****
****
version 3.17

March 2 2011

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Fixed less than (<) and greater than (>) operators.
- Fixed less than or equal (<=) and greater than or equal (>=) operators.
- Fixed MARC-8 conversion from EACC set to UTF-8.
- Optimized MARC-8 conversion tables for a slightly smaller size.

****
****
version 3.16

February 14 2011

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Fixed character conversion tables. In some cases the proper conversion was not used due to signed/unsigned comparison.
- Fixed library automake to not try installing statemanager.h twice.

****
****
version 3.15

January 18 2011

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Fixed encoding/decoding of tag, indicators and subfield code when processing xml files (just in case..).
- Fixed a memory leak during conversion.
- Fixed hang when an xml record contained too long leader.

****
****
version 3.14

September 28 2010

The National Library of Finland
Ere Maijala

http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Cleaned up error handling and improved the API for errors and warnings.
- Added an API command to add and remove configuration overrides.
- Added a warning in rule debug mode when a field is overwritten.
- Const-correctness in source code.
- Optimized rule file parsing a bit.
- Fixed a bug from global conditions where an empty or comment line after
  #if caused the condition to be applied to the previous rule too.
- Added XML namespace declarations to XML output.
- Improved XML entity handling. Now supports numeric entities and won't
  mess up '.
- Added a simple optional Win32 DLL wrapper so that USEMARCON can be
  loaded as a DLL. The DLL is not built by default.
- Fixed most (apart from PCRE) warnings regarding 32-bit vs. 64-bit
types.

****
****
version 3.13

September 4 2009

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Added autodetection of XML input format.
- Fixed a possible crash when a subfield was moved first with
  MoveFirst or MoveBefore command.
- Fixed a possible crash when no fields were found in the input
  record.
- Changed the command line executable to return values >= 0
  (0 is still success) so that error checking would be easier.
- Fixed a crash when a rule had double concatenation (+ in the
  beginning and after a condition).
- Fixed a possible crash when an empty field was found in the input
  record.
- Added option ([DEFAULT_STATES] SortRecord=false) to disable
  sorting of fields.
- Added SortField command to enable sorting of selected fields when
  SortRecord=false.

****
****
version 3.12

October 14 2008

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Fixed a crash trying to report an invalid field code while reading

in records.
- Fixed parsing of Then and Else statements with blocks on multiple lines.
- Fixed concatenation in multiline rules.

****
****
version 3.10

August 29 2008

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Fixed RegReplace with the global flag. It misbehaved after the second iteration.
- Fixed concatenation (rule starting with +) for multipart rules.
- Only real errors are now counted when checking the maximum number of errors.

****
****
version 3.09

May 21 2008

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Fixed while loops. They may not have run all expected iterations and could lose the field contents.
- Fixed a crash when trying to report an empty field.
- Fixed a possible endless loop when outputting MARCXML.
- Moved applying of macros before any other processing of a rule line making it possible to use macros in macros or global conditions.

****
****
version 3.08

April 10 2008

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Changed error handler to state manager to more appropriately describe its function.
- Fixed setting of record id in state manager overriding the flag of handling of linked fields.
- Weakened comment designator // so that it won't take effect inside

a string.
- Type and format attributes are written to XML record only if they are not empty.

****
****
version 3.07**

April 4 2008

**The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi**

**- Fixed a possible crash when conversion was done in UTF-8 mode and a record contained invalid characters.
- Fixed a problem introduced in version 3.06 where e.g. From(ELast('nonexisting string')) would return the whole string.**

****
****
version 3.06**

March 14 2008

**The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi**

**- Fixed a couple of possible crashes when rule processing encounters an error.
- Fixed a possible crash in MoveBefore/MoveAfter.
- Added 001 field (if any) of the input record to the warning and error messages.
- Added writing of version number to the error log.
- Fixed a possible memory leak in case insensitive utf8 string comparison.
- Try to avoid showing (wrong) progress percentage for files larger than 2GB.**

****
****
version 3.05**

February 27 2008

**The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi**

**- Fixed spurious 5006 error messages.
- Added record number to warning 2602.**

****
****
version 3.04

February 21 2008

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Fixed setting of input record in second and subsequent calls
  to Usemarcon->Convert(). API mode only.
- Fixed trimming of whitespace in the result of To() command.

****
****
version 3.03

February 14 2008

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Fixed a one time memory leak in TUMApplication (old bug).
- Fixed an invalid file write attempt when converting record in
  a memory buffer (old bug).

