

# Release Notes

## ASCET V6.4.8

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## Table of Contents

Copyright .....	2
1. Introduction .....	5
1.1. Definitions and Abbreviations .....	5
1.2. References.....	5
1.3. Conventions .....	6
1.4. User Documentation .....	6
2. Product Definition .....	6
2.1. Functions at a glance.....	6
2.2. General Description .....	7
2.2.1. Safety Notice .....	7
2.2.2. System Prerequisites .....	7
2.2.3. Software Prerequisites .....	8
2.2.4. Access Rights.....	8
2.2.5. Release Test Configuration.....	9
2.3. Delivery .....	9
2.3.1. Used 3rd Party Software .....	10
2.4. Installation.....	10
2.5. Licensing.....	11
3. Changes .....	11
3.1. What's New.....	11
3.2. Compatibility to Earlier Releases .....	11
3.3. Fixed Problems .....	13
3.4. Known Issue Reports.....	22
3.5. Known Issues.....	22
4. Hints.....	23
4.1. Release Notes .....	24
4.2. Installation issues with Virus Scanner Tools.....	24
4.3. Performance .....	24
4.4. XML Workspace and Export/Import.....	24
4.5. Double Byte Characters are not supported .....	25
4.6. Update of MinGW GCC .....	25
4.7. Changed Safety Advice for EHOOKS On Target Bypass .....	25
4.8. Modelling of Messages in AUTOSAR Software Components .....	26
4.9. Customizable labels for ASAM-2MC Generation (*.a2l).....	26
4.10. Note on the use of discrete data types .....	26

4.11. Advanced Information ..... 26

5. Contact, Support and Problem Reporting ..... 27

# 1. Introduction

## 1.1. Definitions and Abbreviations

Term/Abbreviation	Definition
ASCET-DIFF	ASCET Difference Browser
Code Generation	Code generation is the first step in the transformation of a physical model to executable code. The physical model is transformed into ANSI C code. Since the C code is compiler (and therefore target) dependent, different code for each target is produced.
EHI	<b>ETAS Help Desk International</b>
File extension *.amd	<b>ASCET Model Description</b> , XML based description format of ASCET models
File extension *.axl	<b>Archived XML</b> for ASCET
HW	<b>Hardware</b>
KIR	<b>Known Issue Report</b> – For severe Problem Reports which occur after a release, ETAS has introduced the Known Issue Report to inform affected customer immediately. The current Known Issues of former versions can be found on the ETAS website: <a href="http://www.etas.com/kir">http://www.etas.com/kir</a>
PR	<b>Problem Report</b>
SW	<b>Software</b>
Target	The hardware a program or an experiment runs on, e.g. MPC55xx, TriCore, SH2
WB	<b>Walkback</b> : ASCET system error

## 1.2. References

### [ASW\_GS\_EN]

ASCET V6.4 Getting Started

### [ASW\_INST\_EN]

ASCET V6.4 Installation Guide

### [ASW\_ADMIN\_EN]

ASCET V6.4 Administration Guide

### [ASW\_AR\_UG\_EN]

ASCET V6.4 AUTOSAR User's Guide

### [ASW\_ARCONV\_UG\_EN]

ASCET V6.4 AUTOSAR to ASCET Converter User's Guide

### [ASW\_ICON\_REF\_EN]

ASCET V6.4 Icon Reference Guide

### [ASW\_RP\_UG\_EN]

ASCET-RP V6.4 User's Guide

### [ASW\_SE\_UG\_EN]

ASCET-SE V6.4 User's Guide

**[ASW\_DIFF\_INST\_EN]**

ASCET-DIFF V6.4 Installation Guide

### 1.3. Conventions

The following typographical conventions are used in this document:

<code>OCI_CANTxMessage msg0 = 0;</code>	Code snippets are presented on a gray background and in the Courier font. Meaning and usage of each command are explained by means of comments. The comments are enclosed by the usual syntax for comments.
Choose <b>File → Open</b> .	Menu commands are shown in boldface.
Click <b>OK</b> .	Buttons are shown in boldface.
Press <ENTER>.	Keyboard commands are shown in angled brackets.
The "Open File" dialog box is displayed.	Names of program windows, dialog boxes, fields, etc. are shown in quotation marks.
Select the file <code>setup.exe</code>	Text in drop-down lists on the screen, program code, as well as path- and file names are shown in the Courier font.
A <i>distribution</i> is always a one-dimensional table of sample points.	General emphasis and new terms are set in italics.

 **NOTE**

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Important hint for the user.

### 1.4. User Documentation

The set of ASCET manuals (see section 1.4) can be found on the DVD installation medium.

## 2. Product Definition

### 2.1. Functions at a glance

ASCET is a development environment that enables the specification and implementation of control algorithms for embedded systems. ASCET V6.4 forms the core installation and must be installed first. The products ASCET-MD (Modeling & Design), ASCET-MDV (Model Viewer), ASCET-RP (Rapid Prototyping) and ASCET-SE (Software Engineering) for various micro controller targets can be installed on it independently.

Together with the add-on products ASCET-SCM (Software Configuration Management) and ASCET-

DIFF (Difference Browsing), ASCET forms a complete software development tool-chain

## 2.2. General Description

### 2.2.1. Safety Notice

If ASCET is used to generate code for safety-related applications, the following assumptions are made on, and must be validated for, all users:

- You are a trained software engineer who wants to use the ASCET model-based development approach to generate C code for use in a safety-related system.
- You are a recognized expert in the design and implementation of software-intensive safety-related systems. You have detailed knowledge about the failure modes of the system you are constructing and will have been the author or technical reviewer of the system safety case as it relates to aspects of the systems realized in software.

