VECTOR

Third Party MCAL Integration

Technical Reference

Infineon TC3xx

Version 2.18.00

Authors	virgaj
Status	Released

Document Information

History

Author	Date	Version	Remarks
Virgaj	2018-02-08	1.0.0	Basic Integration of TC3xx MCAL Series
Virrsu	2018-02-09	2.0.0	Update Document Properties (Type Technical Reference)
Virgaj	2018-03-05	2.0.1	Added chapters 2.1.1 and 2.1.2
Virgaj	2018-04-11	2.1.0	Document Rename
Virgaj	2018-04-24	2.1.1	Added chapter 2.1.4
Virrsu	2018-06-12	2.1.2	Added chapter 2.1.5
Virgki	2018-07-20	2.2.0	Updated or Added the chapter 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 2.1.6, 2.1.7
Virgaj	2018-04-24	2.2.1	Update of chapter 2.1.9
Virgki	2018-09-06	2.2.2	Update of folder name patch to patches
Virgaj	2018-09-25	2.2.3	Update of chapter 1.3, 2.1, 2.1.4, 2.1.5, 2.1.6, 2.1.7, 2.1.8
Virgki	2018-10-23	2.2.4	Corrected the reference path mentioned in the sections 2.1.1, 2.1.2, 2.1.3. A new section 2.1.11 is added to explain the issue with the header file Test_Mcal_SafetyError.h A new section 2.1.12 is added to explain the issue Icu: Wrong Reference Value to Gpt Timer Configuration
Virgki	2018-10-24	2.3.0	Integrate the latest Package. MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.0.0-rc MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_CD_1.0.0-rc
Virgaj	2019-02-28	2.4.0	Integration of package MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.10.0-rc Added chapters 2.1.1.1 and 2.1.4
Virgki	2019-04-02	2.5.0	Integration of package MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.10.0 Added chapters 2.1.5
Virgki	2019-05-02	2.6.0	Integration of package MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_BASIC_1.20.0-beta Added chapters 2.1.6
Virgki	2019-05-03	2.7.0	Integration of MC-ISAR_AS42x_AURIX2G_TC37xA_BASIC_1.30.0-alpha
Virnid	2019-08-13	2.8.0	Changed template

			Integration of MIP for MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_TC37xA_BASIC_1.30.0-rc / MC-ISAR_AS42x_AURIX2G_TC36xA_BASIC_1.40.0-alpha
Virgaj	2019-11-13	2.9.0	Integration of package MC-ISAR_AS42x_TC3xx_BASIC_1.30.0
Virnid	2020-02-18	2.10.0	Integration of MC-ISAR_AS422_TC3xx_BASIC_1.40.0-alpha1
Virrsu	2020-04-22	2.10.1	V1.30.0-pr MCAL Patches added to the MIP (see chapter 2.1.1.1)
Virnid	2020-04-30	2.11.0	Integration of MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc
Virnid	2020-06-15	2.12.0	Integration of MC-ISAR_AS422_TC3xx_BASIC_1.40.0 (PR)
Virnid	2020-11-12	2.12.1	Changed reference document to UserManual
Virnid	2021-01-14	2.13.0	Integration of MC-ISAR_AS422_TC3xx_BASIC_2.0.0-rc and MC-ISAR_AS440_TC3xx_BASIC_2.0.0-rc
Virnid	2021-03-04	2.13.0	Added chapter for stub McalLib_OsStub.h
Virelt	2021-04-16	2.14.0	Integration of MC-ISAR_AS422_TC3xx_BASIC_2.0.0 and MC-ISAR_AS440_TC3xx_BASIC_2.0.0
Virnid	2021-04-29	2.14.1	Added restriction 2.2.2.1
Virnid	2021-06-30	2.14.2	Added chapter 2.1.1.3 (initialization of Fee)
Virnid	2021-07-13	2.14.3	Added chapter 2.1.2.1.1
Virnid	2021-12-13	2.15.0	Integration of MC-ISAR_AS422_TC3xx_BASIC_2.10.0 and MC-ISAR_AS440_TC3xx_BASIC_2.10.0
Virnid	2022-10-19	2.16.0	Integration of MC-ISAR_AS422_TC3xx_BASIC_2.20.0 and MC-ISAR_AS440_TC3xx_BASIC_2.20.0
Virnid	2023-01-24	2.16.1	Update of restriction 2.2.2.1
Virnid	2023-08-05	2.17.0	Integration of MC-ISAR_AS422_TC3xx_BASIC_2.25.0 and MC-ISAR_AS440_TC3xx_BASIC_2.25.0
Virnid	2023-10-06	2.17.1	Adding restriction for MemMap file (2.2.1.4)
Virnid	2024-06-24	2.18.0	Integration of MC-ISAR_AS422_TC3xx_BASIC_2.25.0 and MC-ISAR_AS440_TC3xx_BASIC_2.25.0

Reference Documents

No.	Source	Title	Version
[1]	Vector	UserManual_3rdParty-MCAL-Integration.pdf	See Delivery
[2]	Vector	IssueHandling_TC3xx_MCAL.pdf	See Delivery

Scope of the Document

This document contains information about the integration of third party MCAL into Vector software stack.

Contents

1 MCAL Integration

1.1 Type of Integration

Basic Integration
Both configuration tools, EB tresos™ as well as Vector DaVinci Configurator Classic, are used for configuration.

