

Release Notes

ASCET V6.4.7

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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	ETAS Help Desk International
File extension *.amd	ASCET Model Description , XML based description format of ASCET models
File extension *.axl	Archived XML for ASCET
HW	Hardware
KIR	Known Issue Report – 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: http://www.etas.com/kir
PR	Problem Report
SW	Software
Target	The hardware a program or an experiment runs on, e.g. MPC55xx, TriCore, SH2
WB	Walkback : 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 File → Open .	Menu commands are shown in boldface.
Click OK .	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 General emphasis and new terms are set in italics.	
one-dimensional table of sample points.	

 **NOTE**

Important hint for the user.

1.4. User Documentation

The set of ASCET manuals (see section 1.2) 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:

Required Hardware	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
Required Operating System	Windows® 10 x64 (Build 1703 or higher)
Required Free Disk Space	3 GB (not including the size for application data)

The following system prerequisites are recommended:

Required Hardware	2,0 GHz Dual-Core PC or equivalent 16 GB RAM DVD-ROM drive Network adapter Graphics with a resolution of 1920 x 1200, 256 MB RAM
Required Operating System	Windows® 10 x64 (Build 1703 or higher)

Required Free Disk Space	>4,0 GB
Required Software	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 and requires read/write access to the following locations:

- HKEY_LOCAL_MACHINE\Software\ETAS
- HKEY_LOCAL_MACHINE\SOFTWARE\Classes\CLSID\{57C37195-98DD-43E8-BFF0-5015215B15FA}
- HKEY_LOCAL_MACHINE\SOFTWARE\Classes\AppID\{53C745C7-78D9-415f-8215-D1E8B652E5CF}
- HKEY_LOCAL_MACHINE\SOFTWARE\ETAS

- HKEY_LOCAL_MACHINE\SOFTWARE\ETAS\ASCET
- HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\
- HKEY_CLASSES_ROOT\Ascet.Ascet
- HKEY_CLASSES_ROOT\Ascet.Ascet.6
- HKEY_CLASSES_ROOT\Ascet.Ascet.6.4
- HKEY_CLASSES_ROOT\Ascet.Ascet.6.4.7
- HKEY_CLASSES_ROOT\CLSID\{A19A0268-9053-4ae8-BE50-C807A11245E2}
- HKEY_CLASSES_ROOT\AscetServer.AscetServer
- HKEY_CLASSES_ROOT\AscetServer.AscetServer.6
- HKEY_CLASSES_ROOT\AscetServer.AscetServer.6.4
- HKEY_CLASSES_ROOT\AscetServer.AscetServer.6.4.7
- HKEY_CLASSES_ROOT\CLSID\{63C4AEF3-B847-4b01-B25D-319D0CF1C698}
- HKEY_CLASSES_ROOT\.six
- HKEY_CLASSES_ROOT\SCOOP-IX_file
- HKEY_CLASSES_ROOT\SCOOP-IX_file\DefaultIcon
- HKEY_CLASSES_ROOT\SCOOP-IX_file\shell
- HKEY_CLASSES_ROOT\SCOOP-IX_file\shell\Open in Browser\command
- HKEY_CLASSES_ROOT\ascet
- HKEY_CLASSES_ROOT\ascet\shell\open\command
- HKEY_CLASSES_ROOT\asd
- HKEY_CLASSES_ROOT\asd\shell\open\command
- HKEY_CURRENT_USER\Software\ETAS
- HKEY_CURRENT_USER\Software\ETAS\ASCET

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:\ProgramData\ETAS\ETASManuals\	RW	R
	C:\ETASData\ASCETx.y	RW	RW
C:\Program Files\ Common Files\ETAS		RW	RW
C:\Windows\System32		RW	RW
%ProgramData%\ETAS		RW	RW
%AppData%\Local\Temp		RW	RW
%AppData%\Roaming\ETAS		RW	RW
C:\Temp		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
- Compilers for host PC:
 - Microsoft Studio 2005 Express
 - Microsoft Studio 2008
 - MinGW GNU Compiler V11.3.0
- Compilers for Prototyping targets:
 - MinGW GNU Compiler V11.3.0
- μ C 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:

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

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 of ASCET V6.4.6.

3.1. What's New

The following changes have been made with this release:

- ASCET uses the VAST 64bit framework now. So, ASCET V6.4.7 is a genuine 64bit application.
- MinGW GCC V11.3 has been introduced for the PC simulation target
- Code Generator uses Perl V5.32 64bit.
- EHOOKS
 - Updated to add support for EHOOKS V4.12 and V5.0
 - Support for EHOOKS V4.8 and V4.9 has been removed

3.2. Compatibility to Earlier Releases

ASCET V6.4.7 is functionally upwards compatible with previous versions.

