

Merge-enabled Change Tracking (MCT): Extension prototype

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Supported by: GOP-1.1.1-11-2011-0006

Why developing it as an extension?

- The code of the extension is separated from the code lines of the OpenOffice.
- Easier development while the specification of MCT is still under construction.
- The same functionality can be adopted in various OpenOffice based applications.

The main structure of the Extension

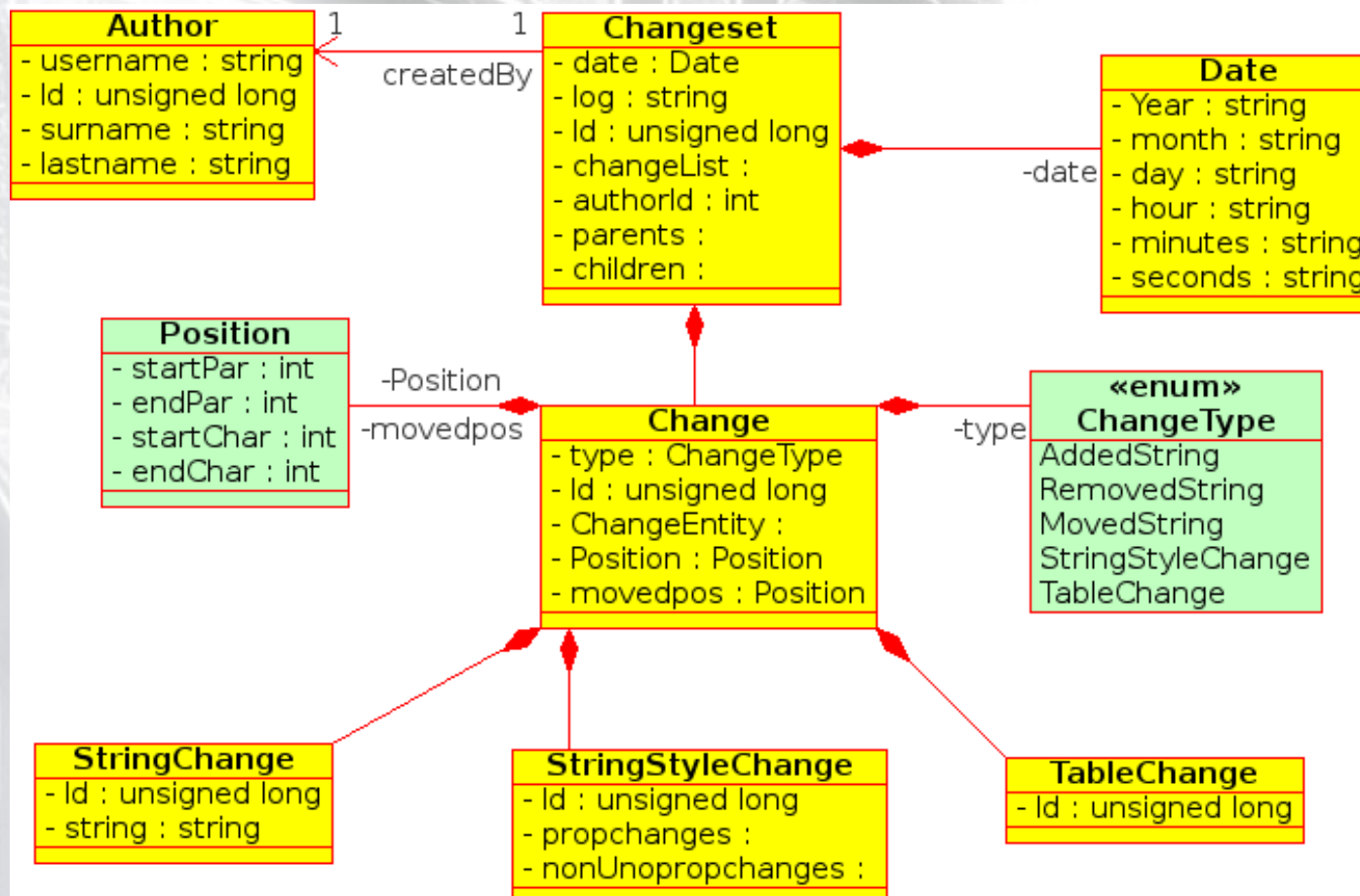
1. The model

- Changes stored in a redo/undo graph.
- Should obey the same specification in all implementation.
- XML parser to load and save the history of changes.
- Changes are grouped under changesets (revisions of the document).
- Storing other metadata of the changesets (author, date, comment).