Recommended workflow:
Start initial configuration with EB tresos™, export it in AUTOSAR format and import it into Vector DaVinci Configurator Classic. Generation and minor changes in configuration are done in Vector DaVinci Configurator Classic.
For usage with Vector DaVinci Configurator Classic please refer to chapter 'Mixed configuration tool usage' in the document `UserManual_3rdParty-MCAL-Integration.pdf` [1].

Note
Only the recommended workflow is tested during MCAL integration. Deviations from the workflow can lead to complications with the configuration resp. build of the MCAL.

Multimedia Link
For additional information please also refer to the Vector screen cast referenced in UserManual_3rdParty-MCAL-Integration.pdf [1]

1.2 MCAL Location within SIP

The third party MCAL is separated from the Vector parts within the SIP. It might not even be part of the delivery. Please refer to chapter 'First Steps' in document `UserManual_3rdParty-MCAL-Integration.pdf` [1].

1.3 Supported Third Party Products

This integration supports the following Infineon targets:

1.3.1 ASR 4.4

1.3.1.1 TC39x B-Step, TC38x A-Step, TC37x, TC37x_ED A-Step, TC36x A-Step, TC35x A-Step, TC33x, TC33x_ED A-Step, TC32x A-Step, TC3Ex A-Step

- MC-ISAR_AS440_TC3xx_BASIC_2.30.0 /

MC-ISAR_AS440_TC3xx_CD_2.30.0

- MC-ISAR_AS440_TC3xx_BASIC_2.25.0 (Ext) / MC-ISAR_AS440_TC3xx_CD_2.25.0 (ext)
- MC-ISAR_AS440_TC3xx_BASIC_2.20.0 / MC-ISAR_AS440_TC3xx_CD_2.20.0
- MC-ISAR_AS440_TC3xx_BASIC_2.10.0 / MC-ISAR_AS440_TC3xx_CD_2.10.0
- MC-ISAR_AS440_TC3xx_BASIC_2.0.0 / MC-ISAR_AS440_TC3xx_CD_2.0.0
- MC-ISAR_AS440_TC3xx_BASIC_2.0.0-rc / MC-ISAR_AS440_TC3xx_CD_2.0.0-rc

1.3.2 ASR 4.2

1.3.2.1 TC39x B-Step

- MC-ISAR_AS422_TC3xx_BASIC_2.30.0 / MC-ISAR_AS422_TC3xx_CD_2.30.0
- MC-ISAR_AS422_TC3xx_BASIC_2.25.0 / MC-ISAR_AS422_TC3xx_CD_2.25.0
- MC-ISAR_AS422_TC3xx_BASIC_2.20.0 / MC-ISAR_AS422_TC3xx_CD_2.20.0
- MC-ISAR_AS422_TC3xx_BASIC_2.10.0 / MC-ISAR_AS422_TC3xx_CD_2.10.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0 / MC-ISAR_AS422_TC3xx_CD_2.0.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0-rc / MC-ISAR_AS422_TC3xx_CD_2.0.0-rc
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0 / MC-ISAR_AS422_TC3xx_CD_1.40.0
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc / MC-ISAR_AS422_TC3xx_CD_1.40.0-rc
- MC-ISAR_AS42x_TC3xx_BASIC_1.30.0
- MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_TC37xA_BASIC_1.30.0-rc / MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_TC37xA_CD_1.30.0-rc
- MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_BASIC_1.20.0-beta / MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_CD_1.20.0-beta
- MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.10.0 /

MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB _CD_1.10.0

- MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.10.0-rc / MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_CD_1.10.0-rc

1.3.2.2 TC38x A-Step

- MC-ISAR_AS422_TC3xx_BASIC_2.30.0 / MC-ISAR_AS422_TC3xx_CD_2.30.0
- MC-ISAR_AS422_TC3xx_BASIC_2.25.0 / MC-ISAR_AS422_TC3xx_CD_2.25.0
- MC-ISAR_AS422_TC3xx_BASIC_2.20.0 / MC-ISAR_AS422_TC3xx_CD_2.20.0
- MC-ISAR_AS422_TC3xx_BASIC_2.10.0 / MC-ISAR_AS422_TC3xx_CD_2.10.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0 / MC-ISAR_AS422_TC3xx_CD_2.0.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0-rc / MC-ISAR_AS422_TC3xx_CD_2.0.0-rc
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0 / MC-ISAR_AS422_TC3xx_CD_1.40.0
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc / MC-ISAR_AS422_TC3xx_CD_1.40.0-rc
- MC-ISAR_AS42x_TC3xx_BASIC_1.30.0
- MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_TC37xA_BASIC_1.30.0-rc / MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_TC37xA_CD_1.30.0-rc
- MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_BASIC_1.20.0-beta / MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_CD_1.20.0-beta
- MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC 1.10.0 / MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB _CD_1.10.0
- MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.10.0-rc / MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_CD_1.10.0-rc

1.3.2.3 TC37x, TC37x_ED A-Step

- MC-ISAR_AS422_TC3xx_BASIC_2.30.0 / MC-ISAR_AS422_TC3xx_CD_2.30.0
- MC-ISAR_AS422_TC3xx_BASIC_2.25.0 / MC-ISAR_AS422_TC3xx_CD_2.25.0
- MC-ISAR_AS422_TC3xx_BASIC_2.20.0 / MC-ISAR_AS422_TC3xx_CD_2.20.0