Further information about the use of ASCET in safety-related applications is available in the following documents that are available on request from ETAS:

- ASCET V6.4 Safety Manual
- ASCET V6.4 MISRA-C:2012 Compliance Guide

### 2.2.2. System Prerequisites

The following minimum system prerequisites have to be met:

<b>Required Hardware</b>	1,5 GHz PC 1 GB RAM DVD-ROM drive Network adapter Graphics with a resolution of at least 1024 x 768, 32 MB RAM 16Bit color and DirectX 7
<b>Required Operating System</b>	Windows® 10 x64 (Build 22H2 or higher) Windows® 11 x64 (Build 23H2 or higher)
<b>Required Free Disk Space</b>	3 GB (not including the size for application data)

The following system prerequisites are recommended:

<b>Required Hardware</b>	2,0 GHz Dual-Core PC or equivalent 16 GB RAM DVD-ROM drive Network adapter
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	Graphics with a resolution of 1920 x 1200, 256 MB RAM
<b>Required Operating System</b>	Windows® 10 x64 (Build 1703 or higher) Windows® 11 x64 (Build 23H2 or higher)
<b>Required Free Disk Space</b>	>4,0 GB
<b>Required Software</b>	Microsoft® .NET Framework 4.6.2 or later Microsoft® Visual C++ Redistributable Package 2010 SP1 Microsoft® Visual C++ Redistributable Package 2015 SP2

### 2.2.3. Software Prerequisites

You ensure that your PC has the following Microsoft® redistributables installed **before** installing ASCET:

- Microsoft® .NET Framework 4.6.2 or later
- Microsoft® Visual C++ Redistributable Package 2010 SP1
- Microsoft® Visual C++ Redistributable Package 2015 SP2

ASCET V6.4 cannot be used without installing **at least one** of the product executables:

- ASCET-MD V6.4
- ASCET-MDV V6.4
- ASCET-RP V6.4
- ASCET-SE V6.4 for a microcontroller target.

Any combination of these products can be installed once ASCET V6.4 is present. For details see the ASCET Installation manual.

ASCET uses XML technology for code preview and code documentation. Please see the “Hints” section for details on the required software installation.

### 2.2.4. Access Rights

#### 2.2.4.1. Administrator Rights

Administrator rights are:

- Mandatory for installation
- Optional for normal operation

#### 2.2.4.2. Registry Access

ASCET places data in the Windows registry.



### 2.2.4.3. File System Access

ASCET requires access to the following file-system locations:

Folder	Default(s)	Installation	Use
<installation folder>	C:\ETAS\ASCETx.y	RW	RW
	C:\ETAS\LogFiles	RW	RW
	C:\ETAS\ETASManuals	RW	R
	C:\ETASData\ASCETx.y	RW	RW
C:\Program Files (x86)\Common Files\ETAS		RW	RW
C:\Windows\SysWOW64		RW	RW
%ProgramData%\ETAS	C:\ProgramData\ETAS	RW	RW
C:\Users\ <username>\AppData\Local\Temp</username>		RW	RW
C:\Users\ <username>\AppData\Roaming\ETAS</username>		RW	RW

### 2.2.5. Release Test Configuration

The ASCET release tests have been executed with the following configuration:

- Host OS:
  - Windows® 10 x86\_64
  - Windows® 11 x64
- Compilers for host PC:
  - Microsoft Studio 2005 Express
  - Microsoft Studio 2008
  - MinGW GNU Compiler V13.2.0
- Compilers for Prototyping targets:
  - MinGW GNU Compiler V13.2.0
  - QCC V6.5.0
- µC on target testing:
  - MPC55xx, WindRiver Compiler V5.6.0

## 2.3. Delivery

The software is delivered with an installation routine on a DVD including ASCET software, documentation, tools, utilities, and further information. All software documentation is available in the Portable Document Format (PDF), which requires Adobe® Reader®. You find the installation link in the `ToolsAndUtilities` directory on the installation DVD.

The DVD contains the following items:

<b>Directory</b>	<b>Meaning / Explanation</b>
<b>ASCET V6.4</b>	ASCET base system installation, including release notes
<b>ASCET-DIFF V6.4</b>	ASCET Model Difference Browser installation
<b>ASCET-MD V6.4</b>	ASCET Modeling & Design installation
<b>ASCET-MDV V6.4</b>	ASCET Model Viewer installation
<b>ASCET-VIEW V6.4</b>	ASCET Eclipse-based Model Viewer installation
<b>ASCET-RP V6.4</b>	ASCET Rapid Prototyping installation
<b>ASCET-SCM V6.4</b>	ASCET Software Configuration Management installation
<b>ASCET-SE V6.4</b>	ASCET Software Engineering (for multiple targets) installation
<b>Documentation</b>	Documentation set for complete ASCET V6.4 product family (in PDF format)
<b>Graphic</b>	Graphical elements for the product installer program
<b>Main</b>	Main elements for the product installer program
<b>MDA V5.3</b>	Measure Data Analyzer installation
<b>Partner</b>	ETAS Partner information for the product installer program
<b>Support</b>	ETAS customer support contact information for the product installer program
<b>ToolsAndUtilities</b>	<ul style="list-style-type: none"> <li>▪ ASCET-SCM_CM-Tool-Configuration (content also incl. in online help)</li> <li>▪ ASCET-SCM_Difference Browsing</li> <li>▪ ASCET-SCM_Driver Toolkit</li> <li>▪ ASCET-SCM_Subversion Client V1.6</li> <li>▪ ASCET-SCM_Subversion ScriptingAPI Example</li> <li>▪ CaliberRM Coupling</li> <li>▪ Licensing Tools for FlexLM</li> <li>▪ MikTex Documentation Generation</li> <li>▪ OpenSourceSoftware</li> <li>▪ WebService Example</li> </ul>

### 2.3.1. Used 3rd Party Software

ASCET makes use of products that are released under the respective licenses.

For details, please refer to the following documents on the DVD under the folder:

`\ToolsAndUtilities\OpenSourceSoftware\`

## 2.4. Installation

You must install the following Microsoft® Redistributables **before** installing ASCET:

- Microsoft® .NET Framework 4.6.2 or later

- Microsoft® Visual C++ Redistributable Package 2010 SP1
- Microsoft® Visual C++ Redistributable Package 2015 SP2

These are available from Microsoft.

After you have installed the r, follow the installation instructions on the DVD installer or the ASCET installer.exe. Further details are available in the installation manual [ASW\_INST\_EN].

## 2.5. Licensing

The use of ASCET products is protected by electronic licensing. Valid licenses are necessary to install ASCET and its add-ons. The use of unlicensed ETAS software is prohibited. The required licenses are not included in this delivery.

When you purchase ASCET licenses, you receive a separate entitlement letter. You activate the license using a self-service portal on the ETAS website (<https://www.etas.com/support/licensing>). For assistance, please consult the help file available on the start page of the self-service portal. During the activation process, you receive the necessary license keys per E-mail.

## 3. Changes

This chapter describes changes with respect to the previous version ASCET V6.4.7.

### 3.1. What's New

The following changes have been made with this release:

- MinGW GCC V13.2 has been introduced for the PC simulation and ANSI-C target
- Code Generator uses Perl V5.38 64bit.
- Support for EHOOKS V5.1, V5.2 and V5.3 for On Target Bypass
- Removal of the support of EHOOKS V4.10
- Modelling of Messages in AUTOSAR Software Components (SWC)
- Improved and customizable ASAM-2MC (\*.a2l) generation

### 3.2. Compatibility to Earlier Releases

ASCET V6.4.8 is functionally upwards compatible with previous versions.

