

# BMW Package Release Notes

## Artt\_Generator-2.0.2



Version:	2.0.2
Release Date:	23-Nov-2011
Package Status:	Released
Author:	BMW Group

# 1 Revision History

Revision	Date	Remarks
2.0.2	23-Nov-2011	CR71146, CR71147.
2.0.1	14-Apr-2011	Method ModuleConfAtDefRefTo() added CR71008.
2.0.0	15-Mar-2011	Behaviour of ValueOf() changed CR71004, CR71005.
1.3.0	11-Oct-2010	AUTOSAR 4.0 schema CR .
1.2.0	30-Jun-2010	New validation feature CR70359, CR .
1.1.1	27-May-2010	CR70519.
1.1.0	11-Nov-2009	User friendliness and portability CR70397, CR70343.
1.0.3	27-Oct-2009	Performance optimization CR70341.
1.0.2	29-Jun-2009	Support of more BAC2.1 templates. CR70168, CR70166, CR70167, CR70195, CR70237, CR70267.
1.0.1	03-Oct-2008	Initial revision. CR70051, CR70068.

## 2 Package Enumeration Scheme

Every package carries a 3-digit version number. The following table explains how compatibility between versions can be determined from the version number:

Changed Version	Example	Compatibility
Patch Version	<del>FileA</del> <del>FileB</del>	A defect has been fixed. Versions are fully compatible.
Minor Version	<del>FileA</del> <del>FileB</del>	A new feature was added. New version is backwards compatible to old version.
Major Version	<del>FileA</del> <del>FileB</del>	API of package changed. Versions are not compatible. If the new package is used, other packages must be changed as well.

## 3 Package Description

artt is a command line application allowing to generate text files, including source code, from AUTOSAR descriptions. As input data artt uses a template file describing static content and structure of the desired output and one or more AUTOSAR descriptions, which are serving as provider for dynamic content. Since AUTOSAR descriptions are XML files, templates for artt typically use XPATH expressions referring to certain elements in the input file.

This package is maintained by BMW AUTOSAR Core Support, via Request Tracker (<https://sc-support.bader-muenchen.de/rt3/>) or telephone hotline (+49-89-382-32233).

## 4 Revisions and Modifications

### Revision 2.0.2 [Released]

Item	Description
CR ID:	71146
CR Headline:	ARTT ChangeContext returns false when called with null as parameter.
Description of Issues:	Misleading documentation
Description of Changes:	Extended the documentation of ChangeContext method in ArGtcBase to reflect that a call to ChangeContext(null) will successfully reset the context to the root context AND return false. (although one could expect that it returns true because the context change was successfull.
Changed Files:	artt.chm
Compatibility:	Fully compatible

Item	Description
CR ID:	71147
CR Headline:	Wrong implementation of BoolValueOf
Description of Issues:	The included template utility file Helper.tt contained a helper function BoolValueOf. This implementation was wrong since it did not respect the various representations of bool-values allowed by the autosar schema.
Description of Changes:	Changed the implementation to use the correct artt internal implicit bool operator to map a ValueNode to a bool. Marked the helper function BoolValueOf and its wrapper Enabled () as being obsolete since these helpers can simply be substituted with core artt functions.
Changed Files:	Helper.tt
Compatibility:	Fully compatible

Item	Description
CR ID:	
CR Headline:	
Description of Issues:	
Description of Changes:	
Changed Files:	
Compatibility:	

## Revision 2.0.1 [Stable]

Item	Description
CR ID:	71008
CR Headline:	new method ModuleConfAtDefRefTo()
Description of Issues:	New method ModuleConfAtDefRefTo() added.
Description of Changes:	Creates XPATH to the <c>MODULE-CONFIGURATION</c> node (for AUTOSAR versions before 4.0) or the <c>ECUC-MODULE-CONFIGURATION-VALUES</c> node (starting with AUTOSAR version 4.0) of the module configuration that is based on the module definition with the given shortname.
Changed Files:	artt.exe artt.chm
Compatibility:	no restrictions to older AUTOSAR versions

## Revision 2.0.0 [Stable]

Item	Description
CR ID:	71004
CR Headline:	artt generator shall write output file even in case of error
Description of Issues:	Also for Environment.Exit in template file an outputfile is generated.
Description of Changes:	Also in case of a thrown exception in template file an output file is generated.
Changed Files:	artt.exe
Compatibility:	no restrictions to older AUTOSAR versions