- MC-ISAR_AS422_TC3xx_BASIC_2.10.0 / MC-ISAR_AS422_TC3xx_CD_2.10.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0 / MC-ISAR_AS422_TC3xx_CD_2.0.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0-rc / MC-ISAR_AS422_TC3xx_CD_2.0.0-rc
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0 / MC-ISAR_AS422_TC3xx_CD_1.40.0
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc / MC-ISAR_AS422_TC3xx_CD_1.40.0-rc
- MC-ISAR_AS42x_TC3xx_BASIC_1.30.0
- MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_TC37xA_BASIC_1.30.0-rc / MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_TC37xA_CD_1.30.0-rc
- MC-ISAR_AS42x_AURIX2G_TC37xA_BASIC_1.30.0-alpha / MC-ISAR_AS42x_AURIX2G_TC37xA_CD_1.30.0-alpha

1.3.2.4 TC36x A-Step

- MC-ISAR_AS422_TC3xx_BASIC_2.30.0 / MC-ISAR_AS422_TC3xx_CD_2.30.0
- MC-ISAR_AS422_TC3xx_BASIC_2.25.0 / MC-ISAR_AS422_TC3xx_CD_2.25.0
- MC-ISAR_AS422_TC3xx_BASIC_2.20.0 / MC-ISAR_AS422_TC3xx_CD_2.20.0
- MC-ISAR_AS422_TC3xx_BASIC_2.10.0 / MC-ISAR_AS422_TC3xx_CD_2.10.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0 / MC-ISAR_AS422_TC3xx_CD_2.0.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0-rc / MC-ISAR_AS422_TC3xx_CD_2.0.0-rc
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0 / MC-ISAR_AS422_TC3xx_CD_1.40.0
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc / MC-ISAR_AS422_TC3xx_CD_1.40.0-rc
- MC-ISAR_AS42x_AURIX2G_TC36xA_BASIC_1.40.0-alpha / MC-ISAR_AS42x_AURIX2G_TC36xA_CD_1.40.0-alpha

1.3.2.5 TC35x A-Step

- MC-ISAR_AS422_TC3xx_BASIC_2.30.0 /

MC-ISAR_AS422_TC3xx_CD_2.30.0

- MC-ISAR_AS422_TC3xx_BASIC_2.25.0 / MC-ISAR_AS422_TC3xx_CD_2.25.0
- MC-ISAR_AS422_TC3xx_BASIC_2.20.0 / MC-ISAR_AS422_TC3xx_CD_2.20.0
- MC-ISAR_AS422_TC3xx_BASIC_2.10.0 / MC-ISAR_AS422_TC3xx_CD_2.10.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0 / MC-ISAR_AS422_TC3xx_CD_2.0.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0-rc / MC-ISAR_AS422_TC3xx_CD_2.0.0-rc
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0 / MC-ISAR_AS422_TC3xx_CD_1.40.0
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc / MC-ISAR_AS422_TC3xx_CD_1.40.0-rc
- MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_TC37xA_BASIC_1.30.0-rc / MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_TC37xA_CD_1.30.0-rc
- MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_BASIC_1.20.0-beta / MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_CD_1.20.0-beta

1.3.2.6 TC33x, TC33x_ED A-Step

- MC-ISAR_AS422_TC3xx_BASIC_2.30.0 / MC-ISAR_AS422_TC3xx_CD_2.30.0
- MC-ISAR_AS422_TC3xx_BASIC_2.25.0 / MC-ISAR_AS422_TC3xx_CD_2.25.0
- MC-ISAR_AS422_TC3xx_BASIC_2.20.0 / MC-ISAR_AS422_TC3xx_CD_2.20.0
- MC-ISAR_AS422_TC3xx_BASIC_2.10.0 / MC-ISAR_AS422_TC3xx_CD_2.10.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0 / MC-ISAR_AS422_TC3xx_CD_2.0.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0-rc / MC-ISAR_AS422_TC3xx_CD_2.0.0-rc
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0 / MC-ISAR_AS422_TC3xx_CD_1.40.0
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc / MC-ISAR_AS422_TC3xx_CD_1.40.0-rc
- MC-ISAR_AS42x_ TC3xx_BASIC_1.40.0-alpha1 /

MC-ISAR_AS42x_ TC3xx_CD_1.40.0-alpha1

1.3.2.7 TC32x A-Step

- MC-ISAR_AS422_TC3xx_BASIC_2.30.0 / MC-ISAR_AS422_TC3xx_CD_2.30.0
- MC-ISAR_AS422_TC3xx_BASIC_2.25.0 / MC-ISAR_AS422_TC3xx_CD_2.25.0
- MC-ISAR_AS422_TC3xx_BASIC_2.20.0 / MC-ISAR_AS422_TC3xx_CD_2.20.0
- MC-ISAR_AS422_TC3xx_BASIC_2.10.0 / MC-ISAR_AS422_TC3xx_CD_2.10.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0 / MC-ISAR_AS422_TC3xx_CD_2.0.0
- MC-ISAR_AS422_TC3xx_BASIC_2.0.0-rc / MC-ISAR_AS422_TC3xx_CD_2.0.0-rc
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0 / MC-ISAR_AS422_TC3xx_CD_1.40.0
- MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc / MC-ISAR_AS422_TC3xx_CD_1.40.0-rc

Note
Please refer to the Release Notes of the third party products for further information, e.g. regarding supported versions, derivatives and compilers.