****
****
version 3.02

February 14 2008

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Updated the accompanying PCRE library to version 7.6.
- Updated PCRE build instructions to disable pcrecpp (not needed).
- Fixed USEMARCON program build to link with libpcre instead of
  libpcrecpp.
- Fixed a possible bug in trimming of rule lines and removal
  of CR at end of line.

****
****
version 3.01

January 28 2008

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Fixed global conditions.
- Fixed RegReplaceTable.
- Added check for unbalanced parenthesis to conditions.
- Added 'f' option for RegReplaceTable to only do the first
  matching replace.

****
****
version 3.00

January 17 2008

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Cleaned up the interface ("API") to USEMARCON.
- Cleaned up file name string handling.
- Cleaned up header file dependencies.
- Added duplicate field and subfield processing options.
- Fixed concatenation of a complete field with multiple subfields
  to a single subfield.
- Fixed peeking of output record contents (% operator) in a rule that
  creates a temporary input field.
- Added possibility to do RegFind in string given as a parameter.
- Better UTF-8 support using utf8proc library.
- Added possibility to use simple macros in the rule file.
- Added RegReplaceTable() function that can be used to replace a list
  of strings with a short piece of code.
- Added possibility to split a line to multiple lines using \ in the
  of the line.
- Occurrence parameter in NextSub() and PreviousSub() is now optional.
- Added MoveBefore and MoveAfter to manipulate subfield positions in
  a field.
- Added ExistsIn(), NextSubIn() and PreviousSubIn() to check for
  subfields in S or other string.
- Fixed rule parser to not get confused over pipe characters embedded
  in strings.
- Fixed regular expressions handling to handle escaped characters
  properly inside square brackets.
- Added occurrence specifier "newest" that can be used to target the
  last occurrence of the tag.
- Switched regular expressions support to use PCRE for added features.
- Added RegFindPos and RegFindNum.
- Added left-recursive If statement handling. A branch is no
  more evaluated unless it matches the condition.
- Added execution blocks for conditional processing (denoted by curly
  brackets {}).
- Added While loops.
- Added For loops.

- Combined the documentation to a single document.
- Added record number to logged error and warning messages.
- Conversion will now fail if the specified ini file cannot be opened.
- Added possibility to define minimum version that can be used for the conversion. USEMARCON 3.00 has rule version 300. See #define in the manual for more information.
- Added possibility to use "global" conditions for a group of rules. See #if in manual for more information.

****
****
version 2.01

August 14 2007

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Fixed initialization of CD's to reset output flag. Fixes spurious errors when trying to access input record.
- Improved rule debug mode output and made all output go to console.

****
****
version 2.00

August 2 2007

The National Library of Finland
Ere Maijala
http://www.nationallibrary.fi/
ere.maijala at helsinki.fi

- Renewed the core scanner and parser. Parser is now built with bison and converted to C++ by a perl script. Scanner is built with flex in C++ mode. Building of them is currently not part of the regular build process.
- Fixed conversion of full fields in field order mode.
- Added NextSub($x, '>=1') and PreviousSub($x, '>=1') to handle subfield occurrences better.
- Added option to convert all subfield codes to lower case (ConvertSubfieldCodesToLowercase=TRUE in [DEFAULT_STATES] section).
- Added possibility to use nonbreaking conditionals (just leave 'Then' out from an 'If' clause.
- Added possibility to make USEMARCON always create a new field: 500 | 500(New) | S
- Fixed concatenation when converting a full field.
- Fixed using wildcards in subfield codes in field order mode.
- Added possibility to peek at a converted (output) field by prepending the tag code with % (e.g. If (%008/0-5/ = '123456') Then S).
- Added regexp support for \s, \S, \w, \W, \d, \D, \b and \B (escape \ in actual rules (e.g. \\s).
- Fixed sorting of temporary fields to not lose data when using field order.
- Fixed wildcard handling when converting complete fields.
- Cleaned up a lot of code and got rid of the huge temporary buffers in

ErrorHandler and other static buffers. Record or field size is no more limited.
- Initial support for MARCXML and MarcXchange records (see documentation for more information).
- Improved rule syntax error reporting to include the full rule and line number.
- Added possibility to use wildcards (?) with Exists().
- Empty indicators no longer cause warnings but are written out as is.
- Added new function InTable('string', 'filename') that can be used to check if a value exists in a table file.
e.g. If (InTable(S, 'table.tbl') Then S; Table('table.tbl')