NOTE

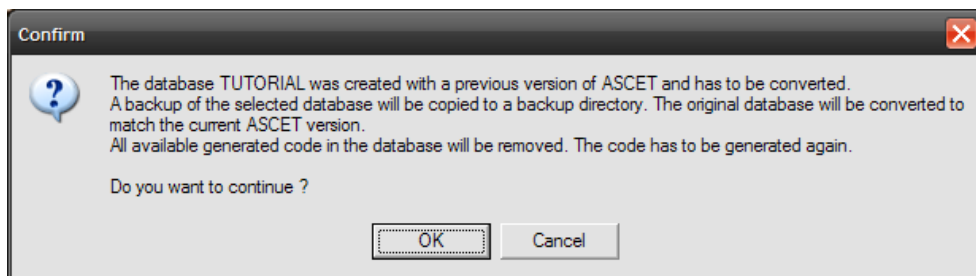
There are no known Database incompatibilities to ASCET V5.0 / V5.1 / V5.2 / V6.0, V6.1, V6.2 & V6.3.

ASCET V6.4.7 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.

i NOTE

ASCET V6.4.7 provides *.amd 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

3.3. Fixed Problems

This section describes the set of fixed problems of the released version of ASCET V6.4.7.

286285	Inputs of CT blocks cannot be dropped more than once in BDE ASCET does not allow to drag & drop a graphical instance of input for CT blocks WHEN there already is another instance of the same input placed in same block diagram.
286498	Class Interface Editor doesn't accept changes, if second Interface Editor of another Class is opened ASCET does not save changes in the Method Signature Editor WHEN a Method Signature Editor of another class has been opened after the first one.
286514	PC Experiment: Write back implementation destroys implementation ASCET changes the implementation type of variables to 'real64' WHEN the simulation experiment is running as "Quantized Physical Experiment" AND the calibrated implementation settings are written back by Edit->Implementation->Write Back
287012	Editing of arguments does not work Changes to the attributes of method elements are not persisted correctly if multiple editors have been opened.
312259	Export of amd-files fails if destination files exist and are write protected Export of amd-files fails if destination files exist and are write protected, and unsightly error message is shown in this case.
344057	System error when opening a component ASCET runs into a system error WHEN an integer element is assigned to an enumerator element AND the value range of the integer exceeds the number of possible enumerator values A walkback occurs: Primitive failed in: Object>>#at: due to Index out of range in argument 1
394487	Speedup compression/decompression of axl/zip-files in ASCET The compressions and extraction of AXL file should be accelerated.
523938	Measurement of integer variable in PC experiment shows deviation from expected value ASCET displays a measurement variable in the PC experiment with a little deviance WHEN using the Implementation Experiment AND the model contains a type conversion from float to integer
539113	Fatal errors during importing an ARXML file A fatal error occurs when importing an ARXML file broken references. Instead a sensible error message such as follows should be shown: [ERROR] No mapped implementation type for Record Element /SWC/ApplicationRecordDataTypes/myARDT/myVal
580009	Resolve Hierarchy does not work correctly Resolve Hierarchy does not work consistently for control flow connections and connected sequence calls.
583867	Save-Toolbar-Button is always active The Save button in the Component Editor (Database or Workspace) is always active.
587567	Walkback when selecting calibration editor for curves ASCET runs in a system error WHEN selecting calibration editor for curves A walkback occurs: (ExCLDObjectNotFound) Object not found.
587697	Some issues with large arrays/matrices ASCET shows unexpected behavior (Walkback, out of memory exception, wrong