Note

Only official third party vendor releases are part of this Vector integration package. Therefore, any customer-specific releases cannot be considered.

Caution

To find out if there are further Hotfixes available for your MCAL package, please contact the third party vendor.

It is essential to replace the affected EB tresos™ module plugins in your original package before you start Script_MCAL_Prepare.bat.

1.4 Configuration Tools

- Vector DaVinci Configurator Classic (MICROSAR Classic project)
- EB tresos™

2 Vector Comment

The user should consider the attached `UserManual_3rdParty-MCAL-Integration.pdf` [1] for further information regarding Vector integration and setup of a project.

2.1 Known Issues

The MCAL package in use might not be the latest one. Updates or Hot Fixes might be available from the vendor.

The errors documented in the following chapters were detected at Vector during the MCAL integration and reported to the third party vendor.

If you discover errors in the MCAL during development or suspect that faulty behavior could be caused by the MCAL, please contact the third party vendor or check the issue lists provided by the third party vendor. Further information is given in IssueHandling_TC3xx_MCAL.pdf [2].

If there are updates for your MCAL available, it might be helpful to use them. The corresponding third party vendor Release Notes will tell you which errors have been fixed.

Note
Vector makes every effort to ensure that this integration is compatible with all MCAL packages of the corresponding Controller Family as long as the third party vendor does not change the structure of the packages. However, not all MCAL packages can be tested and therefore the user may find errors either in Vector's files or in the MCAL that are not listed in this document.

Caution
Modifications to the MCAL, which may be described in the following chapters under the keyword 'Workaround', must take place after the 3rd Party MCAL IntegrationHelperTool has run. Otherwise, the changes will be overwritten.

Note
Necessary patches are provided via the SIP folder ThirdParty\<Short_Name>\VectorIntegration\Patches\ (called 'patch folder' in this chapter).

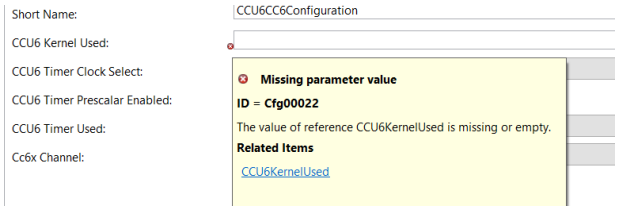
2.1.1 General Issues

2.1.1.1 MCAL Patches from Infineon

The MCAL contains issues that have been fixed by the MCAL vendor. Such patches like MC-ISAR_AS42x_TC3xx_1.30.0_Patch_1 are available in the patch folder.

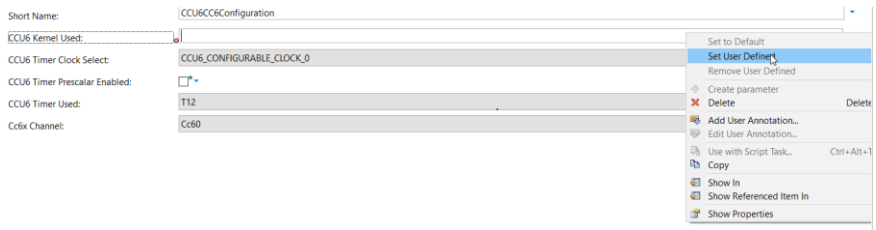
Note
Further details about the fixed issues can be found in the related patch package.

2.1.1.2 General: Inconsistency between EB Tresos and DaVinci Configurator Classic



There may be inconsistencies between parameters in Tresos and DaVinci Configurator Classic. This is because the parameter in Tresos is marked as optional while it is mandatory in DaVinci Configurator Classic.

To avoid that the parameter must be configured in DaVinci Configurator Classic and the configuration is changed, set the parameter to “User Defined”.



2.1.1.3 Fee: Asynchronous Initialization

The Fee module uses asynchronous initialization. Thus, the change of the state

MEMIF_UNINIT → (MEMIF_BUSY_INTERNAL →) MEMIF_IDLE

is done by Fee_Init in combination with Fee_MainFunction.

The change of the state varies in the different AUTOSAR versions. This has to be considered during the initialization. Please use the Infineon Fee Demo of your MCAL version as an example of your initialization.

2.1.2 All derivatives

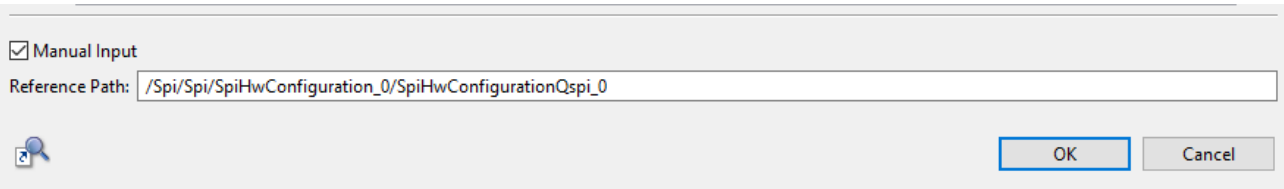
2.1.2.1 Mcal versions up to MC-ISAR_AS440_TC3xx_BASIC_2.0.0 / MC-ISAR_AS422_TC3xx_BASIC_2.0.0

2.1.2.1.1 Reference to SpiHwConfigurationQspi not configurable

The reference ResourceMResourceRef to the container SpiHwConfigurationQspi is not shown in DaVinci Configurator Classic because the module description uses an AUTOSAR, but the container SpiHwConfigurationQspi is vendor specific.