****
****
version 1.81**

November 10 2006

**The National Library of Finland
Ere Maijala
http://www.kansalliskirjasto.fi/
ere.maijala at helsinki.fi**

- Added possibility to convert incoming records from MARC-8 to UTF-8

****
****
version 1.80**

September 27 2006

**The National Library of Finland
Ere Maijala
http://www.kansalliskirjasto.fi/
ere.maijala at helsinki.fi**

**- Updated documentation for new features and revised parts of the old docs.
- Separated interactive mode from file/buffer mode. Now files are used if buffers are not specified regardless of the mode. Interactive mode controls only whether USEMARCON outputs anything on the console.
- Added possibility to copy the input to output as the default action in translation tables. This can be accomplished with a magic token COPY in #DEFAULT declaration:**

```
#DEFAULT | COPY
```

- Added possibility to use question mark as a wildcard in rules. A question mark can replace any single character in field code or subfield code. For example the following rules would convert all fields as is (it is assumed that 00? are control fields, thus no indicators or subfield codes):

```
00? | 00? | S
???I1 | ???I1 | S
???I2 | ???I2 | S
```

???$? | ???$? | S

- Fixed UTF-8 handling. Now it should finally actually work correctly, but
it's still a bit limited in that it cannot handle all non-spacing characters correctly. Now the functions work on complete glypheme clusters
(=perceived characters) in the supported ranges.

- Bulletproofed several functions to cope better with broken fields.

- Removed dangerous static declarations from the scanner. It's no more directly recreatable from analyse.l, pending rewrite with better techniques.

****
****
version 1.71

29th March 2006

The National Library of Finland
Ere Maijala
http://www.lib.helsinki.fi/
ere.maijala at helsinki.fi

- Fixed UTF-8 mode to work correctly with 3+ byte entities

****
****
version 1.70

2nd February 2006

The National Library of Finland
Ere Maijala
http://www.lib.helsinki.fi/
ere.maijala at helsinki.fi

- Added support to peeking at the previous contents of the destination field
using variable D (requires of course that there is already data in the destination field). This allows for example comparisons between the old and new value and concatenation of old value to the new one.
- Added experimental support for simple regular expressions. Three new functions are provided:
RegFind('expression') returns >= 0 if the expression was found.
RegMatch(index) returns matched parts by index (0-9).
RegReplace('expression', 'expression') replaces expression by another.
\1 \2 etc. can be used to reference the matched parts. Thoroughly untested.
- Added possibility to do the conversion in field order instead of the classic
rule order. In this new mode the record is processed field by field and all
matching rules are applied. Enabled by setting ConvertInFieldOrder=TRUE in
section DEFAULT_STATES of the ini file.

- Added possibility to specify the absolute field or subfield index in input
  or output CD (for example rule "245(1)$a | 240(2)$a | S" would copy $a from
  first 245 to the second 240 in the destination.
- Added possibility to use "If Then Translation Else Condition" and
  "If Then Condition". This allows more complicated conditional rules.
- Fixed a crash if the destination record doesn't contain any fields.
- Fixed a hang when UTF-8 mode was active and To command was used.
- Fixed a problem where transcoding a string with Table command would return
  only the default value and not the other transcoded parts of the string.

****
****
version 1.60

14th October 2005

The National Library of Finland
Ere Maijala
http://www.lib.helsinki.fi/
ere.maijala at helsinki.fi

- Implemented UTF-8 support for Len, From, To, Between and /.../ operators.
  Enabled by setting UTF8Mode=TRUE in section DEFAULT_STATES of the ini file.
- Fixed a possible memory overwrite error in
  TTransFile::Transcode. Patch by DanX, Talis.
- Fixed a possible memory allocation error in
  TEvaluateRule::Between. Patch by DanX, Talis.
- Fixed an error where indicators for a variable width field were not
  written to the output file if the conversion rules didn't create them
  correctly.
- Optimized the search for a specific field so that it would be faster to
  apply rules for non-existing fields or check if a field exists.
- Implemented a simple memory pooling to optimize memory allocations
- Implemented a simple string class to optimize memory allocations and
  avoid frequent allocations of short strings
- Removed the line length limit (256 characters) of rule and table files
- Fixed a crash when the input data contained an empty variable length field

****
****
version 1.51

5th January 2005

Helsinki University Library, the National Library of Finland
Ere Maijala
http://www.lib.helsinki.fi/
ere.maijala at helsinki.fi

- added a directive UpdateOrdinalNumber to control if the

OrdinalNumber in the ini file is updated. It's no longer updated by default as the update can cause problems if multiple conversions are done simultaneously.