#### NOTE

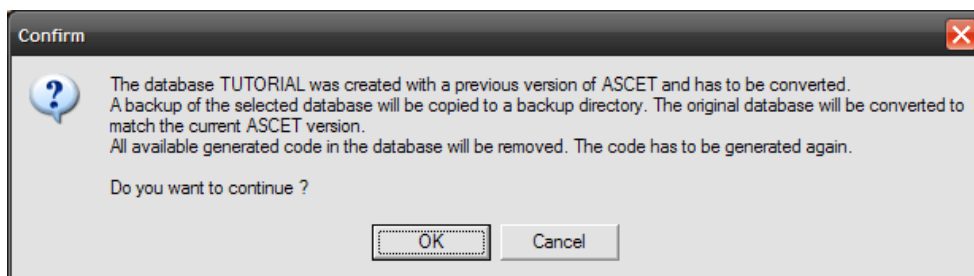
There are no known Database incompatibilities to ASCET V5.0 / V5.1 / V5.2 / V6.0, V6.1, V6.2 & V6.3.

ASCET V6.4.8 can import or read models that have been created with ASCET-SD V4.0.16 or higher.

Before exporting or converting the database, a database defragmentation (menu Tools→Database→Performance Utilities→optimize database) is recommended. For older models, you have to import and export them with ASCET-SD V4.0.16 or V4.1.x first.

After opening a database that was created using a previous ASCET version (e.g. ASCET-SD V5.2.2 or V6.1.x), ASCET asks if you want to convert the database (see screenshot below). If you answer with yes, a path selection dialog is opened, and you can define the destination directory for the database conversion. A new ASCET V6.x database is created in that directory. The original database remains untouched. The converted database is now usable with ASCET V6.x but no longer with the old version.

A similar conversion is made for export files (\*.exp) created with previous versions.



If you encounter difficulties in using your ASCET V5.x or V6.x Database under ASCET V6.4, please contact your local ETAS Hotline.

### NOTE

ASCET V6.4.8 provides \*.and export compatibility for the following legacy versions:

- V5.2.2
- V6.0.1
- V6.1.4
- V6.2.1
- V6.3.1
- V6.4.0
- V6.4.1
- V6.4.2
- V6.4.3
- V6.4.4
- V6.4.5
- V6.4.6
- V6.4.7

### 3.3. Fixed Problems

This section describes the set of fixed problems of the released version of ASCET V6.4.8.

ID	Title
366958	<p><b>Bad line routing after copy/paste (or cut/paste)</b>            ASCET may corrupt the connection lines in the block diagram in case copy/cut &amp; paste is used for multiple objects including their connection lines.</p>
546600	<p><b>No warning is generated if a method local variable and a message have the same name</b>            ASCET does not detect possible name clashes between local and global elements. From now on a warning will be issued (which can be promoted to an error):            WARNING(WMd19): element "&lt;label&gt;" already declared in component scope</p>
561813	<p><b>Reinitialize Variables does not work for the size of variant size arrys/matrices</b>            ASCET does reset the calibrated lengths of arrays/matrices with variant size to the initial size            WHEN using "Reinitialize Variables" in the experiment</p>
584160	<p><b>Write access to a an element with "external access - SET" is not possible</b>            ASCET may throw unreasonable errors during code generation            WHEN Set access is used for an instance variable            AND Get access is not activated:            ERROR(MMd122): method "limitInt" not defined in class "Reference::Impl"            ERROR(MMd13): &lt;limitInt&gt; - due to expression - is not a left value for assignment</p>
584219	<p><b>Code generation takes a very long time</b>            The code generation takes a very long time in case the code optimization option "Common Subexpression Elimination" is active.</p>
586788	<p><b>Adding variables to CT block via tool bar not possible</b>            Inserting a variable into a Block Diagram Continuous Time Block is not possible even though it works for a similar ESDL block.</p>
586797	<p><b>Variables of type array cannot be inserted into CT-components</b>            It is not possible to insert an array type element in an Continuous Time Block.</p>
588040	<p><b>Export/import to Amd fails with schema validation error due to "_NOIMPL_[DEFAULT_1]_NOIMPL_" implementation name</b>            ASCET throws an XML validation error due to "_NOIMPL_[DEFAULT_1]_NOIMPL_" implementation name            WHEN exporting/importing a model as AMD file            AND an implementation set name contains [ and/or ]            Export/import to amd fails with schema validation error</p>
594134	<p><b>Inconsistent generation of WMd184</b>            In some case the warning WMd184 does not reflect the suspicious code characteristic. So the phrasing has been changed to:            WARNING(WMd184): Possibly conflicting variable access may lead to unexpected behavior in the compiled code</p>

597205	<p><b>Incorrect variant size check for message array</b>  ASCET shows an error dialog "The X size variant element is undefined"  WHEN a global message array has a variant size  AND the properties editor of the exported element is opened via the properties dialog of the imported element  AND a system constant is selected for the variant size.</p>
600285	<p><b>Misleading "WARNING(WIle50): unreachable code after break statement --- removed" for statemachine</b>  ASCET may generate an unreasonable code generation warning "WARNING (WIle50) : unreachable code after break statement --- removed"  WHEN a statemachine contains transitions with always true conditions  ASCET may optimize the generated code in a way which results in unreachable code even though this is not reflected in the model.</p>
603021	<p><b>Changes in ESDL code of statemachine are not saved</b>  ASCET does not persist manual code changes in ESDL methods of statemachines  WHEN the editor for the code has been opened with the link from the monitor window (e.g. clicking on a warning message from a previous code generation)</p>
648308	<p><b>The Dependency attribute of System Constants is not displayed</b>  The Dependency attribute of System Constants is not displayed in the Browse view of its parent component.</p>
664962	<p><b>Generated code violates MISRA C:2012 Rule 10.3</b>  ASCET generates code which violates MISRA C:2012 Rule 10.3  WHEN a temporary variable of an integer type is created automatically  AND the result of a comparison is assigned to this variable.</p>
665074	<p><b>Too many warnings of type "WARNING(WIle365896): Udisc/Sdisc may be generated in an unexpected way"</b>  ASCET shows warnings or type "WARNING (WIle365896) : Udisc/Sdisc may be generated in an unexpected way" by mistake for some record elements and messages</p>
666831	<p><b>System error during code generation for AUTOSAR projects with array of classes</b>  ASCET runs into a system error  WHEN code is generated for a n AUTOSAR project  AND the model contains arrays/matrices of classes  A walkback occurs:  SGCgComplexClassType does not understand getPhysInterval</p>
666863	<p><b>"Finding Unused Implementation Sets" does not scroll to the found implementation set.</b>  The database menu "Finding Unused Implementation Sets" lists the unused implementation set of the entire database.  When double-clicking the list entry, the Implementation Editor of the component is opened but it does not scroll to the unused implementation set if there is a long list of objects.</p>
675321	<p><b>ASCET may generate integer literals without type indicator</b>  If the maxSize of an array is replaced automatically by an integer literal, this literal is used without the postfix which indicates its type. (e.g., "42" instead of "42U")</p>
677084	<p><b>System error when loading an experiment environment</b>  ASCET runs into a system error  WHEN ASCET loads an experiment environment that measures data in an array or</p>