The issue has been reported to Infineon issue database with number VECTOR-98.

Workaround
Copy the reference path of your SpiHwConfigurationQspi container (e.g. SpiHwConfigurationQspi_0) and create a manual input as shown below.



2.1.3 TC38x A-Step

2.1.3.1 MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc

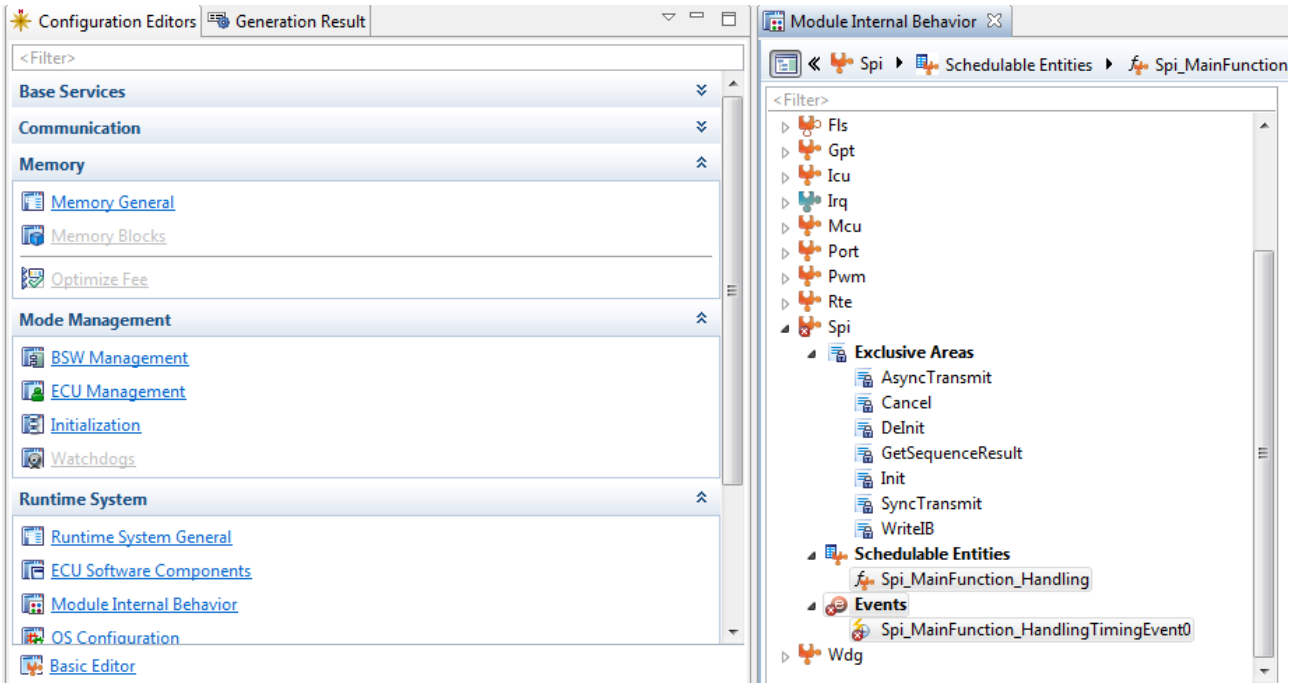
2.1.3.1.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

The function Spi_MainFunction_Handling is called unconditionally in the file SchM_Spi.h without any compiler switch but the extern definition of this function is defined in spi.h file with a compiler switch.

This leads to an error as below if Spi Level Delivered is different from 2:
In file included from ../../../external/BSW/../ThirdParty/Mcal_Tc3xx/Supply/MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.0.0-beta/McIsar/Src/Mcal/Tricore/Spi/ssc/src/Spi.c:75:
gendata/SchM_Spi.h:33: arguments given to macro `Spi_MainFunction_Handling'

Workaround
Remove the configuration for Spi_MainFunction_Handling in
Runtime System →Module Internal Behavior →Spi →Schedulable Entities and Events

Please see the below image for some more information.



2.1.3.1.2 Test_Mcal_SafetyError.h: No such file or directory

While checking for the dependency, If the macro APP_SW is not defined the below error occurs

Error Message:

In file included from ../../../external/BSW/../ThirdParty/Mcal_Tc3xx/Supply/MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.0.0-beta/DemoWorkspace/McalDemo/TC38A/0_Src/BaseSw/Infra/Autosar_Srv/Mcal_SafetyError.c:38:
../../../external/BSW/../ThirdParty/Mcal_Tc3xx/Supply/MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.0.0-beta/DemoWorkspace/McalDemo/TC38A/0_Src/BaseSw/Infra/Autosar_Srv/Mcal_SafetyError.h:42: Test_Mcal_SafetyError.h: No such file or direct
../../../external/BSW/../ThirdParty/Mcal_Tc3xx/Supply/MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.0.0-beta/DemoWorkspace/McalDemo/TC38A/0_Src/BaseSw/Infra/Autosar_Srv/Mcal_SafetyError.c:40: Test_Print.h: No such file or directory
../../../external/BSW/../ThirdParty/Mcal_Tc3xx/Supply/MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.0.0-beta/DemoWorkspace/McalDemo/TC38A/0_Src/BaseSw/Infra/Autosar_Srv/Mcal_SafetyError.c:43: Test_Mcal_SafetyError.h: No such file or direct

Workaround
Define the APP_SW as below in Compiler_Cfg.h to solve this issue.
#define APP_SW 3

2.1.3.2 MC-ISAR_AS42x_AURIX2G_ TC38xA_TC39xB_TC35xA_TC37xA_BASIC_1.30.0-rc

2.1.3.2.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.3.3 MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_BASIC_1.20.0-beta

2.1.3.3.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.3.3.2 Test_Mcal_SafetyError.h: No such file or directory

See chapter 2.1.3.1.2.

