/xml/EX-terms-selector-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-terms-selector-2.xml)]

Example 43: Usage of the termInfoRefPointer attribute

**<text>**

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:termRule** selector="//term" term="yes"

termInfoRefPointer="@target"**/>**

**</its:rules>**

**<p>**We may define **<term** target="#TDPV"**>**discoursal point of view**</term>**

as **<gloss** xml:id="TDPV"**>**the relationship, expressed through discourse

structure, between the implied author or some other addresser,

and the fiction.**</gloss></p>**

**</text>**

[Source file: [examples/xml/EX-terms-selector-3.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-terms-selector-3.xml)]

LOCAL: The following local markup is available for the Terminology data category:

* A term attribute with the value "yes" or "no".
* An optional termInfoRef attribute that contains an IRI referring to the resource providing information about the term.
* An optional termConfidence attribute with the value of a rational number in the interval 0 to 1 (inclusive). The value follows the [XML Schema double data type](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#double) with the constraining facets [minInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-minInclusive) set to 0 and [maxInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-maxInclusive) set to 1. termConfidence represents the confidence of the agents producing the annotation that the annotated unit is a term or not. 1 represents the highest level of confidence. termConfidence does not provide confidence information related to termInfoRef.

Any node selected by the terminology data category with the termConfidence attribute specified MUST be contained in an element with the annotatorsRef (or in HTML its-annotators-ref) attribute specified for the Terminology data category. See Section 5.8: ITS Tools Annotation for more information.

Example 44: The Terminology data category expressed locally, including term information reference and confidence score.

**<book** its:version="2.0" xmlns:its="http://www.w3.org/2005/11/its" its:annotatorsRef="terminology|http://example.com/term-tool"**>**

**<head>**...**</head>**

**<body>**

...

**<p>**And he said: you need a new

**<quote** its:term="yes"

its:termInfoRef="http://www.directron.com/motherboards1.html"

its:termConfidence="0.5"**>**motherboard**</quote></p>**

...

**</body>**

**</book>**

[Source file: [examples/xml/EX-terms-selector-4.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-terms-selector-4.xml)]

Example 45: The Terminology data category expressed locally in HTML

**<!DOCTYPE html>**

**<html** lang=en**>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Terminology test: default**</title>**

**</head>**

**<body>**

**<p>**We need a new **<span** its-term=yes**>**motherboard**</span>**

**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-term-html5-local-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-term-html5-local-1.html)]

**8.5 Directionality**

**Note:**

At the time of writing, enhancements are being discussed in the context of HTML5 that are expected to change the approach to marking up Directionality, in particular to support content where directionality needs to be isolated from that of surrounding content. However, these enhancements are not finalized yet. This section therefore reflects directionality markup in [HTML 4.01]; enhancements in HTML5 will be reflected in a future revision.

**8.5.1 Definition**

The Directionality data category allows the user to specify the base writing direction of blocks, embeddings, and overrides for the Unicode bidirectional algorithm. It has four values: "ltr", "rtl", "lro" and "rlo".

**Note:**

ITS defines only the values of the Directionality data category and their inheritance. The behavior of text labeled in this way may vary, according to the implementation. Implementers are encouraged, however, to model the behavior on that described in the CSS 2.1 specification or its successor. In such a case, the effect of the data category's values would correspond to the following CSS rules:

* Data category value: "ltr" (left-to-right text) CSS rule: \*[dir="ltr"] { unicode-bidi: embed; direction: ltr}
* Data category value: "rtl" (right-to-left text) CSS rule: \*[dir="rtl"] { unicode-bidi: embed; direction: rtl}
* Data category value: "lro" (left-to-right override) CSS rule: \*[dir="lro"] { unicode-bidi: bidi-override; direction: ltr}
* Data category value: "rlo" (right-to-left override) CSS rule: \*[dir="rlo"] { unicode-bidi: bidi-override; direction: rtl}

More information about how to use this data category is provided by [Bidi Article].

**8.5.2 Implementation**

The Directionality data category can be expressed with global rules, or locally on an individual element. For elements, the data category information inherits to the textual content of the element, *including* child elements and attributes. The default is that both elements and attributes have the directionality of left-to-right.

GLOBAL: The dirRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A required dir attribute with the value "ltr", "rtl", "lro" or "rlo".

Example 46: Document that needs global rules for directionality

In this document the right-to-left directionality is marked using a direction attribute with a value "rtlText".

**<text** xml:lang="en"**>**

**<body>**

**<par>**In Hebrew, the title **<quote** xml:lang="he" direction="rtlText"**>**פעילות

הבינאום, W3C**</quote>** means "Internationalization Activity, W3C",

and the order of characters is **<bdo** direction='rtlText'**>**פעילות

הבינאום, W3C**</bdo>**.**</par>**

**</body>**

**</text>**

[Source file: [examples/xml/EX-dir-selector-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-dir-selector-1.xml)]

Example 47: The Directionality data category expressed with global rules

The dirRule element indicates that all elements with an attribute direction="rtlText" have right-to-left content, except that bdo elements with that attribute have right-to-left override content.

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:dirRule** dir="rtl" selector="//\*[@direction='rtlText']"**/>**

**<its:dirRule** dir="rlo" selector="//bdo[@direction='rtlText']"**/>**

**</its:rules>**

[Source file: [examples/xml/EX-dir-selector-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-dir-selector-2.xml)]

LOCAL: The following local markup is available for the Directionality data category:

* A dir attribute with the value "ltr", "rtl", "lro" or "rlo".

**Note:**

[HTML 4.01] does not have the "lro" and "rlo" values for its dir attribute, so these values are not used for HTML documents. HTML uses an inline bdo element instead.

Example 48: The Directionality data category expressed locally

On the first quote element, the its:dir="rtl" attribute indicates a right-to-left content.

**<text** xml:lang="en" xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<body>**

**<par>**In Arabic, the title **<quote** xml:lang="ar" its:dir="rtl"**>**نشاط التدويل،

W3C**</quote>** means "Internationalization Activity, W3C".**</par>**

**</body>**

**</text>**

[Source file: [examples/xml/EX-dir-selector-3.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-dir-selector-3.xml)]

Example 49: The Directionality data category expressed locally in HTML

**<!DOCTYPE html>**

**<html** lang=en**>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Dir test: Default**</title>**

**</head>**

**<body>**

**<p>**In Arabic, the title **<q** dir=rtl lang=ar**>**نشاط التدويل، W3C**</q>**

means "Internationalization Activity, W3C".**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-dir-html5-local-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-dir-html5-local-1.html)]

**8.6 Language Information**

**8.6.1 Definition**

The element langRule is used to express the language of a given piece of content. The langPointer attribute points to the markup that expresses the language of the text selected by the selector attribute. This markup MUST use values that conform to [BCP47]. The recommended way to specify language identification is to use xml:lang in XML, and lang in HTML. The langRule element is intended only as a fallback mechanism for documents where language is identified with another construct.

Example 50: Pointing to language information via langRule

The following langRule element expresses that the content of all p elements (including attribute values and textual content of child elements) are in the language indicated by mylangattribute, which is attached to the p elements, and expresses language using values conformant to [BCP47].

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:langRule** selector="//p" langPointer="@mylangattribute"**/>**

**</its:rules>**

[Source file: [examples/xml/EX-lang-definition-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-lang-definition-1.xml)]

**Note:**

The Language Information data category only provides for rules to be expressed at a global level. Locally users are able to use xml:lang (which is defined by XML), or lang in HTML, or an attribute specific to the format in question (as in Example 50).

In XML xml:lang is the preferable means of language identification. To ease the usage of xml:lang, a declaration for this attribute is part of the non-normative XML DTD and XML Schema document for ITS markup declarations. There is no declaration of xml:lang in the non-normative RELAX NG document for ITS, since in RELAX NG it is not necessary to declare attributes from the XML namespace.

Applying the Language Information data category to xml:lang attributes using global rules is not necessary, since xml:lang is the standard way to specify language information in [XML 1.0] .

In HTML lang is the mandated means of language identification.

**8.6.2 Implementation**

The Language Information data category can be expressed only with global rules. For elements, the data category information inherits to the textual content of the element, *including* child elements and attributes. There is no default.

GLOBAL: The langRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A required langPointer attribute that contains a relative selector pointing to a node that contains language information. If the attribute xml:lang is present or lang in HTML for the selected node, the value of the xml:lang attribute or lang in HTML MUST take precedence over the langPointer value.

**8.7 Elements Within Text**

**8.7.1 Definition**

The Elements Within Text data category reveals if and how an element affects the way text content behaves from a linguistic viewpoint. This information is for example relevant to provide basic text segmentation hints for tools such as translation memory systems. The values associated with this data category are:

* "yes" : The element and its content are part of the flow of its parent element. For example the element strong in [XHTML 1.0]: <strong>Appaloosa horses</strong> have spotted coats.
* "nested" : The element is part of the flow of its parent element, its content is an independent flow. For example the element fn in [DITA 1.0]: Palouse horses<fn>A Palouse horse is the same as an Appaloosa.</fn> have spotted coats.
* "no" : The element splits the text flow of its parent element and its content is an independent text flow. For example the element p when inside the element li in DITA or XHTML: <li>Palouse horses: <p>They have spotted coats.</p> <p>They have been bred by the Nez Perce.</p> </li>

**8.7.2 Implementation**

The Elements Within Text data category can be expressed with global rules, or locally on an individual element. There is no inheritance.

For XML: The default is that elements are not within text.

For HTML: The default is that elements are not within text, with the following exceptions:

* For the elements that are part of the [HTML5 phrasing content](http://www.w3.org/TR/2012/CR-html5-20121217/dom.html#phrasing-content-1) the default is withinText="yes", with the following exceptions:
  + For the elements iframe, noscript, script and textarea the default is withinText="nested".

Example 51: Illustrates the defaults for the Elements Within Text data category in HTML.

In this document the different flows of text are the following (brackets indicating inline or nested elements):  - "Elements within Text defaults for HTML5" - "The element p is not within text. But [the element em is]." - "A button [Click Here] is also within text. But [] is nested." - "The content of textarea" - "Some additional text... [] []" - "The script element is nested." - "The noscript element is nested."

**<!DOCTYPE html>**

**<html>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Elements within Text defaults for HTML5**</title>**

**</head>**

**<body>**

**<p>**The element p is not within text. But **<em>**the element em is**</em>**.**</p>**

**<p>**A button **<button** onclick="display()"**>**Click Here**</button>** is also within text.

But **<textarea>**The content of textarea**</textarea>** is nested.**</p>**

Some additional text...

**<script>***<!--*

*function display() {*

*alert("The script element is nested."); }*

*//-->*

**</script>**

**<noscript>**The noscript element is nested.**</noscript>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-within-text-defaults-html5-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-within-text-defaults-html5-1.html)]

GLOBAL: The withinTextRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A required withinText attribute with the value "yes", "no" or "nested".

Example 52: Specifying elements within text with a withinTextRule element

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:withinTextRule** withinText="yes" selector="//b | //em | //i"**/>**

**</its:rules>**

[Source file: [examples/xml/EX-within-text-implementation-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-within-text-implementation-1.xml)]

LOCAL: The following local markup is available for the Elements Within Text data category:

* A withinText attribute with the values "yes", "no" or "nested".

Example 53: The Elements Within Text data category expressed locally

**<text** xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<body>**

**<par>**Text with **<bold** its:withinText="yes"**>**bold**</bold>**.**</par>**

**</body>**

**</text>**

[Source file: [examples/xml/EX-within-text-local-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-within-text-local-1.xml)]

Example 54: The Elements Within Text data category expressed locally in HTML

**<!DOCTYPE html>**

**<html>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Within text test: Default**</title>**

**</head>**

**<body>**

**<p>**Text with **<span** its-within-text='yes'**>**bold**</span>**.**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-within-text-local-html5-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-within-text-local-html5-1.html)]

**8.8 Domain**

**8.8.1 Definition**

The Domain data category is used to identify the topic or subject of content. Such information allows for more relevant linguistic choices during various processes.

Examples of usage include:

* Allowing machine translation systems to select the most appropriate engine and rules to translate the content.
* Providing a general indication of what terminology collection should be used by a translator.

This data category addresses various challenges:

* Often domain-related information already exist in the document (e.g., keywords in the HTML meta element). The Domain data category provides a mechanism to point to this information.
* There are many flat or structured lists of domain related values, keywords, key phrases, classification codes, ontologies, etc. The Domain data category does not propose its own given list. Instead it provides a mapping mechanism to associate the values in the document with the values used by the consumer tool.

**8.8.2 Implementation**

The Domain data category can be expressed only with global rules. For elements, the data category information inherits to the textual content of the element, *including* child elements and attributes. There is no default.

The information provided by this data category is a comma-separated list of one or more values, which is obtained by applying the following algorithm:

* STEP 1: Set the initial value of the resulting string as an empty string.
* STEP 2: Get the list of nodes resulting of the evaluation of the domainPointer attribute.
* STEP 3: For each node:
  + STEP 3-1: If the node value contains a COMMA (U+002C):
    - STEP 3-1-1: Split the node value into separate strings using the COMMA (U+002C) as separator.
    - STEP 3-1-2: For each string:
      * STEP 3-1-2-1: Trim the leading and trailing white spaces of the string.
      * STEP 3-1-2-2: If the first character of the value is an APOSTROPHE (U+0027) or a QUOTATION MARK (U+0022): Remove it.
      * STEP 3-1-2-3: If the last character of the value is an APOSTROPHE (U+0027) or a QUOTATION MARK (U+0022): Remove it.
      * STEP 3-1-2-4: If the value is empty: Go to STEP 3-1-2.
      * STEP 3-1-2-5: Check the domainMapping attribute to see if there is a mapping set for the string:
        + STEP 3-1-2-5-1. If a mapping is found: Add the corresponding value to the result string.
        + STEP 3-1-2-5-2. Else (if no mapping is found): Add the string to the result string.
  + STEP 3-2: Else (if the node value does not contain a COMMA (U+002C)):
    - STEP 3-2-1: Trim the leading and trailing white spaces of the string.
    - STEP 3-2-2: If the first character of the value is an APOSTROPHE (U+0027) or a QUOTATION MARK (U+0022): Remove it.
    - STEP 3-2-3: If the last character of the value is an APOSTROPHE (U+0027) or a QUOTATION MARK (U+0022): Remove it.
    - STEP 3-2-4: If the value is empty: Go to STEP 3.
    - STEP 3-2-5: Check if there is a mapping for the string:
      * STEP 3-2-5-1: If a mapping is found: Add the corresponding value to the result string.
      * STEP 3-2-5-2: Else (if no mapping is found): Add the string (in its original cases) to the result string.
* STEP 4: Remove duplicated values from the resulting string.
* STEP 5: Return the resulting string.

GLOBAL: The domainRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A required domainPointer attribute that contains a relative selector pointing to a node that contains the domain information.
* An optional domainMapping attribute that contains a comma separated list of mappings between values in the content and consumer tool specific values. The left part of the pair corresponds to the source content and is unique within the mapping and case-sensitive. The right part of the mapping belongs to the consumer tool. Several left parts can map to a single right part. The values in the left or the right part of the mapping may contain spaces; in that case they MUST be delimited by quotation marks, that is pairs of APOSTROPHE (U+0027) or QUOTATION MARK (U+0022).

**Note:**

Although the domainMapping attribute it is optional, its usage is recommended. Many commercial machine translation systems use their own domain definitions; the domainMapping attribute will foster interoperability between these definitions and metadata items like keywords or dcterms.subject in Web pages or other types of content.

Values used in the domainMapping attribute are arbitrary strings. In some consumer systems or existing content, the domain may be identified via an IRI like http://example.com/domains/automotive. The domainMapping allows for using IRIs too. For the mapping, they are regarded as ordinary string values.

**Note:**

Although the focus of ITS 2.0, and some of the usage scenarios addressed in [ITS 2.0 High-level Usage Scenarios](http://www.w3.org/TR/mlw-metadata-us-impl/)) is on “single engine” environments, ITS 2.0 (for example in the context of the Domain data category) can accommodate "workflow/multi engine" scenarios.

Example:

* A scenario involves Machine Translation (MT) engines A and B. The domain labels used by engine A follow the naming scheme A\_123, the one for engine B follow the naming scheme B\_456.
* A domainMapping like the following is in place: domainMapping="'sports law' Legal, 'property law' Legal"
* Engine A maps 'Legal' to A\_4711, Engine B maps 'Legal' to B\_42.

Thus, ITS does not encode a process or workflow (like "Use MT engine A with domain A\_4711, and use MT engine B with domain A\_42"). Rather, it encodes information that can be used in workflows.

Example 55: The domainRule element

The domainRule element expresses that the content of the HTML body element is in the domain expressed by the HTML meta element with the name attribute, value keywords. The domainPointer attribute points to that meta element.

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"

xmlns:h="http://www.w3.org/1999/xhtml"**>**

**<its:domainRule** selector="/h:html/h:body"

domainPointer="/h:html/h:head/h:meta[@name='keywords']/@content"**/>**

**</its:rules>**

[Source file: [examples/xml/EX-domain-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-domain-1.xml)]

Example 56: The domainRule element

The domainRule element expresses that the content of the HTML body element is in the domain expressed by associated values. The domainPointer attribute points to the values in the source content. In this case it points to the meta elements with the name attribute set to "keywords" or to "dcterms.subject". These elements hold the values in their content attributes. The domainMapping attribute contains the comma-separated list of mappings. In the example, "automotive" is available in the source content, and "auto" is used within the consumer tool, e.g., a machine translation system.

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"

xmlns:h="http://www.w3.org/1999/xhtml"**>**

**<its:domainRule** selector="/h:html/h:body"

domainPointer="/h:html/h:head/h:meta[@name='dcterms.subject' or @name='keywords']/@content"

domainMapping="automotive auto, medical medicine, 'criminal law' law, 'property law' law"**/>**

**</its:rules>**

[Source file: [examples/xml/EX-domain-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-domain-2.xml)]

**Note:**

In HTML, one possible way how to express domain information is a meta element with the name attribute set to "keywords" (see [standard metadata names in HTML](http://www.w3.org/TR/html5/single-page.html#standard-metadata-names)). Alternatively, following the process for [other metadata names](http://www.w3.org/TR/html5/single-page.html#other-metadata-names), the [extension value](http://wiki.whatwg.org/wiki/MetaExtensions) of "dcterms.subject" can be used. The usage of both "keywords" and "dcterms.subject" is shown in example Example 56.

In the area of machine translation (e.g., machine translation systems or systems harvesting content for machine translation training), there is no agreed upon set of value sets for domain. Nevertheless it is recommended to use a small set of values both in source content and within consumer tools, to foster interoperability. If larger value sets are needed (e.g., detailed terms in the law or medical domain), mappings to the smaller value set needed for interoperability should be provided. An example would be a domainMapping attribute for generalizing the law domain: domainMapping="'criminal law' law, 'property law' law, 'contract law' law".

It is possible to have more than one domain associated with a piece of content. For example, if the consumer tool is a statistical machine translation engine, it could include corpora from all domains available in the source content in training the machine translation engine.

The consumer machine translation engine might choose to ignore the domain and take a one-size-fits-all approach, or may be selective in which domains to use, based on the range of content marked with domain. For example, if the content has hundreds of sentences marked with domain "automotive" and "medical", but only a couple of sentences marked with additional domains "criminal law" and "property law", the consumer tool may opt to include its domains "auto" and "medicine", but not "law", since the extra training resources do not justify the improvement in the output. Guidance about appropriate actions in such cases is beyond the scope of this specification.

**8.9 Text Analysis**

**8.9.1 Definition**

The Text Analysis data category is used to annotate content with lexical or conceptual information for the purpose of contextual disambiguation. This information can be provided by so-called text analysis software agents such as named entity recognizers, lexical concept disambiguators, etc., and is represented by either string valued or IRI references to possible resource descriptions. Example: A named entity recognizer provides the information that the string "Dublin" in a certain context denotes a town in Ireland.

While text analysis can be done by humans, this data category is targeted more at software agents.

The information can be used for several purposes, including, but not limited to:

* Informing a human agent such as a translator that a certain fragment of textual content (so-called “text analysis target”) may follow specific translation rules. Examples: proper names, brands, or officially regulated expressions.
* Informing a software agent such as a content management system about the conceptual type of a textual entity to enable special processing. Examples: places, personal names, product names, or geographic names, chemical compounds, and protein names that are situated in a specific index.

The data category provides three pieces of annotation: confidence, entity type or concept class, entity identifier or concept identifier as specified in the following table.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Information | Description | Value | Example | Comments |
| Text analysis confidence | The confidence of the agent (that produced the annotation)in its own computation | The [XML Schema double data type](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#double) with the constraining facets [minInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-minInclusive) set to 0 and [maxInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-maxInclusive) set to 1 | 0.5647346 | The confidence value applies to two pieces of information (see the following rows in this table). This is opposed to termConfidence., which is part of the Terminology data category. termConfidence represents the confidence in just a single piece of information: the decision whether something is a term or not (term). termConfidence does not relate to the confidence about additional information about the term that can be encoded with termInfoRef. |
| Entity type / concept class | The type of entity, or concept class of the text analysis target | IRI | <http://nerd.eurecom.fr/ontology#Location> |  |
| Entity / concept identifier | A unique identifier for the text analysis target | Mode 1: Identifier (string value) of the collection source + identifier of the concept in that collection | "Wordnet3.0" to identify the collection resource; "301467919" to identify a synset in Wordnet3.0 | Mode 1 and mode 2 are mutually exclusive. They MUST NOT be used at the same time for the same text analysis target/node. |
| Mode 2: Identifier ( IRI) of the text analysis target | <http://dbpedia.org/resource/Dublin> |

**Note:**

The use case for Text Analysis is distinct from that for the Terminology data category. Text Analysis informs human agents or software agents in cases where either explicit terminology information is not (yet) available, or would not be appropriate, e.g., conceptual information for general vocabulary.