	<p>displayed size information, etc.) WHEN large arrays or matrices are used AND the max size of these objects is changed by the user.</p>
590169	<p>System error when using "Resolve Globals" for a write protected component ASCET runs into a system error WHEN a component is write-protected AND menu entry "Extras\Default Project\Resolve Globals" is used the binding of global elements may be corrupted and a walkback occurs during code generation: RBArithmeticElement does not understand asInterval</p>
592700	<p>"WARNING(Wla91): Loosing precision" shown without justification for constants Arithmetic operations with constants are executed during code generation time using float precision and must not cause warnings concerning integer arithmetic.</p>
599114	<p>Parameter element has no write access in calibration Write calibration flag gets lost when switching Scope setting of element</p>
608187	<p>Bad representation of ASCET windows The representation of some windows is corrupted on Windows 10 with screen scaling differs from 100%</p>
614851	<p>System error during search operation ASCET runs in a system error WHEN opening a component from the search results window A walkback occurs: SGReal does not understand isGenericComponent</p>
622910	<p>Wrong values for system constants shown in block diagram The graphical representation for values of system constants from type limited integer is not updated in the block diagram editor.</p>
625062	<p>Walkback when using copy/paste ASCET runs in a system error WHEN using copy/paste for a method argument in the Outline view A walkback occurs: UndefinedObject does not understand at:ifAbsent</p>
625214	<p>Syntax highlighting lacks inner records as variables and method names The syntax highlighting and auto completion of label names in EDSL/C code editors does not work for members of records.</p>
629972	<p>ARXML importer stops The ARXML import stops when trying to import shared maps and curves.</p>
632523	<p>Search function does not work in Navigation view Navigation tree does not find and show searched strings in nested hierarchies</p>
633264	<p>Ignore info, Starting with, Appending features do not work Automatic sequencing using Ignore info, Starting with, Appending features does not work for Statement blocks</p>
633281	<p>Reset for method/process does not work Reset of sequence calls for method/process does not work.</p>
640370	<p>Wrong implementation type check in Method Signature Editor ASCET performs a wrong implementation type check in the Method Signature Editor WHEN the method signature editor dialog is opened AND there is more than one argument in the method AND the arguments are of more than one implementation type AND one argument is selected AND the signature editor is closed The properties of all arguments are checked against the selected implementation type which may lead to an error message.</p>

648674	System error when opening database or workspace ASCET runs into a system error WHEN a database or workspace should be opened AND the selected folder or subdirectory is damaged A walkback occurs: CfsError does not understand dName
650764	Impossible to create Statement Block with IF condition ASCET rejects the creation of the statement block WHEN the user tries to encapsulate some selected graphics objects of a block diagram editor into a new statement block AND the list of selected graphic objects contains an IF statement
651094	IDTs not imported correctly References to AUTOSAR Implementation Data Types are not imported correctly from ARXML file.
651431	Storing problem of external code (C-, H- and object code) ASCET stores unexpected external C code WHEN the contents of an external specified file in the External Source Code Editor are reduced in the number of characters AND the related C code component is persisted by using the AMD format (workspace, export) ASCET does not reduce the file size accordingly to the new contents. The former specified information at the end of the file is still available.
653449	Menu "hide unconnected ports" with defined sequence calls does not work correctly If a sequence call of a class method is assigned (even though the argument pin is not connected) it should not be hidden, since the user cannot see the incomplete modelling before the code generation throws an error.
653665	Wrong pointer declaration of group structs A const qualifier is missing when accessing a parameter struct member.
654473	Analyze Diagram in state machines shows unexpected errors The "Analyze Diagram" feature may cause false positive errors when analyzing statemachines.
654639	Violation of MISRA Rule 1.1 MISRA Rule 1.1 is violated by the generation of an enumeration type which is provided by the RTE already.
656649	Walkback during sorting ASCET runs in a system error during sorting Mappings A walkback occurs: Undefined Object does not understand displayName
657725	Incompatibility error when saving Tool Options False error concerning hardware settings is reported when saving tool options.
657954	System error when opening a component ASCET runs in a system error WHEN opening a component is opened AND the request for sufficient GDI handles fails due to missing registry keys A walkback occurs: UndefinedObject does not understand -
657997	Matrices as arguments are generated flat like Arrays Although the target option "Number of Dimensions for Fixed Matrices" is set to "Two Dimensional" matrices are generated as flat arrays in the C code.
658326	Element is created on the canvas with wrong properties If a new element is created in a Software Component and its properties are changed in the Properties dialog it can be placed in the block diagram right away. In this case the properties of the element in the diagram are not updated correctly.
658444	Uninstallation of ASCET does not remove all entries from registry