2.1.3.4 MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.10.0

2.1.3.4.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.3.4.2 Test_Mcal_SafetyError.h: No such file or directory

See chapter 2.1.3.1.2.

2.1.3.5 MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.10.0-rc

2.1.3.5.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.3.5.2 Test_Mcal_SafetyError.h: No such file or directory

See chapter 2.1.3.1.2.

2.1.4 TC39x B-Step

2.1.4.1 MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc

2.1.4.1.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.4.2 MC-ISAR_AS42x_AURIX2G_ TC38xA_TC39xB_TC35xA_TC37xA_BASIC_1.30.0-rc

2.1.4.2.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.4.2.2 Test_Mcal_SafetyError.h: No such file or directory

See chapter 2.1.3.1.2.

2.1.4.3 MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_BASIC_1.20.0-beta

2.1.4.3.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.4.3.2 Test_Mcal_SafetyError.h: No such file or directory

See chapter 2.1.3.1.2.

2.1.4.4 MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.10.0

2.1.4.4.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.4.4.2 Test_Mcal_SafetyError.h: No such file or directory

See chapter 2.1.3.1.2.

2.1.4.5 MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_BASIC_1.10.0-rc

2.1.4.5.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.4.5.2 Test_Mcal_SafetyError.h: No such file or directory

See chapter 2.1.3.1.2.

2.1.4.6 MC-ISAR_AS42x_TC3xx_BASIC_1.30.0

2.1.4.6.1 Destination Reference of AUTOSAR Reference Parameter GptClockReference wrong

DestinationRef of AUTOSAR reference 'Gpt/GptDriverConfiguration/GptClockReferencePoint/GptClockReference' should be '/AUTOSAR/EcucDefs/Mcu/McuModuleConfiguration/McuClockSettingConfig/McuClockReferencePoint'

Workaround
In CFG5, add the correct path manually

2.1.5 TC35 A-Step

2.1.5.1 MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc

2.1.5.1.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.5.2 MC-ISAR_AS42x_AURIX2G_ TC38xA_TC39xB_TC35xA_TC37xA_BASIC_1.30.0-rc

2.1.5.2.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.5.2.2 Test_Mcal_SafetyError.h: No such file or directory

See chapter 2.1.3.1.2.

2.1.5.3 MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_TC35xA_BASIC_1.20.0-beta

2.1.5.3.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.5.3.2 Test_Mcal_SafetyError.h: No such file or directory

See chapter 2.1.3.1.2.

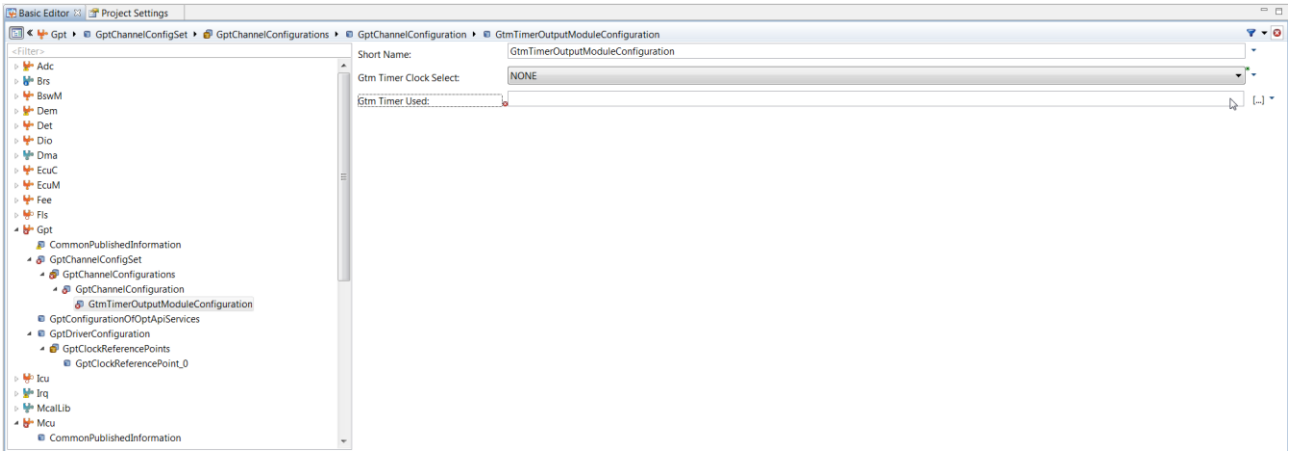
2.1.5.3.3 GPT modules cannot be generated in DaVinci configurator.