Item	Description
CR ID:	71005
CR Headline:	ValueOf-Method shall not try to interpret ECUC-BOOLEAN-VALUE
Description of Issues:	In versions less the 2 the ValueOf() method returned the string found in the tt-file if it was not a boolean value. In case of a boolean value, it retruned "TRUE" or "FALSE".
Description of Changes:	The method ValueOf() now always returns just the string found in the template file without an interpretation of it.
Changed Files:	artt.exe
Compatibility:	Instead of writing: boolean blub = <#= ValueOf(<xpath to BOOLEAN-VALUE>) #> now it has to be written: boolean blub = <#= (ValueOf(<xpath to BOOLEAN-VALUE>) == true ? "TRUE" : "FALSE") #>

## Revision 1.3.0 [Released]

Item	Description
CR ID:	
CR Headline:	Handling of the changed tags in AUTOSAR 4.0 schema.
Description of Issues:	<ul style="list-style-type: none"><li>- ECUC-MODULE-CONFIGURATION-VALUES instead of MODULE-CONFIGURATION (in AR &lt; V3.x)</li><li>- ECUC- PARAM-CONF-CONTAINER-DEF instead of PARAM-CONF-CONTAINER-DEF (in AR &lt; V3.x)</li></ul>
Description of Changes:	Changed tags of AUTOSAR V4.0 are supported now. Depending on the URL given in the template or via the commandline, the tag name of AUTOSAR 2.x, 3.x or 4.x is used.
Changed Files:	artt.exe artt.chm
Compatibility:	no restrictions to older AUTOSAR versions

## Revision 1.2.0 [Stable]

Item	Description
CR ID:	70359
CR Headline:	Validation of AUTOSAR descriptions
Description of Issues:	The ARTT generator has no ability to validate the given EPC file against the BMD. This has the following disadvantages: <ul style="list-style-type: none"><li>- Existence of nodes can not be ensured</li><li>- MIN/MAX/RANGE tags can not be evaluated</li><li>- Type checks of variables can not be done</li><li>- Uniqueness of container entries can not be verified</li></ul>
Description of Changes:	Implemented validation of AUTOSAR description (EPC) against AUTOSAR definition (BMD). Validation can be triggered by specifying the AUTOSAR definition file on the command line. See user guide for more information.
Changed Files:	artt.exe artt.chm
Compatibility:	

Item	Description
CR ID:	
CR Headline:	Push- / PopContext functionality
Description of Issues:	Functionality was needed for Validation of AUTOSAR descriptions.
Description of Changes:	New set of functions added to manipulate the context using a stack: PushContext(), PopContext(), ClearContextStack(). See user guide for more information.
Changed Files:	artt.exe artt.chm
Compatibility:	



### Revision 1.1.1 [Released]

Item	Description
CR ID:	70519
CR Headline:	Artt-Generator continous generating even if verify failed
Description of Issues:	Artt-Generator returns success of generation.
Description of Changes:	Artt-Generator does not return value if successfull generated.<> 0.
Changed Files:	logger.tt
Compatibility:	

### Revision 1.1.0 [Stable]

Item	Description
CR ID:	70397
CR Headline:	Improve user friendliness
Description of Issues:	In some cases of wrong command line parameters the return value was an errorlevel of 0.
Description of Changes:	Help file extened with the information, that a not existing output folder is created. In case of a wrong command line parameter, the program returns an errorlevel <> 0.
Changed Files:	artt.chm artt.exe
Compatibility:	

Item	Description
CR ID:	70343
CR Headline:	Include search path
Description of Issues:	The usage of the templates with includes in build systems with different folder structures was not possilbe.
Description of Changes:	It is now possible to declare an search path for the includes given in an template via command line parameter -i.
Changed Files:	artt.exe
Compatibility:	

### Revision 1.0.3 [Stable]

Item	Description
CR ID:	70341
CR Headline:	ARTT Performance Issue
Description of Issues:	For large .epc files the template generation takes a long time because of the xpath search.
Description of Changes:	Performance optimizations done with different means. - Caches for Autosar shortnames to xpaths. - Working with compiled xpaths.
Changed Files:	artt.exe
Compatibility:	

### Revision 1.0.2 [Stable]

Item	Description
CR ID:	70168
CR Headline:	ARTT: Missing Include Directives.
Description of Issues:	Although ARTT documentation references MS T4 documentation (which ARTT is based on), ARTT currently does not support Template Include directives.
Description of Changes:	Added support for T4 <#@include #> directive.
Changed Files:	artt.exe artt.chm SswcT4EngineHost.dll
Compatibility:	