	Uninstallation of ASCET does not remove all entries from the Windows registry because of remaining artefacts of hotfix or addon installations.
660468	System Error during code generation ASCET runs into a system error during code generation step WHEN A fixed look-up table with only one axis point A walkback occurs: UndefinedObject does not understand <
662996	Wrong import as Boolean from ARXML ASCET wrongly imports elements from an ARXML file WHEN the value range is restricted to [0 .. 1] Even though the BASE-TYPE-SIZE of the Basic Type in the ARXML file is greater than 1, the element is imported as "Boolean" Implementation type.
664868	Missing variation points on unused port Missing variation point information for unused port in generated ARXML file with activated target options "Variant Coded Data Structures" and "Compile Unused Data".
665591	Wrong comment "no version number will be appended" in install.ini A wrong comment "no version number will be appended" in the install.ini for MainDir and MainDataDir entries
667154	Missing warning for inconsistent specification (wrap-around integer) ASCET shall generate a warning WHEN a wrap-around integer is specified using different min/max values than given by the interval of the associated implementation type
667175	Corrupt data created in Asian Windows environment ASCET creates corrupt data and may run into a system WHEN an Asian OS is used (two-byte characters OS, e.g. Japanese, Chinese, Korean, ...) AND database objects containing strings are edited or newly created OR a database repair is executed These objects are handled and saved incorrectly. The result is that these database objects are no longer usable. A walkback occurs: ByteArray does not understand compareNumericWith
670239	Tool-API method does not persist changed settings The Tool-API method ReadCodeGenMessagesFromXMLFile() does not mark the related project as modified after changing the code generation message settings. Hence, it may happen that its setting gets lost when closing ASCET.
671602	Duplicate C-Code name with multiple instances of CT-blocks ASCET code generation stops with an error message WHEN the project is generated using a Controller target AND multiple instances of CT-blocks components are used within the model ASCET wrongly complains about the same name used more than once in the global name space.
671627	The Target Server component could not be installed Installation of the Target server fails due to corrupted batch files.
671891	Struct element entry missing in AMD calibration parameter interface mapping Struct elements members are not available in AUTOSAR calibration interface mapping
672034	Wrong RTE access macro in customer specific implementation ASCET generates wrong Rte Access read macro WHEN the project is generated in the AUTOSAR context AND a message is mapped to a record field of a SRInterface AND the SRInterface is listed in codegen.ini as any read access should be generated as explicit ASCET generates an Rte Access Macro with IMPLICIT access semantics.

672102	Wrong c-code type for service classes ASCET generates the wrong c-code type for service classes WHEN the target template for c-code type names of ASCET classes has been changed to "CamelCase" ASCET still generates the c-code type for the service class using uppercase
672343	Rte_Read called via pointer instead of local variable ASCET generates wrong code WHEN the code is generated for the AUTOSAR context AND a READ access to a complex element, i.e. element typed as ARRAY or RECORD is used AND the access uses explicit semantics AND the data returned from the RTE_READ macro is not directly stored in a model element, thus the code generator introduces a temporary variable ASCET wrongly generates a pointer type for that variable instead of a non-pointer type to actually be able to store the returned data.
672934	Error message when reimporting a component: 'interface isNil' ASCET wrongly reports an error WHEN a component is imported into ASCET AND the component already exists in the current database The consistency check for data & implementation wrongly reports 'interface isNil'.
673170	Missing type definition in generated code ASCET generated code does not compile WHEN the project uses the AUTOSAR context AND Implementation Types are defined in the project and used The names of the used Implementation Types appear in the generated C-Code instead of their associated platform type.
673196	System error when used as headless server ASCET runs into a system error WHEN generating code AND the model contains implementation casts in the branches of a multiplexer operator A walkback occurs: UndefinedObject does not understand at:ifAbsent
673833	Missing warning for incomplete CSI mapping When using Asynchronous Client Server Communication no warning is shown if return type is missing in the prototype method.
673936	RTE Error if Application Error is used as return value and multi-instance is selected When using Asynchronous Client Server Communication an error is show if an Application Error type is used as return value and multi-instance is selected.
674253	System error during code generation ASCET runs into a system error WHEN the model uses FIXED characteristic tables AND the project option "optimized Direct Access" has been activated AND the access to a FIXED characteristic table element is done via a direct access A walkback occurs: UndefinedObject does not understand varDecl
674327	Cannot copy/paste Impl. Min/Max for Limited Integers in Implementation view Copy/Paste of Min/Max attributes of implementation for Limited Integer types does not work in Browse view of component.
674333	System Constants: Wrong import as logic basic type from ARXML ASCET wrongly imports System Constants from an ARXML file WHEN the value range is [0 .. 1] Even though the Implementation Data Type in the ARXML file is not "Boolean", the System Constants are imported as "logic" basic type.