2. Connection of the model to the ODF

- Established by the UNO Accessibility API.
- Change tracking based on event listener interfaces provided by the UNO.
- Dialog window in order to control the functionality of the extension.

The Graph of change history

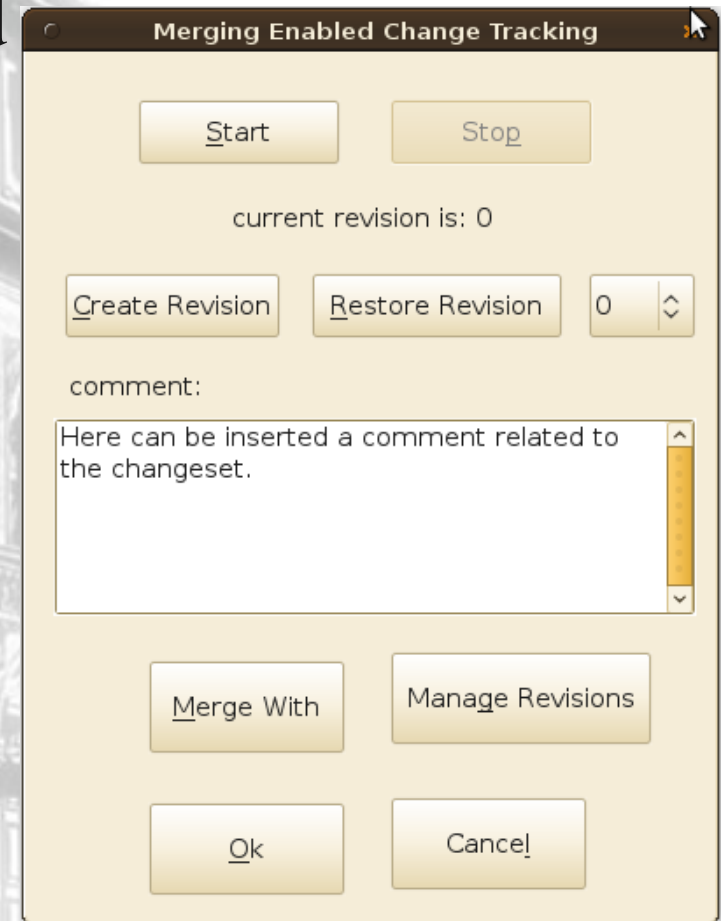


Currently supported change types

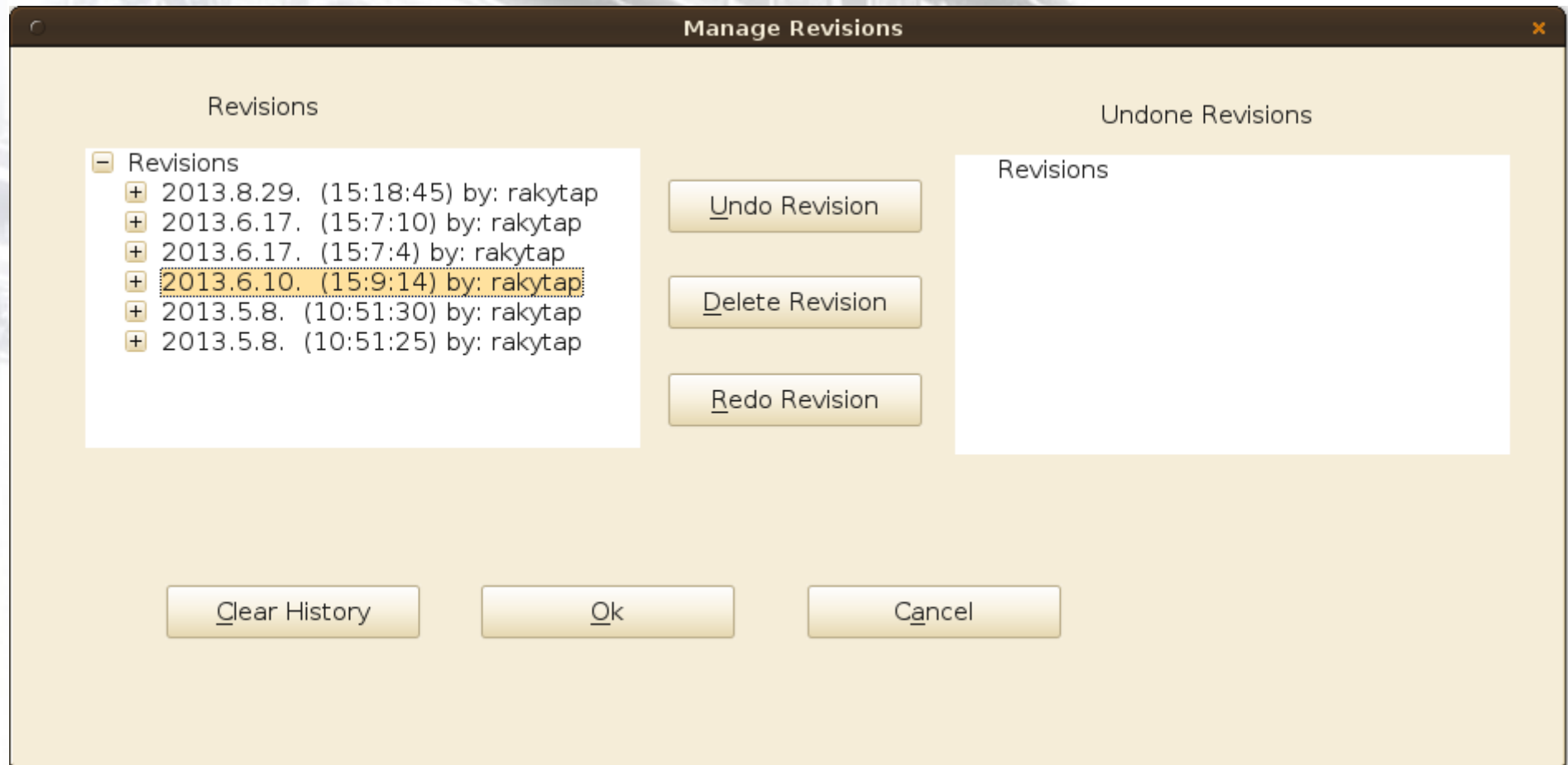
- Recorded changes can be triggered by keyboard or by menu (mouse) events.
- The extension supports Linux and Windows operating systems. (supporting office suits utilizing Python 2.7 and higher is under development)
- Insertion/deletion of characters
- Insertion/deletion of paragraph breaks
- Style change of characters, paragraphs, ordered and unordered lists
- Insertion/deletion of graphic objects

Creating revisions

- MCT support for a doc is started/stopped by pressing *Start/Stop* button.
- Create revision by *Create Revision* button. (Author and date of the changeset is obtained from OS.)
- Restore document to an earlier state by *Restore Revision* button.
- Manage revisions by *Manage Revisions* button.
- Open merge dialog window by *Merge With* button



Managing revisions



Dependency tree of changesets

- Changeset A: insert picture *test.png*
- Changeset B: delete picture *test.png*
- Changeset A **cannot be undone** unless Changeset B is also undone.

The screenshot shows a software interface with two main panels: "Revisions" on the left and "Undone Revisions" on the right. The "Revisions" panel contains a list of revisions with the following details:

