

XML configuration files

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1 Introduction

Rather than developing Flex using a standard Microsoft .NET framework, a large part of the program is based on XML configuration files. New functionality and/or changes to existing functionality can sometimes be made simply by changing these configuration files. A form of localization is also possible because most of the strings for the user interface, outside of dialog boxes, come from these configuration files.

A system has been developed for adding extensions in a relatively safe way. For adding new functionality, this is preferable to making changes directly in the other directories.

2 Warnings

The configuration files are located in c:\Program Files\SIL\FieldWorks\Language Explorer\Configuration. Adventuresome users can modify these files and might even do some useful things with them. However, here are potential problems they should be aware of before touching these files:

- It is very easy to make Flex crash on startup or when going to a certain tool by improperly modifying configuration files. If users plan to do *any* experimenting, they need to *first* make a backup of the entire Configuration directory! Then they can always restore a working copy again if something breaks.
- The XML files are not documented, so if users want to play with them, it is best to look at existing examples and use them as a guide. FieldWorks source code is available at any time from the Internet, if users want to see that as part of the “documentation”.
- It is possible to add new functionality using configuration files, but it is quite possible that the new functionality will also need some C# support which is *only* possible from a full development environment.
- If users *do* make changes, there is no easy way to migrate these changes the next time they upgrade to a new FieldWorks version. The installation process will probably overwrite any changes made. Even if users saved them somewhere else, it is likely

that the new version will have other changes in the same files, so they *cannot* simply copy their version back again. The only way it will work is to *manually* merge their changes back into the new set of files. However, if extensive localizations have been made in these files, LSDev should be able to extract these so that the work is not lost.

3 Configuration files

Configuration files determine features like this:

- Areas
- Tools in each area
- Windows used for each tool
- Menus and toolbars
- Views for displaying database classes and properties in detail and publication formats
- Column possibilities in browse/bulk edit views

Each area is defined in a separate directory under Configuration. There is also an Extensions directory for adding extensions (see ReadMe.txt in that directory), and a Parts directory that provides override information for displaying classes and properties in various contexts.

3.1 Parts

The Parts folder holds layouts and parts files. A layout element defines the properties to display for a given class. Each property is defined by a part element that is defined in one of the parts files. There are layouts and parts defined for detail view (data entry) as well as “jtvviews”. The jtvviews access FieldWorks Views code which provides powerful functions for displaying and editing information in different ways.

3.2 UI strings

Most of the strings users see in Flex are defined in the configuration files. Many of these are in strings-en.xml file in the Configuration directory. In this file, the “id” attributes should *never* be changed, but the “txt” attributes contain the strings that are displayed for each id. Once Flex is fully internationalized, there will be multiple strings-*.xml files—one for each localized language. FieldWorks 5.4 includes French and Indonesian localizations.

Each field in a detail view is known as a “slice”. The “label” attribute contains the string displayed in the detail view. In general, any “label” attribute used in any of the configuration files defines the string used for menus and other items in the UI.

As just one example, search for label=“Definition” in Configuration\Parts\LexSenseParts.XML. Users can change “Definition” to French “Définition”. The next time they start Flex, the label for the Definition field for senses uses the French spelling.

Changing strings in the standard configuration files is not the real solution to localization. If you are interested in localizing the interface, see the document, FieldWorks Localization.doc.

XML files are UTF-8 data, so if any labels are changed to non-ASCII values, users need to be in a Unicode editor (e.g., ZEdit in UTF-8 mode). They can enter Chinese or other

major languages in these labels and it will display properly. If the language requires a special font, such as Yi, it will only show boxes. These labels are using standard Windows display technologies that use default fonts.

3.3 Localization

See FieldWorks Localization.doc for information on localizing the Flex and TE interfaces.

3.4 Extensions

Flex can be extended on the field if specialized features are not available in the released version. Field programmers can add entirely new areas (and one or more tools to the area) or they can add new tools to an existing area. Indeed, several tools in the released version started out as extensions and then ended up being incorporated into the official version. The three Reversal tools started out as tools in a new area extension, while the Analyses tool in the Words area started as an extension to an existing area. That Analyses tool eventually replaced the original tool with the same name.

Either type of extension requires at least one XML configuration file (more can be included, as needed), as well as the actual C# code, when needed. The XML extension files are then located in programmer-specified folders under specially named folders. The C# code can be most anywhere. (The configuration files specify where to find the code.) Configuration files for a new area need to be located in some folder under the Language Explorer\Configuration\Extensions folder, while configuration files for adding a new tool to an Area need to be in folders under a folder like: Language Explorer\Configuration\Lexicon\Extensions (for a new tool to the Lexicon Area). There are 'readme' files in each of those 'Extensions' folders that give very basic guidance to the extension developer in how to add one. Randy Regnier has worked the most with extensions, so is a good resource person in this area.

4 Other files

4.1 Wordforming characters

Language Explorer uses standard Unicode semantics for determining where to break words. If a character in the text causes individual words to be broken incorrectly into multiple words, you can edit the c:\Program

Files\SIL\FieldWorks\WordFormingCharOverrides.xml file in the FieldWorks program folder.

- To *prevent* word breaks, add a line similar to the following:
`<wordForming val="200D" name="ZWJ"/>`
- To *make* a word break where it currently does *not* break, add a line similar to the following:
`<notWordForming val="200D" name="ZWJ"/>`

In the preceding examples, 200D is a Unicode code point and ZWJ is an abbreviation for later intelligibility.

Note: These overrides are used for all projects on the current computer—they are not language specific.

Caution: Changing these settings can potentially damage your wordforms and interlinearization. This happens when going to the Words area, or on a smaller scale, to the Interlinearize tab of a Text. The program will reprocess all texts from the Words area or a single text from the Text area based on the new definitions. For example, if you had an apostrophe as a wordforming character, but that is no longer in this file, every word that used to have an apostrophe will be broken into two 'words'. These new 'words' will be added to the wordforms and the words with apostrophes that were interlinearized will lose their interlinearization since they are now two 'words'.

If you've modified this file to cover your orthography, make sure you save a copy of this file. The master FieldWorks 5.4 installer will keep your old file as long as it can find it based on uninstalling a previous version. However, if you manually uninstall an older version of FieldWorks prior to installation, the old file will be removed before the installer can recover it. In this case, after installing the new version you'll need to restore your older WordFormingCharOverrides.xml file before opening Flex.

4.2 Stylesheets

Whenever Flex loads, it checks c:\Program Files\SIL\FieldWorks\Language Explorer\FlexStyles.xml. If this file has changed, it is loaded into the database, updating the styles used by the program. This allows a branch to define its own custom styles and have these installed automatically.

TE uses the same scheme, loading their stylesheet from c:\Program Files\SIL\FieldWorks\Translation Editor\TStyles.xml.