Text Analysis support is achieved by associating a fragment of text with an external resource that can be interpreted by a language review agent. The agent may, for example, use the web resource to disambiguate the meaning or lexical choice of the fragment, and thereby contributing to its correct translation. The web resource may as well provide information on appropriate synonyms and example usage. This is, for example, the case if the web resource is WordNet [WordNet]. In the case of a concept class, the external resource may provide a formalized conceptual definition arranged in a hierarchical framework of related concepts. In the case of a named entity, the external resource may provide a full-fledged description of the associated real world entity.

Extended example: The word 'City' in the fragment 'I am going to the City' may be enhanced by one of the following:

* one of WordNet's synsets that can be represented by 'city'
* an ontological concept of 'City' that could represent a subclass of 'Populated Place' as a concept
* the central area of a particular city - as interpreted as an entity instance (e.g., 'City of London')

**Note:**

A given document fragment can only be annotated once. When support for multiple annotations is necessary (e.g., when all three of the annotations in the extended example above need to be accommodated) NIF 2.0, [TEI Stand-off Markup](http://www.tei-c.org/release/doc/tei-p5-doc/en/html/NH.html#NHSO), or other so-called stand-off annotation mechanisms should be considered.

Some external resources such as DBpedia also provide information for some ontological concepts and named entity definitions in multiple languages, and this facilitates translation even more because a possible link traversal would allow a direct access to foreign language labels for named entities.

**8.9.2 Implementation**

The Text Analysis data category can be expressed with global rules, or locally on an individual element. There is no inheritance.

**Note:**

This specification defines a normative way to represent text analysis information in XML and HTML locally. However, text analysis information can also be represented in other formats, e.g., [JSON](http://tools.ietf.org/html/rfc4627). The [Internationalization Tag Set Interest Group](http://www.w3.org/International/its/ig/) maintains a [description of such alternative serializations](http://www.w3.org/International/its/wiki/Text_Analysis_serializations). Readers of this specification are encouraged to evaluate whether that description fulfills their needs and to provide comments in the [ITS IG mailing list (public archive)](http://lists.w3.org/Archives/Public/public-i18n-its-ig).

GLOBAL: The textAnalysisRule element contains the following:

* A required selector attribute that contains an absolute selector that selects the nodes to which this rule applies.
* At least one of the following:
  + A taClassRefPointer attribute that contains a relative selector pointing to a node that holds an IRI that implements the entity type / concept class information.
  + Exactly one of the following:
    - When using identification mode 1: A taSourcePointer attribute that contains a relative selector to a node that holds the identifier of the collection source; and a taIdentPointer attribute that contains a relative selector to a node that holds the identifier of the concept in the collection.
    - When using identification mode 2: A taIdentRefPointer attribute that contains a relative selector pointing to a node that holds an IRI that holds the identifier of the text analysis target.

For an example, see Example 59.

LOCAL: The following local markup is available for the Text Analysis data category:

* An optional taConfidence attribute that implements the text analysis confidence.
* At least one of the following:
  + A taClassRef attribute that holds an IRI, which implements the Entity type / concept class information.
  + Exactly one of the following:
    - When using identification mode 1: A taSource attribute that holds the identifier of the collection source, and a taIdent attribute that holds the identifier of the concept in the collection.
    - When using identification mode 2: A taIdentRef attribute that holds the identifier of the text analysis target.

Any node selected by the Text Analysis data category with the taConfidence attribute specified MUST be contained in an element with the annotatorsRef (or in HTML its-annotators-ref) attribute specified for the Text Analysis data category. For more information, see Section 5.8: ITS Tools Annotation.

Example 57:  Local mixed usage of Usage of taClassRef, and taIdentRef in HTML.

**<!DOCTYPE html>**

**<html** lang="en" its-annotators-ref="text-analysis|http://enrycher.ijs.si"**>**

**<head>**

**<meta** charset="utf-8" **/>**

**<title>**Text analysis: Local Test**</title>**

**</head>**

**<body>**

**<p><span**

its-ta-confidence="0.7"

its-ta-class-ref="http://nerd.eurecom.fr/ontology#Location"

its-ta-ident-ref="http://dbpedia.org/resource/Dublin"**>**Dublin**</span>**

is the **<span**

its-ta-source="Wordnet3.0"

its-ta-ident="301467919"

its-ta-confidence="0.5"

**>**capital**</span>** of Ireland.**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-text-analysis-html5-local-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-text-analysis-html5-local-1.html)]

**Note:**

For expressing Entity type / concept class information, implementers are encouraged to use an existing repository of entity types such as the Named Entity Recognition and Disambiguation [NERD] ontology. Of course this requires that the repository satisfy the constraints imposed by the text analysis data category (e.g., use of IRIs).

Various target types can be expressed via Entity type / concept class: types of entities, types of lexical concepts, or ontology concepts. While a relationship between these types may exist, this specification does not prescribe a way of automatically inferring a one target type from another.

**Note:**

Text Analysis is primarily intended for textual content. Nevertheless, the data category can also be used in multi-media contexts. Example: objects on an image could be annotated with DBpedia IRIs.

When serializing the Text Analysis data category markup in HTML, one way to serialize the markup is RDFa Lite or Microdata. This serialization is due to the existing search and crawling infrastructure that is able to consume these formats. For other usage scenarios ( e.g., adding text annotation to feed into a subsequent terminology process), using native ITS Text Analysis data category markup is preferred. In this way, the markup easily can be stripped out again later.

Example 58:  Local mixed usage of taClassRefPointer, and taIdentRefPointer, in HTML+RDFa Lite.

See Example 59 for the companion document with the mapping data.

**<!DOCTYPE html>**

**<html** lang=en**>**

**<head>**

**<meta** charset=utf-8**>**

**<link** href=EX-text-analysis-html5-rdfa.xml rel=its-rules**>**

**<title>**Entity: Local Test**</title>**

**</head>**

**<body>**

**<p><span** property="http://xmlns.com/foaf/0.1/name"

about="http://dbpedia.org/resource/Dublin"

typeof="http:/nerd.eurecom.fr/ontology#Location"**>**Dublin**</span>** is

the capital of Ireland.**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-text-analysis-html5-rdfa.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-text-analysis-html5-rdfa.html)]

Example 59:  Companion document, having the mapping data for Example 58 .

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:textAnalysisRule** selector="//\*[@typeof and @about]"

taClassRefPointer="@typeof" taIdentRefPointer="@about"**/>**

**</its:rules>**

[Source file: [examples/html5/EX-text-analysis-html5-rdfa.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-text-analysis-html5-rdfa.xml)]

**8.10 Locale Filter**

**8.10.1 Definition**

The Locale Filter data category specifies that a node is only applicable to certain locales.

This data category can be used for several purposes, including, but not limited to:

* Including a legal notice only in locales for certain regions.
* Dropping editorial notes from all localized output.

The Locale Filter data category associates with each selected node a filter type and a list of extended language ranges conforming to [BCP47].

The list is comma-separated and can include the wildcard extended language range "\*". The list can also be empty. Whitespace surrounding language ranges is ignored.

The type can take the values "include" or "exclude".

* A single wildcard "\*" with a type "include" indicates that the selected content applies to all locales.
* A single wildcard "\*" with a type "exclude" indicates that the selected content applies to no locale.
* An empty string with a type "include" indicates that the selected content applies to no locale.
* An empty string with a type "exclude" indicates that the selected content applies to all locales.
* Otherwise, with a type "include", the selected content applies to the locales for which the language tag has a match in the list when using the Extended Filtering algorithm defined in [BCP47].
* If, instead, the type is "exclude", the selected content applies to the locales for which the language tag does not have a match in the list when using the Extended Filtering algorithm defined in [BCP47].

**8.10.2 Implementation**

The Locale Filter data category can be expressed with global rules, or locally on an individual element. For elements, the data category information inherits to the textual content of the element, *including* child elements and attributes. The default is that the language range is "\*" and the type is "include".

GLOBAL: The localeFilterRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A required localeFilterList attribute with a comma-separated list of extended language ranges, or an empty string value.
* An optional localeFilterType attribute with a value "include" or "exclude".

Example 60: The Locale Filter data category expressed globally

This document contain three localeFilterRule elements: The first one specifies that the elements legalnotice with a role set to "Canada" apply only to the Canadian locales. The second one specifies that the elements legalnotice with a role set to "nonCanada" apply to all locales that are not Canadian. And the third one specifies that none of the remark elements apply to any locale.

**<book** xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<info>**

**<its:rules** version="2.0"**>**

**<its:localeFilterRule** selector="//legalnotice[@role='Canada']"

localeFilterList="\*-CA"**/>**

**<its:localeFilterRule** selector="//legalnotice[@role='nonCanada']"

localeFilterList="\*-CA" localeFilterType="exclude"**/>**

**<its:localeFilterRule** selector="//remark"

localeFilterList=""**/>**

**</its:rules>**

**<legalnotice** role="Canada"**>**

**<para>**This notice is only for Canadian locales.**</para>**

**</legalnotice>**

**<legalnotice** role="nonCanada"**>**

**<para>**This notice is for locales that are non-Canadian locales.**</para>**

**</legalnotice>**

**<remark>**Note: This section will be written later.**</remark>**

**</info>**

**</book>**

[Source file: [examples/xml/EX-locale-filter-selector-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-locale-filter-selector-1.xml)]

LOCAL: The following local markup is available for the Locale Filter data category:

* A localeFilterList attribute with a comma-separated list of extended language ranges, or an empty string value.
* An optional localeFilterType attribute with a value "include" or "exclude".

Example 61: The Locale Filter data category expressed locally in HTML

In this example the Locale Filter data category is used to select different sections depending on whether the locale is a Canadian one or not.

**<!DOCTYPE html>**

**<html>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Locale filter**</title>**

**</head>**

**<body>**

**<div** its-locale-filter-list="\*-ca"**>**

**<p>**Text for Canadian locales.**</p>**

**</div>**

**<div** its-locale-filter-list="\*-ca" its-locale-filter-type="exclude"**>**

**<p>**Text for non-Canadian locales.**</p>**

**</div>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-locale-filter-local-html5-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-locale-filter-local-html5-1.html)]

Example 62: The Locale Filter data category expressed locally in XML

**<book** xmlns:its="http://www.w3.org/2005/11/its"**>**

**<info>**

**<legalnotice** its:localeFilterList="en-CA, fr-CA"**>**

**<para>**This legal notice is only for English and French Canadian locales.**</para>**

**</legalnotice>**

**</info>**

**</book>**

[Source file: [examples/xml/EX-locale-filter-attribute-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-locale-filter-attribute-1.xml)]

**8.11 Provenance**

**8.11.1 Definition**

The Provenance data category is used to communicate the identity of agents that have been involved in the translation of the content or the revision of the translated content. This allows translation and translation revision consumers, such as post-editors, translation quality reviewers, or localization workflow managers, to assess how the performance of these agents may impact the quality of the translation. Translation and translation revision agents can be identified as a person, a piece of software, or an organization that has been involved in providing a translation that resulted in the selected content.

This data category offers three types of information. First, it allows identification of translation agents. Second, it allows identification revision agents. Third, if provenance information is needed that includes temporal or sequence information about translation processes (e.g., multiple revision cycles) or requires agents that support a wider range of activities, the data category offers a mechanism to refer to external provenance information.

**Note:**

The specification does not define the format of external provenance information, but it is recommended that an open provenance or change-logging format be used, e.g., the W3C provenance data model [PROV-DM].

Translation or translation revision tools, such as machine translation engines or computer assisted translation tools, may offer an easy way to create this information. Translation tools can then present this information to post-editors or translation workflow managers. Web applications may to present such information to consumers of translated documents.

The data category defines seven pieces of information:

|  |  |  |
| --- | --- | --- |
| Information | Description | Value |
| Human provenance information | Identification of a human translation agent | A string or an IRI (only for the Ref attributes) |
| Organisational provenance information | Identification of an organization acting as a translation agent | A string or an IRI (only for the Ref attributes) |
| Tool-related provenance information | Identification of a software tool that was used in translating the selected content | A string or an IRI (only for the Ref attributes) |
| Human revision provenance information | Identification of a human translation revision agent | A string or an IRI (only for the Ref attributes) |
| Organisational revision provenance information | Identification of an organization acting as a translation revision agent | A string or an IRI (only for the Ref attributes) |
| Tool-related revision provenance information | Identification of a software tool that was used in revising the translation of the selected content | A string or an IRI (only for the Ref attributes) |
| Reference to external provenance information | A reference to external provenance information | A space (U+0020) separated list of IRIs |

**Note:**

The tool related provenance and tool related revision provenance pieces of information are not meant to express information about tools used for creating ITS annotations themselves. For this purpose, ITS 2.0 provides a separate mechanism. See Section 5.8: ITS Tools Annotation for details, especially the note on annotatorsRef usage scenarios.

**8.11.2 Implementation**

The Provenance data category can be expressed with global rules, or locally on individual elements. For elements, the data category information inherits to the textual content of the element, *including* child elements and attributes.

GLOBAL: The provRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A provenanceRecordsRefPointer attribute that contains a relative selector pointing to a node containing a list of provenance records. These are related to the content selected via the selector attribute.

Example 63: The Provenance data category used globally with standoff provenance records.

This example expresses provenance information in a standoff manner using provenanceRecords elements. The provRule element specifies that for any element with a ref attribute, that ref attribute hold a reference to an associated provenanceRecords element where the provenance information is listed. The legalnotice element has been revised two times. Hence, the related provenanceRecords element contains two provenanceRecord child elements.

**<text** xmlns:dc="http://purl.org/dc/elements/1.1/"

xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<dc:creator>**John Doe**</dc:creator>**

**<its:provenanceRecords** xml:id="pr1"**>**

**<its:provenanceRecord**

toolRef="http://www.example.onlinemtex.com/2012/7/25/wsdl/"

org="acme-CAT-v2.3"

revToolRef="http://www.mycat.com/v1.0/download"

revOrg="acme-CAT-v2.3"

provRef="http://www.examplelsp.com/excontent987/production/prov/e6354"**/>**

**</its:provenanceRecords>**

**<its:provenanceRecords** xml:id="pr2"**>**

**<its:provenanceRecord**

person="John Doe"

orgRef="http://www.legaltrans-ex.com"

revPerson="Tommy Atkins"

revOrgRef="http://www.example.myorg.com"

provRef="http://www.example.myorg.com/job-12-7-15-X31/reviewed/prov/re8573469"**/>**

**<its:provenanceRecord**

revPerson="John Smith"

revOrgRef="http://john-smith.qa.example.com"**/>**

**</its:provenanceRecords>**

**<its:rules** version="2.0"**>**

**<its:provRule** selector="//\*[@ref]" provenanceRecordsRefPointer="@ref"**/>**

**</its:rules>**

**<title>**Translation Revision Provenance Agent: Global Test in XML**</title>**

**<body>**

**<par** ref="#pr1"**>** This paragraph was translated from the machine.**</par>**

**<legalnotice** postediting-by="http://www.example.myorg.com" ref="#pr2"**>**This text was

translated directly by a person.**</legalnotice>**

**</body>**

**</text>**

[Source file: [examples/xml/EX-provenance-global-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-provenance-global-1.xml)]

LOCAL: Using the inline markup to represent the data category locally is limited to a single occurrence for a given content (e.g., one cannot have different toolRef attributes applied to the same span of text because the inner-most one would override the others). A local *standoff markup* is provided to allow such cases.

The following local markup is available for the Provenance data category:

* Either (inline markup): at least one of the following attributes:
  + A person or personRef attribute that implements the human provenance information.
  + An org or orgRef attribute that implements the organisational provenance information.
  + A tool or toolRef attribute that implements the tool-related provenance information.
  + A revPerson or revPersonRef attribute that implements the human revision provenance information.
  + A revOrg or revOrgRef attribute that implements the organisational revision provenance information.
  + A revTool or revToolRef attribute that implements the tool-related revision provenance information.
  + A provRef attribute that implements the reference to external provenance descriptions.
* Or (standoff markup):
  + A provenanceRecordsRef attribute. Its value is an IRI pointing to the provenanceRecords element containing the list of provenance records related to this content.
  + An element provenanceRecords, which contains:
    - One or more elements provenanceRecord, each of which contains at least one of the following attributes:
      * A person or personRef attribute that implements the human provenance information.
      * An org or orgRef attribute that implements the organisational provenance information.
      * A tool or toolRef attribute that implements the tool-related provenance information.
      * A revPerson or revPersonRef attribute that implements the human revision provenance information.
      * A revOrg or revOrgRef attribute that implements the organisational revision provenance information.
      * A revTool or revToolRef attribute that implements the tool-related revision provenance information.
      * A provRef attribute that implements the reference to external provenance descriptions.
* **Note:** The order of provenanceRecord elements within a provenanceRecords element should reflect the order with which they were added to the document, with the most recently added one listed first.  When the attributes person, personRef, org, orgRef, tool, toolRef, revPerson, revPersonRef, revOrg, revOrgRef, revTool, revToolRef and provRef are used in a standoff manner, the information they carry pertains to the content of the element that refers to the standoff annotation, not to the content of the element provenanceRecord where they are declared.  In HTML the standoff markup MUST either be stored inside a script element in the same HTML document, or can be linked from any provenanceRecordsRef to an external XML or HTML file with the standoff inside. If standoff is inside a script element, that element MUST have a type attribute with the value application/its+xml. Its id attribute MUST be set to the same value as the xml:id attribute of the provenanceRecords element it contains.

Example 64: Annotating provenance information in XML with local inline markup

The provenance related attributes at the par and legalnotice elements are used to associate the provenance information directly with the content of these elements.

**<text** xmlns:dc="http://purl.org/dc/elements/1.1/"

xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<title>**Translation Revision Provenance Agent: Local Test in XML**</title>**

**<body>**

**<par** its:toolRef="http://www.onlinemtex.com/2012/7/25/wsdl/"

its:org="acme-CAT-v2.3"

its:revToolRef="http://www.mycat.com/v1.0/download"

its:revOrg="acme-CAT-v2.3"

its:provRef="http://www.example.lsp1.com/prov/e6354 http://www.example.lsp2.com/prov/e7738"

**>**This paragraph was translated from the machine.**</par>**

**<legalnotice** its:person="John Doe"

its:orgRef="http://www.legaltrans-ex.com/"

its:provRef="http://www.examplelsp.com/excontent987/legal/prov/e6354"

its:revPerson="Tommy Atkins"

its:revOrgRef="http://www.example.myorg.com"

**>**This text was translated directly by a person.**</legalnotice>**

**</body>**

**</text>**

[Source file: [examples/xml/EX-provenance-local-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-provenance-local-1.xml)]

Example 65: Annotating provenance information in HTML with local inline markup

In this example several spans of content are associated with provenance information.

**<!DOCTYPE html>**

**<html** lang=en**>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Provenance Agent: Local Test in HTML5**</title>**

**</head>**

**<body>**

**<p** its-tool-ref="http://www.onlinemtex.com/2012/7/25/wsdl/"

its-org="acme-CAT-v2.3"

its-prov-ref="http://www.examplelsp.com/excontent987/production/prov/e6354"

its-rev-org="acme-CAT-v2.3"

**>**This paragraph was translated from the machine.**</p>**

**<p** class="legal-notice"

its-person="John Doe"

its-org-ref="http://www.legaltrans-ex.com/"

its-prov-ref="http://www.examplelsp.com/excontent987/legal/prov/e6354"

its-rev-person="Tommy Atkins" its-rev-org-ref="http://www.example.myorg.com"

**>**This text was translated directly by a person.**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-provenance-html5-local-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-provenance-html5-local-1.html)]

Example 66: Annotating provenance information in HTML with local standoff markup

The following example shows a document using local standoff markup to encode provenance information. The p elements delimit the content to markup. They hold its-provenance-records-ref attributes that point to the standoff information inside the script elements.

**<!DOCTYPE html>**

**<html>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Test**</title>**

**<script** id=pr1 type=application/its+xml**>**

**<its:provenanceRecords** xml:id="pr1" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:provenanceRecord**

toolRef="http://www.onlinemtex.com/2012/7/25/wsdl/"

org="acme-CAT-v2.3"

provRef="http://www.examplelsp.com/excontent987/production/prov/e6354"

revToolRef="http://www.mycat.com/v1.0/download"

revOrg="acme-CAT-v2.3" **/>**

**</its:provenanceRecords>**

**</script>**

**<script** id=pr2 type=aplication/its+xml**>**

**<its:provenanceRecords** xml:id="pr2" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:provenanceRecord**

person="John Doe"

orgRef="http://www.legaltrans-ex.com/"

provRef="http://www.examplelsp.com/excontent987/legal/prov/e6354"

revPerson="Tommy Atkins"

revOrgRef="http://www.example.myorg.com" **/>**

**<its:provenanceRecord**

revPerson="John Smith"

revOrgRef="http://john-smith.qa.example.com" **/>**

**</its:provenanceRecords>**

**</script>**

**</head>**

**<body>**

**<p** its-provenance-records-ref="#pr1"**>**This paragraph was translated from the machine.**</p>**

**<p** its-provenance-records-ref="#pr2"**>**This text was translated directly by a person.**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-provenance-html5-local-2.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-provenance-html5-local-2.html)]

**8.12 External Resource**

**8.12.1 Definition**

The External Resource data category indicates that a node represents or references potentially translatable data in a resource outside the document. Examples of such resources are external images and audio or video files.

**8.12.2 Implementation**

The External Resource data category can be expressed only with global rules. There is no inheritance. There is no default.