674336	False WARNING(Wille52) is generated for messages in C Code modules False warning Wille52 if Interrunnable Variables are used in C Code modules.
675125	Subcomponents are not removed completely when uninstalling ASCET Several programs / folders / files and registry values not deleted when uninstalling ASCET.
675891	New IN/OUT pins of a hierarchy may be hidden behind a sub hierarchy WHEN a new input or output pin is added to a hierarchy AND there is a sub hierarchy THEN the pin may be hidden by the overlapping sub hierarchy
676105	Multiple mapping of NV data variables handled incorrectly ASCET code generation misses to show an error WHEN mappings in the AUTOSAR context are used AND a non-volatile variable is mapped to two different data elements via associated require ports
676784	ScaleToStepSize does not work in statement blocks for sequence calls Automatic assignments of the does not work for sequence calls in statement blocks.
676785	Missing sequence calls for statement blocks in navigation view ASCET does not show a Sequence Calls in the Navigation Tree WHEN it is modeled under a statement block
676811	Erroneous navigation with CTRL arrow key in statement blocks ASCET may fail to jump to the next/previous Sequence Call WHEN the user navigates inside a Statement Block AND the Ctrl + Left/Right keys are used in the block diagram Editor An arbitrary other sequence call is selected instead.
677032	Show unused Elements lists referenced messages of type Record ASCET wrongly lists messages in the result list of 'Show unused elements' WHEN these messages are of type Record AND the messages are referenced (e.g., mapped in a Software Component)
677511	System error during code generation ASCET runs into a system error during code generation WHEN a switch statement is used AND one or more associated case statements use constant arithmetic expressions instead of a constant only as "literal", e.g., sysconst + 1 The code generation aborts with a walkback: UndefinedObject does not understand isFloatContext
677872	Superfluous limit code for float typed elements ASCET generates wrong limit code for float typed elements WHEN an Implementation specific code generator is used AND the Integer Arithmetic Option "Generate Float Limiter on Assignment" has been enabled AND a float typed element does have limits specified AND the float typed element is part of an expression which is assigned to an integer typed element ASCET generates superfluous limit code taken from the float typed element prior to the assignment to the integer typed element.
678130	"Show unused Elements" shows incorrect results "Show unused Elements" shows incorrect results due to inconsistent and not updated references.
678263	Connection via mouse over and popup for elements of a structure is not possible The connection dialog for structure elements in the block diagram does not work.
678564	Complex Calibration Interface elements are imported as variable instead of parameter Struct elements are imported with kind variable instead of parameter for a calibration interface during the ARXML import.

678598	System error when opening block diagram view for AUTOSAR components ASCET runs into a system error WHEN an ARXML model is imported into an existing database AND the ARXML overwrites elements with a different type AND afterwards a block diagram view using these elements is opened A walkback occurs: SGDataGO does not understand createSymbolGO:
679751	Redundant assignment in generated C code The generated code contains a redundant assignment (e.g., <code>_t1sint16 = _t1sint16;</code>)
681343	Problem with special characters in ASCET webservice API Exporting files via Web Services fails if target path contains special characters (e.g., "ä", "ü", ...)
682060	System error when using customer specific Engineering enhancement ASCET runs into a system error WHEN graphics are exported from a BDE AND Traceability text is included A walkback occurs: Signal does not understand defaultAction
682617	Remove erroneous mnemonics from component manager The mnemonics of the component manager have been set into function with a workaround that is not available with the updated development framework. They are presented erroneously, now (with &1, &2, ... marks). They shall be removed completely.
683358	System Error during when writing DCM for a map with less values than expected by its axis ASCET runs into a system error WHEN a DCM file is written for the data of a map AND due to an inconsistency in the data model this map has less values than its distribution requests A walkback occurs: Primitive failed in: Object>>#at: due to Index out of range in argument 1 (1188417863)
683724	Show unused elements does not work correctly for record elements ASCET wrongly shows elements as unused WHEN nested elements of records are used in the block diagram editor AND they are searched with the feature 'Show unused Elements'
683828	No warning in code generation for empty statements Empty Statement under If statement of an ESDL trigger in a statemachine shows no warning
684889	Wrong code when using compile-time system constants on multiple MUX operators ASCET generates wrong code WHEN the target settings System Constant Resolution are set to COMPILE-TIME AND a System Constant is used as part of the conditional expression of a MUX operator AND one of the connections to the MUX contains another MUX operator AND the inner MUX operator contains expressions where a temporary variable is generated in order to avoid recalculation, e.g. a MAX operator The algorithm used to keep track of the usage of the temporary variables gets confused and uses temporary variables which have not yet been assigned to in the respective path of the MUX.
685583	Unneeded WMdl95 in statemachines