	<p>matrix</p> <p>AND this element (array or matrix) has become a reference meanwhile</p> <p>The measure window for this element could not be restored and a system error occurs:</p> <pre>UndefinedObject does not understand @</pre>
<b>679919</b>	<p><b>Values of elements in numerical editor may differ from value in data model</b></p> <p>For numerical elements ASCET allows to enter the initialization data in a numerical editor without any length limitation. Even though the decimal places in the data model is limited. Therefore, the used value in the model may not be exactly the same like the entered one. To indicate the possibly changed value ASCET now shows the stored and the displayed value in the numerical editor.</p>
<b>680037</b>	<p><b>Deleting, Adding, or Renaming an element from the Outline does not update the Syntax Highlighting of the Model Identifier</b></p> <p>The marked identifiers in an ESDL or C code editor are not updated automatically in case elements are deleted, renamed, or added.</p>
<b>680961</b>	<p><b>ASCET-Links in Monitor are wrong colored and incorrect</b></p> <p>ASCET may show invalid ASCET Links in the Monitor window</p> <p>WHEN ASCET adds information containing ASCET-Links into the ASCET monitor</p> <p>AND the monitor window has not been opened at this time</p> <p>The information is not correct reconstructed if the monitor is opened afterwards. This can result in some invalid ASCET-Links which are not working like intended.</p>
<b>686969</b>	<p><b>ASCET runs in a system error when using "Open Component in Project Context"</b></p> <p>ASCET runs into a system error</p> <p>WHEN using the button "Open Component in Project Context" from the "Model Path of export" section in the "Path for" dialog</p> <p>AND the component has scope "Imported"</p> <p>AND the "Exported" of the component does not reside in the project but in another component</p> <p>A walkback occurs:</p> <pre>SGVariable does not understand getMakeConfigForElement.</pre>
<b>700041</b>	<p><b>Multiple declarations for record with "Object Based Controller Physical" Cgen setting</b></p> <p>ASCET may generate redundant code</p> <p>WHEN the "Object Based Controller Physical" code generator setting is used</p> <p>AND a record is used in a message-array</p> <p>ASCET may wrongly generate multiple unnecessary implementations for the same record.</p> <p>Note: In case ASCET is configured to ignore the implementation in the record name template, ASCET generates uncompatible code.</p> <p>Here, the multiple implementations all share the same name in the generated c code, which is illegal in C.</p>
<b>709072</b>	<p><b>Walkback in code generation when generating code two times for a workspace</b></p> <p>ASCET runs into a system error</p> <p>WHEN generating code for a project in a workspace twice</p> <p>AND a statemachine with a broken graphical representation is included</p> <p>A walkback occurs:</p> <pre>ExCLDTIndexOutOfRange) Index out of range.: 1</pre>
<b>710858</b>	<p><b>Incomprehensible constant folding info messages</b></p> <p>ASCET throws multiple incomprehensible info messages IMdl40 and lmdl43 (constant</p>

	<p>folding - reduced IF-THEN statement)</p> <p>WHEN generating code for a model with IF condition with a system constant which generates a preprocessor command.</p>
<b>710941</b>	<p><b>System Error during EHOOKS automapping</b></p> <p>ASCET runs into a system error</p> <p>WHEN an EHOOKS On-Target-Bypass is configured</p> <p>AND the Automapping features is used</p> <p>A walkback occurs:</p> <pre>WB_IDispatch_call_returned_an_exception._ErrorCode_0x800706BA_Sou rce_mscorlib._The_RPC_server_is_unavailable.</pre>
<b>711794</b>	<p><b>EHOOKS: EH_copy_ECU_variable is still available for the input tab although the original ECU variable was deleted in the output tab</b></p> <p>Even though the ECU variable to be overwritten has been removed from the On-Target-Bypass configuration of EHOOKS, the related backup copy variable is still available in the selection.</p>
<b>713368</b>	<p><b>Customer Data lost in Implementations or Data</b></p> <p>ASCET loses Customer Data in Implementations or Data</p> <p>WHEN the scope of an Array/Matrix is switched from Local to Imported/Exported or back</p>
<b>713746</b>	<p><b>Imported system constant used for variant size matrix as method argument undefined in C code</b></p> <p>ASCET does not generate the definition of a system constant macro</p> <p>WHEN the system constant has scope "Imported"</p> <p>AND is used as the variant size of a matrix/array method argument.</p>
<b>713862</b>	<p><b>Save button in Project Editor not active after changes</b></p> <p>After doing changes in the mapping of an EHOOKS project the Save button is not consequently active to be pressed for saving.</p>
<b>714270</b>	<p><b>'Get ECU Labels and Map' not working for record elements</b></p> <p>ASCET may not be able to map record elements to EHOOKS signals from the ECU for On-Target-Bypass.</p>
<b>714441</b>	<p><b>Customer specific Engineering: ASCET Graphic Generator enhancement</b></p> <p>Upgrade the ASCET Graphic Generator backend to V6.4.7 (x64).</p>
<b>714828</b>	<p><b>Method name generated improperly if name of representation contains underscore</b></p> <p>ASCET may generate unexpected code</p> <p>WHEN the method name and/or the implementation set include an underscore ('_')</p> <p>ASCET may generate shortened method names.</p> <p>Solution: A new tool option "Disable Truncation of service routine names" has been introduced to configure the desired behavior.</p>
<b>715167</b>	<p><b>Duplicate prefixes for types are generated for maps</b></p> <p>ASCET does not generate the correct type names for matrix types in AUTOSAR code generation. The name template for Matrix types in the ARXML options is not evaluated correctly.</p>
<b>715659</b>	<p><b>ASCET runs in a system error when using "Open Component in Project Context"</b></p> <p>ASCET runs into a system error</p> <p>WHEN using the button "Open Component in Project Context" from the "Model Path" section in the "Path for" dialog</p> <p>A walkback occurs:</p> <pre>Arrays should not implement this method</pre>