GLOBAL: The externalResourceRefRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A required externalResourceRefPointer attribute that contains a relative selector pointing to a node that provides the IRI of the external resource.

Example 67: The externalResourceRefRule element

The externalResourceRefRule element expresses that the imagedata, audiodata and videodata elements contain references to external resources. These references are expressed via a fileref attribute. The externalResourceRefPointer attribute points to that attribute.

**<doc** xmlns:its="http://www.w3.org/2005/11/its"

xmlns:db="http://docbook.org/ns/docbook"**>**

**<its:rules** version="2.0"**>**

**<its:externalResourceRefRule**

selector="//db:imagedata | //db:audiodata | //db:videodata"

externalResourceRefPointer="@fileref"**/>**

**</its:rules>**

**<db:mediaobject>**

**<db:videoobject>**

**<db:videodata** fileref="movie.avi"**/>**

**</db:videoobject>**

**<db:imageobject>**

**<db:imagedata** fileref="movie-frame.gif"**/>**

**</db:imageobject>**

**<db:textobject>**

**<db:para>**This video illustrates the proper way to assemble an inverting

time distortion device. **</db:para>**

**<db:warning>**

**<db:para>** It is imperative that the primary and secondary temporal

couplings not be mounted in the wrong order. Temporal catastrophe is

the likely result. The future you destroy may be your own. **</db:para>**

**</db:warning>**

**</db:textobject>**

**</db:mediaobject>**

**</doc>**

[Source file: [examples/xml/EX-externalresource-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-externalresource-1.xml)]

Example 68: Two externalResourceRefRule elements used for external resources associated with HTML video elements

The two externalResourceRefRule elements select the src and the poster attributes at HTML video elements. These attributes identify different external resources, and at the same time contain the references to these resources. For this reason, the externalResourceRefPointer attributes point to the value of src and poster respectively. The underlying HTML document is given in Example 69.

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"

xmlns:html="http://www.w3.org/1999/xhtml"**>**

**<its:externalResourceRefRule** selector="//html:video/@src"

externalResourceRefPointer="."**/>**

**<its:externalResourceRefRule** selector="//html:video/@poster"

externalResourceRefPointer="."**/>**

**</its:rules>**

[Source file: [examples/xml/EX-externalresource-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-externalresource-2.xml)]

Example 69: An HTML document that can be used for Example 68.

**<!DOCTYPE html>**

**<html** lang=en**>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Video element example**</title>**

**</head>**

**<body>**

**<video**

height=360

poster=video-image.png

src=http://www.example.com/video/v2.mp

width=640**>**

**<p>**If your browser doesn't support

the **<code>**video**</code>** element, you can

**<a** href=http://www.example.com/video/v2.mp**>**download the video**</a>** instead.**</p>**

**</video>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-externalresource-html5-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-externalresource-html5-1.html)]

**8.13 Target Pointer**

**8.13.1 Definition**

Some formats, such as those designed for localization or for multilingual resources, hold the same content in different languages inside a single document. The Target Pointer data category is used to associate the node of a given source content (i.e., the content to be translated) and the node of its corresponding target content (i.e., the source content translated into a given target language).

This specification makes no provision regarding the presence of the target nodes or their content: A target node may or may not exist and it may or may not have content.

This data category can be used for several purposes, including but not limited to:

* Extract the source content to translate and put back the translation at its proper location.
* Compare source and target content for quality verification.
* Re-use existing translations when localizing the new version of an existing document.
* Access aligned bi-lingual content to build memories, or to train machine translation engines.

**Note:**

In general, it is recommended to avoid developing formats where the same content is stored in different languages in the same document, except for very specific use cases. See the best practices “[Working with multilingual documents](http://www.w3.org/TR/2008/NOTE-xml-i18n-bp-20080213/#DevMLDoc)” from [XML i18n BP] for further guidance.

**8.13.2 Implementation**

The Target Pointer data category can be expressed only with global rules. There is no inheritance. There is no default.

GLOBAL: The targetPointerRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A required targetPointer attribute. It contains a relative selector that points to the node for the target content corresponding to the selected source node.

**Note:**

The source node and the target node may be of different types, but the target node must be able to contain the same content as the source node (e.g., an attribute node cannot be the target node of a source node that is an element with children).

Example 70: Defining the target location of a source content with the targetPointerRule element

**<file>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:translateRule** selector="/file" translate="no"**/>**

**<its:translateRule** selector="//source" translate="yes"**/>**

**<its:targetPointerRule** selector="//source" targetPointer="../target"**/>**

**</its:rules>**

**<entry** id="one"**>**

**<source>**Remember last folder**</source>**

**<target/>**

**</entry>**

**<entry** id="two"**>**

**<source>**Custom file filter:**</source>**

**<target/>**

**</entry>**

**</file>**

[Source file: [examples/xml/EX-target-pointer-global-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-target-pointer-global-1.xml)]

**8.14 Id Value**

**8.14.1 Definition**

The Id Value data category indicates a value that can be used as unique identifier for a given part of the content.

The recommended way to specify a unique identifier is to use xml:id [XML ID] or id in HTML (See the best practice “[Defining markup for unique identifiers](http://www.w3.org/TR/2008/NOTE-xml-i18n-bp-20080213/#DevUniqueID)” from [XML i18n BP]). The idValueRule element is intended only as a fallback mechanism for documents in which unique identifiers are available with another construct.

Providing a unique identifier that is maintained in the original document can be useful for several purposes, for example:

* Allow automated alignment between different versions of the source document, or between source and translated documents.
* Improve the confidence in leveraged translation for exact matches.
* Provide backtracking information between displayed text and source material when testing or debugging.

**Note:**

* The Id Value data category only provides for rules to be expressed at a global level. Locally, users are able to use xml:id (which is defined by XML) or id in HTML, or an attribute specific to the format in question (as in Example 73).
* Applying the Id Value data category to xml:id (in XML) or id (in HTML) attributes in global rules is not necessary, since these attributes are the recommended way to specify an identifier.

**8.14.2 Implementation**

The id Value data category can be expressed only with global rules. There is no inheritance. There is no default.

GLOBAL: The idValueRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A required idValue attribute. It contains an XPath expression that constructs a string corresponding to the identifier of the node to which this rule applies. The identifier MUST be unique at least within the document. If the attribute xml:id is present or id in HTML for the selected node, the value of the xml:id attribute or id in HTML MUST take precedence over the idValue value.

Example 71: Pointing to an ID value with the idValueRule element

The idValueRule element indicates that the unique identifier for each <text> element is the value of the attribute name of its parent element.

<?xml version="1.0"?>

**<resources>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:translateRule** translate="no" selector="/resources"**/>**

**<its:translateRule** translate="yes" selector="//text"**/>**

**<its:idValueRule** selector="//text" idValue="../@name"**/>**

**</its:rules>**

**<entry** name="btn.OK"**>**

**<text>**OK**</text>**

**<pos>**1, 1**</pos>**

**<trig>**sendOK**</trig>**

**</entry>**

**<entry** name="btn.CANCEL"**>**

**<text>**Cancel**</text>**

**<pos>**2, 1**</pos>**

**<trig>**cancelAll**</trig>**

**</entry>**

**</resources>**

[Source file: [examples/xml/EX-idvalue-element-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-idvalue-element-1.xml)]

Example 72: Constructing ID values using the idValueRule element.

The idValue attribute allows to build composite values based on different attributes, elements, or even hard-coded text. Any of the String functions offered by XPath can be used. In the document below, the two elements <text> and <desc> are translatable, but they have only one corresponding identifier, the name attribute in their parent element.

To make sure the identifier is unique for both the content of <text> and the content of <desc>, the XPath expression concat(../@name, '\_t') gives the identifier "settingsMissing\_t" for the content of <text> and the expression concat(../@name, '\_d') gives the identifier "settingsMissing\_d" for the content of <desc>.

<?xml version="1.0"?>

**<doc>**

**<its:rules** version="2.0" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:idValueRule** selector="//text" idValue="concat(../@name, '\_t')"**/>**

**<its:idValueRule** selector="//desc" idValue="concat(../@name, '\_d')"**/>**

**</its:rules>**

**<msg** name="settingsMissing"**>**

**<text>**Can't find settings file.**</text>**

**<desc>**The module cannot find the default settings file. You need to

re-initialize the system.**</desc>**

**</msg>**

**</doc>**

[Source file: [examples/xml/EX-idvalue-element-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-idvalue-element-2.xml)]

Example 73: Using xml:id and idValueRule

When an xml:id attribute is present for a node selected by an idValueRule element, the value of xml:id takes precedence over the value defined by the idValueRule element. In the example below, the unique ID to use is “btnAgain” for the first <res> element, and “retryTip” for the second <res> element.

<?xml version="1.0"?>

**<file>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:idValueRule** selector="//res" idValue="@name"**/>**

**</its:rules>**

**<res** name="retryBtn" xml:id="btnAgain"**>**Try Again**</res>**

**<res** name="retryTip"**>**click this to re-run the process with the current

settings.**</res>**

**</file>**

[Source file: [examples/xml/EX-idvalue-attribute-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-idvalue-attribute-1.xml)]

**8.15 Preserve Space**

**8.15.1 Definition**

The Preserve Space data category indicates how whitespace should be handled in content. The possible values for this data category are "default" and "preserve" and carry the same meaning as the corresponding values of the [xml:space](http://www.w3.org/TR/2008/REC-xml-20081126/#sec-white-space) attribute. The default value is "default". The Preserve Space data category does not apply to HTML documents in HTML syntax.

**8.15.2 Implementation**

The Preserve Space data category can be expressed with global rules, or locally using the xml:space attribute. For elements, the data category information inherits to the textual content of the element, *including* child elements and attributes.

**Note:**

The Preserve Space data category is not applicable to HTML documents in HTML syntax because xml:space (and by extension Preserve Space) has no effect in documents parsed as text/html. However, the data category can be used in HTML *in XHTML syntax*.

GLOBAL: The preserveSpaceRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A required space attribute with the value "default" or "preserve".

Example 74: The Preserve Space data category expressed globally

The preserveSpaceRule element specifies that whitespace in all verse elements must be treated literally.

**<book>**

**<info>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:preserveSpaceRule** selector="//verse" space="preserve"**/>**

**</its:rules>**

**</info>**

**<verse>**

’Twas brillig, and the slithy toves

Did gyre and gimble in the wabe;

All mimsy were the borogoves,

And the mome raths outgrabe.

**</verse>**

**</book>**

[Source file: [examples/xml/EX-preservespace-global-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-preservespace-global-1.xml)]

LOCAL: The xml:space attribute, as defined in section 2.10 of [XML 1.0], maps exactly to the Preserve Space data category.

Example 75: The Preserve Space data category expressed locally

The standard xml:space attribute specifies that the whitespace in the verse element must be treated literally.

**<book>**

**<verse** xml:space="preserve"**>**

'Twas brillig, and the slithy toves

Did gyre and gimble in the wabe;

All mimsy were the borogoves,

And the mome raths outgrabe.

**</verse>**

**</book>**

[Source file: [examples/xml/EX-preservespace-local-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-preservespace-local-1.xml)]

**8.16 Localization Quality Issue**

**8.16.1 Definition**

The Localization Quality Issue data category is used to express information related to localization quality assessment tasks. Such tasks can be conducted on the translation of some source text into a target language or on the source text itself where its quality may impact on the localization process.

This data category can be used in a number of ways, including the following example scenarios:

* An automatic quality checking tool flags a number of potential quality issues in an XML or HTML file and marks them up using ITS 2.0 markup. Other tools in the workflow then examine this markup and decide whether the file needs to be reviewed manually or passed on for further processing without a manual review stage.
* A quality assessment process identifies a number of issues and adds the ITS markup to a rendered HTML preview of an XML file along with CSS styling that highlights these issues. The resulting HTML file is then sent back to the translator to assist his or her revision efforts.
* A human reviewer working with a web-based tool adds quality markup, including comments and suggestions, to a localized text as part of the review process. A subsequent process examines this markup to ensure that changes were made.

**Note:**

What issues should be considered in quality assessment tasks depends on the nature of the project and tools used. For more information on setting translation project specifications and determining quality expectations, implementers are encouraged to consult [ISO/TS 11669:2002]. Details about translation specifications are available at [Structured Specifications]. While these documents do not directly address the definition of quality metrics, they provide useful guidance for implementers interested in determining which localization quality issue values should be used for specific scenarios.

The data category defines five pieces of information:

|  |  |  |  |
| --- | --- | --- | --- |
| Information | Description | Value | Notes |
| Type | A set of broad types of issues into which tool-specific issues can be categorized. | One of the values defined in list of type values. | ITS 2.0-compliant tools that use these types MUST map their internal values to these types. If the type of the issue is set to uncategorized, a comment MUST be specified as well. |
| Comment | A human-readable description of the quality issue. | Text |  |
| Severity | A decimal value representing the severity of the issue, as defined by the model generating the metadata. | A rational number in the interval 0 to 100 (inclusive). The value follows the [XML Schema double data type](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#double) with the constraining facets [minInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-minInclusive) set to 0 and [maxInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-maxInclusive) set to 100. The higher values represent greater severity. | It is up to tools to map the values of this to their own system to this scale. If needed, the original value can be passed along using a custom namespace for XML, or a data- attribute for HTML. |
| Profile Reference | A reference to a document describing the quality assessment model used for the issue. | An IRI pointing to the reference document. | The use of resolvable IRI is strongly recommended as it provides a way for human evaluators to learn more about the quality issues in use. |
| Enabled | A flag indicating whether the issue is enabled or not. | A value yes or no, with the default value being yes. | This flag is used to activate or deactivate issues. There is no prescribed behavior associated with activated or deactivated issues. One example of usage is a tool that allows the user to deactivate false positives so they are not displayed again each time the document is re-checked. |

**8.16.2 Implementation**

The Localization Quality Issue data category can be expressed with global rules, or locally on individual elements. For elements, the data category information inherits to the textual content of the element, *including* child elements, but excluding attributes.

GLOBAL: The locQualityIssueRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* Either (in parallel to local inline markup)
  + At least one of the following attributes:
    - A locQualityIssueType attribute that implements the type information.
    - A locQualityIssueComment attribute that implements the comment information.
  + An optional locQualityIssueSeverity attribute that implements the severity information.
  + An optional locQualityIssueProfileRef attribute that implements the profile reference information.
  + An optional locQualityIssueEnabled attribute that implements the enabled information.
* Or (standoff markup) exactly one of the following:
  + A locQualityIssuesRef attribute. Its value is an IRI pointing to the locQualityIssues element containing the list of issues related to this content.
  + A locQualityIssuesRefPointer attribute that contains a relative selector pointing to a node with the exact same semantics as locQualityIssuesRef.

**Note:**

The attribute locQualityIssuesRefPointer does not apply to HTML as local markup is provided for direct annotation in HTML.

Example 76: Annotating an issue in XML with locQualityIssueRule element

The locQualityIssueRule element associates the issue information with the value of the text attribute.

<?xml version="1.0"?>

**<doc>**

**<header>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:locQualityIssueRule** selector="//image[@id='i1']/@text"

locQualityIssueType="typographical"

locQualityIssueComment="Sentence without capitalization"

locQualityIssueSeverity="50"**/>**

**</its:rules>**

**</header>**

**<para>**Click the button **<image** id="i1" src="button.png"

text="start button"**/>**.**</para>**

**</doc>**

[Source file: [examples/xml/EX-locQualityIssue-global-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-locQualityIssue-global-1.xml)]

Example 77: Annotating an issue in XML with local standoff markup and a global rule

The following example shows a document using local standoff markup to encode several issues. But because, in this case, the mrk element does not allow attributes from another namespace we cannot use locQualityIssuesRef directly. Instead, a global rule is used to map the function of locQualityIssuesRef to a non-ITS construct, here the ref attribute of any mrk elements that has its attribute type set to "x-itslq".

<?xml version="1.0"?>

**<doc** xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<file>**

**<header>**

**<its:rules** version="2.0"**>**

**<its:locQualityIssueRule** selector="//mrk[@type='x-itslq']"

locQualityIssuesRefPointer="@ref"**/>**

**</its:rules>**

**</header>**

**<unit** id="1"**>**

**<segment>**

**<source>**This is the content**</source>**

**<target><mrk** type="x-itslq" ref="#lq1"**>**c'es**</mrk>** le contenu**</target>**

**</segment>**

**<its:locQualityIssues** xml:id="lq1"**>**

**<its:locQualityIssue** locQualityIssueType="misspelling"

locQualityIssueComment="'c'es' is unknown. Could be 'c'est'"

locQualityIssueSeverity="50"**/>**

**<its:locQualityIssue** locQualityIssueType="typographical"

locQualityIssueComment="Sentence without capitalization"

locQualityIssueSeverity="30"**/>**

**</its:locQualityIssues>**

**</unit>**

**</file>**

**</doc>**

[Source file: [examples/xml/EX-locQualityIssue-global-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-locQualityIssue-global-2.xml)]

LOCAL: Using inline markup to represent the data category locally is limited to a single occurrence for a given content (e.g., one cannot have different locQualityIssueType attributes applied to the same span of text because the inner-most one would override the others). A local *standoff markup* is provided to allow such cases.

The following local markup is available for the Localization Quality Issue data category:

* Either (inline markup):
  + At least one of the following attributes:
    - A locQualityIssueType attribute that implements the type information.
    - A locQualityIssueComment attribute that implements the comment information.
  + An optional locQualityIssueSeverity attribute that implements the severity information.
  + An optional locQualityIssueProfileRef attribute that implements the profile reference information.
  + An optional locQualityIssueEnabled attribute that implements the enabled information.
* Or (standoff markup):
  + A locQualityIssuesRef attribute. Its value is an IRI pointing to the locQualityIssues element containing the list of issues related to this content.
  + An element locQualityIssues with a xml:id attribute set to the identifier specified in the locQualityIssuesRef attribute. The locQualityIssues element contains:
    - One or more elements locQualityIssue, each of which contains:
      * At least one of the following attributes:
        + A locQualityIssueType attribute that implements the type information.
        + A locQualityIssueComment attribute that implements the comment information.
      * An optional locQualityIssueSeverity attribute that implements the severity information.
      * An optional locQualityIssueProfileRef attribute that implements the profile reference information.
      * An optional locQualityIssueEnabled attribute that implements the enabled information.
* **Note:** The order of locQualityIssue elements within a locQualityIssues element should reflect the order with which they were added to the document, with the most recently added one listed first.  When the attributes locQualityIssueType, locQualityIssueComment, locQualityIssueSeverity, locQualityIssueProfileRef and locQualityIssueEnabled are used in a standoff manner, the information they carry pertains to the content of the element that refers to the standoff annotation, not to the content of the element locQualityIssue where they are declared. In HTML the standoff markup MUST either be stored inside a script element in the same HTML document, or can be linked from any locQualityIssuesRef to an external XML or HTML file with the standoff inside. If standoff is inside a script element, that element MUST have a type attribute with the value application/its+xml. Its id attribute MUST be set to the same value as the xml:id attribute of the locQualityIssues element it contains.

Example 78: Annotating an issue in XML with local inline markup

The attributes locQualityIssueType, locQualityIssueComment and locQualityIssueSeverity are used to associate the issue information directly with a selected span of content.

<?xml version="1.0"?>

**<doc** xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<para><span** its:locQualityIssueType="typographical"

its:locQualityIssueComment="Sentence without capitalization"

its:locQualityIssueSeverity="50"**>**this**</span>** is an example**</para>**

**</doc>**

[Source file: [examples/xml/EX-locQualityIssue-local-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-locQualityIssue-local-1.xml)]

Example 79: Annotating an issue in HTML with local inline markup

In this example several spans of content are associated with a quality issue.

**<!DOCTYPE html>**

**<html** lang=en**>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Telharmonium 1897**</title>**

**<style** type=text/css**>**

[its-loc-quality-issue-type]{

background-color:yellow;

margin:2px;

}

[its-loc-quality-issue-severity = "100"]{

border: 2px solid red;

}

**</style>**

**</head>**

**<body>**

**<h1>**Telharmonium (1897)**</h1>**

**<p>**

**<span**

data-mytool-qacode=named\_entity\_not\_found

its-loc-quality-issue-comment="Should be Thomas Cahill."

its-loc-quality-issue-profile-ref=http://example.org/qaMovel/v1

its-loc-quality-issue-severity=100

its-loc-quality-issue-type=inconsistent-entities**>**Christian Bale**</span>**

(1867–1934) conceived of an instrument that could transmit its sound

from a power plant for hundreds of miles to listeners over telegraph wiring.

Beginning in 1889 the sound quality of regular telephone concerts was very poor

on account of the buzzing generated by carbon-granule microphones. As a result

Cahill decided to set a new standard in perfection of sound **<span**

its-loc-quality-issue-comment="should be 'quality'"

its-loc-quality-issue-profile-ref=grammar

its-loc-quality-issue-severity=50

its-loc-quality-issue-type=spelling**>**qulaity**</span>** with his instrument,

a standard that would not only satisfy listeners but that

would overcome all the flaws of traditional instruments.**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-locQualityIssue-html5-local-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-locQualityIssue-html5-local-1.html)]

Example 80: Annotating an issue in XML with local standoff markup

The following example shows a document using local standoff markup to encode several issues. The mrk element delimits the content to markup and holds a locQualityIssuesRef attribute that points to the locQualityIssues element where the issues are listed.