	A warning is issued even though it is not justified: WARNING(WMdl95): method argument "arg" possibly not assigned, but needs assignment because of OUT direction
685590	Code generator generates duplicate typedefs ASCET generates multiple typedefs with the same name WHEN the project is generated in the AUTOSAR context AND an array/matrix type is used for non-AUTOSAR elements The generated code does not compile.
685971	Target option "Guarded typedef" ASCET introduces a new target option "Guarded typedef" to generate C preprocessor directives to avoid duplicate definitions on typedefs on c-code level.
686679	"Find and Replace" in C editor wrongly overwrites Header code ASCET wrongly overwrites the Header code with the C/ESDL Code in the C code editor WHEN the Header code tab is selected AND the function "Find and Replace" is used in combination with "Replace All"
686686	AMD/AXL export with referenced items causes assertion if flexible class layout is used with nonstandard icon ASCET causes an assertion when exporting components in AMD/AXL format in case the "Flexible Class Layout" option is active, and a custom icon is used.
687002	Error during axl import ASCET wrongly shows an import error during the import of an AXL file WHEN it contains a model with BDE elements created with the function 'Send to Back' AND these elements are inside hierarchies
687823	Common Subexpression Elimination generates broken Code for switch statements with non-empty fall through ASCET generates wrong code WHEN the user writes ESDL code with a switch statement AND common subexpression elimination is enabled AND one of the cases (called case "f") has fall through behavior (into the next case, called case "g") AND the case "f" is not empty, i.e., it contains any non-empty statement before falling through into case "g" (please note that the model triggers the warning WMdl885) AND there is a (sub-)expression present in all cases that could be extracted if there were no fall through AND one of the variables used in the subexpression is overwritten in case "f" before the subexpression occurs again in case "g" ASCET generates wrong compilable code by extracting the subexpression, so that it is not re-evaluated after the variable is overwritten.
688344	Using system constants as maxsize, wrong matrix dimension is generated Variant size matrices are generated as two-dimensional even though the target option is set to one-dimensional.
688879	Sequence Call navigation is not possible for nested structures Sequence Call navigation is not possible if a nested structure statement block -> hierarchy -> statement block is used. The sequence calls are not shown completely.
689198	Connection to EHOOKS fails When starting EHOOKS from ASCET project the system hangs.
690275	ASCET overwrites temp vars used in loop condition ASCET generates wrong code WHEN the model contains a WHILE- or FOR-loop AND the code generator introduces a temporary variable that is only used in the condition of the loop AND the code generator needs another temporary variable in the loop body The code generator wrongly reuses the temporary variable, overwriting its content.

690728	ECU variable selection fails The ECU variable selection from EHOOKS cannot be opened for the input variables.
691636	Wrong optimization for arithmetic ASCET may generate wrong code WHEN the code generator is configured for "object based controller physical" or "physical experiment" AND the model contains an expression with sub-expressions, where one of the sub-expressions is of type udisc AND the value of the expression is always less or equal to zero ASCET might wrongly substitute zero for the expression. (e.g.: $B = A + -2 * C$ is transformed into $B = A$, where A, B and C are all of type udisc).
694270	Inconsistent models after deletion of arguments of child class methods Inconsistent models are not detected by the code generation when the arguments of child class methods are deleted.
694640	Inconsistent AUTOSAR mapping The AUTSAR message mapping to interfaces may not work in a deterministic way.
695186	System error during code generation ASCET runs into a system error during code generation WHEN accessing an extended input value on a method call without arguments A walkback occurs: (ExCLDTIndexOutOfRange) Index out of range.: 1
695363	Duplicate entries shown in implementations page when importing AMD ASCET may show duplicate entries in the Implementation page WHEN components are imported from an *.amd file AND a component contains Wrap-Around or Limited Integers An immediate look onto the Implementation page of this component may show duplicate entries for the elements.
696143	Reproduce As caused system error ASCET runs into a system error WHEN the menu Edit > Reproduce As > ESDL is used A walkback occurs: SGESDLCodeStream does not understand lineComment
697599	Wrong error MMdl6 during code generation ASCET reports a wrong error MMdl6 during code generation WHEN an AUTOSAR interface is used AND this interface is represented by multiple objects with different contents
697730	References to a signal object may get lost if it is renamed or reimported in a workspace If a signal item is used in a workspace and is renamed or reimported the reference to the MDF data file gets lost.
697739	Missing unit in generated DCM file for axis Imported axes of group tables do not get the unit entry in the generated DCM file.
697995	Walkback during ASCET OTB Build ASCET runs into a system error WHEN generating code for an EHOOKS On-Target-Project A walkback occurs: UndefinedObject does not understand checkForExistentMakelog
698305	ESDL method between() does not return log type A code generation error is thrown if an In/Out argument is used with a Between operator in ESDL code: ERROR(MMdl6): type mismatch: expected <cont> (<(Between-Expr)>), got <readWrite*cont> (<arg>)
698708	Missing propagation of empty Server Interface to Provider Port A Server Interface has empty runnables only, the operation invoked events and the runnables get a variation point with the corresponding system constant.