<b>715922</b>	<p><b>Child dialogs may pop up partly outside the visible area</b>  ASCET opens a child dialog partly outside the visible area  WHEN multiple screens are used  AND the resolutions are not the same  AND/OR the areas of the screens are placed unaligned.</p>
<b>716016</b>	<p><b>"Create ASCET Link" does not work for "Data" and "Implementation" tab</b>  ASCET links are not copied to the clipboard  WHEN using the "Create ASCET link" from the context menus of items in the Implementation and Data browse view of components</p>
<b>718170</b>	<p><b>System error when editing implementation of Record</b>  ASCET runs into a system error  WHEN an Implementation of a record element in a module is edited  A walkback occurs:  WB_UndefinedObject_does_not_understand_value</p>
<b>718381</b>	<p><b>Erroneous internal memory management</b>  The ASCET internal memory management may in very rare cases lead to an allocation of insufficient memory for reading/writing objects from/to the database.</p>
<b>718869</b>	<p><b>Wrong assignment when using "Extra Reference Connector"</b>  ASCET does not generate a pointer access correctly  WHEN the "Extra Reference Connector" is activated for an Out argument of a method  AND it is used as argument for another nested method call</p>
<b>719081</b>	<p><b>Navigation Tree shows in Hierarchies double Entries and filtered Entries</b>  ASCET shows multiple entries for the same hierarchy in the Navigation view even though the filter settings should suppress these.</p>
<b>719334</b>	<p><b>System error during code generation for model with nested loops</b>  ASCET runs into a system error during code generation  WHEN a model contains nested loops  AND the used variables in deepest loop have been modified prior code generation.  A walkback occurs:  Primitive failed in: Behavior&gt;&gt;#new: due to Not enough memory</p>
<b>719945</b>	<p><b>Throw warning for possible uninitialized process local pointer</b>  ASCET misses to throw a warning  WHEN a process/method local variable is set to "Reference"  AND the pointer to this variable is not initialized explicitly (e.g. read from external source)  A new warning has been introduced:  WARNING(WMdl823): possible uninitialized reference of local variable "locvar"</p>
<b>721080</b>	<p><b>Rescale sequence without function when wrong process selected</b>  ASCET does not rescale when the command "Rescale Sequence Calls" in BDE is used  WHEN it is applied to a sequence call that belongs to a process different from the selected one</p>
<b>722016</b>	<p><b>Arrays and matrices are still shown in the navigation tree</b>  ASCET still shows arrays and matrices in the navigation tree of a component  WHEN the option Show Primitive Elements under Tool Options -&gt; Appearance -&gt; Tree Pane -&gt; Navigation Tree is deactivated.</p>
<b>722703</b>	<p><b>Redundant display of warnings concerning EHOOKS message mapping</b>  ASCET shows multiple warnings in a dialog concerning unresolved messages  WHEN using the EHOOKS mapping of messages to ECU variables.</p>

<b>723252</b>	<p><b>Imported system constant undefined in C code for 2nd code generation</b></p> <p>ASCET does not generate the definition of a system constant macro          WHEN this system constant has the scope "Imported"          AND this system constant is used as the variant size of a matrix/array method argument          AND the code generation is started for a second time without any model change or          Touch Recursive</p>
<b>725172</b>	<p><b>Wrong default settings for the Calibration attribute in the element properties</b></p> <p>ASCET does not set the default calibration access behavior of an element          WHEN changing the "Kind" in the properties window of an element in the properties editor          E.g. the calibration access is set to Write and Read when creating a parameter, but the calibration access keeps the setting of the variable) when creating a variable and changing it to a parameter.</p>
<b>725247</b>	<p><b>System error when generating code for incomplete model</b></p> <p>ASCET runs into a system error          WHEN generating code          AND the model contains references to missing child components.          A walkback occurs:  <code>CTError does not understand do:</code></p>
<b>725412</b>	<p><b>Extremely low performance with specific complex projects</b></p> <p>ASCET has an extremely low performance          WHEN ASCET V6.4.5 ff is used          AND certain operations are executed in a (complex) project context (e.g. BDE handling, code generation, ...)</p>
<b>725521</b>	<p><b>Enum array initialized with '0' when activating Sparse Array generation</b></p> <p>ASCET may generate initialization data of the wrong type          WHEN arrays of enumeration types are used          AND the Project Property "Generation of Enums" is set to "Enumeration"          AND the generation of Sparse Arrays is activated in the target options</p>
<b>727328</b>	<p><b>Import/Export of EHOOKS messages takes very long if ECU variable info is checked</b></p> <p>ASCET needs a very long processing time          WHEN exporting/importing messages from the EHOOKS tab of an EHOOKS project</p>
<b>728330</b>	<p><b>Multiplication with zero may be wrongly optimized</b></p> <p>ASCET generates wrong compilable code          WHEN multiplying with a constant zero          OR performing a remainder operation with zero as numerator          ASCET optimizes the expression, possibly discarding side-effects like function calls or increment operators.</p>
<b>728805</b>	<p><b>Index information for Record implementation gets lost on AMD import</b></p> <p>ASCET may lose the index information in the record implementation when further element attributes from the list below in the same implementation set are imported:</p> <ul style="list-style-type: none"> <li>* AUTOSAR:              invalidationPolicy, aliveTimeout, handleNeverReceived, handleOutOfRange, handleDataStatus, policy</li> <li>* Complex elements:              memoryLocationInstance, cacheLocking, rescalingFormula, memoryLocationReference</li> </ul>
<b>729261</b>	<p><b>WB: 'Primitive failed in: Object&gt;&gt;#at: due to Index out of range in argument 1' for</b></p>