<?xml version="1.0"?>

**<xliff** version="1.2" xmlns="urn:oasis:names:tc:xliff:document:1.2"

xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<file** original="example.doc" source-language="en" datatype="plaintext"**>**

**<body>**

**<trans-unit** id="1"**>**

**<source** xml:lang="en"**>**This is the content**</source>**

**<target** xml:lang="fr"**><mrk** mtype="x-itslq"

its:locQualityIssuesRef="#lq1"**>**c'es**</mrk>** le contenu**</target>**

**<its:locQualityIssues** xml:id="lq1"**>**

**<its:locQualityIssue** locQualityIssueType="misspelling"

locQualityIssueComment="'c'es' is unknown. Could be 'c'est'"

locQualityIssueSeverity="50"**/>**

**<its:locQualityIssue** locQualityIssueType="typographical"

locQualityIssueComment="Sentence without capitalization"

locQualityIssueSeverity="30"**/>**

**</its:locQualityIssues>**

**</trans-unit>**

**</body>**

**</file>**

**</xliff>**

[Source file: [examples/xml/EX-locQualityIssue-local-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-locQualityIssue-local-2.xml)]

Example 81: Annotating an issue in HTML with local standoff markup

The following example shows a document using local standoff markup to encode several issues. The span element delimits the content to markup and holds a loc-quality-issues-ref attribute that points to a special span element where the issues are listed within a set of other special span elements.

**<!DOCTYPE html>**

**<html>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Test**</title>**

**<script** src=qaissues.js type=text/javascript**></script>**

**<script** type=application/its+xml id=lq1**>**

**<its:locQualityIssues** xml:id="lq1" xmlns:its="http://www.w3.org/2005/11/its"**>**

**<its:locQualityIssue**

locQualityIssueType="misspelling"

locQualityIssueComment="'c'es' is unknown. Could be 'c'est'"

locQualityIssueSeverity="50"**/>**

**<its:locQualityIssue**

locQualityIssueType="typographical"

locQualityIssueComment="Sentence without capitalization"

locQualityIssueSeverity="30"**/>**

**</its:locQualityIssues>**

**</script>**

**<style** type=text/css**>**.qaissue { background-color: yellow; } **</style>**

**</head>**

**<body** onload=addqaissueattrs()**>**

**<p>**

**<span** its-loc-quality-issues-ref=#lq1**>**c'es**</span>** le contenu**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-locQualityIssue-html5-local-2.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-locQualityIssue-html5-local-2.html)]

**8.17 Localization Quality Rating**

**8.17.1 Definition**

The Localization Quality Rating data category is used to express an overall measurement of the localization quality of a document or an item in a document.

This data category allows to specify a quality score or a voting result for a given item or document, as well as to indicate what constitutes a passing score or vote. It also allows pointing to a profile describing the quality assessment model used for the scoring or the voting.

**8.17.2 Implementation**

The Localization Quality Rating data category is only expressed locally on individual elements. The data category information inherits to the textual content of the element, *including* child elements, but *excluding* attributes.

LOCAL: The following local markup is available for the Localization Quality Rating data category:

* Exactly one of the following:
  + A locQualityRatingScore attribute. Its value is a rational number in the interval 0 to 100 (inclusive). The value follows the [XML Schema double data type](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#double) with the constraining facets [minInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-minInclusive) set to 0 and [maxInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-maxInclusive) set to 100. The higher values represent better quality.
  + A locQualityRatingVote attribute. Its value is a signed integer with higher values indicating a better vote.
* If locQualityRatingScore is used:
  + an optional locQualityRatingScoreThreshold attribute indicating the lowest score that constitutes a passing score in the profile used. Its value is a rational number in the interval 0 to 100 (inclusive). The value follows the [XML Schema double data type](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#double) with the constraining facets [minInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-minInclusive) set to 0 and [maxInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-maxInclusive) set to 100.
* If locQualityRatingVote is used:
  + an optional locQualityRatingVoteThreshold attribute indicating the lowest value that constitutes a passing vote in the profile used. Its value is a signed integer.
* An optional locQualityRatingProfileRef attribute. Its value is an IRI pointing to the reference document describing the quality assessment model used for the scoring.

Example 82: The Localization Quality Rating data category expressed locally in XML

The locQualityRatingScore, locQualityRatingThreshold and locQualityRatingProfileRef are used to score the quality of the document.

<?xml version="1.0"?>

**<doc** xml:lang='nl'

xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"

its:locQualityRatingScore="100"

its:locQualityRatingScoreThreshold="95"

its:locQualityRatingProfileRef="http://example.org/qaModel/v13"**>**

**<title>**De lotgevallen van Tom Sawyer**</title>**

**<para>**Hij kwam vrij laat te huis, en toen hij voorzichtig het raam insprong,

viel hij in eene hinderlaag, in de persoon van zijne tante, bij wie, toen zij

den staat zag, waarin zijne kleederen verkeerden, het besluit om zijn vrijen

Zaterdag in een gevangenschap met dwangarbeid te veranderen, onherroepelijk

vaststond.**</para>**

**</doc>**

[Source file: [examples/xml/EX-locQualityRating-local-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-locQualityRating-local-1.xml)]

Example 83: The Localization Quality Rating data category expressed locally in HTML

The its-loc-quality-rating-score, its-loc-quality-rating-score-threshold and its-loc-quality-rating-profile-ref are used to score the quality of the document.

**<html** lang=fr

its-loc-quality-rating-profile-ref=http://example.org/qaModel/v13

its-loc-quality-rating-score=90

its-loc-quality-rating-score-threshold=80

**>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Rikki-tikki-tavi**</title>**

**</head>**

**<body>**

**<p>**C'est l'histoire de la grande guerre que Rikki-Tikki-Tavi a combattu tout seul,

à travers les salles de bain du grand bungalow au cantonnement Segowlee. Darzee,

le tailbird, l'a aidé, et Chuchundra, le rat musqué, qui ne sort jamais jusqu'au

milieu du plancher, mais se glisse toujours contre la paroi, lui donnait des

conseils, mais Rikki-Tikki-Tavi fait le véritable combat.**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-locQualityRating-html5-local.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-locQualityRating-html5-local.html)]

**8.18 MT Confidence**

**8.18.1 Definition**

The MT Confidence data category is used to communicate the self-reported confidence score from a machine translation engine for the accuracy of a translation it has provided. It is not intended to provide a score that is comparable between machine translation engines and platforms. This data category does NOT aim to establish any sort of correlation between the self-reported confidence score and either human evaluation of MT usefulness, or post-editing cognitive effort. For harmonization’s sake, MT Confidence is provided as a rational number in the interval 0 to 1 (inclusive).

**Note:**

Implementers are expected to interpret the floating-point number and present it to human and other consumers in a convenient form, such as percentage (0-100%) with up to 2 decimal digits, font or background color coding, etc.

This data category can be used for several purposes, including, but not limited to:

* Automated prioritising of raw machine translated text for further processing based on empirically set thresholds.
* Providing readers, translators, post-editors, reviewers, and proofreaders of machine translated text with self-reported relative accuracy prediction.

MT confidence scores can be displayed, e.g., on websites machine translated on the fly, by simple web-based translation editors or on Computer Aided Translation (CAT) tools.

**8.18.2 Implementation**

The MT Confidence category can be expressed with global rules or locally on individual elements. For elements, the data category information is inherited by the textual content of the element, *including* child elements, but *excluding* attributes.

Any node selected by the MT Confidence data category MUST be contained in an element with the annotatorsRef (or in HTML, its-annotators-ref) attribute specified for the MT Confidence data category. For more information, see Section 5.8: ITS Tools Annotation.

GLOBAL: The mtConfidenceRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* A required mtConfidence attribute with a value that represents the translation confidence score as a rational number in the interval 0 to 1 (inclusive). The value follows the [XML Schema double data type](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#double) with the constraining facets [minInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-minInclusive) set to 0 and [maxInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-maxInclusive) set to 1.

Example 84: Global usage of mtConfidenceRule in a HTML document to specify the confidence scores for the translation into English of the title attributes of two img elements.

**<!DOCTYPE html>**

**<html** lang=en**>**

**<head>**

**<meta** charset=utf-8**>**

**<link** href=EX-mtconfidence-global-html5-1-external-rules.xml rel=its-rules**>**

**<title>**Machine translated title attributes of img elements give MT

confidence scores using global rules**</title>**

**</head>**

**<body** its-annotators-ref="mt-confidence|file:///tools.xml#T1"**>**

**<p>**

**<img** src="http://upload.wikimedia.org/wikipedia/commons/9/93/Trinity\_College.jpg"

title="Front gate of Trinity College Dublin"**/>**

**<img** src="http://upload.wikimedia.org/wikipedia/commons/c/cc/Molly\_alone.jpg"

title="A tart with a cart"**/>**

**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-mtConfidence-global-html5-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-mtConfidence-global-html5-1.html)]

Where the external ITS rules file is as shown:

Example 85: XML file with external rules references from an HTML file.

<?xml version="1.0" encoding="UTF-8"?>

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"

xmlns:h="http://www.w3.org/1999/xhtml"**>**

**<its:mtConfidenceRule** mtConfidence="0.785" selector="//h:img[@title='Front gate of Trinity College Dublin']/@title"**/>**

**<its:mtConfidenceRule** mtConfidence="0.805" selector="//h:img[@title='A tart with a cart']/@title"**/>**

**</its:rules>**

[Source file: [examples/html5/EX-mtconfidence-global-html5-1-external-rules.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-mtconfidence-global-html5-1-external-rules.xml)]

LOCAL: the following local markup is available for the MT Confidence data category:

* A mtConfidence attribute with a value that represents the translation confidence score as a rational number in the interval 0 to 1 (inclusive). The value follows the [XML Schema double data type](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#double) with the constraining facets [minInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-minInclusive) set to 0 and [maxInclusive](http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/#rf-maxInclusive) set to 1.

Example 86: The MT Confidence data category expressed locally for the content of a span in an XML document.

**<text** xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0" its:annotatorsRef="mt-confidence|file:///tools.xml#T1"**>**

**<body>**

**<p>**

**<span** its:mtConfidence="0.8982"**>**Dublin is the capital city of

Ireland.**</span>**

**</p>**

**</body>**

**</text>**

[Source file: [examples/xml/EX-mtConfidence-local-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-mtConfidence-local-1.xml)]

Example 87: The MT Confidence data category expressed locally for the content of two separate spans in a HTML document.

**<!DOCTYPE html>**

**<html** lang=en **>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Sentences about Dublin and Prague

machine translated from Czech with mtConfidence locally.**</title>**

**</head>**

**<body** its-annotators-ref="mt-confidence|file:///tools.xml#T1"**>**

**<p>**

**<span** its-mt-confidence=0.8982**>**Dublin is the capital of Ireland.**</span>**

**<span** its-mt-confidence=0.8536 **>**The capital of the Czech Republic is Prague.**</span>**

**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-mtConfidence-html5-local-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-mtConfidence-html5-local-1.html)]

**8.19 Allowed Characters**

**8.19.1 Definition**

The Allowed Characters data category is used to specify the characters that are permitted in a given piece of content.

This data category can be used for various purposes, including the following examples:

* Limiting the characters that may be used in the UI of a game due to font restrictions.
* Preventing illegal characters from being entered as text content that represents file or directory names.
* Controlling what characters can be used when translating examples of a login name in content.

**Note:**

The Allowed Characters data category is not intended to disallow HTML markup. The purpose is to restrict the content to various characters only, e.g., when the content is to be used for URL or filename generation. In most Content Management Systems, content is divided into several fields, some of which may be restricted to plain text, while in other fields HTML fragments may be allowed. Enforcing such restrictions is outside the scope of this data category. For further information see Section 1.3.1.4: Content producers.

The set of characters that are allowed is specified using a regular expression. That is, each character in the selected content MUST be included in the set specified by the regular expression.

The regular expression is the character class construct charClass defined as follows:

* [1] charClass ::= singleCharEsc | charClassExpr | wildcardEsc
* [2] singleCharEsc ::= '\' [nrt\|.?\*+(){}#x2D#x5B#x5D#x5E]
* [3] charClassExpr ::= '[' charGroup ']'
* [4] charGroup ::= posCharGroup | negCharGroup
* [5] posCharGroup ::= ( charRange | singleCharEsc )+
* [6] charRange ::= seRange | xmlCharIncDash
* [7] seRange ::= charOrEsc '-' charOrEsc
* [8] charOrEsc ::= xmlChar | singleCharEsc
* [9] xmlChar ::= [^\#x2D#x5B#x5D]
* [10] xmlCharIncDash ::= [^\#x5B#x5D]
* [11] negCharGroup ::= '^' posCharGroup
* [12] wildcardEsc ::= '.'

The . metacharacter also matches CARRIAGE RETURN (U+000D) and LINE FEED (U+000F). That is, the *dot-all* option is set.

This construct is a sub-set of the [Character Classes](http://www.w3.org/TR/xmlschema-2/#charcter-classes) construct of XML Schema [XML Schema Part 2] and is compatible with most other regular expression engines.

**Note:**

Users may want to use a regular expression to make sure that they follow the definition given above. Sample regular expressions to verify the regular expression in allowed characters are provided [for XML](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/allowed-characters-verify-xml-regex.txt) and [for Java](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/allowed-characters-verify-java-regex.txt).

Example of expressions (shown as XML source):

* "[abc]" : allows the characters 'a', 'b' and 'c'.
* "[a-c]" : allows the characters 'a', 'b' and 'c'.
* "[a-zA-Z]" : allows the characters from 'a' to 'z' and from 'A' to 'Z'.
* "[^abc]" : allows any characters except 'a', 'b', and 'c'.
* "[^&#x0061;-c]" : allows any characters except 'a', 'b', and 'c'.
* "[^&lt;>:&quot;\\/|\?\*]" : allows only the characters valid for Windows file names.
* "." : allows any character.
* "" : allows no character.

**8.19.2 Implementation**

The Allowed Characters data category can be expressed with global rules, or locally on individual elements. For elements, the data category information inherits to the textual content of the element, *including* child elements, but *excluding* attributes.

GLOBAL: The allowedCharactersRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* Exactly one of the following:
  + An allowedCharacters attribute that contains the regular expression indicating the allowed characters.
  + An allowedCharactersPointer attribute that contains a relative selector pointing to a node with the exact same semantics as allowedCharacters.

Example 88: The Allowed Characters data category expressed globally in XML

The allowedCharactersRule element states that the translated content of elements content must not contain the characters \* and +.

<?xml version="1.0"?>

**<myRes** xmlns:its="http://www.w3.org/2005/11/its"**>**

**<head>**

**<its:rules** version="2.0"**>**

**<its:allowedCharactersRule** allowedCharacters="[^\*+]" selector="//content"**/>**

**</its:rules>**

**</head>**

**<body>**

**<content>**Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam

nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed

diam voluptua.**</content>**

**</body>**

**</myRes>**

[Source file: [examples/xml/EX-allowedCharacters-global-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-allowedCharacters-global-1.xml)]

Example 89: Mapping the Allowed Characters data category in XML

The attribute allowedCharactersPointer is used to map the data category to the non-ITS attribute set in this document. The attribute has the same semantics as allowedCharacters.

<?xml version="1.0"?>

**<res** xmlns:its="http://www.w3.org/2005/11/its"**>**

**<head>**

**<its:rules** version="2.0"**>**

**<its:allowedCharactersRule** selector="//record" allowedCharactersPointer="@set"**/>**

**</its:rules>**

**</head>**

**<record** id="a1" set="[ &#xFF01;–&#xFF5E;]"**>**ＦＵＬＬ ＷＩＤＴＨ ＯＮＬＹ**</record>**

**</res>**

[Source file: [examples/xml/EX-allowedCharacters-global-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-allowedCharacters-global-2.xml)]

LOCAL: the following local markup is available for the Allowed Characters data category:

* A allowedCharacters attribute that contains the regular expression indicating the allowed characters.

Example 90: The Allowed Characters data category expressed locally in XML

The local allowedCharacters attribute specifies that the translated content of element panelmsg must contain only Unicode characters between U+0020 and U+00FE.

<?xml version="1.0"?>

**<messages** xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<msg** num="123"**>**Click the **<panelmsg** its:allowedCharacters="[&#x0020;-&#x00FE;]"

**>**CONTINUE**</panelmsg>** Button on the printer panel**</msg>**

**</messages>**

[Source file: [examples/xml/EX-allowedCharacters-local-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-allowedCharacters-local-1.xml)]

Example 91: The Allowed Characters data category expressed locally in HTML

The local its-allowed-characters attribute specifies that the translated content of element code must not contain the characters other than 'a' to 'z' in any case and the characters underscore and minus.

**<!DOCTYPE html>**

**<html** lang=en**>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Example**</title>**

**</head>**

**<body>**

**<p>**Login names can only use letters from A to Z (upper or lowercase)

and the character underscore (\_) and minus (-).

For example: **<code** its-allowed-characters=[a-zA-Z\_\-]**>**Huck\_Finn**</code>**.**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-allowedCharacters-html5-local-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-allowedCharacters-html5-local-1.html)]

**8.20 Storage Size**

**8.20.1 Definition**

The Storage Size data category is used to specify the maximum storage size of a given content.

This data category can be used for various purposes, including the following examples:

* Verify during translation if a string fits into a fixed-size database field.
* Control the size of a string that is stored in a fixed-size memory buffer at run-time.

The storage size is always expressed in bytes and excludes any leading Byte-Order-Markers. It is provided along with the character set encoding and the line break type that will be used when the content is stored. If the encoding form does not use the byte as its unit (e.g., UTF-16 uses 16-bit code units) the storage size MUST still be given in bytes (e.g., for UTF-16: 2 bytes per 16-bit code unit).

An application verifying the storage size for a given content is expected to perform the following steps:

* All the LINE FEED (U+000A) characters of the content to verify are replaced by the character or characters specified by the line break type.
* The resulting string is converted to an array of bytes using a character set encoder for the specified encoding. If a character cannot be represented with the specified encoding, an error is generated.
* If the leading bytes represent a Byte-Order-Mark, they are stripped from that array.
* The length of the resulting array is compared to the storage size provided. The content is too long if the length is greater than the storage size.

**Note:**

Storage size is not related to the display length of a text, and therefore should not be used to constrain a certain display length.

**8.20.2 Implementation**

The Storage Size data category can be expressed with global rules, or locally on individual elements. There is no inheritance. The default value of the character set encoding is "UTF-8", and the default value for the line break is "lf" (LINE FEED (U+000A)).

GLOBAL: The storageSizeRule element contains the following:

* A required selector attribute. It contains an absolute selector that selects the nodes to which this rule applies.
* Exactly one of the following:
  + A storageSize attribute. It contains the maximum number of bytes the text of the selected node is allowed in storage.
  + A storageSizePointer attribute that contains a relative selector pointing to a node with the exact same semantics as storageSize.
* None or exactly one of the following:
  + A storageEncoding attribute. It contains the name of the character set encoding used to calculate the number of bytes of the selected text. The name MUST be one of the names or aliases listed in the [IANA Character Sets registry](http://www.iana.org/assignments/character-sets) [IANA Character Sets]. The default value is the string "UTF-8".
  + A storageEncodingPointer attribute that contains a relative selector pointing to a node with the exact same semantics as storageEncoding.
* An optional lineBreakType attribute. It indicates what type of line breaks the storage uses. The possible values are: "cr" for CARRIAGE RETURN (U+000D), "lf" for LINE FEED (U+000A), or "crlf" for CARRIAGE RETURN (U+000D) followed by LINE FEED (U+000A). The default value is "lf".

Example 92: The Storage Size data category expressed globally in XML

The storageSizeRule element is used to specify that, when encoded in ISO-8859-1, the content of the country element must not be more than 25 bytes. The name "Papouasie-Nouvelle-Guinée" is 25 characters long and fits because all characters in ISO-8859-1 are encoded as a single byte.

<?xml version="1.0"?>

**<db>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:storageSizeRule** selector="//country" storageSize="25"

storageEncoding="ISO-8859-1"**/>**

**</its:rules>**

**<data>**

**<country** id="123"**>**Papouasie-Nouvelle-Guinée**</country>**

**<country** id="139"**>**République Dominicaine**</country>**

**</data>**

**</db>**

[Source file: [examples/xml/EX-storageSize-global-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-storageSize-global-1.xml)]

Example 93: Mapping the Storage Size data category in XML

The storageSizePointer attribute is used to map the non-ITS attribute max to the same functionality as storageSize. There is no character encoding specified, so the default UTF-8 is assumed. Note that, while the name "Papouasie-Nouvelle-Guinée" is 25 character long, the character 'é' is encoded into two bytes in UTF-8. Therefore this name is one byte too long to fit in its storage destination.

<?xml version="1.0"?>

**<fields>**

**<its:rules** xmlns:its="http://www.w3.org/2005/11/its" version="2.0"**>**

**<its:storageSizeRule** selector="//field" storageSizePointer="@max"**/>**

**</its:rules>**

**<field** type="country" id="123" max="25"**>**Papouasie-Nouvelle-Guinée**</field>**

**<field** type="country" id="139" max="25"**>**République Dominicaine**</field>**

**</fields>**

[Source file: [examples/xml/EX-storageSize-global-2.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-storageSize-global-2.xml)]

LOCAL: the following local markup is available for the Storage Size data category:

* A storageSize attribute. It contains the maximum number of bytes the text of the selected node is allowed in storage.
* An optional storageEncoding attribute. It contains the name of the character set encoding used to calculate the number of bytes of the selected text. The name MUST be one of the names or aliases listed in the [IANA Character Sets registry](http://www.iana.org/assignments/character-sets) [IANA Character Sets]. The default value is the string "UTF-8".
* An optional lineBreakType attribute. It indicates what type of line breaks the storage uses. The possible values are: "cr" for CARRIAGE RETURN (U+000D), "lf" for LINE FEED (U+000A), or "crlf" for CARRIAGE RETURN (U+000D) followed by LINE FEED (U+000A). The default value is "lf".