****
****

version 1.50

7th December 2004

Helsinki University Library, the National Library of Finland
Ere Maijala
http://www.lib.helsinki.fi/
ere.maijala at helsinki.fi

- **added some fairly simple Autoconf/Automake magic to ease building on different platforms**
- **fixed a memory leak from precedes and follows operations**
- **fixed a read of uninitialized memory error**
- **fixed a potential memory overwrite error from rule handling**
- **fixed a memory leak from ReplaceOcc operation**
- **fixed a memory leak from Len operation**
- **optimized the code a bit, now the uni2uk conversion is more than 20% faster than before**
- **added build command for Microsoft Visual C++ Toolkit 2003**

****
****

version 1.44

24th August 2004

ATP Library Systems Ltd, Finland
http://www.atp.fi
mailto:usemarcon@atp.fi

- **a malformed field with no subfields doesn't cause a crash anymore**

****
****

version 1.43

28th July 2004

ATP Library Systems Ltd, Finland
http://www.atp.fi
mailto:usemarcon@atp.fi

- **fixed a bug which caused a crash or a converted record to be reconverted when running in non-interactive mode**

****
****

version 1.42

15th June 2004

ATP Library Systems Ltd, Finland
http://www.atp.fi
mailto:usemarcon@atp.fi

- added the possibility to disable character conversion
- corrected a bug where the non-strict Replace command on a string with only spaces crashed the program

****
****
version 1.41**

15th April 2004

ATP Library Systems Ltd, Finland
http://www.atp.fi
mailto:usemarcon@atp.fi

- fixed a crash when a control field containing two characters was treated as a data field (thanks to Christopher Dunavant from VTLS for reporting the problem)
- fixed error messages related to the above crash
- added command line option -v for verbose mode
- moved the startup banner and usage text away from the library
- unified the way USEMARCON is written
- created MS Visual C++ .NET 2003 project files

****
****
version 1.4**

29th August 2003

ATP Library Systems Ltd, Finland
http://www.atp.fi
mailto:usemarcon@atp.fi

- fixed situations where the ini file was left open if an error was encountered
- fixed the file handling to only require input and output files
- moved the error messages into a header file to avoid the need to locate and load them at startup

****
****
version 1.3**

8th July 2003

ATP Library Systems Ltd, Finland
http://www.atp.fi
mailto:usemarcon@atp.fi

We have made some major modifications, fixes and restructuring to make USEMARCON more suitable for integration in other software, our main targets being on-the-fly conversions in Z39.50 clients and

multithreaded Z39.50 servers. There are too many changes to list them all here, but this document outlines the most important ones.

Major Changes

* Merged Windows and Linux versions

Windows and Linux versions have been merged into the same source. The current source should be easily adaptable to other systems too. The ini file handling has been rewritten to be cross platform code. This includes updating the ini file (the ordinal number), which now works in Linux too.

* Elimination of global and static data

The scanner and parser have been regenerated using flex++/bison++ (Win32 port available at http://http://www.kohsuke.org/flex++bison++/) to create C++ classes and avoid global non-reentrant code. Most code had to be moved from the parser (Analyse.y) to a child class (TEvaluateRule in a new header file lien_not.h). The error handler (TError) is now a member of TUMApplication and it is used by other classes also. Global temporary buffers have been incorporated into the error handler (this is a workaround to avoid allocating them in dozens of places).

* Better handling of on-the-fly conversions

Input and output files are no longer required if the data is provided in a buffer. File names in .ini files can be declared without paths. In that case it is assumed that they reside in the same directory as the .ini file itself. Error log is not created if the file name is empty.

* Elimination of all known memory leaks

All detected memory leaks have been fixed.

* Command line enhancements

Input and output files can now be specified on the command line overriding the ini file settings. This makes it possible to, for example, run conversion for a batch of files.

* A bunch of miscellaneous bug fixes

During the modification and testing phases, multiple bugs from minor to severe (crash-producing) ones were discovered and fixed.

* Non-functional code restructuring for better readability

Most source files have been restructured to fix the different indentation errors and styles. Some ugly things will remain, but the overall readability has been improved.