	In this case the propagation of all empty runnables to the whole provider port is missing.
699273	Local message of record type is not initialized Messages of type record and scope local are not initialized.
699695	System error during code generation for AUTOSAR project ASCET runs into a system error WHEN code generation for an AUTOSAR target is used AND a method uses the implementation setting "Prototype Implementation" AND system constants for variant code generation a used A walkback occurs: UndefinedObject does not understand ileNativeInitValue
701295	System error when importing broken model ASCET runs into a system error WHEN importing a corrupted *.exp file A walkback occurs: Primitive failed in: Float>>#* due to Floating point underflow
701755	Missing write back of temporary variable The result of an incremented temporary variable is not written back to the original static variable in the generated code when using the project option "common subexpression elimination".
702393	System error in code generation for multiplex operator ASCET runs into a system error WHEN code is generated for a model AND Implementation casts are used in the branches of a multiplex operator. A walkback occurs: UndefinedObject does not understand getImpIType
702631	System error with toolbar of write protected AUTOSAR Software Component ASCET runs into a system error WHEN clicking on an non-disabled button in the palette of a block diagram Software Component AND the Software Component is write protected. A walkback occurs: SGViewController does not understand addOperator:arguments:
704183	Distribution of a curve cannot be copied to another curve It is not possible to copy the values of a distribution of a group table to another distribution.
704220	Addresses for 2d matrix elements missing in A2L-file For matrix elements no addresses are available in the generated a2l file. The build process shows a warning: Monitor Log shows lots of messages: Getting VAT file ... WARNING: No addresses for: <element_name> in map file D:\ETAS\ASCET6.4\CGen\temp_vat.s19
704255	Naming of variables for message copies is not deterministic Automatically created temporary variables for message copies may need to be shortened. The pattern to rename them according to the maximum allowed label length may lead to variant names in different code generation runs.
706443	Unjustified ERROR(MMdl710): illegal value for case literal - does not match switch entry expression type <udisc> If a switch operand is calculated from unsigned input values but the result might be a negative value an appropriate cast to a signed variable is missing.
707472	Dependency formulas in generated a2l file do not comply to ASAM standard The usage of logarithm functions in dependency formulas is correct according to the ASAM-2MC specification.
708931	Changing the used target for a project does not remember the OS settings

	In case the target of a project is changed back to a previously selected target the former OS settings are not recovered.
712667	System error when using a write protected folder for Executer Output path ASCET runs into a system error WHEN the write access to the Executer Output Path is not possible because it is write-protected. A walkback occurs: Primitive failed in: Behavior>>#new: due to Invalid class in argument 1
713318	"Always on top" is always disabled in experiment view The "Always on top" button in the experiment is always disabled even though it works as expected.

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 V6.4.7.

ID [EHI ID]	Title
293145 [50828]	1GEE Online Experiment: Change measure rate is always grayed out 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).
293808 [52675]	Virtual Parameter not calibrate-able in offline simulation Virtual variables are calibratable, but virtual Parameter are not calibratable in offline simulation, see attached example. => v_param is defined as Existence: virtual => v_param is defined with Calibration: YES
297593 [68869]	Offline experiment: Hierarchy States not correctly reinitialized when Hierarchical CGEN In the ASCET offline PC-experiment, hierarchy state variables in State Machines are not reinitialized when "Experiment Stop" and "Reinitialize Both" is executed. The workaround is, to close and open the experiment whenever a full initialization is required.

304106 [90653]	Data buffer returned from target has invalid length, the error occurred while retrieving the pseudo address for ... ASCET supports only components with a maximum of 999 methods (including direct access methods) when running an experiment on an experimental target.
334631	Code Generation fails after conversion to ASCET V6.1 when array or matrix of kind "parameter" is used as method argument If a method component, using an array or matrix as method argument, is converted to ASCET V6.1 or higher, 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. ASCET code generation fails WHEN the converted method is called by another component by using an array or matrix of kind "parameter" The code generator will report the error MMdl104 since parameters are not writeable. Workaround: The OUT attribute must be unset for the array or matrix argument in the method definition.
349823	MSVS-2005..2008 compiler defect with floating point precision Due to a known issue of the Microsoft Visual Studio Compiler 2005...2008 in certain cases a rounding issue occurs → wrong floating point values. Citation from: http://msdn.microsoft.com/en-us/library/e7s85ffb%28v=vs.90%29.aspx with topic compiler configuration /fp (Specify Floating-Point Behavior): With /fp:precise on x86 processors, the compiler will perform rounding on variables of type float to the proper precision for assignments and casts and when passing parameters to a function. (...)
704753	Moving dialog boxes 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.
712375	Path settings with spaces In the tool options you can set different paths to folders used by ASCET under Environment->Paths. Paths with spaces must be specified with " at the beginning and end (e.g., "C:\Program Files\ETAS\ASCET6.4").

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 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 V6.4.6 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. Removal of Borland V4.5 for PC experiments

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

From ASCET 6.4.7 on the default compiler for the PC experiment is the MinGW GNU Compiler V11.3.0 which is part of the delivery.

4.7. Passing OUT arguments in block diagrams

To pass an element as an OUT argument, it is required to connect the get-pin with the argument pin. However, this was not possible for send-messages or other OUT arguments, because the get-pin was not enabled. This has been improved for non-scalar elements, where the get-pin can now be activated for this purpose.