Example 94: The Storage Size data category expressed locally in XML

The storageSize attribute allows specification of different maximum storage sizes throughout the document. Note that the string CONTINUE does not fit the specified restriction of 8 bytes. The minimal number of bytes to store such a string in UTF-16 is 16.

<?xml version="1.0"?>

**<messages** xmlns:its="http://www.w3.org/2005/11/its" its:version="2.0"**>**

**<var** num="panelA1\_Continue" its:storageSize="8" its:storageEncoding="UTF-16"**>**CONTINUE**</var>**

**<var** num="panelA1\_Stop" its:storageSize="8" its:storageEncoding="UTF-16"**>**STOP**</var>**

**<var** num="panelB5\_Cancel" its:storageSize="12" its:storageEncoding="UTF-16"**>**CANCEL**</var>**

**</messages>**

[Source file: [examples/xml/EX-storageSize-local-1.xml](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/xml/EX-storageSize-local-1.xml)]

Example 95: The Storage Size data category expressed locally in HTML

The its-storage-size is used here to specify the maximum number of bytes the two editable strings can have in UTF-8.

**<!DOCTYPE html>**

**<html** lang=en**>**

**<head>**

**<meta** charset=utf-8**>**

**<title>**Example**</title>**

**</head>**

**<body>**

**<p>**String to translate:**</p>**

**<p** contenteditable=true id=123 its-storage-size=25**>**Papua New-Guinea**</p>**

**<p** contenteditable=true id=139 its-storage-size=25**>**Dominican Republic**</p>**

**</body>**

**</html>**

[Source file: [examples/html5/EX-storageSize-html5-local-1.html](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/html5/EX-storageSize-html5-local-1.html)]

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**B Internationalization Tag Set (ITS) MIME Type**

*This section is normative.*

This section is being submitted to the IESG for review, approval, and registration with IANA.

This section defines a MIME type for Internationalization Tag Set (ITS) documents. It covers both ITS 1.0 and ITS 2.0.

*Type name:* application

*Subtype name:* its+xml

*Required parameters:* none

*Optional parameters:* charset

This parameter has identical semantics to the charset parameter of the "application/xml" media type as specified in IETF RFC 3023.

*Encoding considerations:* Identical to those of "application/xml" as described in IETF RFC 3023, section 3.2, as applied to an ITS document.

*Security considerations:* An ITS 1.0 or ITS 2.0 document may cause arbitrary URIs or IRIs to be dereferenced, via the @xlink:href attribute at the its:rules element. Therefore, the security issues of [RFC3987] Section 8 should be considered. In addition, the contents of resources identified by file: URIs can in some cases be accessed, processed and returned as results. An implementation of ITS global rules requires the support of XPath 1.0 or its successor. Hence, processing of global rules might encompass dereferencing of URIs or IRIs during computation of XPath expressions. Arbitrary recursion is possible, as is arbitrarily large memory usage, and implementations may place limits on CPU and memory usage, as well as restricting access to system-defined functions. ITS 1.0 and ITS 2.0 permit extensions. Hence it is possible that application/its+xml may describe content that has security implications beyond those described here.

*Interoperability considerations:* There are no known interoperability issues.

*Published specification:* <http://www.w3.org/TR/2007/REC-its-20070403/> and <http://www.w3.org/TR/its20/>.

Any XML document containing ITS 1.0 "its:rules" elements http://www.w3.org/TR/its/#selection-global can be labeled with application/its+xml. <http://www.w3.org/TR/its/EX-link-external-rules-2.xml> Provides an example of a document linking to a file with ITS 1.0 and ITS 2.0 "rules". The link target is at <http://www.w3.org/TR/its/EX-link-external-rules-1.xml>. There is no need that the link target has "its:rules" as a root element. The processing semantics is that rules are gathered in document order.

*Applications that use this media type:* This new media type is being registered to allow for deployment of ITS 1.0 and ITS 2.0 on the World Wide Web., e.g., by localization tools.

*Additional information:*

* Magic number(s): none
* File extension(s): .its
* Macintosh file type code(s): TEXT

*Person & email address to contact for further information:* World Wide Web Consortium <web-human at w3.org>

*Intended usage:* COMMON

*Restrictions on usage:* none

*Author / Change controller:* The Internationalization Tag Set (ITS) 1.0 and 2.0 specifications are a work product of the World Wide Web Consortium's Internationalization Tag Set Working Group. The W3C has change control over this specification.

**C Values for the Localization Quality Issue Type**

*This section is normative.*

The locQualityIssueType attribute provides a basic level of interoperability between different localization quality assurance systems. It offers a list of high-level quality issue types common in automatic and human localization quality assessment. Tools can map their internal types to these types in order to exchange information about the kinds of issues they identify and take appropriate action even if another tool does not know the specific issues identified by the generating tool.

The scope column in the following table identifies whether the issue type applies to the source text (“S”), target text (“T”) or both (“S or T”).

The values listed in the following table are allowed for locQualityIssueType. The values a tool implementing the data category produces for the attribute must match one of the values provided in this table and must be semantically accurate. If a tool can map its internal values to these types it must do so and must use the value other, which is reserved strictly for values that cannot be mapped to these values.

**Note:**

The [ITS Interest Group](http://www.w3.org/International/its/ig/) maintains an informative mappings of tools to localization quality issue types. [The ITS IG Wiki](http://www.w3.org/International/its/wiki/Tool_specific_mappings) provides information on [how to update that list](http://www.w3.org/International/its/wiki/Tool_specific_mappings#Update_of_this_page). The purpose of these mappings is to document how tool internal information relates to the ITS 2.0 quality types. To foster interoperability, implementers are strongly encouraged not to rely on these mappings and to implement the ITS 2.0 quality types natively.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Value | Description | Example | Scope | Notes |
| terminology | An incorrect term or a term from the wrong domain was used or terms are used inconsistently. | * The localization had “Pen Drive” when corporate terminology specified that “USB Stick” was to be used. * The localized text inconsistently used "Start" and "Begin". * A text renders the Hungarian term *recsegőhid* as “buzzer bridge” in English (a literal translation), but the term used in English should be “wedge block,” as specified in a terminology list supplied to the translator. | S or T | This value must not be used for simple typographical errors or word choice not related to defined terminologies. For example, a mistyping of “pin” as “pen” or the use of “imply” instead of “infer” (mistaking two commonly confused words) would not count as terminology issues and should be categorized as either spelling errors or mistranslations, depending on the nature of the issue. Terminology refers *only* to cases where incorrect choices about terms (either formal or commonly defined in a domain) are involved. |
| mistranslation | The content of the target mistranslates the content of the source. | * The English source reads "An ape succeeded in grasping a banana lying outside its cage with the help of a stick" but the Italian translation reads "l'ape riuscì a prendere la banana posta tuori dall sua gabbia aiutandosi con un bastone" ("A bee succeeded...") | T | Issues related to translation of specific terms related to the domain or task-specific language should be categorized as terminology issues. |
| omission | Necessary text has been omitted from the localization or source. | * One or more segments found in the source that should have been translated are missing in the target. | S or T | This value should not be used for missing whitespace or formatting codes, but instead should be reserved for linguistic content. |
| untranslated | Content that should have been translated was left untranslated. | * The source segment reads "The Professor said to Smith that he would hear from his lawyer" but the Hungarian localization reads "A professzor azt mondta Smithnek, hogy he would hear from his lawyer." | T | omission takes precedence over untranslated. Omissions are distinct in that they address cases where text is not present, while untranslated addresses cases where text has been carried from the source untranslated. |
| addition | The translated text contains inappropriate additions. | * The translated text contains a note from the translator to himself to look up a term; the note should have been deleted but was not. | T |  |
| duplication | Content has been duplicated improperly. | * A section of the target text was inadvertently copied twice in a copy and paste operation. | T |  |
| inconsistency | The text is inconsistent with itself or is translated inconsistently (NB: not for use with terminology inconsistency). | * The text states that an event happened in 1912 in one location but in another states that it happened in 1812. * The translated text uses different wording for multiple instances of a single regulatory notice that occurs in multiple locations in a series of manuals. | S or T |  |
| grammar | The text contains a grammatical error (including errors of syntax and morphology). | * The text reads "The guidelines says that users should use a static grounding strap." | S or T |  |
| legal | The text is legally problematic (e.g., it is specific to the wrong legal system). | * The localized text is intended for use in Thailand but includes U.S. regulatory notices. * A text translated into German contains comparative advertising claims that are not allowed by German law. | S or T |  |
| register | The text is written in the wrong linguistic register of uses slang or other language variants inappropriate to the text. | * A financial text in U.S. English refers to dollars as "bucks". | S or T |  |
| locale-specific-content | The localization contains content that does not apply to the locale for which it was prepared. | * A text translated for the Japanese market contains call center numbers in Texas and refers to special offers available only in the U.S. | S or T | Legally inappropriate material should be classified as legal. |
| locale-violation | Text violates norms for the intended locale. | * A text localized into German has dates in YYYY-MM-DD format instead of in DD.MM.YYYY. * A text for the Irish market uses American-style foot and inch measurements instead of centimeters. * A text intended for a U.S.-based audience uses U.K. spellings such as “centre” and “colour.” | S or T | This value should be used for spelling errors only if they relate specifically to locale expectations (e.g., a text consistently uses British instead of U.S. spellings for a text intended for the U.S.). If these errors are not systematic (e.g., a text uses U.S. spellings but has a single instance of “centre”), they should instead be counted as spelling errors. |
| style | The text contains stylistic errors. | * Company style guidelines dictates that all individuals be referred to as Mr. or Ms. with a family name, but the text refers to “Jack Smith”. | S or T |  |
| characters | The text contains characters that are garbled or incorrect or that are not used in the language in which the content appears. | * A text should have a '•' but instead has a '¥' sign. * A text translated into German systematically transforms 'ü', 'ö', and 'ä' to û, ô, and â * A Japanese text has been garbled and appears with Devanagari characters. | S or T | Characters should be used in cases of garbling or systematic use of inappropriate characters, not for spelling issues where individual characters are replaced with incorrect one. |
| misspelling | The text contains a misspelling. | * A German text misspells the word "Zustellung" as "Zustlelung". | S or T |  |
| typographical | The text has typographical errors such as omitted/incorrect punctuation, incorrect capitalization, etc. | * An English text has the following sentence: "The man whom, we saw, was in the Military and carried it's insignias". | S or T |  |
| formatting | The text is formatted incorrectly. | * Warnings in the text are supposed to be set in italic face, but instead appear in bold face. * Margins of the text are narrower than specified. | S or T |  |
| inconsistent-entities | The source and target text contain different named entities (dates, times, place names, individual names, etc.) | * The name "Thaddeus Cahill" appears in an English source but is rendered as "Tamaš Cahill" in the Czech version. * The date "February 9, 2007" appears in the source but the translated text has "2. September 2007". | S or T |  |
| numbers | Numbers are inconsistent between source and target. | * A source text states that an object is 120 cm long, but the target text says it is 129 cm. long. | S or T | Some tools may correct for differences in units of measurement to reduce false positives. |
| markup | There is an issue related to markup or a mismatch in markup between source and target. | * The source segment has five markup tags but the target has only two. * An opening tag in the text is missing a closing tag. | S or T |  |
| pattern-problem | The text fails to match a pattern that defines allowable content (or matches one that defines non-allowable content). | * The tool disallows the regular expression pattern ['"”’][\.,] but the translated text contains "A leading “expert”, a political hack, claimed otherwise." | S or T |  |
| whitespace | There is a mismatch in whitespace between source and target content or the text violates specific rules related to the use of whitespace. | * A source segment starts with six space characters but the corresponding target segment has two non-breaking spaces at the start. * The text uses a run of 12 space characters instead of a tab character to align numbers in a table. * Two space characters appear after a period even though only a single period should be used. | S or T |  |
| internationalization | There is an issue related to the internationalization of content. | * A line of programming code has embedded language-specific strings. * A user interface element leaves no room for text expansion. * A form allows only for U.S.-style postal addresses and expects five digit U.S. ZIP codes. | S or T | There are many kinds of internationalization issues. This value is therefore very heterogeneous in what it can refer to. |
| length | There is a significant difference in source and target length. | * The translation of a segment is five times as long as the source. | S or T | What constitutes a "significant" difference in length is determined by the model referred to in the locQualityIssueProfileRef. |
| non-conformance | The content is deemed to have a level of conformance to a reference corpus. The non-conformance type reflects the degree to which the text conforms to a reference corpus given an algorithm which combines several classes of error type to produce an aggregate rating. Higher values reflect poorer conformance. | The sentence "The harbour connected which to printer is busy or configared not properly." would have poor conformance. | S or T | In a system that uses classification techniques, the poor conformance is a function of the combined incorrect terminology, wrong spelling, and bad grammar, or other features as determined by the system. |
| uncategorized | The issue either has not been categorized or cannot be categorized. | * A new version of a tool returns information on an issue that has not been previously checked and that is not yet classified. * A text is defective in ways that defy categorization, such as the appearance of nonsense garbled text of unknown origin (e.g., a translation shows an unintelligible result and/or appears unrelated to the source material). | S or T | This value has the following uses:   1. A tool can use it to pass through quality data from another tool in cases where the issues from the other tool are not classified (for example, a localization quality assurance tool interfaces with a third-party grammar checker). 2. A tool’s issues are not yet assigned to values, and, until an updated assignment is made, they may be listed as uncategorized. In this case it is recommended that issues be assigned to appropriate values as soon as possible since uncategorized does not foster interoperability. 3. uncategorized can be used where a portion of text is defective in a way that defies assignment to a value in either the originating system or in any other ITS localization quality markup to indicate that it is uncategorizable. |
| other | Any issue that cannot be assigned to any values listed above. |  | S or T | * This value allows for the inclusion of any issues not included in the previously listed values. This value must not be used for any tool- or model-specific issues that can be mapped to the values listed above. * In addition, this value is not synonymous with uncategorized in that uncategorized issues may be assigned to another precise value, while other issues cannot. * If a system has an "miscellaneous" or "other" value, it must be mapped to this value even if the specific instance of the issue might be mapped to another value. |

**D Schemas for ITS**

*This section is normative.*

The following schemas define ITS elements and attributes and can be used as building blocks when you want to integrate ITS markup into your own XML vocabulary. You can see examples of such integration in [Best Practices for XML Internationalization](http://www.w3.org/TR/xml-i18n-bp/).

Foreign elements can be used only inside rules. Foreign attributes can be used on any element defined in ITS.

The following four schemas are provided:

*1. NVDL document*: The following [NVDL] document allows validation of ITS markup that has been added to a host vocabulary. Only ITS elements and attributes are checked. Elements and attributes of host language are ignored during validation against this NVDL document/schema.

Example 96: NVDL schema for ITS

<?xml version="1.0" encoding="UTF-8"?>

**<rules** xmlns="http://purl.oclc.org/dsdl/nvdl/ns/structure/1.0"**>**

**<namespace** ns="http://www.w3.org/2005/11/its"**>**

**<validate** schema="its20-elements.rng"**/>**

**</namespace>**

**<namespace** ns="http://www.w3.org/2005/11/its" match="attributes"**>**

**<validate** schema="its20-attributes.rng"**/>**

**</namespace>**

**<anyNamespace>**

**<allow/>**

**</anyNamespace>**

**</rules>**

[Source file: [schemas/its20.nvdl](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/schemas/its20.nvdl)]

*2. RELAX NG schema for elements and attributes*: The NVDL schema depends on the following two schemas: RELAX NG schema for ITS elements, and RELAX NG schema for all ITS local attributes.

Example 97: RELAX NG schema for ITS elements

<?xml version="1.0" encoding="UTF-8"?>

**<grammar** xmlns="http://relaxng.org/ns/structure/1.0"**>**

**<include** href="its20.rng"**/>**

**<start>**

**<choice>**

**<ref** name="its-rules"**/>**

**<ref** name="its-span"**/>**

**<ref** name="its-standoff"**/>**

**</choice>**

**</start>**

**</grammar>**

[Source file: [schemas/its20-elements.rng](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/schemas/its20-elements.rng)]

([RELAX NG compact syntax version of schema](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/schemas/its20-elements.rnc))

Example 98: RELAX NG schema for all ITS local attributes

<?xml version="1.0" encoding="UTF-8"?>

**<grammar** xmlns="http://relaxng.org/ns/structure/1.0"**>**

**<include** href="its20.rng"**/>**

**<start>**

**<group>**

**<optional>**

**<ref** name="its-local.attributes"**/>**

**</optional>**

**<optional>**

**<ref** name="its-attribute.version"**/>**

**</optional>**

**</group>**

**</start>**

**</grammar>**

[Source file: [schemas/its20-attributes.rng](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/schemas/its20-attributes.rng)]

([RELAX NG compact syntax version of schema](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/schemas/its20-attributes.rnc))

*3. Base RELAX NG schema for ITS*: All ITS elements and attributes referenced by previous two schemas are defined in the base RELAX NG schema for ITS.

Example 99: Base RELAX NG schema for ITS

<?xml version="1.0" encoding="UTF-8"?>

**<grammar** ns="http://www.w3.org/2005/11/its"

xmlns:a="http://relaxng.org/ns/compatibility/annotations/1.0"

xmlns:xlink="http://www.w3.org/1999/xlink"

xmlns:its="http://www.w3.org/2005/11/its"

xmlns="http://relaxng.org/ns/structure/1.0"

datatypeLibrary="http://www.w3.org/2001/XMLSchema-datatypes"**>**

**<include** href="its20-types.rng"**/>**

**<define** name="its-attribute.translate"**>**

**<attribute** name="its:translate"**>**

**<ref** name="its-translate.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.translate.nons"**>**

**<attribute** name="translate"**>**

**<ref** name="its-translate.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.dir"**>**

**<attribute** name="its:dir"**>**

**<ref** name="its-dir.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.dir.nons"**>**

**<attribute** name="dir"**>**

**<ref** name="its-dir.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locNote"**>**

**<attribute** name="its:locNote"**>**

**<ref** name="its-locNote.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locNote.nons"**>**

**<attribute** name="locNote"**>**

**<ref** name="its-locNote.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locNoteType"**>**

**<attribute** name="its:locNoteType"**>**

**<ref** name="its-locNoteType.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locNoteType.nons"**>**

**<attribute** name="locNoteType"**>**

**<ref** name="its-locNoteType.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locNoteRef"**>**

**<attribute** name="its:locNoteRef"**>**

**<ref** name="its-locNoteRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locNoteRef.nons"**>**

**<attribute** name="locNoteRef"**>**

**<ref** name="its-locNoteRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.termInfoRef"**>**

**<attribute** name="its:termInfoRef"**>**

**<ref** name="its-termInfoRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.termInfoRef.nons"**>**

**<attribute** name="termInfoRef"**>**

**<ref** name="its-termInfoRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.term"**>**

**<attribute** name="its:term"**>**

**<ref** name="its-term.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.term.nons"**>**

**<attribute** name="term"**>**

**<ref** name="its-term.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.termConfidence"**>**

**<attribute** name="its:termConfidence"**>**

**<ref** name="its-termConfidence.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.termConfidence.nons"**>**

**<attribute** name="termConfidence"**>**

**<ref** name="its-termConfidence.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.withinText"**>**

**<attribute** name="its:withinText"**>**

**<ref** name="its-withinText.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.withinText.nons"**>**

**<attribute** name="withinText"**>**

**<ref** name="its-withinText.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.domainMapping"**>**

**<attribute** name="its:domainMapping"**>**

**<ref** name="its-domainMapping.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.domainMapping.nons"**>**

**<attribute** name="domainMapping"**>**

**<ref** name="its-domainMapping.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.taConfidence"**>**

**<attribute** name="its:taConfidence"**>**

**<ref** name="its-taConfidence.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.taConfidence.nons"**>**

**<attribute** name="taConfidence"**>**

**<ref** name="its-taConfidence.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.taClassRef"**>**

**<attribute** name="its:taClassRef"**>**

**<ref** name="its-taClassRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.taClassRef.nons"**>**

**<attribute** name="taClassRef"**>**

**<ref** name="its-taClassRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.taIdent"**>**

**<attribute** name="its:taIdent"**>**

**<ref** name="its-taIdent.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.taIdent.nons"**>**

**<attribute** name="taIdent"**>**

**<ref** name="its-taIdent.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.taIdentRef"**>**

**<attribute** name="its:taIdentRef"**>**

**<ref** name="its-taIdentRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.taIdentRef.nons"**>**

**<attribute** name="taIdentRef"**>**

**<ref** name="its-taIdentRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.taSource"**>**

**<attribute** name="its:taSource"**>**

**<ref** name="its-taSource.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.taSource.nons"**>**

**<attribute** name="taSource"**>**

**<ref** name="its-taSource.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.localeFilterList"**>**

**<attribute** name="its:localeFilterList"**>**

**<ref** name="its-localeFilterList.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.localeFilterList.nons"**>**

**<attribute** name="localeFilterList"**>**

**<ref** name="its-localeFilterList.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.localeFilterType"**>**

**<attribute** name="its:localeFilterType"**>**

**<ref** name="its-localeFilterType.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.localeFilterType.nons"**>**

**<attribute** name="localeFilterType"**>**

**<ref** name="its-localeFilterType.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.person"**>**

**<attribute** name="its:person"**>**

**<ref** name="its-person.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.person.nons"**>**

**<attribute** name="person"**>**

**<ref** name="its-person.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.personRef"**>**

**<attribute** name="its:personRef"**>**

**<ref** name="its-personRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.personRef.nons"**>**

**<attribute** name="personRef"**>**

**<ref** name="its-personRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.org"**>**

**<attribute** name="its:org"**>**

**<ref** name="its-org.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.org.nons"**>**

**<attribute** name="org"**>**

**<ref** name="its-org.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.orgRef"**>**

**<attribute** name="its:orgRef"**>**

**<ref** name="its-orgRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.orgRef.nons"**>**

**<attribute** name="orgRef"**>**

**<ref** name="its-orgRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.tool"**>**

**<attribute** name="its:tool"**>**

**<ref** name="its-tool.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.tool.nons"**>**

**<attribute** name="tool"**>**

**<ref** name="its-tool.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.toolRef"**>**

**<attribute** name="its:toolRef"**>**

**<ref** name="its-toolRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.toolRef.nons"**>**

**<attribute** name="toolRef"**>**

**<ref** name="its-toolRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.revPerson"**>**

**<attribute** name="its:revPerson"**>**

**<ref** name="its-revPerson.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.revPerson.nons"**>**

**<attribute** name="revPerson"**>**

**<ref** name="its-revPerson.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.revPersonRef"**>**

**<attribute** name="its:revPersonRef"**>**

**<ref** name="its-revPersonRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.revPersonRef.nons"**>**

**<attribute** name="revPersonRef"**>**

**<ref** name="its-revPersonRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.revOrg"**>**

**<attribute** name="its:revOrg"**>**

**<ref** name="its-revOrg.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.revOrg.nons"**>**

**<attribute** name="revOrg"**>**

**<ref** name="its-revOrg.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.revOrgRef"**>**

**<attribute** name="its:revOrgRef"**>**

**<ref** name="its-revOrgRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.revOrgRef.nons"**>**

**<attribute** name="revOrgRef"**>**

**<ref** name="its-revOrgRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.revTool"**>**

**<attribute** name="its:revTool"**>**

**<ref** name="its-revTool.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.revTool.nons"**>**

**<attribute** name="revTool"**>**

**<ref** name="its-revTool.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.revToolRef"**>**

**<attribute** name="its:revToolRef"**>**

**<ref** name="its-revToolRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.revToolRef.nons"**>**

**<attribute** name="revToolRef"**>**

**<ref** name="its-revToolRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.provRef"**>**

**<attribute** name="its:provRef"**>**

**<ref** name="its-provRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.provRef.nons"**>**

**<attribute** name="provRef"**>**

**<ref** name="its-provRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.provenanceRecordsRef"**>**

**<attribute** name="its:provenanceRecordsRef"**>**

**<ref** name="its-provenanceRecordsRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.provenanceRecordsRef.nons"**>**