For the derivative TC35x generation of GPT is not possible in DaVinci Configurator.

In the path Gpt/GptChannelConfigSet/GptChannelConfiguration/GtmTimerOutputModuleConfiguration/GtmTimerUsed

The tag GtmTimerUsed is a mandatory tag with multiplicity 1:1.

To configure this tag, we must give a reference to Mcu/McuHardwareResourceAllocationConf/McuGtmAllocationConfcontainer, but this container is not available for the derivative TC35x



Workaround
GPT module must be generated with Tresos and the generated files has to be copied to GenData/Src and Gendata/inc folders respectively for the compilation.

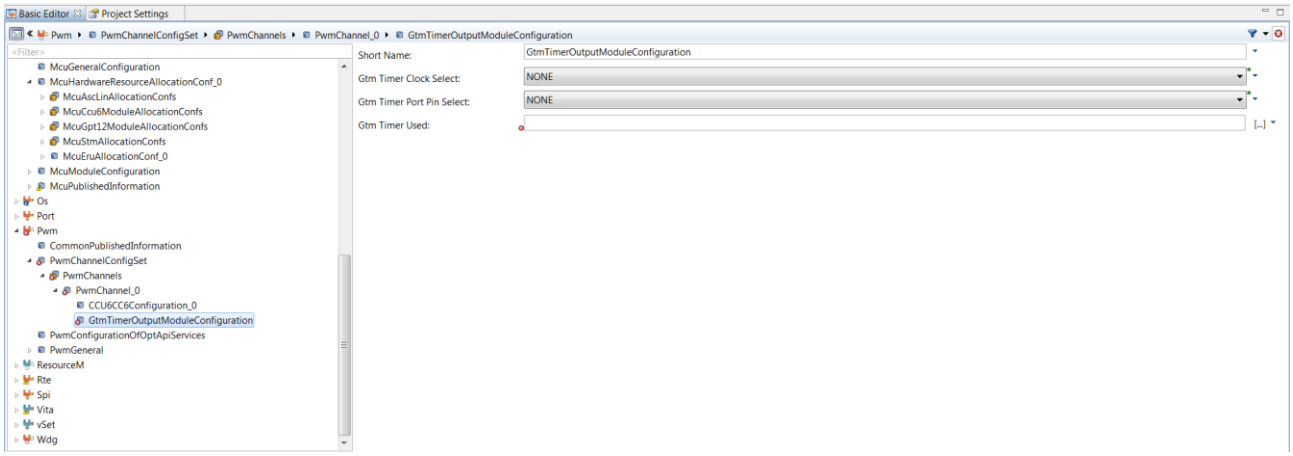
2.1.5.3.4 PWM modules cannot be generated in DaVinci configurator.

For the derivative TC35x generation of PWM is not possible in DaVinci Configurator.

In the path Pwm/PwmChannelConfigSet/PwmChannel/GtmTimerOutputModuleConfiguration/GtmTimerUsed

The tag GtmTimerUsed is a mandatory tag with multiplicity 1:1.

To configure this tag, we must give a reference to Mcu/McuHardwareResourceAllocationConf/McuGtmAllocationConfcontainer, but this container is not available for the derivative TC35x



Workaround
Pwm module must be generated with Tresos and the generated files has to be copied to GenData/Src and Gendata/inc folders respectively for the compilation.

2.1.6 TC37x, TC37xA_ED A-Step

2.1.6.1 MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc

2.1.6.1.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.6.2 MC-ISAR_AS42x_AURIX2G_ TC38xA_TC39xB_TC35xA_TC37xA_BASIC_1.30.0-rc

2.1.6.2.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.6.2.2 Test_Mcal_SafetyError.h: No such file or directory

See chapter 2.1.3.1.2.

2.1.6.3 MC-ISAR_AS42x_AURIX2G_TC37xA_BASIC_1.30.0-alpha

2.1.6.3.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.6.3.2 Test_Mcal_SafetyError.h: No such file or directory

See chapter 2.1.3.1.2.

2.1.7 TC36x A-Step

2.1.7.1 MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc

2.1.7.1.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.7.2 MC-ISAR_AS42x_AURIX2G_TC36xA_BASIC_1.40.0-alpha

2.1.7.2.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.7.2.2 Test_Mcal_SafetyError.h: No such file or directory

See chapter 2.1.3.1.2.

2.1.8 TC33x, TC33x_ED A-Step

2.1.8.1 MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc

2.1.8.1.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.8.1.2 Uart: UartCTSPinSelection not in range

When UartHwUnit is configured to e.g. ASCLIN0, the following error message occurs in DaVinci Configurator 5:

```
ERROR 20-04-30,12:59:39 (1025) Value "SELECT_CTS_B_PORT33_PIN5" of node "/AUTOSAR/TOP-LEVEL-
PACKAGES/Uart/ELEMENTS/Uart/UartConfigSet/UartChannel/UartChannel_0/UartCTSPinSelection
" not in range "[NONE]"
```

But UartCTSPinSelection cannot be configured to NONE in the enumeration field.

The issue has been reported to Infineon issue database with number VECTOR-42.

Workaround
Choose ASCLIN2 for UartHwUnit.

2.1.8.2 MC-ISAR_AS42x_ TC3xx_BASIC_1.40.0-alpha1

2.1.8.2.1 Supported Devices

The MCAL contains files for TC32x which is not part of the Release Notes. Thus, the Integration for TC32x devices is not supported by Vector Informatik GmbH.