	<p><b>not optimized method calls</b></p> <p>ASCET runs into a system error</p> <p>WHEN codegen.ini contains the following options:</p> <p>ConditionalDataStructure = true</p> <p>conditionalInputValues = true</p> <p>extendedConditionalInputvalues = true</p> <p>AND the implementation setting "Optimize method calls" is deactivated</p> <p>AND variant size arrays are used</p> <p>A walkback occurs:</p> <pre>Primitive failed in: Object&gt;&gt;#at: due to Index out of range in argument 1</pre>
<b>732159</b>	<p><b>System error during code generation</b></p> <p>ASCET runs into a system error</p> <p>WHEN attempting to compile code similar to <math>z = (x++) * 0</math></p> <p>An arbitrary walkback may occur and a fatal error:</p> <pre>ERROR(): Internal error: Shift expression with negative constant</pre>
<b>732468</b>	<p><b>"Potentially Used" of "Show Unused Elements" does not work</b></p> <p>ASCET may wrong information in the "Potentially Used" column of "Show Unused Elements" view.</p> <p>So this column has been removed and is ensured that the information about the unused elements is always correct.</p>
<b>733776</b>	<p><b>Missing limiter when using arithmetic services</b></p> <p>ASCET generates wrong compilable code</p> <p>WHEN arithmetic services are enabled</p> <p>AND the target of an assignment has limiting enabled</p> <p>AND this target has a range that is smaller than the set of values of its assigned implementation type</p> <p>AND this target's range matches the set of values of a smaller type (e.g. the target has implementation type S32 and value range 0 to 65535, which matches U16)</p> <p>ASCET wrongly does not limit the assignment to the target's range.</p>
<b>734781</b>	<p><b>Runnable incorrectly encapsulated with unused code macro</b></p> <p>ASCET may disable runnables with unused code macros</p> <p>WHEN AUTOSAR is used</p> <p>AND the generation of system constants is enabled</p> <p>AND the runnable in question does not have any side effect</p>
<b>735446</b>	<p><b>Default path of Cgen directory</b></p> <p>Due to common regulations concerning IT security the default path of the Cgen directory should not be under C:\Program Files anymore.</p>
<b>737609</b>	<p><b>System Error when generating code for do-while loop</b></p> <p>ASCET runs into a system error</p> <p>WHEN code is generated for a model with a switch case statement or a statemachine</p> <p>AND that model contains a do-while loop</p> <p>A walkback occurs:</p> <pre>receiver must be a boolean</pre>
<b>738598</b>	<p><b>System error when toggling scope of system constant</b></p> <p>ASCET runs into a system error</p> <p>WHEN the properties editor is used</p>

	<p>AND a system constant is changed from imported to exported and back again A walkback occurs: <code>UndefinedObject does not understand primitiveValuesAt:</code></p>
<b>738831</b>	<p><b>Errors on importing AUTOSAR files not displayed</b> When importing an AUTOSAR XML file the occurring errors are not displayed in ASCET.</p>
<b>739496</b>	<p><b>Show unused elements erroneously detect and delete mapped NV-Data elements</b> ASCET shows variables as unused when executing "Show unused elements" WHEN they are mapped to NV Data interfaces in an AUTOSAR Software Component.</p>
<b>739832</b>	<p><b>Invalid input quantity for tables in ASAM-2MC file</b> Using an implementation cast as input for a distribution causes ASCET to write the name of the implementation cast into the ASAM-MC2 file as distribution source.</p>
<b>741154</b>	<p><b>MISRA 14.2 violation in for-loops over bounded types</b> ASCET may generate code which is not MISRA-C compliant WHEN a loop is used which is modelled or optimized to an empty loop condition ASCET now indicates such a possible violation of the MISRA-C rule 14.2 by an additional warning during code generation: <code>WARNING(WMdl8886): The loop condition is always &lt;true&gt;</code></p>
<b>743725</b>	<p><b>Wrong number of code generation errors/warnings/information messages in the Monitor window</b> ASCET may not show the correct number of code generation errors/warnings/information messages in the Monitor window, if a custom code generation process is used which consists of multiple steps.</p>
<b>743730</b>	<p><b>Missing comments for sequence calls</b> ASCET may generate code which could miss the correct comments belonging to sequence calls including the corresponding traceability information.</p>
<b>745969</b>	<p><b>System error when editing component data</b> ASCET runs into a system error WHEN the component contains a variable with a deleted element A walkback occurs: <code>UndefinedObject does not understand hasDatas</code></p>
<b>746261</b>	<p><b>ASCET generates code using unknown enumeration labels</b> ASCET generates code using unknown enumeration labels WHEN the settings for "Resolve System Constants" = "Generation Time" and "Generation of Enums" = "Enumeration"</p>
<b>748484</b>	<p><b>Arrowheads of statemachine transitions are broken</b> ASCET shows broken arrowheads for statemachine transitions WHEN "Orthogonal Lines" are used and a line width thicker than the default is selected.</p>
<b>748546</b>	<p><b>System error during code generation</b> ASCET runs into a system error WHEN code is generated for a project with target "PC" AND the setting for the project property "Message Usage Variant" is "NON_OPT_COPY_TASK" AND receive messages of type "Log" are used A walkback occurs: <code>SGIlTempVarInitVisitedState does not understand first</code></p>
<b>749891</b>	<p><b>ASCET generates unexpected special characters in comments</b> ASCET generates special characters in a comment which belongs to an #if statement WHEN activating the option "Variant Coded Data Structures"</p>

753562	<p><b>Automatic conversion of OUT or INOUT argument of type bit</b></p> <p>ASCET converts an OUT or INOUT argument of type bit to bool in the generated C code without adding an appropriate temporary variable.</p>
753902	<p><b>ASCET warns against database size</b></p> <p>In previous ASCET versions (before V6.4.7) a 32bit architecture was used which limited the size of a database to a maximum of 4GB. As a precaution measure a warning was issued when reaching a size of 3.5 GB already. Since ASCET V6.4.7 a 64bit architecture has been used which allows bigger database sizes now. The warning is not necessary anymore.</p>
754708	<p><b>Unclear error message if a workspace from a newer version is opened</b></p> <p>ASCET shows a not very helpful error message if a workspace contains a component from a newer ASCET version:</p> <p>ERROR: Failed to access an item: ....</p> <p>The error message has been improved to:</p> <pre>### ERROR: General XML tools exception: Unable to load &lt;model file&gt;.amd -&gt; 'Transformation from &lt;newer version&gt; to current failed'</pre>
757101	<p><b>Missing system constant dependency for system constant used as variant size for an array</b></p> <p>ASCET generates code which misses the definition of a system constant WHEN the system constant is used to define the size of a variant size array/matrix AND the option ConditionalDataStructure = true is used in the codegen.ini</p>
759832	<p><b>Web Services: Wrong character transformation when using non-standard ASCII characters</b></p> <p>ASCET performs a character conversion from UTF8 to the currently used windows code page two times. This results in wrong and/or invalid characters when using non-standard ASCII characters - like a German Umlaut - which cannot be processed in ASCET correctly.</p>
759867	<p><b>System error during EHOOKS Build</b></p> <p>ASCET runs into a system error</p> <p>WHEN code is generated for Controller Target</p> <p>AND Access Macros are activated for the selected target</p> <p>AND a method (e.g. 'called') is specified with a variable size ARRAY type argument</p> <p>AND that method is called from another executable with a local element of array type used as runtime parameter</p> <p>A fatal error occurs:</p> <pre>FATAL (ECC01200): Can't call method "getStackVariable" on an undefined value at &lt;path&gt;</pre>
761245	<p><b>Missing sequence calls of Statement block in the Navigation view</b></p> <p>ASCET does not show all sequence calls of a Statement block</p> <p>WHEN they belong to direct access methods of elements of a record</p>
761354	<p><b>Writing a DCM file fails for AMD imported models without element OIDs</b></p> <p>Importing an AMD file in ASCET that is created by a 3rd party software without the OID information for elements and components causes to skip the initialization of an internal flag in the data configuration.</p> <p>This causes an error message when trying to write a DCM file for those data configuration. The write operation is aborted.</p>
762184	<p><b>Automatic Sequence Call scaling can mix up the sequence order</b></p> <p>ASCET may change the existing order of sequence calls</p>