**<attribute** name="provenanceRecordsRef"**>**

**<ref** name="its-provenanceRecordsRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locQualityIssuesRef"**>**

**<attribute** name="its:locQualityIssuesRef"**>**

**<ref** name="its-locQualityIssuesRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locQualityIssuesRef.nons"**>**

**<attribute** name="locQualityIssuesRef"**>**

**<ref** name="its-locQualityIssuesRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locQualityIssueType"**>**

**<attribute** name="its:locQualityIssueType"**>**

**<ref** name="its-locQualityIssueType.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locQualityIssueType.nons"**>**

**<attribute** name="locQualityIssueType"**>**

**<ref** name="its-locQualityIssueType.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locQualityIssueComment"**>**

**<attribute** name="its:locQualityIssueComment"**>**

**<ref** name="its-locQualityIssueComment.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locQualityIssueComment.nons"**>**

**<attribute** name="locQualityIssueComment"**>**

**<ref** name="its-locQualityIssueComment.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locQualityIssueSeverity"**>**

**<attribute** name="its:locQualityIssueSeverity"**>**

**<ref** name="its-locQualityIssueSeverity.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locQualityIssueSeverity.nons"**>**

**<attribute** name="locQualityIssueSeverity"**>**

**<ref** name="its-locQualityIssueSeverity.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locQualityIssueProfileRef"**>**

**<attribute** name="its:locQualityIssueProfileRef"**>**

**<ref** name="its-locQualityIssueProfileRef.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locQualityIssueProfileRef.nons"**>**

**<attribute** name="locQualityIssueProfileRef"**>**

**<ref** name="its-locQualityIssueProfileRef.type"**/>**

**</attribute>**

**</define>**

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**<a:documentation>**Container for global rules**</a:documentation>**

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**<ref** name="its-langRule"**/>**

**<ref** name="its-withinTextRule"**/>**

**<ref** name="its-domainRule"**/>**

**<ref** name="its-textAnalysisRule"**/>**

**<ref** name="its-localeFilterRule"**/>**

**<ref** name="its-provRule"**/>**

**<ref** name="its-locQualityIssueRule"**/>**

**<ref** name="its-mtConfidenceRule"**/>**

**<ref** name="its-externalResourceRefRule"**/>**

**<ref** name="its-targetPointerRule"**/>**

**<ref** name="its-idValueRule"**/>**

**<ref** name="its-preserveSpaceRule"**/>**

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**<a:documentation>**Declaration of variable used in selectors**</a:documentation>**

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**<a:documentation>**Inline element to contain ITS information**</a:documentation>**

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**<ref** name="its-span.attributes"**/>**

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**<define** name="its-span.content"**>**

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**<define** name="its-translateRule"**>**

**<element** name="translateRule"**>**

**<a:documentation>**Rule about the Translate data category**</a:documentation>**

**<ref** name="its-translateRule.content"**/>**

**<ref** name="its-translateRule.attributes"**/>**

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**<define** name="its-locNoteRule"**>**

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**<a:documentation>**Rule about the Localization Note data category**</a:documentation>**

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**<define** name="its-attribute.locNotePointer.nons"**>**

**<attribute** name="locNotePointer"**>**

**<ref** name="its-relative-selector.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.locNoteRefPointer.nons"**>**

**<attribute** name="locNoteRefPointer"**>**

**<ref** name="its-relative-selector.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-locNote"**>**

**<element** name="locNote"**>**

**<a:documentation>**Localization note**</a:documentation>**

**<ref** name="its-locNote.content"**/>**

**<ref** name="its-locNote.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-locNote.content"**>**

**<zeroOrMore>**

**<choice>**

**<text/>**

**<ref** name="its-span"**/>**

**</choice>**

**</zeroOrMore>**

**</define>**

**<define** name="its-locNote.attributes"**>**

**<ref** name="its-local.nons.attributes"**/>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-termRule"**>**

**<element** name="termRule"**>**

**<a:documentation>**Rule about the Terminology data category**</a:documentation>**

**<ref** name="its-termRule.content"**/>**

**<ref** name="its-termRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-termRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-termRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<ref** name="its-attribute.term.nons"**/>**

**<optional>**

**<choice>**

**<ref** name="its-attribute.termInfoPointer.nons"**/>**

**<ref** name="its-attribute.termInfoRef.nons"**/>**

**<ref** name="its-attribute.termInfoRefPointer.nons"**/>**

**</choice>**

**</optional>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-attribute.termInfoPointer.nons"**>**

**<attribute** name="termInfoPointer"**>**

**<ref** name="its-relative-selector.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.termInfoRefPointer.nons"**>**

**<attribute** name="termInfoRefPointer"**>**

**<ref** name="its-relative-selector.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-dirRule"**>**

**<element** name="dirRule"**>**

**<a:documentation>**Rule about the Directionality data category**</a:documentation>**

**<ref** name="its-dirRule.content"**/>**

**<ref** name="its-dirRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-dirRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-dirRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<ref** name="its-attribute.dir.nons"**/>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-langRule"**>**

**<element** name="langRule"**>**

**<a:documentation>**Rule about the Language Information data category**</a:documentation>**

**<ref** name="its-langRule.content"**/>**

**<ref** name="its-langRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-langRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-langRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<ref** name="its-attribute.langPointer.nons"**/>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-attribute.langPointer.nons"**>**

**<attribute** name="langPointer"**>**

**<ref** name="its-relative-selector.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-withinTextRule"**>**

**<element** name="withinTextRule"**>**

**<a:documentation>**Rule about the Elements Within Text data category**</a:documentation>**

**<ref** name="its-withinTextRule.content"**/>**

**<ref** name="its-withinTextRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-withinTextRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-withinTextRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<ref** name="its-attribute.withinText.nons"**/>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-domainRule"**>**

**<element** name="domainRule"**>**

**<a:documentation>**Rule about the Domain data category**</a:documentation>**

**<ref** name="its-domainRule.content"**/>**

**<ref** name="its-domainRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-domainRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-domainRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<ref** name="its-attribute.domainPointer.nons"**/>**

**<optional>**

**<ref** name="its-attribute.domainMapping.nons"**/>**

**</optional>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-attribute.domainPointer.nons"**>**

**<attribute** name="domainPointer"**>**

**<ref** name="its-relative-selector.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-textAnalysisRule"**>**

**<element** name="textAnalysisRule"**>**

**<a:documentation>**Rule about the Disambiguation data category**</a:documentation>**

**<ref** name="its-textAnalysisRule.content"**/>**

**<ref** name="its-textAnalysisRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-textAnalysisRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-textAnalysisRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<optional>**

**<ref** name="its-attribute.taClassRefPointer.nons"**/>**

**</optional>**

**<optional>**

**<choice>**

**<group>**

**<ref** name="its-attribute.taSourcePointer.nons"**/>**

**<ref** name="its-attribute.taIdentPointer.nons"**/>**

**</group>**

**<ref** name="its-attribute.taIdentRefPointer.nons"**/>**

**</choice>**

**</optional>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-attribute.taClassRefPointer.nons"**>**

**<attribute** name="taClassRefPointer"**>**

**<ref** name="its-taClassRefPointer.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.taIdentPointer.nons"**>**

**<attribute** name="taIdentPointer"**>**

**<ref** name="its-taIdentPointer.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.taSourcePointer.nons"**>**

**<attribute** name="taSourcePointer"**>**

**<ref** name="its-taSourcePointer.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.taIdentRefPointer.nons"**>**

**<attribute** name="taIdentRefPointer"**>**

**<ref** name="its-taIdentRefPointer.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-localeFilterRule"**>**

**<element** name="localeFilterRule"**>**

**<a:documentation>**Rule about the LocaleFilter data category**</a:documentation>**

**<ref** name="its-localeFilterRule.content"**/>**

**<ref** name="its-localeFilterRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-localeFilterRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-localeFilterRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<ref** name="its-attribute.localeFilterList.nons"**/>**

**<optional>**

**<ref** name="its-attribute.localeFilterType.nons"**/>**

**</optional>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-provRule"**>**

**<element** name="provRule"**>**

**<a:documentation>**Rule about the Provenance data category**</a:documentation>**

**<ref** name="its-provRule.content"**/>**

**<ref** name="its-provRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-provRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-provRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<ref** name="its-attribute.provenanceRecordsRefPointer.nons"**/>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-attribute.provenanceRecordsRefPointer.nons"**>**

**<attribute** name="provenanceRecordsRefPointer"**>**

**<ref** name="its-relative-selector.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-externalResourceRefRule"**>**

**<element** name="externalResourceRefRule"**>**

**<a:documentation>**Rule about the External Resource data category**</a:documentation>**

**<ref** name="its-externalResourceRefRule.content"**/>**

**<ref** name="its-externalResourceRefRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-externalResourceRefRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-externalResourceRefRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<ref** name="its-attribute.externalResourceRefPointer.nons"**/>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-attribute.externalResourceRefPointer.nons"**>**

**<attribute** name="externalResourceRefPointer"**>**

**<ref** name="its-relative-selector.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-targetPointerRule"**>**

**<element** name="targetPointerRule"**>**

**<a:documentation>**Rule about the Target Pointer data category**</a:documentation>**

**<ref** name="its-targetPointerRule.content"**/>**

**<ref** name="its-targetPointerRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-targetPointerRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-targetPointerRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<ref** name="its-attribute.targetPointer.nons"**/>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-attribute.targetPointer.nons"**>**

**<attribute** name="targetPointer"**>**

**<ref** name="its-relative-selector.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-idValueRule"**>**

**<element** name="idValueRule"**>**

**<a:documentation>**Rule about the Id Value data category**</a:documentation>**

**<ref** name="its-idValueRule.content"**/>**

**<ref** name="its-idValueRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-idValueRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-idValueRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<ref** name="its-attribute.idValue.nons"**/>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-attribute.idValue.nons"**>**

**<attribute** name="idValue"**>**

**<ref** name="its-xpath-expression.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-preserveSpaceRule"**>**

**<element** name="preserveSpaceRule"**>**

**<a:documentation>**Rule about the Preserve Space data category**</a:documentation>**

**<ref** name="its-preserveSpaceRule.content"**/>**

**<ref** name="its-preserveSpaceRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-preserveSpaceRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-preserveSpaceRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<ref** name="its-attribute.space.nons"**/>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-attribute.space.nons"**>**

**<attribute** name="space"**>**

**<choice>**

**<value>**default**</value>**

**<value>**preserve**</value>**

**</choice>**

**</attribute>**

**</define>**

**<define** name="its-locQualityIssueRule"**>**

**<element** name="locQualityIssueRule"**>**

**<a:documentation>**Rule about the Localization Quality Issue data category**</a:documentation>**

**<ref** name="its-locQualityIssueRule.content"**/>**

**<ref** name="its-locQualityIssueRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-locQualityIssueRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-locQualityIssueRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<choice>**

**<choice>**

**<ref** name="its-attribute.locQualityIssuesRef.nons"**/>**

**<ref** name="its-attribute.locQualityIssuesRefPointer.nons"**/>**

**</choice>**

**<group>**

**<oneOrMore>**

**<choice>**

**<ref** name="its-attribute.locQualityIssueType.nons"**/>**

**<ref** name="its-attribute.locQualityIssueComment.nons"**/>**

**</choice>**

**</oneOrMore>**

**<optional>**

**<ref** name="its-attribute.locQualityIssueSeverity.nons"**/>**

**</optional>**

**<optional>**

**<ref** name="its-attribute.locQualityIssueProfileRef.nons"**/>**

**</optional>**

**<optional>**

**<ref** name="its-attribute.locQualityIssueEnabled.nons"**/>**

**</optional>**

**</group>**

**</choice>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-attribute.locQualityIssuesRefPointer.nons"**>**

**<attribute** name="locQualityIssuesRefPointer"**>**

**<ref** name="its-relative-selector.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-mtConfidenceRule"**>**

**<element** name="mtConfidenceRule"**>**

**<a:documentation>**Rule about the MT Confidence data category**</a:documentation>**

**<ref** name="its-mtConfidenceRule.content"**/>**

**<ref** name="its-mtConfidenceRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-mtConfidenceRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-mtConfidenceRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<ref** name="its-attribute.mtConfidence.nons"**/>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-allowedCharactersRule"**>**

**<element** name="allowedCharactersRule"**>**

**<a:documentation>**Rule about the Allowed Characters data category**</a:documentation>**

**<ref** name="its-allowedCharactersRule.content"**/>**

**<ref** name="its-allowedCharactersRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-allowedCharactersRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-allowedCharactersRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<choice>**

**<ref** name="its-attribute.allowedCharacters.nons"**/>**

**<ref** name="its-attribute.allowedCharactersPointer.nons"**/>**

**</choice>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-attribute.allowedCharactersPointer.nons"**>**

**<attribute** name="allowedCharactersPointer"**>**

**<ref** name="its-relative-selector.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-storageSizeRule"**>**

**<element** name="storageSizeRule"**>**

**<a:documentation>**Rule about the Allowed Characters data category**</a:documentation>**

**<ref** name="its-storageSizeRule.content"**/>**

**<ref** name="its-storageSizeRule.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-storageSizeRule.content"**>**

**<empty/>**

**</define>**

**<define** name="its-storageSizeRule.attributes"**>**

**<ref** name="its-attribute.selector"**/>**

**<choice>**

**<ref** name="its-attribute.storageSize.nons"**/>**

**<ref** name="its-attribute.storageSizePointer.nons"**/>**

**</choice>**

**<optional>**

**<choice>**

**<ref** name="its-attribute.storageEncoding.nons"**/>**

**<ref** name="its-attribute.storageEncodingPointer.nons"**/>**

**</choice>**

**</optional>**

**<optional>**

**<ref** name="its-attribute.lineBreakType.nons"**/>**

**</optional>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</define>**

**<define** name="its-attribute.storageSizePointer.nons"**>**

**<attribute** name="storageSizePointer"**>**

**<ref** name="its-relative-selector.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-attribute.storageEncodingPointer.nons"**>**

**<attribute** name="storageEncodingPointer"**>**

**<ref** name="its-relative-selector.type"**/>**

**</attribute>**

**</define>**

**<define** name="its-standoff"**>**

**<choice>**

**<ref** name="its-provenanceRecords"**/>**

**<ref** name="its-locQualityIssues"**/>**

**</choice>**

**</define>**

**<define** name="its-provenanceRecords"**>**

**<element** name="its:provenanceRecords"**>**

**<a:documentation>**Standoff markup for Provenance data category**</a:documentation>**

**<oneOrMore>**

**<ref** name="its-provenanceRecord"**/>**

**</oneOrMore>**

**<attribute** name="xml:id"**>**

**<data** type="ID"**/>**

**</attribute>**

**<optional>**

**<ref** name="its-attribute.version.nons"**/>**

**</optional>**

**<zeroOrMore>**

**<ref** name="its-foreign-no-xml-id-attribute"**/>**

**</zeroOrMore>**

**</element>**

**</define>**

**<define** name="its-provenanceRecord"**>**

**<element** name="its:provenanceRecord"**>**

**<a:documentation>**Provenance record used in Provenance standoff markup**</a:documentation>**

**<ref** name="its-provenanceRecord.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-provenanceRecord.attributes"**>**

**<interleave>**

**<optional>**

**<choice>**

**<ref** name="its-attribute.person.nons"**/>**

**<ref** name="its-attribute.personRef.nons"**/>**

**</choice>**

**</optional>**

**<optional>**

**<choice>**

**<ref** name="its-attribute.org.nons"**/>**

**<ref** name="its-attribute.orgRef.nons"**/>**

**</choice>**

**</optional>**

**<optional>**

**<choice>**

**<ref** name="its-attribute.tool.nons"**/>**

**<ref** name="its-attribute.toolRef.nons"**/>**

**</choice>**

**</optional>**

**<optional>**

**<choice>**

**<ref** name="its-attribute.revPerson.nons"**/>**

**<ref** name="its-attribute.revPersonRef.nons"**/>**

**</choice>**

**</optional>**

**<optional>**

**<choice>**

**<ref** name="its-attribute.revOrg.nons"**/>**

**<ref** name="its-attribute.revOrgRef.nons"**/>**

**</choice>**

**</optional>**

**<optional>**

**<choice>**

**<ref** name="its-attribute.revTool.nons"**/>**

**<ref** name="its-attribute.revToolRef.nons"**/>**

**</choice>**

**</optional>**

**<optional>**

**<ref** name="its-attribute.provRef.nons"**/>**

**</optional>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</interleave>**

**</define>**

**<define** name="its-locQualityIssues"**>**

**<element** name="its:locQualityIssues"**>**

**<a:documentation>**Standoff markup for Localization Quality Issue data category**</a:documentation>**

**<oneOrMore>**

**<ref** name="its-locQualityIssue"**/>**

**</oneOrMore>**

**<attribute** name="xml:id"**>**

**<data** type="ID"**/>**

**</attribute>**

**<optional>**

**<ref** name="its-attribute.version.nons"**/>**

**</optional>**

**<zeroOrMore>**

**<ref** name="its-foreign-no-xml-id-attribute"**/>**

**</zeroOrMore>**

**</element>**

**</define>**

**<define** name="its-locQualityIssue"**>**

**<element** name="its:locQualityIssue"**>**

**<a:documentation>**Issue recorded in Localization Quality standoff markup**</a:documentation>**

**<ref** name="its-locQualityIssue.attributes"**/>**

**</element>**

**</define>**

**<define** name="its-locQualityIssue.attributes"**>**

**<interleave>**

**<optional>**

**<ref** name="its-attribute.locQualityIssueType.nons"**/>**

**</optional>**

**<optional>**

**<ref** name="its-attribute.locQualityIssueComment.nons"**/>**

**</optional>**

**<optional>**

**<ref** name="its-attribute.locQualityIssueSeverity.nons"**/>**

**</optional>**

**<optional>**

**<ref** name="its-attribute.locQualityIssueProfileRef.nons"**/>**

**</optional>**

**<optional>**

**<ref** name="its-attribute.locQualityIssueEnabled.nons"**/>**

**</optional>**

**<zeroOrMore>**

**<ref** name="its-foreign-attribute"**/>**

**</zeroOrMore>**

**</interleave>**

**</define>**

**</grammar>**

[Source file: [schemas/its20.rng](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/schemas/its20.rng)]

([RELAX NG compact syntax version of schema](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/schemas/its20.rnc))

*4. Data type definitions*: All datatypes used in the base RELAX NG schema are defined the following schema.