2.1.8.2.2 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.1.8.2.3 TC332x: EcuM, Dem and Spi modulues not displayed in EB tresos™

If the subderivative TC332x is chosen in ResourceM module, the modules EcuM, Dem and Spi are not displayed and cannot be loaded in EB tresos™.

The issue has been reported to Infineon issue database with number VECTOR-23.

Workaround
Manually add the line

```
<ecuType target="AURIX2G" derivate="TC332"/>
```

to the plugin.xml files in the directories

\ThirdParty\Mcal_Tc3xx\Supply\Tresos\plugins\(Dem|EcuM|Spi)_Aurix2G

2.1.8.2.4 TC332x: Error during compiling in Spi module

For the subderivative TC332x, an error message like

ctc E269: ["../../../internal/StartApplication/Appl/GenData/src/Spi_PBcfg.c" 478/5] too many initializers

occurs while compiling, because there are 4 lines generated for “QSPI Hw configuration” in Spi_PBcfg.h, but TC332x only supports QSPI0, QSPI1 and QSPI2.

The issue has been reported to Infineon issue database with number VECTOR-24.

Workaround
Manually delete the last NULL_PTR of the lines

```
{
    &Spi_kQspiHwConfigQSPI0,
    NULL_PTR,
    NULL_PTR,
    NULL_PTR,

  },
```

in the file Spi_PBcfg.c.

2.1.9 TC32x A-Step

2.1.9.1 MC-ISAR_AS422_TC3xx_BASIC_1.40.0-rc

2.1.9.1.1 Extern Definition for the function Spi_MainFunction_Handling is defined with a compiler switch.

See chapter 2.1.3.1.1.

2.2 Restrictions

2.2.1 General Restrictions

2.2.1.1 General: Usage of DemoWorkspace (except Irq)

Some MCAL modules need files like Mcal_SafetyError.c for the build process. These files exist in the DemoWorkspace of the MCAL and are used for the integration and testing. If they shall not be part of the built process, they can be excluded by the switch “MCAL_EXCLUDE_DEMO” in “Mcal_Tc3xx_rules.mak” (except Irq files).

2.2.1.2 Irq: Configuration of Init-Functions and DemoWorkspace

The Init functions of the Irq module are not automatically added to the configuration. If the Init functions are needed, they must be configured manually by the user.

Most Irq-files are part of the DemoWorkpace. According to Infineon’s Irq User Manual, the files must be updated by the user to work with an actual Os like Vector’s.

2.2.1.3 MCAL usage in User Mode

If the MCAL is used in User Mode, it tries to include a file called “McalLib_OsStub.h”. The template files provided by Infineon are not compatible with APIs of the Vector Os. Thus, a template file is provided in BSW\Mcal_Tc3x resp. Components\Mcal_Tc3xx\Implementation by Vector.

To use it, copy the template file into your “Application” folder and rename it from “_McalLib_OsStub.h” to “McalLib_OsStub.h”. The OsPeripheral must be configured by the user in the Vector Os. The name of the peripheral region must be defined by the user.

2.2.1.4 MemMap: Compiler Errors during Build

The compiler throws the following error messages during the build process:

#error "For Integrator: This section must be aligned to a 4-byte boundary!"

#error "For Integrator: Alignment must be restored!"

Since the MemMap.h file is only an example file, the user must take care for the correct mapping/linking of the memory sections. The module user manuals and MemMap example files of the MCAL help the user to do so.

The Error messages must be removed afterwards.

2.2.2 AUTOSAR 4.4.0

2.2.2.1 NvM_JobEndNotification and NvM_JobErrorNotification not Declared

With the introduction of AUTOSAR 4.4.0, the functions NvM_JobEndNotification and NvM_JobErrorNotification are not provided by NvM_Cbk.h, but by NvM.h according to AUTOSAR_SWS_FlashEEPROMEmulation.pdf.

In contrast to this, the functions shall be available via NvM_Mem.h according to AUTOSAR_SWS_NVRAMManager.pdf. But NvM_Mem.h is not part of the header file structure.

This leads to an incompatibility between Vector and Infineon with MICROSAR Classic versions 25.05 and lower.

Workaround

MICROSAR Classic 25.05 and lower:
Set NvM Polling Mode == true.

MICROSAR Classic 25.06 and higher:
Because of an updated include structure in NvM, nothing has to be done.

2.2.2.2 Missing header-file EcuM_Externals.h

If Wake-Up functionality is configured in Gpt or Icu, compiling is not successful since the header-file EcuM_Externals.h is missing.

Workaround

Create a stub file “EcuM_Externals.h” with the following content:

#include “EcuM_Cbk.h”

3 Glossary and Abbreviations

3.1 Glossary

Term	Description
Third party components / MCAL	BSW modules not provided by Vector. Vector may have integrated the software within the SIP but does not take over any responsibility regarding functionality of these modules.
DaVinci Configurator Classic	Configuration and generation tool for Vector MICROSAR Classic components

Table 3-1 Glossary

3.2 Abbreviations

Abbreviation	Description
MCAL	Microcontroller Abstraction Layer
AUTOSAR	Automotive Open System Architecture
SIP	Software Integration Package (as provided by Vector)
Msn	Module Short Name according AUTOSAR

Table 3-2 Abbreviations

4 Contact

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