	<p>WHEN using Statement Blocks  AND the Statement Blocks are connected to signal flow operators (IF, ...)  AND automatic sequencing (Tools-&gt;Sequence Calls-&gt;Scale to Step Size) is used.</p>
<b>762841</b>	<p><b>Wrong optimization of code with compare operator</b>  ASCET generates wrong compilable code  WHEN an implementation based code generator is used  AND the model (or the intermediate code) includes a relational operator ("&gt;" or "&lt;") with constants on both sides of the relation (Note: The constant might also stem from scaling factors)  AND the sign of the two constants is different  AND the constants can be optimized to only one constant on one side of the relation  The generated code wrongly replaced a relational operator by its inverse operator.</p>
<b>763525</b>	<p><b>System error during code generation for model with direct access to array</b>  ASCET runs into a system error  WHEN generating code for an ESDL model  AND the model contains a direct access to an array in a subclass  AND the code is syntactically incorrect  A walkback occurs:  SGCgContReal64Type does not understand readOfReferencedObject</p>
<b>766075</b>	<p><b>Generation of eps files leads to missing icons</b>  ASCET generates EPS graphics without the correct icons for referenced components  WHEN these components are used within a hierarchy.</p>

### 3.4. Known Issue Reports

If a product issue develops, ETAS will prepare a Known Issue Report (KIR) and post it on the internet. The report includes information regarding the technical impact and status of the solution. Therefore, you must check the KIR applicable to this ETAS product version and follow the relevant instructions prior to operation of the product.

The Known Issue Report (KIR) can be found here:

<http://www.etas.com/kir>

### 3.5. Known Issues

This section describes the set of known problems of the released version of ASCET V6.4.8.

ID	Title
<b>293145 [50828]</b>	<p><b>1GEE Online Experiment: Change measure rate is always grayed out</b></p> <p>After adding a variable to a measurement window, the acquisition rate (alias raster / OS task) cannot be changed later on because the entry in the context menu is always disabled (grayed out).</p>

<b>293808 [52675]</b>	<p><b>Virtual Parameter not calibrate-able in offline simulation</b></p> <p>Virtual variables are calibratable, but virtual Parameter are not calibratable in offline simulation, see attached example.</p> <p>=&gt; v_param is defined as Existence: virtual</p> <p>=&gt; v_param is defined with Calibration: YES</p>
<b>297593 [68869]</b>	<p><b>Offline experiment: Hierarchy States not correctly reinitialized when Hierarchical CGEN</b></p> <p>In the ASCET offline PC-experiment, hierarchy state variables in State Machines are not reinitialized when "Experiment Stop" and "Reinitialize Both" is executed.</p> <p>The workaround is, to close and open the experiment whenever a full initialization is required.</p>
<b>304106 [90653]</b>	<p><b>Data buffer returned from target has invalid length, the error occurred while retrieving the pseudo address for ...</b></p> <p>ASCET supports only components with a maximum of 999 methods (including direct access methods) when running an experiment on an experimental target.</p>
<b>334631</b>	<p><b>Code Generation fails after conversion to ASCET V6.1 when array or matrix of kind "parameter" is used as method argument</b></p> <p>If a method component, using an array or matrix as method argument, is converted to ASCET V6.1 or higher,</p> <p>ASCET enables the new introduced IN and OUT attributes for this argument to ensure that it is possible to write to the array or matrix argument within the method code.</p> <p>ASCET code generation fails</p> <p>WHEN the converted method is called by another component by using an array or matrix of kind "parameter"</p> <p>The code generator will report the error MMdl104 since parameters are not writeable.</p> <p>Workaround: The OUT attribute must be unset for the array or matrix argument in the method definition.</p>
<b>704753</b>	<p><b>Moving dialog boxes</b></p> <p>In case the scaling or resolution of the PC is changed while running ASCET- even by connecting/disconnecting of external screens - child dialogs (like e.g. import dialog) are moving automatically unexpectedly on the screen. After a restart of ASCET the problem does not occur anymore.</p>
<b>712375</b>	<p><b>Path settings with spaces</b></p> <p>In the tool options you can set different paths to folders used by ASCET under Environment-&gt;Paths. Paths with spaces must be specified with " at the beginning and end (e.g., "C:\Program Files\ETAS\ASCET6.4").</p>

## 4. Hints

**i NOTE**

**Code generation**

It is recommended to perform a **clean code generation directory** before doing a complete project build. Otherwise, ASCET may not consistently consider all changed options during make.

## 4.1. Release Notes

These release notes are copied to the `ETASManuals\ASCET V6.4` folder during installation and can be opened from there.

## 4.2. Installation issues with Virus Scanner Tools

In certain cases, an active Virus Scanner may cause a failing installation process. It is recommended to deactivate the Virus protection for the installation sources and the `Ascet.exe` installation process.

## 4.3. Performance

As consequence of the migration of the tool framework to a 64bit environment with ASCET V6.4.7 and other general improvements there might be an expected loss of performance particularly in the code generation process.

## 4.4. XML Workspace and Export/Import

For externally created or adapted XML files compliance to the XML schemas (to be found in the installation directory of ASCET) is important to obtain consistent and readable ASCET components.