Example 100: RELAX NG schema with datatypes for ITS

<?xml version="1.0" encoding="UTF-8"?>

**<grammar**

xmlns:a="http://relaxng.org/ns/compatibility/annotations/1.0"

xmlns="http://relaxng.org/ns/structure/1.0"

datatypeLibrary="http://www.w3.org/2001/XMLSchema-datatypes"**>**

**<define** name="its-version.type"**>**

**<a:documentation>**Version of ITS**</a:documentation>**

**<data** type="string"**>**

**<param** name="pattern"**>**[0-9]+\.[0-9]+**</param>**

**</data>**

**</define>**

**<define** name="its-queryLanguage.type"**>**

**<a:documentation>**The query language to be used for processing the rules**</a:documentation>**

**<choice>**

**<value>**xpath**</value>**

**<value>**css**</value>**

**<text/>**

**</choice>**

**</define>**

**<define** name="its-absolute-selector.type"**>**

**<data** type="string" datatypeLibrary=""**>**

**<a:documentation>**Absolute selector**</a:documentation>**

**</data>**

**</define>**

**<define** name="its-relative-selector.type"**>**

**<data** type="string" datatypeLibrary=""**>**

**<a:documentation>**Relative selector**</a:documentation>**

**</data>**

**</define>**

**<define** name="its-xpath-expression.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-confidence.type"**>**

**<data** type="double"**>**

**<param** name="minInclusive"**>**0**</param>**

**<param** name="maxInclusive"**>**1**</param>**

**</data>**

**</define>**

**<define** name="its-translate.type"**>**

**<a:documentation>**The Translate data category information to be attached to the current node**</a:documentation>**

**<choice>**

**<value>**yes**</value>**

**<a:documentation>**The nodes need to be translated**</a:documentation>**

**<value>**no**</value>**

**<a:documentation>**The nodes must not be translated**</a:documentation>**

**</choice>**

**</define>**

**<define** name="its-locNote.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-locNoteType.type"**>**

**<a:documentation>**The type of localization note**</a:documentation>**

**<choice>**

**<value>**alert**</value>**

**<a:documentation>**Localization note is an alert**</a:documentation>**

**<value>**description**</value>**

**<a:documentation>**Localization note is a description**</a:documentation>**

**</choice>**

**</define>**

**<define** name="its-locNoteRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-termInfoRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-term.type"**>**

**<a:documentation>**Indicates a term locally**</a:documentation>**

**<choice>**

**<value>**yes**</value>**

**<a:documentation>**The value 'yes' means that this is a term**</a:documentation>**

**<value>**no**</value>**

**<a:documentation>**The value 'no' means that this is not a term**</a:documentation>**

**</choice>**

**</define>**

**<define** name="its-termConfidence.type"**>**

**<ref** name="its-confidence.type"**/>**

**</define>**

**<define** name="its-dir.type"**>**

**<a:documentation>**The text direction for the context**</a:documentation>**

**<choice>**

**<value>**ltr**</value>**

**<a:documentation>**Left-to-right text**</a:documentation>**

**<value>**rtl**</value>**

**<a:documentation>**Right-to-left text**</a:documentation>**

**<value>**lro**</value>**

**<a:documentation>**Left-to-right override**</a:documentation>**

**<value>**rlo**</value>**

**<a:documentation>**Right-to-left override**</a:documentation>**

**</choice>**

**</define>**

**<define** name="its-withinText.type"**>**

**<a:documentation>**States whether current context is regarded as "within text"**</a:documentation>**

**<choice>**

**<value>**yes**</value>**

**<a:documentation>**The element and its content are part of the flow of its parent element**</a:documentation>**

**<value>**no**</value>**

**<a:documentation>**The element splits the text flow of its parent element and its content

is an independent text flow**</a:documentation>**

**<value>**nested**</value>**

**<a:documentation>**The element is part of the flow of its parent element,

its content is an independent flow**</a:documentation>**

**</choice>**

**</define>**

**<define** name="its-domainMapping.type"**>**

**<a:documentation>**A comma separated list of mappings between values in the content

and workflow specific values. The values may contain spaces; in

that case they MUST be delimited by quotation marks.**</a:documentation>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-taConfidence.type"**>**

**<ref** name="its-confidence.type"**/>**

**</define>**

**<define** name="its-taClassPointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-taClassRefPointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-taClassRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-taIdentRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-taIdent.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-taSource.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-taIdentPointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-taIdentRefPointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-taSourcePointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-localeFilterList.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-localeFilterType.type"**>**

**<choice>**

**<value>**include**</value>**

**<value>**exclude**</value>**

**</choice>**

**</define>**

**<define** name="its-provenanceRecordsRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-person.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-personRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-org.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-orgRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-tool.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-toolRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-revPerson.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-revPersonRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-revOrg.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-revOrgRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-revTool.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-revToolRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-provRef.type"**>**

**<list>**

**<oneOrMore>**

**<data** type="anyURI"**/>**

**</oneOrMore>**

**</list>**

**</define>**

**<define** name="its-externalResourceRefPointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-targetPointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-idValue.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-space.type"**>**

**<choice>**

**<value>**default**</value>**

**<value>**preserve**</value>**

**</choice>**

**</define>**

**<define** name="its-locQualityIssuesRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-locQualityIssuesRefPointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-locQualityIssueType.type"**>**

**<choice>**

**<value>**terminology**</value>**

**<value>**mistranslation**</value>**

**<value>**omission**</value>**

**<value>**untranslated**</value>**

**<value>**addition**</value>**

**<value>**duplication**</value>**

**<value>**inconsistency**</value>**

**<value>**grammar**</value>**

**<value>**legal**</value>**

**<value>**register**</value>**

**<value>**locale-specific-content**</value>**

**<value>**locale-violation**</value>**

**<value>**style**</value>**

**<value>**characters**</value>**

**<value>**misspelling**</value>**

**<value>**typographical**</value>**

**<value>**formatting**</value>**

**<value>**inconsistent-entities**</value>**

**<value>**numbers**</value>**

**<value>**markup**</value>**

**<value>**pattern-problem**</value>**

**<value>**whitespace**</value>**

**<value>**internationalization**</value>**

**<value>**length**</value>**

**<value>**non-conformance**</value>**

**<value>**uncategorized**</value>**

**<value>**other**</value>**

**</choice>**

**</define>**

**<define** name="its-locQualityIssueTypePointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-locQualityIssueComment.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-locQualityIssueCommentPointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-locQualityIssueSeverity.type"**>**

**<data** type="double"**>**

**<param** name="minInclusive"**>**0**</param>**

**<param** name="maxInclusive"**>**100**</param>**

**</data>**

**</define>**

**<define** name="its-locQualityIssueSeverityPointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-locQualityIssueProfileRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-locQualityIssueProfileRefPointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-locQualityIssueEnabled.type"**>**

**<choice>**

**<value>**yes**</value>**

**<value>**no**</value>**

**</choice>**

**</define>**

**<define** name="its-locQualityRatingScore.type"**>**

**<data** type="double"**>**

**<param** name="minInclusive"**>**0**</param>**

**<param** name="maxInclusive"**>**100**</param>**

**</data>**

**</define>**

**<define** name="its-locQualityRatingVote.type"**>**

**<data** type="integer"**/>**

**</define>**

**<define** name="its-locQualityRatingScoreThreshold.type"**>**

**<data** type="double"**>**

**<param** name="minInclusive"**>**0**</param>**

**<param** name="maxInclusive"**>**100**</param>**

**</data>**

**</define>**

**<define** name="its-locQualityRatingVoteThreshold.type"**>**

**<data** type="integer"**/>**

**</define>**

**<define** name="its-locQualityRatingProfileRef.type"**>**

**<data** type="anyURI"**/>**

**</define>**

**<define** name="its-mtConfidence.type"**>**

**<ref** name="its-confidence.type"**/>**

**</define>**

**<define** name="its-allowedCharacters.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-allowedCharactersPointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-storageSize.type"**>**

**<data** type="nonNegativeInteger"**/>**

**</define>**

**<define** name="its-storageSizePointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-storageEncoding.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**<define** name="its-storageEncodingPointer.type"**>**

**<ref** name="its-relative-selector.type"**/>**

**</define>**

**<define** name="its-lineBreakType.type"**>**

**<choice>**

**<value>**cr**</value>**

**<value>**lr**</value>**

**<value>**crlf**</value>**

**<value>**nel**</value>**

**</choice>**

**</define>**

**<define** name="its-annotatorsRef.type"**>**

**<data** type="string" datatypeLibrary=""**/>**

**</define>**

**</grammar>**

[Source file: [schemas/its20-types.rng](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/schemas/its20-types.rng)]

([RELAX NG compact syntax version of schema](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/schemas/its20-types.rnc))

*5. Schematron schema*: Several constraints of ITS markup cannot be validated with above ITS schemas. The following [Schematron] document allows for validating some of these constraints.

Example 101: Schematron schema for ITS

<?xml version="1.0" encoding="UTF-8"?>

**<schema** xmlns="http://purl.oclc.org/dsdl/schematron" queryBinding="xslt2"**>**

**<ns** uri="http://www.w3.org/2005/11/its" prefix="its"**/>**

**<ns** uri="http://www.w3.org/1999/xlink" prefix="xlink"**/>**

**<pattern>**

**<title>**Indicating the Version of ITS**</title>**

**<rule** context="\*[@its:\*]"**>**

**<assert** test="ancestor-or-self::\*/@its:version | //its:rules/@version"**>**The version is indicated by the

ITS version attribute.

This attribute is mandatory for the rules element, where it MUST be in no namespace.

If there is no rules element in an XML document, a prefixed ITS version attribute (e.g. its:version) MUST

be on the element where the ITS markup is used, or on one of its ancestors.**</assert>**

**</rule>**

**<rule** context="its:provenanceRecords | its:locQualityIssues"**>**

**<assert** test="self::\*/@version | ancestor::\*/@its:version | //its:rules/@version"**>**The version is indicated by the

ITS version attribute. This attribute is mandatory for the rules element, where it MUST be in no namespace.

If there is no rules element in an XML document, a prefixed ITS version attribute (e.g. its:version) MUST be

on the element where the ITS markup is used, or on one of its ancestors.

For standoff markup unprefixed version attribute is used.**</assert>**

**</rule>**

**<rule** context="\*[@its:version]"**>**

**<assert** test="if (@its:version and //its:rules/@version) then //its:rules/@version = @its:version else true()"**>**

There MUST NOT be two different versions of ITS in the same document.**</assert>**

**<assert** test="every $v in //\*/@its:version satisfies $v = @its:version"**>**

There MUST NOT be two different versions of ITS in the same document.**</assert>**

**</rule>**

**<rule** context="its:provenanceRecords | its:locQualityIssues"**>**

**<assert** test="if (@version and //its:rules/@version) then //its:rules/@version = @version else true()"**>**

There MUST NOT be two different versions of ITS in the same document.**</assert>**

**<assert** test="every $v in //\*/@its:version satisfies $v = @version"**>**

There MUST NOT be two different versions of ITS in the same document.**</assert>**

**</rule>**

**</pattern>**

**<pattern>**

**<title>**Global, Rule-based Selection**</title>**

**<rule** context="its:rules"**>**

**<assert** test="every $rules in //its:rules satisfies $rules/@version = current()/@version"**>**

If there is more than one rules element in an XML document, the rules from each section are

to be processed at the same precedence level. The rules sections are to be read in document order,

and the ITS rules with them processed sequentially.

The versions of these rules elements MUST NOT be different.**</assert>**

**</rule>**

**</pattern>**

**<pattern>**

**<title>**Link to External Rules**</title>**

**<rule** context="its:rules[@xlink:href]"**>**

**<assert** test="count(doc(resolve-uri(@xlink:href, base-uri()))//its:rules) le 1"**>**

The referenced document must be a valid XML document containing at most one rules element.**</assert>**

**</rule>**

**</pattern>**

**<pattern>**

**<title>**ITS Tools Annotation**</title>**

**<rule** context="\*[@its:annotatorsRef]"**>**

**<assert** test="every $ref in tokenize(@its:annotatorsRef, '\s+') satisfies

matches($ref, '(translate|localization-note|terminology|directionality|language-information|

elements-within-text|domain|text-analysis|locale-filter|provenance|external-resource|

target-pointer|id-value|preserve-space|localization-quality-issue|localization-quality-rating|

mt-confidence|allowed-characters|storage-size)\|.+')"**>**

The value of annotatorsRef is a space-separated list of references where each reference is

composed of two parts: a data category identifier and an IRI.

These two parts are separated by a character | VERTICAL LINE (U+007C).**</assert>**

**</rule>**

**</pattern>**

**<pattern>**

**<title>**Source of confidence**</title>**

**<rule** context="\*[@its:termConfidence]"**>**

**<assert** test="ancestor-or-self::\*[@its:annotatorsRef][matches(@its:annotatorsRef, '.\*\s\*terminology\|.+')]"**>**

Any node selected by the terminology data category with the termConfidence attribute specified MUST be

contained in an element with the annotatorsRef attribute specified for the Terminology data category.**</assert>**

**</rule>**

**<rule** context="\*[@its:taConfidence]"**>**

**<assert** test="ancestor-or-self::\*[@its:annotatorsRef][matches(@its:annotatorsRef, '.\*\s\*text-analysis\|.+')]"**>**

Any node selected by the Text Analysis data category with the taConfidence attribute specified MUST be

contained in an element with the annotatorsRef attribute specified for the Text Analysis data category.**</assert>**

**</rule>**

**<rule** context="\*[@its:mtConfidence]"**>**

**<assert** test="ancestor-or-self::\*[@its:annotatorsRef][matches(@its:annotatorsRef, '.\*\s\*mt-confidence\|.+')]"**>**

Any node selected by the MT Confidence data category MUST be

contained in an element with the annotatorsRef attribute specified for the MT Confidence data category.**</assert>**

**</rule>**

**</pattern>**

**<pattern>**

**<title>**Text analysis**</title>**

**<rule** context="its:textAnalysisRule"**>**

**<assert** test="@taClassRefPointer | @taSourcePointer | @taIdentPointer | @taIdentRefPointer"**>**

Text analysis rule must specify at least target type class or target identity.**</assert>**

**</rule>**

**</pattern>**

**<pattern>**

**<title>**Provenance standoff markup**</title>**

**<rule** context="its:provenanceRecord"**>**

**<assert** test="@person | @personRef | @org | @orgRef | @tool | @toolRef | @revPerson | @revPersonRef |

@revOrg | @revOrgRef | @revTool | @revToolRef | @provRef"**>**

At least one attribute must be specified on the provenanceRecord element.**</assert>**

**</rule>**

**</pattern>**

**</schema>**

[Source file: [schemas/its20.sch](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/schemas/its20.sch)]

[Ed. note: W3C XML Schema will be provided later.]

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PROV-DM

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James Clark. [*XSL Transformations (XSLT) Version 1.0*](http://www.w3.org/TR/1999/REC-xslt-19991116). W3C Recommendation 16 November 1999. Available at <http://www.w3.org/TR/1999/REC-xslt-19991116>. The latest version of [XSLT 1.0](http://www.w3.org/TR/xslt) is available at http://www.w3.org/TR/xslt.

XUL

[*exTensible User Interface Language*](http://www.xulplanet.com/). Available at <http://www.xulplanet.com/>.

**F Conversion NIF2ITS (Non-Normative)**

The following algorithm relies on Example 26. It is assumed that the example has been converted to NIF, leading to the [output](file:///Users/fenevad/Dropbox/dfki/mlw-lt/website/WWW/International/multilingualweb/lt/drafts/its20/examples/nif/EX-nif-conversion-output.xml) exemplified for the ITS2NIF conversion algorithm.

This example uses [DBpedia Spotlight](https://github.com/dbpedia-spotlight/dbpedia-spotlight#readme) as an example natural language processing (NLP) tool. In it, DBpedia Spotlight linked "Ireland" to DBpedia:

<http://example.com/exampledoc.html#char=21,28>

rdf:type nif:RFC5147String;

itsrdf:taIdentRef <http://dbpedia.org/resource/Ireland> .

<http://dbpedia.org/resource/Ireland>

rdf:type <http:/nerd.eurecom.fr/ontology#Country> .

The conversion algorithm to generate ITS out of NIF consists of two steps.

* STEP 1: Send the text to any NIF Web service, which creates the NLP annotation. The output of the Web service will be a NIF representation.
* STEP 2: Use the mapping from ITS2NIF (available after step 7 of the ITS2NIF algorithm) to reintegrate annotations in the original ITS annotated document.

For step 2, three cases can occur.

CASE 1: The NLP annotation created in NIF matches the text node. Solution: Attach the annotation to the parent element of the text node.

# Based on:

<http://example.com/exampledoc.html#xpath(/html/body[1]/h2[1]/b[1]/text()[1])>

itsrdf:nif <http://example.com/exampledoc.html#char=21,28> .

# and:

<http://example.com/exampledoc.html#char=21,28>

itsrdf:taIdentRef <http://dbpedia.org/resource/Ireland> .

# we can attach the metadata to the parent node:

<b its-ta-ident-ref="http://dbpedia.org/resource/Dublin”

translate="no">Ireland</b>

CASE 2: The NLP annotation created in NIF is a substring of the text node. Solution: Create a new element, e.g., for HTML "span". A different input example is given below as case 2 is not covered in the original example input.

# Input:

<html>

<body>

<h2>Welcome to Dublin in Ireland!</h2>

</body>

</html>

# ITS2NIF

<http://example.com/exampledoc.html#xpath(/html/body[1]/h2[1]/text()[1])>

itsrdf:nif <http://example.com/exampledoc.html#char=0,29>

# DBpedia Spotlight returns:

<http://example.com/exampledoc.html#char=21,28>

itsrdf:taIdentRef <http://dbpedia.org/resource/Ireland> .

# NIF2ITS

<html>

<body>

<h2 >Welcome to Dublin in <span

its-ta-ident-ref="http://dbpedia.org/resource/Ireland” >Ireland</span>!</h2>

</body>

</html>

Case 3: The NLP annotation created in NIF starts in one region and ends in another. Solution: No straight mapping is possible; a mapping can be created if both regions have the same parent.

**G List of ITS 2.0 Global Elements and Local Attributes (Non-Normative)**

The following table lists global ITS 2.0 elements inside rules element and local ITS 2.0 markup in XML and HTML. Note that for the local markup there are various constraints on what local attributes should be used together. Here these constraints are expressed via occurrence indicators: optional "?", alternatives "|", or groups "(...)". Please check the related sub sections in Section 8: Description of Data Categories defining local markup normatively.

In addition to below markup, ITS 2.0 provides a means to refer to the tools used to generate the markup: for XML the annotatorsRef attribute and for HTML the annotators-ref attribute. See Section 5.8: ITS Tools Annotation for details, especially the note on annotatorsRef usage scenarios.

|  |  |  |  |
| --- | --- | --- | --- |
| Data category | Global element inside rules element | Local XML attributes in ITS namespace | HTML attributes |
| Translate | translateRule | translate | translate |
| Localization Note | locNoteRule | (locNote | locNoteRef), locNoteType? | (its-loc-note | loc-note-ref), loc-note-type? |
| Terminology | termRule | term, termInfoRef?, termConfidence? | its-term, its-term-info-ref?, its-term-confidence? |
| Directionality | dirRule | dir | dir |
| Language Information | langRule | xml:lang | lang |
| Elements Within Text | withinTextRule | withinText | its-within-text |
| Domain | domainRule | - | - |
| Text Analysis | textAnalysisRule | taConfidence?, at least one of (taClassRef, ((taSource, taIdent) | taIdentRef)) | its-ta-confidence?, at least one of (its-ta-class-ref, ((its-ta-source, its-ta-ident) | its-ta-ident-ref)) |
| Locale Filter | localeFilterRule | localeFilterList | its-locale-filter-list |
| Provenance | provRule | (at least one of ((person | personRef), (org | orgRef), (tool | toolRef), (revPerson | revPersonRef), (revOrg | revOrgRef), (revTool | revToolRef), provRef)) | provenanceRecordsRef | (at least one of ((its-person | its-person-ref), (its-org | its-org-ref), (its-tool | its-tool-ref), (its-rev-person | its-rev-person-ref), (its-rev-org | its-rev-org-ref), (its-rev-tool | its-rev-tool-ref), its-prov-ref)) | its-provenance-records-ref |
| External Resource | externalResourceRefRule | - | - |
| Target Pointer | targetPointerRule | - | - |
| Id Value | idValueRule | xml:id | id |
| Preserve Space | preserveSpaceRule | xml:space | - |
| Localization Quality Issue | locQualityIssueRule | (at least one of (locQualityIssueType, locQualityIssueComment), locQualityIssueSeverity?, locQualityIssueProfileRef?, locQualityIssueEnabled?) | locQualityIssuesRef | (at least one of (its-loc-quality-issue-type, its-loc-quality-issue-comment), its-loc-quality-issue-severity?, its-loc-quality-issue-profile-ref?, its-loc-quality-issue-enabled?) | its-loc-quality-issues-ref |
| Localization Quality Rating | - | (locQualityRatingScore, locQualityRatingScoreThreshold?) | (locQualityRatingVote, locQualityRatingVoteThreshold?), locQualityRatingProfileRef? | (its-loc-quality-rating-score, its-loc-quality-rating-score-threshold?) | (its-loc-quality-rating-vote, its-loc-quality-rating-vote-threshold?), its-loc-quality-rating-profile-ref? |
| MT Confidence | mtConfidenceRule | mtConfidence | its-mt-confidence |
| Allowed Characters | allowedCharactersRule | allowedCharacters | its-allowed-characters |
| Storage Size | storageSizeRule | storageSize, storageEncoding?, lineBreakType? | its-storage-size, its-storage-encoding?, lits-line-break-type? |

**H Revision Log (Non-Normative)**

The following log records major changes that have been made to this document since the [ITS 2.0 Working Draft 21 May 2013](http://www.w3.org/TR/2013/WD-its20-20130521/).

1. Updated all text of the HTML5 defaults for Element Within Text and added example. See [issue-118](https://www.w3.org/International/multilingualweb/lt/track/issues/118) and [action-532](https://www.w3.org/International/multilingualweb/lt/track/actions/532).
2. Added a paragraph about mime type submission to Appendix B: Internationalization Tag Set (ITS) MIME Type, see step 3 (first bullet point) at [Register an Internet Media Type for a W3C Spec](http://www.w3.org/2002/06/registering-mediatype#Planned) and [action-251](https://www.w3.org/International/multilingualweb/lt/track/actions/251).
3. Removed company names from various examples, see [CVS commits](http://www.w3.org/Search/Mail/Public/search?type-index=public-multilingualweb-lt-commits&index-type=t&keywords=action-502&search=Search) and [action-502](https://www.w3.org/International/multilingualweb/lt/track/actions/502).
4. Reformatting of various examples, see [CVS commit mail](http://lists.w3.org/Archives/Public/public-multilingualweb-lt-commits/2013May/0066.html) and further CVS commit mails with the same send time.

