## OpenETCS: Subset026 Chapter 7

The formalized transformation of UNISIG subset026 chapter 7 is performed by using a newly created tool chain. Starting with a WinWord document an xml file is created which will serve as basis for several subsequent transformations. The aim is to save the time consuming examination of the delta of a new released version of the specification.

The description of packages and variables in subset026 Chapter 7 in version 3.3.0 provided by UNISIG / ERA, have been converted from a WinWord document into an xml file. This xml file “subset026\_7.xml” will serve as basis for several subsequent transformations. This step creates a formalized transformation. In addition the schema file „Subset\_Att\_26\_7.xsd“ has been created to make the validation of the xml file possible.

By now the transformations has been done for „C“ and Scade. This revealed numerous inconsistencies, ambiguities and typos. Their removal was absolutely necessary in order to generate the “C” sources without errors and the scade file.

Both word documents have been supplied in the directory “SubsetFromWord” to determe the delta between the two contents. The original provided by UNISIG is named "SUBSET-026-7 v330\_Original.doc". The one that was modified and used for the transformation is named "SUBSET-026-7 v330.doc". When a delta is discovered, these issues have to be replied to UNISIG / ERA.

The transformation to SCADE revealed the first errors within the WinWord document. Numerous descriptions of enum values contained special characters that raised errors when imported to SCADE. UNISIG / ERA should think about some descriptions of enum values like

* M\_TRACKCOND
* M\_VOLTAGE
* M\_VERSION
* NC\_CDDIFF
* Q\_CONFTEXTDISPLAY
* Q\_ORIENTATION
* Q\_TEXTCONFIRM

An additional transformation from the xml file to „Papyrus“ is planned. When this transformation becomes available, the current usage of file “.scade” becomes obsolete. The figure on the next page will show the different usage of the xml file.

The transformation of the packages to “C” provides a library of functions which may be called by the user. Additionally the “Bitwalker” was created by hand. It provides some functions which enable the user to

* set up raw packages
* supply the generated functions with the raw packages
* call the functions to fill the generated structures
* redraw the values from the structures

The directory „Bitwalker“ is the root directory for the compiler. All required files are located relatively to this directory. Therefore the supplied directory structure has to be retained.

Package 2, "System Version order", had been tested. The coding is available in Bitwalker/main.c. Corresponding to this example all other tests can be composed and executed.