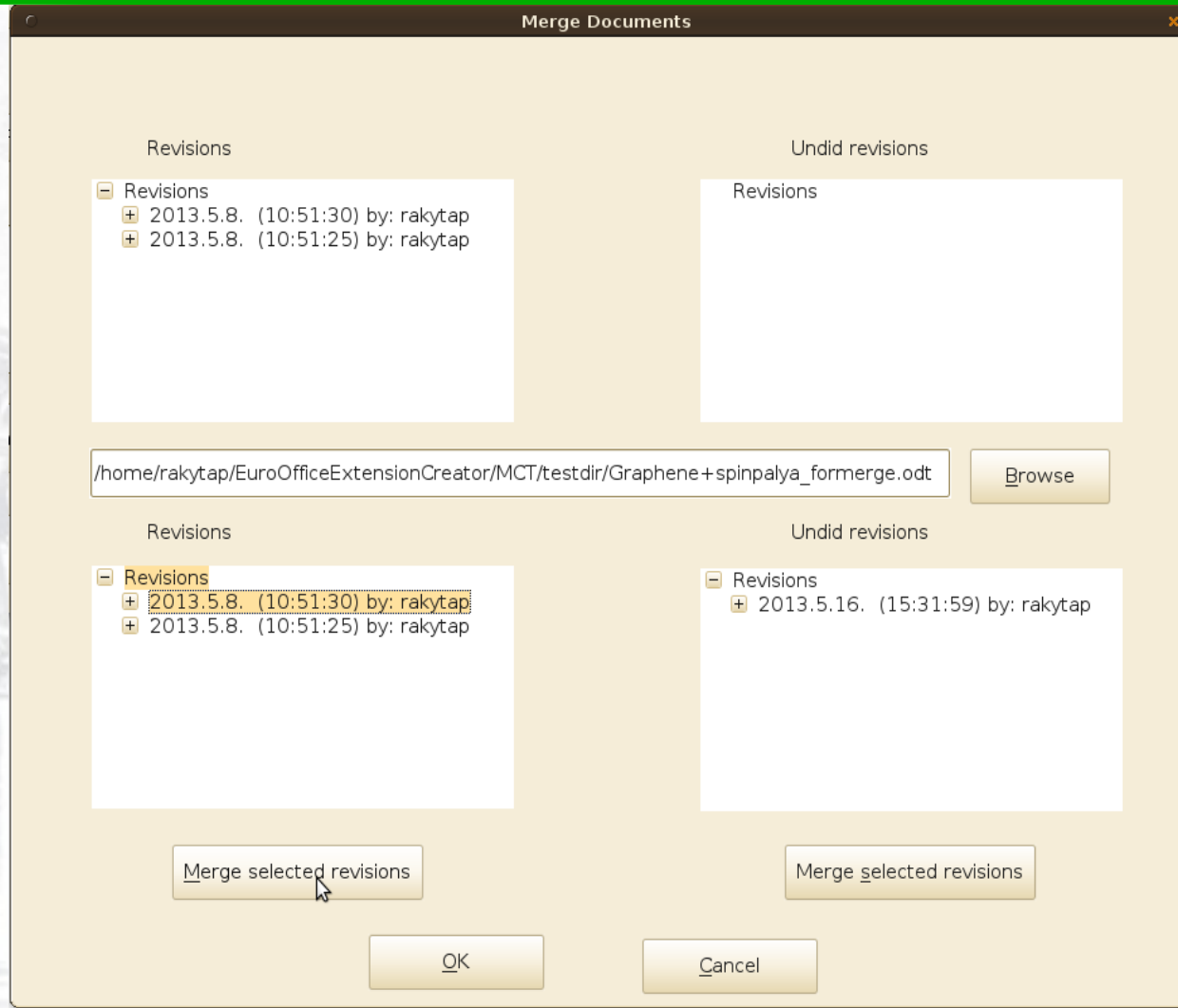
- 2013.8.29. (15:18:45) by: rakytap
- 2013.6.17. (15:7:10) by: rakytap
- 2013.6.17. (15:7:4) by: rakytap
- 2013.6.10. (15:9:14) by: rakytap
- 2013.5.8. (10:51:30) by: rakytap
- 2013.5.8. (10:51:25) by: rakytap

Buttons for "Undo Revision" and "Delete Revision" are visible. A "warning" dialog box is overlaid on the interface, containing the following text:

The following dependent changesets need to be undone in addition:
2013.6.17. (15:7:4) by: rakytap
2013.6.17. (15:7:10) by: rakytap

Buttons for "OK" and "Cancel" are present in the dialog. At the bottom of the interface, there are buttons for "Clear History", "Ok", and "Cancel".

Merging changesets



Further developments

- Extend the list of the supported changetypes:
 - Other types of embedded objects
 - Tables
 - Footnotes
 - etc.
- Develop a “*tool*” to visualize stored changes:
 - Necessary to understand the changes of collaborators.
 - Necessary to manage revisions.
- Change tracking in spreadsheets.



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