Each graphical instance of an OUT argument or a send-message can have a get-pin which is enabled by right-click and choosing "Extra Reference Connector" from the context menu.

4.8. AUTOSAR improvements

When importing AUTOSAR ARXML files SWCs and interfaces are created automatically and can be used for modelling. If available, the AUTOSAR Importer also collects the information about the usage of interfaces and ports (e.g., which runnable can be use which interface)

A new option "Use Imported ARXML Info" has been introduced in the ARXML configuration setting. If the option is set to "Match" or "DeriveAndMatch" the usage information will be considered in the code generation step.

For the setting "Match" a code generation error may be shown in case the model contains an interface access which is not allowed according to the contents of the ARXML file (e.g., port access is not allowed in a certain runnable). For the setting "DeriveAndMatch" the code generator tries to generate the code according to the ARXML information (e.g., implicit instead of explicit RTE access). In such cases a code generation warning is issued.

Additionally, also variation point information in interfaces is taken into account if there are RTE accesses modelled with system constant conditions and the resolving of system constants at compile time. The variation point conditions (e.g., "SysConst == 1") from the ARXML files available in the model and shown in the comment of the imported interfaces. In the code generation step these conditions are compared to the if-conditions using system constants in the model and a code generation warning is issued for mismatching conditions.

4.9. Code changes due to bugfixes

The bugfix for PR700562 “Incompatible varstruct type leads to compiler error” caused a change in the generation of variable size arrays and matrices.

For variable size arrays/matrices A special structure is used that contains a pointer to the values and the one or two max. sizes of the array or matrix.

Instances of this structure shall be used to declare the variable array/matrix elements, and for the parameters/return values of functions that receive or return variable arrays.

This special structure shall be used in the generated code for function parameters and return values if they are variable array references.

The structure shall be used without a pointer redirection, i.e., as a fat pointer, in a call-by-value fashion. Function-local variables are also to be implemented as fat pointers, i.e., as instances of this special structure.

Conversion from fixed array/matrix instances is achieved by construction of such an array. Conversion from a read-write structure to a read-only structure is achieved by creating a new structure and assigning the structure fields.

Example V6.4.6:

```
struct _ASCET_array_const_sint32_ref _t1_ASCET_array_ref_sint32_instance;
_t1_ASCET_array_ref_sint32_instance.val = _myArray_REF;
_t1_ASCET_array_ref_sint32_instance.size = 10U;
MYCLASS_myCalc(&(_t1_ASCET_array_ref_sint32_instance));
void MYCLASS_myCalc (const struct _ASCET_array_const_sint32_ref * arr)
{
    _i = arr->val[0U];
}
```

Example V6.4.7:

```
struct _ASCET_array_const_sint32_ref _t1_ASCET_array_const_ref_sint32_instance;
_t1_ASCET_array_const_ref_sint32_instance.val = _myArray_REF;
_t1_ASCET_array_const_ref_sint32_instance.size = 10U;
MYCLASS_AUTOMATIC_myCalc(_t1_ASCET_array_const_ref_sint32_instance);
void MYCLASS_myCalc (const struct _ASCET_array_const_sint32_ref arr)
{
    _i = arr.val[0U];
}
```

4.10. Limit Assignments for Float Variables

The “Limit Assignment” option in the implementation settings of float elements can be used like for integer elements now.

If the option “Generate Float Limiter on Assignment (may be changed locally)” in the Project Properties (under Build->Integer Arithmetic) is active the local flag “Limit Assignment” will be evaluated, and limiter code is generated for the assignments to the element.

Using the implementation flag in addition to the global flag allows the user a more fine-grained selection of the elements to be considered.

The limitation of a floating-point value is generated, if the global option in the Project Properties is active and the implementation type of the element is of float type and the implementation of the element representing the left-hand side of the assignment has an active implementation specific "limit assignment" flag and the limits of the associated element different value from +/- oo (INF).

In such cases even the initialization value of the element gets limited automatically which is indicated by a code generation warning.

NOTE

The "Limit Assignment" setting of float elements maybe deactivated in existing models by accident. So, for such elements the limitations may not be considered anymore due to the changed behavior of the Project Properties option. The same holds true for method/process local elements which do not have an implementation by default.

4.11. Variable Size Arrays/Matrices

When passing variable size matrices to methods this may cause the need of typecasts between different type descriptors for mutual and constant matrices

To avoid these typecasts the semantic has been changed to call-by-value.

Type descriptors contain only two or three (matrices) fields. In such case compiler can usually generate optimized code for such call by value arguments, by passing such values over the registers.

4.12. 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

ETAS technical support www.etas.com/en/hotlines.php