The following log records major changes that have been made to this document since the [ITS 2.0 Working Draft 11 April 2013](http://www.w3.org/TR/2013/WD-its20-20130411/).

1. Added a reference to the [ITS RDF Ontology](http://www.w3.org/2005/11/its/rdf) and an explanatory note about its status to Section 5.7: Conversion to NIF, see [action-514](https://www.w3.org/International/multilingualweb/lt/track/actions/514).
2. Updated Section 5.7: Conversion to NIF to reflect [MLW-LT May 2013 f2f discussion](http://www.w3.org/2013/05/08-mlw-lt-minutes#item04): nif:occursIn has changed to nif:sourceUrl, and nif:convertedFrom replaces itsrdf:xpath2nif. See [action-517](https://www.w3.org/International/multilingualweb/lt/track/actions/517).
3. Added a note to Section 2.1.1: Local Approach expressing that local selection does not apply to attributes, see [issue-98](https://www.w3.org/International/multilingualweb/lt/track/issues/98).
4. Added a clarification about the role of mappings from tools to quality issue types, see [action-493](https://www.w3.org/International/multilingualweb/lt/track/actions/493).
5. Updated the definition of the regular expression to use in the Section 8.19: Allowed Characters data category, see [issue-67](https://www.w3.org/International/multilingualweb/lt/track/issues/67).
6. Updated Section 1.4: Usage in HTML to reflect discussion on HTML defaults, see [issue-89](https://www.w3.org/International/multilingualweb/lt/track/issues/89), [issue-97](https://www.w3.org/International/multilingualweb/lt/track/issues/97) and [issue-118](https://www.w3.org/International/multilingualweb/lt/track/issues/118).
7. Clarified provenance and localization quality issue standoff constraints for HTML5, see related [mail thread](http://lists.w3.org/Archives/Public/public-multilingualweb-lt/2013May/0032.html).
8. Edits related to HTML defaults for Elements Within Text and Language Information, see [mail thread](http://lists.w3.org/Archives/Public/public-multilingualweb-lt/2013May/0010.html) and [issue-118](https://www.w3.org/International/multilingualweb/lt/track/issues/118).
9. Added Section 1.5: ITS and XLIFF.
10. Added a note on serializations of the Text Analysis data category.
11. Added conformance clause 2-5 about non ITS elements and attributes and a related paragraph to Appendix D: Schemas for ITS, see [action-527](https://www.w3.org/International/multilingualweb/lt/track/actions/527).
12. Made annotatorsRef only needed for Terminology, Text Analysis and MT Confidence, see [issue-71](https://www.w3.org/International/multilingualweb/lt/track/issues/71).

The following log records major changes that have been made to this document since the [ITS 2.0 Working Draft 6 December 2012](http://www.w3.org/TR/2012/WD-its20-20121206/).

1. Changed usage of quote element in example Example 49, see [issue-88](https://www.w3.org/International/multilingualweb/lt/track/issues/88)
2. Added optional version attribute to standoff elements, see [issue-122](https://www.w3.org/International/multilingualweb/lt/track/issues/122).
3. Fixed Example 27, see [issue-58](https://www.w3.org/International/multilingualweb/lt/track/issues/58).
4. Clarified text in Section 2.3: Adding Information or Pointing to Existing Information and Section 5.2.1: Global, Rule-based Selection, see [issue-59](https://www.w3.org/International/multilingualweb/lt/track/issues/59).
5. Clarified the definition of uncategorized in Appendix C: Values for the Localization Quality Issue Type, and (see [related mail](http://lists.w3.org/Archives/Public/public-multilingualweb-lt-comments/2012Dec/0031.html)) used "value" consistently instead of "category" to refer to the value types. See [issue-60](https://www.w3.org/International/multilingualweb/lt/track/issues/60).
6. Clarified definition of Localization Quality Issue, see [issue-62](https://www.w3.org/International/multilingualweb/lt/track/issues/62).
7. Removed disambigClassPointer attribute, see Section 8.9.2: Implementation and [issue-64](https://www.w3.org/International/multilingualweb/lt/track/issues/64).
8. Clarified that provenanceRecordsRefPointer cannot be used in HTML, see Section 8.11.2: Implementation and [issue-65](https://www.w3.org/International/multilingualweb/lt/track/issues/65).
9. Changed the allowed location of the version attribute in Section 5.1: Indicating the Version of ITS, see [issue-66](https://www.w3.org/International/multilingualweb/lt/track/issues/66).
10. Clarified links to external rules, see Section 5.4: Link to External Rules and [issue-69](https://www.w3.org/International/multilingualweb/lt/track/issues/69).
11. Clarified in Section 6.4: Precedence between Selections that in HTML (like in XML) global rules are to be read in document order, see [issue-77](https://www.w3.org/International/multilingualweb/lt/track/issues/77).
12. Clarified how the filter in Section 8.10: Locale Filter works, see [issue-92](https://www.w3.org/International/multilingualweb/lt/track/issues/92) and [issue-103](https://www.w3.org/International/multilingualweb/lt/track/issues/103).
13. Clarified in Section 6: Using ITS Markup in HTML that values of attributes in HTML with a pre-defined set of values match ASCII-case-insensitively, see [issue-93](https://www.w3.org/International/multilingualweb/lt/track/issues/93).
14. Changed representation of decimal numbers from xs:decimal to xs:double, see [issue-94](https://www.w3.org/International/multilingualweb/lt/track/issues/94).
15. Added statement about HTML5 translate attribute in Translate data category, see [issue-97](https://www.w3.org/International/multilingualweb/lt/track/issues/97)
16. Removed case-insensitivity from the algorithm of the Domain data category, see [issue-102](https://www.w3.org/International/multilingualweb/lt/track/issues/102).
17. Clarified Section 7: Using ITS Markup in XHTML and a related note in Section 6: Using ITS Markup in HTML in response to [issue-115](https://www.w3.org/International/multilingualweb/lt/track/issues/115).
18. Clarified when to use HTML-like and when XML-like ITS markup in XHTML as a response to [issue-110](https://www.w3.org/International/multilingualweb/lt/track/issues/110).
19. Deleted excessive requirement from locale filter as a response to [issue-111](https://www.w3.org/International/multilingualweb/lt/track/issues/111).
20. Added links to examples in Section 6: Using ITS Markup in HTML, see [issue-80](https://www.w3.org/International/multilingualweb/lt/track/issues/80) and [action-394](https://www.w3.org/International/multilingualweb/lt/track/actions/394).
21. Added a reference to Unicode, see [issue-104](http://www.w3.org/International/multilingualweb/lt/track/issues/104).
22. Implemented in Example 2 the [resolution](http://lists.w3.org/Archives/Public/public-multilingualweb-lt-comments/2013Jan/0126.html) for [issue-100](https://www.w3.org/International/multilingualweb/lt/track/issues/100).
23. Implemented resolution for [issue-70](https://www.w3.org/International/multilingualweb/lt/track/issues/70) in Section 5.5: Precedence between Selections (for XML) and Section 6.4: Precedence between Selections (for HTML5).
24. Added explanatory note about CSS selectors implemnetations to Section 5.3.3: CSS Selectors, see [action-413](https://www.w3.org/International/multilingualweb/lt/track/actions/413).
25. Made notes about the order of standoff elements in Localization Quality Issue and Provenance, see [issue-72](https://www.w3.org/International/multilingualweb/lt/track/issues/72).
26. Clarification about ITS namespace prefix, see [issue-79](https://www.w3.org/International/multilingualweb/lt/track/issues/79).
27. Edits to resolve Directionality issues, see [issue-86](https://www.w3.org/International/multilingualweb/lt/track/issues/86), [issue-90](https://www.w3.org/International/multilingualweb/lt/track/issues/90), [issue-101](https://www.w3.org/International/multilingualweb/lt/track/issues/101) and [edits summary mail](http://lists.w3.org/Archives/Public/www-international/2013JanMar/0238.html).
28. Added a non-conformance value to the Localization Quality Issue Type table, see [issue-63](https://www.w3.org/International/multilingualweb/lt/track/issues/63).
29. Revised abstract as part of rewrite of sections 1 and 2, see [action-377](https://www.w3.org/International/multilingualweb/lt/track/actions/377).
30. Added note related to "domainMapping" in "multi-engine" scenarios, see [issue-75](https://www.w3.org/International/multilingualweb/lt/track/issues/75).
31. Implemented minor editiorial changes from [Issue-113](https://www.w3.org/International/multilingualweb/lt/track/issues/113).
32. Added the attribute type to the Locale Filter data category and updated the corresponding examples. See [issue-121](https://www.w3.org/International/multilingualweb/lt/track/issues/121).
33. In Section 8.11.2: Implementation removed untrue statement that the attribute provenanceRecordsRefPointer does not apply to HTML, see [issue-123](https://www.w3.org/International/multilingualweb/lt/track/issues/123).
34. Put a note in Section 5.3.3: CSS Selectors about CSS selectors and attributes, see [issue-99](https://www.w3.org/International/multilingualweb/lt/track/issues/99).
35. Updated the table of Localization Quality Issue Type values to clarify the value of “inconsistency,” see [issue-76](https://www.w3.org/International/multilingualweb/lt/track/issues/76).
36. Updated the table of Localization Quality Issue Type values to properly use RFC2119 values. See [issue-112](https://www.w3.org/International/multilingualweb/lt/track/issues/112) and [issue-124](https://www.w3.org/International/multilingualweb/lt/track/issues/124).
37. Updated Localization Quality Issue to reference ISO/TS 11669 and Structure specifications. See [issue-83](https://www.w3.org/International/multilingualweb/lt/track/issues/83).
38. Renamed Disambiguation data category to Text Analysis. Removed disambigGranularity attribute. All other attributes of Disambiguation were renamed to have the prefix "ta". Rewrote defining section. See for all changes [issue-68](https://www.w3.org/International/multilingualweb/lt/track/issues/68).
39. Added non-normative reference to ITS 1.0 [ITS 1.0].
40. Updated Section 5.7: Conversion to NIF and Appendix F: Conversion NIF2ITS with new NIF URI (see [action-460](https://www.w3.org/International/multilingualweb/lt/track/actions/460)), fragment identifiers (see [action-458](https://www.w3.org/International/multilingualweb/lt/track/actions/458)) and ITS ontology predicates. Changes to be confirmed, see [action-481](https://www.w3.org/International/multilingualweb/lt/track/actions/481). See [issue-73](https://www.w3.org/International/multilingualweb/lt/track/issues/73).
41. Updated Section 8.20: Storage Size to clarify the usage of the encoding and the line break type. See [issue-106](https://www.w3.org/International/multilingualweb/lt/track/issues/106) and [issue-107](https://www.w3.org/International/multilingualweb/lt/track/issues/107).
42. Removed note in Section 2.1.2: Global Approach, see [issue-117](https://www.w3.org/International/multilingualweb/lt/track/issues/117).

The following log records major changes that have been made to this document since the [ITS 2.0 Working Draft 23 October 2012](http://www.w3.org/TR/2012/WD-its20-20121023/).

1. Clarified usage of Domain data category in HTML in response to [issue-56](https://www.w3.org/International/multilingualweb/lt/track/issues/56).
2. Added the enabled information in Section 8.16: Localization Quality Issue.
3. Updated the Disambiguation data category.
4. Fine tuned the algorithm to compute the result values of the Domain data category.
5. Fix on Example 81: id attribute of script element now the same as of containing XML.
6. NIF example fix - see [action-284](https://www.w3.org/International/multilingualweb/lt/track/actions/284).
7. Added a note to mark CSS selectors as feature at risk, see [action-272](https://www.w3.org/International/multilingualweb/lt/track/actions/272).
8. Defined in Section 5.3.2.2: Relative selector that an XPath based relative selector can also be an absolute location path - see thedomainPointer attribute in Example 56 and [action-282](https://www.w3.org/International/multilingualweb/lt/track/actions/282).
9. Defined Directionality and Ruby as non-normative features. See Section 1.1.1: Relation to ITS 1.0, note on directionality and [action-250](https://www.w3.org/International/multilingualweb/lt/track/actions/250).
10. Update on Disambiguation example Example 59. See [action-266](https://www.w3.org/International/multilingualweb/lt/track/actions/266) ([related discussion](http://www.w3.org/2012/11/01-mlw-lt-irc#T10-53-44)).
11. Made a simplification of Disambiguation used globally. See [action-267](https://www.w3.org/International/multilingualweb/lt/track/actions/267).
12. Added Appendix B: Internationalization Tag Set (ITS) MIME Type, see [action-251](https://www.w3.org/International/multilingualweb/lt/track/actions/251).
13. Added Section 8.18: MT Confidence, see [action-287](https://www.w3.org/International/multilingualweb/lt/track/actions/287) and [action-288](https://www.w3.org/International/multilingualweb/lt/track/actions/288).
14. Added Section 5.8: ITS Tools Annotation see [action-301](https://www.w3.org/International/multilingualweb/lt/track/actions/301).
15. Added confidence score attributes to Disambiguation data category and MTConfidence data categories - see [action-298](https://www.w3.org/International/multilingualweb/lt/track/actions/298) and [action-299](https://www.w3.org/International/multilingualweb/lt/track/actions/299).
16. Updated Section 8.11: Provenance - now called "Provenance" instead of "Translation Agent Provenance" - see [action-300](https://www.w3.org/International/multilingualweb/lt/track/actions/300).
17. Added a note to differentiate Text Analysis from Terminology data category - see [action-304](https://www.w3.org/International/multilingualweb/lt/track/actions/304).
18. Reworked the Section 8.16: Localization Quality Issue for global rules and standoff markup as per [action-303](https://www.w3.org/International/multilingualweb/lt/track/actions/303).
19. Removed placeholder for [text analysis annotation](http://www.w3.org/TR/2012/WD-its20-20121023/#TextAnalyisAnnotation), since the [text analysis annotation requirement](http://www.w3.org/TR/2012/WD-its2req-20120524/#textAnalysisAnnotation) is covered by the local disambiguation attribute disambigConfidence, in conjunction with Section 5.8: ITS Tools Annotation.
20. Added explanations about ITS 2.0 and plain text in CMS to Section 1.3.1.4: Content producers and Section 8.19.1: Definition - see [action-262](https://www.w3.org/International/multilingualweb/lt/track/actions/262) and [action-302](https://www.w3.org/International/multilingualweb/lt/track/actions/302).
21. Various edits, see [summary mail](http://lists.w3.org/Archives/Public/public-multilingualweb-lt/2012Nov/0193.html) and [action-312](https://www.w3.org/International/multilingualweb/lt/track/actions/312) and [action-317](https://www.w3.org/International/multilingualweb/lt/track/actions/317).
22. Updated list of pointer attributes in Section 5.3.2.2: Relative selector, see [action-308](https://www.w3.org/International/multilingualweb/lt/track/actions/308).
23. Checked data category overview table, see [action-313](https://www.w3.org/International/multilingualweb/lt/track/actions/308), and various edits, see [summary mail](http://lists.w3.org/Archives/Public/public-multilingualweb-lt/2012Nov/0202.html).
24. Clarification of pointer attribute values in Section 8.11.2: Implementation, see [mail for details](http://lists.w3.org/Archives/Public/public-multilingualweb-lt/2012Nov/0215.html).
25. Online editing call - see [call minutes](http://www.w3.org/2012/11/27-mlw-lt-minutes.html) and [summary mail](http://lists.w3.org/Archives/Public/public-multilingualweb-lt/2012Nov/0219.html).
26. Updated Section 8.11: Provenance to remove all the pointers attributes, except provenanceRecordsRefPointer.
27. Updated Section 8.17: Localization Quality Rating to remove the global rules and adjust the thresholds.
28. Re-structered Section 6.2: Global rules and added XHTML example.
29. Made Appendix D: Schemas for ITS a normative section.
30. Moved list of data category identifiers from Section 5.8: ITS Tools Annotation to data category overview table, see [action-330](https://www.w3.org/International/multilingualweb/lt/track/actions/330).
31. Added Example 23: external rules with rules as the root element. See [action-328](https://www.w3.org/International/multilingualweb/lt/track/actions/328).
32. "HTML5" in document now replaced with "HTML", see [action-327](https://www.w3.org/International/multilingualweb/lt/track/actions/327).
33. Changed made during editing call 29 November, see [editing call minutes](http://www.w3.org/2012/11/29-mlw-lt-minutes.html).
34. Made changes (see [detailed description](http://lists.w3.org/Archives/Public/public-multilingualweb-lt/2012Nov/0266.html)) to descriptions of allowed values for Localization Quality Issue (specifically *terminology*, *locale-violation*, and *whitespace* to respond to and clarify [points raised by Daniel Naber](http://lists.w3.org/Archives/Public/public-multilingualweb-lt/2012Nov/0208.html).
35. Added Appendix G: List of ITS 2.0 Global Elements and Local Attributes, see [action-321](https://www.w3.org/International/multilingualweb/lt/track/actions/321).
36. Renaming attribute for Section 5.8: ITS Tools Annotation. See [change description](http://lists.w3.org/Archives/Public/public-multilingualweb-lt/2012Dec/0006.html).
37. Changes related to annotatorsRef, see [Working Group call 2012-12-03](http://www.w3.org/2012/12/03-mlw-lt-minutes.html#item08) discussion.
38. Changes related to disambigGranularity attribute, see [Working Group call 2012-12-03](http://www.w3.org/2012/12/03-mlw-lt-minutes.html#item04) discussion and [action-359](https://www.w3.org/International/multilingualweb/lt/track/actions/359).

The following log records major changes that have been made to this document since the [ITS 2.0 Working Draft 29 August 2012](http://www.w3.org/TR/2012/WD-its20-20120829/).

1. Added a first draft of Section 8.11: Provenance
2. Added Section 6: Using ITS Markup in HTML.
3. Removed inline markup declarations.
4. Addition of a locQualityRatingVote attribute and a locQualityRatingVotePointer attribute to Section 8.17: Localization Quality Rating.
5. A clarification of ITS data category information and processing of content in Section 8.1: Position, Defaults, Inheritance and Overriding of Data Categories.
6. Added Section 8.19: Allowed Characters.
7. Added Section 8.20: Storage Size.
8. Added Section 8.18: MT Confidence.
9. Added a note about informative mappings of Values for the Localization Quality Issue Type to the [ITS IG wiki](http://www.w3.org/International/its/wiki/Tool_specific_mappings).
10. Added a conformance clause about HTML versus XML processing.
11. Added links to XML and HTML examples to the data category overview table.
12. Added new kind of user to Section 1.3.1: Potential Users of ITS.
13. Added the algorithm to obtain the value of the Domain data category.
14. Updated the Allowed Characters data category for the empty string case and the way to define "allow any characters"..
15. Added sections related to NIF conversion (Section 5.7: Conversion to NIF and Appendix F: Conversion NIF2ITS) and a related conformance clause 2-4.

The following log records major changes that have been made to this document since the [ITS 2.0 Working Draft 31 July 2012](http://www.w3.org/TR/2012/WD-its20-20120731/).

1. Added Disambiguation data category.
2. Added Section 8.15: Preserve Space.
3. Added Section 8.14: Id Value.
4. Added support for different query language and reworked whole XPath and CSS Selectors integration.
5. Added examples to Section 8.12: External Resource.
6. Simplified Section 8.10: Locale Filter.
7. Added a note about HTML and the attributes dir and translate to Section 5.2.2: Local Selection in an XML Document.
8. Added definition of param element to Section 5.2.1: Global, Rule-based Selection.
9. Added Section 8.13: Target Pointer.
10. Original Ruby markup model changed to HTML5 Ruby model.
11. Updated references.
12. Added Section 8.15: Preserve Space.
13. Added Section 8.16: Localization Quality Issue and the related Appendix C: Values for the Localization Quality Issue Type.
14. Added Section 8.17: Localization Quality Rating.
15. Added a placeholder Section 8.18: MT Confidence.

The following log records major changes that have been made to this document since the [ITS 2.0 Working Draft 26 June 2012](http://www.w3.org/TR/2012/WD-its20-20120626/).

1. Various editorial changes (non-normative references update, style & grammar fixes).
2. Made clarifications to Section 1.6: Out of Scope, Section 1.7: Important Design Principles.
3. Added explanatory note on precedence and overriding in Section 5.5: Precedence between Selections.
4. Reordered some components in Section 1: Introduction.
5. Restructured Section 1.1: Relation to ITS 1.0 and New Principles.
6. Added Section 5.3.1: Choosing Query Language as a stub.
7. Added Section 8.10: Locale Filter.
8. Added Section 8.8: Domain.
9. Added Section 1.4.5: Version of HTML.
10. Added local markup in Section 8.7: Elements Within Text.
11. Added Section 8.12: External Resource.
12. Updated examples to use the version attribute with the value 2.0.

The following log records major changes that have been made to this document between the [ITS 1.0 Recommendation](http://www.w3.org/TR/2007/REC-its-20070403/) and this document.

1. Clarified introduction to cover ITS 2.0
2. Added a subsection on the relation to ITS 1.0 to the introduction, see Section 1.1.1: Relation to ITS 1.0
3. Created HTML based declarations for various data categories, see e.g., HTML declarations for the Terminology data category and the summary for local data categories in Section 5.2.2: Local Selection in an XML Document
4. Created examples for these declarations, see e.g., Example 45
5. Added placeholders for new data categories to Section 8: Description of Data Categories
6. Added a placeholder section Section 5.7: Conversion to NIF

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