**i NOTE**

**Operating ASCET's GUI during import of \*.axl & \*.amd files**

During import of the XML-based description files (\*.axl or \*.amd), it is possible to operate ASCET's GUI. This is not recommended, as inconsistencies of the manipulated ASCET objects may occur.

**Please do not work with ASCET during import of \*.axl or \*.amd files.**

It is not possible to create folder hierarchies/components with pathnames exceeding 180 characters, for legacy DBs or imported components a longer pathname is possible, but ASCET V6.4.8 won't export such components/folders. The user will be notified to reduce the path length by renaming/move the respective component.



## 4.5. Double Byte Characters are not supported

ASCET does not support the use of double byte characters. You may use double byte Characters, but the correct post processing for documentation can not be assured. The ASCET code generation is not affected as ANSI-C does not make use of double byte characters.

## 4.6. Update of MinGW GCC

With ASCET V6.4 the shipment of the Borland V4.5 Compiler with the ASCET installation has been discontinued.

From ASCET 6.4.8 on the default compiler for the PC experiment is the MinGW GNU Compiler V13.2.0 which is part of the delivery.

## 4.7. Changed Safety Advice for EHOOKS On Target Bypass

The ETAS product ASCET6 is an established tool for the development of control unit software in the automotive sector. The development of software includes early validation on real hardware, in test benches and also in test vehicles at many customers, also known as Rapid Prototyping. However, such use can affect safety-relevant systems or data and therefore requires proper use by trained personnel. The exact legally relevant information is explained in the ETAS Safety Advice, which is part of the software installation.

ASCET 6.x can also be used to generate series codes; this functionality is made possible by the ASCET-SE add-on. The customer is responsible for releasing the code for series use and can of course rely on the capabilities of our certified code generator. However, ASCET-SE also contains examples that are not intended for series use; these are explicitly pointed out during code generation.

In a prototyping use case in combination with the ETAS tool EHOOKS (Ontarget Bypass), an incorrect classification occurred. An interpolation routine for use in conjunction with EHOOKS was declared as not "released". ASCET-SE for EHOOKS therefore previously contained - like all other SE targets - a corresponding user note ("Disclaimer for interpolation routines.txt"), which referred to use for production code development. However, there is nothing to prevent it from being used in prototyping use cases in accordance with the safety advice. The disclaimer will therefore be removed from the EHOOKS target for future versions of ASCET V6.x.

There are technical and historical reasons for this incorrect classification: EHOOKS support is implemented in ASCET as an ASCET-SE target, and the same mechanisms and disclaimers apply as for the creation of ECU production code.

- Program code and/or control actions of programs, which have been developed or modified as well as data of any kind, which have been identified by using ETAS products, will need to be verified with respect to reliability, quality and suitability prior to any use or dissemination.
- Use of this ETAS product or any program code, program control procedures in the public domain (e.g. on public roads) should not occur unless they have been tested and verified as being safe in advance. It is therefore recommended to use the products only in closed and

designated test environment.

The same safety advice is also displayed when starting the ASCET, INTECRIO and EHOOKS tools.

## 4.8. Modelling of Messages in AUTOSAR Software Components

ASCET now allows to use elements of kind “Message” in AUTOSAR Software Components (SWC) like on modules. It is possible to create and use messages in SWC like any other element. They can also be used in for the internal and external AUTOSAR mapping. ASCET will generate RTE access macros accordingly.

## 4.9. Customizable labels for ASAM-2MC Generation (\*.a2l)

With ASCET V6.4.8, it is possible to flexibly define the names of the signals in the A2L file (ASAM-2MC) generated by ASCET. The signal names for MEASUREMENTs and CHARACTERISTICS are generated based on the associated variables and parameters in the ASCET project. These elements are in the hierarchical structure of the project and can be assigned via it. The hierarchy information is used to generate the names.

It is now possible to define the number of hierarchy levels and their alignment in the names of the various signal types and to extend them with your own strings. This can be done using the corresponding options under **Targets** → **<target>** → **Write ASAM-2MC/DCM**.

Detailed information can be found in the corresponding option descriptions.

## 4.10. Note on the use of discrete data types

For the discrete data type Limited Integer, the code generator does not usually apply any optimizations to improve the accuracy or runtime of arithmetic operations. This is a deliberate characteristic of this data type.

However, certain operations are still optimized - e.g., multiplications with factors that represent a power of two - if no negative side effects are to be expected. In this respect, this optimization behavior may be unexpected, as very similar models that differ, for example, only by such factors can lead to very different code.

Nevertheless, we definitely recommend the use of the discrete data types Limited Integer (LimitInt) and Wrap Around Integer (WrapInt) introduced with ASCET V6.4.

## 4.11. Advanced Information

The following options in Build in the ASCET project properties are deprecated and will be removed in the future:

- Force parenthesis for Binary Logical Operators  
Parentheses will always be used. This change has no impact on behavior.
- Add parenthesis for readability.

Parentheses will always be used. This change has no impact on behavior.

- Casting

ASCET will use MISRA casting only in the future.

- Allow Double bit Size for Division Numerators

This option has no effect on 32-bit targets (because numerators cannot be doubled to 64-bit). The use case for 16-bit (ternary services with intermediate values of a larger value range) is now implemented independently of this option.

- Use SHIFT Operation on Signed Values instead of MUL Operation

ASCET will always use a MUL operation in the future. When this option is enabled, it can change mathematical behavior and will break MISRA-C compliance. In modern optimizing compilers, the compiler is intelligent enough to perform this optimization without needing a “hint” from code generation.

The following options in **Build → Code Generation → Optimization** in the ASCET project properties will be deprecated in a future version of ASCET:

- Optimize Direct Access Methods (One Level)

Subsumed into the option for multiple levels.

The following options in **Build → Code Generation → Optimization → State Machine** in the ASCET project properties will be deprecated in a future version of ASCET:

- Optimize Static Actions (Restricted Modelling)

Disabling this option leads to state machine permits strange behavior with respect to execution order of static actions and transition conditions. This option will always be enabled, thus making models easier to comprehend.

- Generate well-formed switch.

A well-formed switch will always be generated (as required for MISRA compliance).

## 5. Contact, Support and Problem Reporting

For details of your local sales office as well as your local technical support team and product hotlines, take a look at the ETAS website:

ETAS subsidiaries [www.etas.com/en/contact.php](http://www.etas.com/en/contact.php)

ETAS technical support [www.etas.com/en/hotlines.php](http://www.etas.com/en/hotlines.php)