Item	Description
CR ID:	70166
CR Headline:	ARTT: String variables as XPATH-Expression in LOOP.
Description of Issues:	Currently only String Literals in the form "xxx" are accepted as a X-PATH expression in a LOOP-statement.
Description of Changes:	Fixed issue with expressions other than non-verbatim string literals being used in LOOP macros. Now all expressions are possible.
Changed Files:	artt.exe artt.chm
Compatibility:	

Item	Description
CR ID:	70167
CR Headline:	ARTT: Warnings shall not abort the generation process.
Description of Issues:	The ARTT generator aborts the generation process if warnings (like "unused variables") are encountered.
Description of Changes:	Warnings no longer result in a generation error, i.e. the calling code will no longer abort the build in case of template warnings.
Changed Files:	artt.exe artt.chm
Compatibility:	

Item	Description
CR ID:	
CR Headline:	Number of processed AUTOSAR files no longer limited.
Description of Issues:	Number of AUTOSAR descriptions was limited.
Description of Changes:	The number of AUTOSAR description files is no longer limited. As consequence the configuration file artt.config, which specified the used upper limit is no longer required.
Changed Files:	AutosarDirectiveProcessor.dll artt.exe artt.chm SswcT4EngineHost.dll artt.config (removed) artt.exe *.dll removed artt.exe artt.chm artt.exe artt.chm
Compatibility:	An old artt.config will not be used and therefore has no influence on the application.

Item	Description
CR ID:	70195
CR Headline:	ARTT-Generator: New convenience functions for template creation.
Description of Issues:	<p>The functions of interest are:</p> <ul style="list-style-type: none"> <li>- RefValueExists() (a combination of the existing functions Exists() and RefValueOf())</li> <li>- AppendTrailingSpaces()</li> <li>- LastStringAfterSlash(string xpath)</li> <li>- bool BitTest(int val, bitNo)</li> <li>- xpath creators (ShortName(), DefRef(), ...)</li> <li>- ToHex(...)</li> <li>- BoolFromString()</li> </ul>
Description of Changes:	<p>A number of new functions have been added. In order to fit existing architecture, original function names were used as suggestion and were adapted as specified below.</p> <p>The following utility functions have been added to artt: BitTest(), Xp.DefRefTo(), Xp.ValueAtDefRefTo(), Xp.ValueRefAtDefRefTo(), LastValueSegmentOf(), ModuleConf(), Xp.ShortNamePath(), Assert(), FormatHex(), AsBool(), RefExists().</p> <p>See user guide for detailed information about the functionality of new and existing methods.</p>
Changed Files:	<p>artt.exe</p> <p>AutosarDirectiveProcessor.dll</p> <p>artt.chm</p>
Compatibility:	

Item	Description
CR ID:	70237
CR Headline:	Extension of XPathFactory functionality
Description of Issues:	Better usability.
Description of Changes:	<p>New XPathFactory.ContainerAtDefRefTo(): Creates XPath for a certain container node.</p> <p>Change function XPathFactory.ModuleConf(): Return absolute XPath instead of relative.</p> <p>New function FormatBin(): format integer to binary format with variable length.</p> <p>new commandlineswitches for overwrite the name of the generated file and the namespace URI in the template</p>
Changed Files:	<p>artt.exe</p> <p>artt.chm</p>
Compatibility:	

Item	Description
CR ID:	70267
CR Headline:	Validation of the given XML against a schema
Description of Issues:	
Description of Changes:	Function to validate the .epc files against a via commandline given .xsd schema.
Changed Files:	artt.exe artt.chm
Compatibility:	

## Revision 1.0.1 [Stable]

Item	Description
CR ID:	
CR Headline:	Support of relative XPATH references.
Description of Issues:	
Description of Changes:	A new feature supporting relative XPATH references has been added through the ChangeContext() command.
Changed Files:	artt.exe artt.chm AutosarDirectiveProcessor.dll
Compatibility:	

Item	Description
CR ID:	70051
CR Headline:	Artt-Generator: Failure when called from network drive.
Description of Issues:	When called from a network drive, artt cannot be executed due to a .NET runtime exception.
Description of Changes:	artt executable and all required libraries were signed with a BMW signature. The signature can be imported on Windows machines that need to call artt from a network path.
Changed Files:	artt.exe artt.chm AutosarDirectiveProcessor.dll SswcT4EngineHost.dll Microsoft.VisualStudio.TextTemplating.dll
Compatibility:	

Item	Description
CR ID:	70068
CR Headline:	LOOP processing of XML nodes.
Description of Issues:	
Description of Changes:	A new feature was added to support looping over a set of referenced XML nodes through the LOOP command.
Changed Files:	artt.exe artt.chm AutosarDirectiveProcessor.dll
Compatibility:	