User's Manual

AUTOSAR MCAL R4.0.3
User's Manual

MCU Driver Component Ver.1.0.8

Generation Tool User's Manual

Target Device:
RH850/P1x

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Abbreviations and Acronyms

Abbreviation / Acronym	Description
AUTOSAR	AUTomotive Open System ARchitecture
BSWMDT	Basic Software Module Description Template
DEM	Diagnostic Event Manager
ECM	Error Control Module
ECU	Electronic Control Unit
Id	Identifier
MCAL	Micro Controller Abstraction Layer
MCU	Micro Controller Unit
MHz	Mega Hertz
MSN	Module Specific Name
SPAL	Standard Peripheral Abstraction Layer
XML	eXtensible Mark-up Language
Rev.	Revision
RUCG	Renesas Unified Code Generator

Definitions

Terminology	Description
BSWMDT File	This file is the template for the Basic Software Module Description.
Configuration XML File (.cfgxml)	This file contains the setting of command line options.
ECU Configuration Description File(.arxml)	Input file to MCU Driver Generation Tool. It is generated by ECU Configuration Editor.
Sl.No	Serial Number.
Translation XML File (.trxml)	This file contains the translation and device specific header file path.

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Chapter 1 Introduction

The MCU Driver component provides services for basic microcontroller initialization, Error Control Module (ECM), reset and microcontroller specific functions required from other SPAL components.

The MCU Driver Component comprises of two sections i.e., Embedded Software and Generation Tool to achieve scalability and configurability.

The document describes the features of the MCU Driver Generation Tool. MCU Driver Generation Tool is a command line tool that extracts information from ECU Configuration Description File, BSWMDT File and generates MCU Driver C source and C header files (Mcu_PBcfg.c, Mcu_Reg.h, Mcu_Cbk.h and Mcu_Cfg.h).

1.1. Document Overview

This user manual is organized as given in the table below:

Section	Contents
Section 1 (Introduction)	Provides an introduction to the document and explains how information is organized in this manual.
Section 2 (Reference)	Provides a list of documents referred while developing this document.
Section 3 (MCU Driver Generation Tool Overview)	Provides the MCU Driver Generation Tool Overview.
Section 4 (Input Files)	Provides information about ECU Configuration Description File.
Section 5 (Output Files)	Explains the output files that are generated by the MCU Driver Generation Tool.
Section 6 (Precautions)	Contains precautions to be taken during configuration of ECU Configuration Description File.
Section 7 (User Configuration Validation)	Describes about user configuration validation done by the MCU Driver Generation Tool.
Section 8 (Messages)	Describes all the Error/Warning/Information messages of R4.0.3 which helps the user to understand the probable reason for the same.
Section 9 (Notes)	Provides notes to help the user to understand this document better.

Chapter 2 Reference

2.1. Reference Documents

The following table lists the documents referred to develop this document:

Sl. No	Title	Version
1.	**Autosar R4.0** AUTOSAR_SWS_MCUDriver.pdf	3.2.0
2.	**P1x Parameter Definition File** R403_MCU_P1M_04_05.arxml	1.1.9
3.	**P1x Parameter Definition File** R403_MCU_P1M_10_to_15_18_to_23.arxml	1.0.6

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Chapter 3 MCU Driver Generation Tool Overview

MCU Driver Generation Tool overview is shown below.

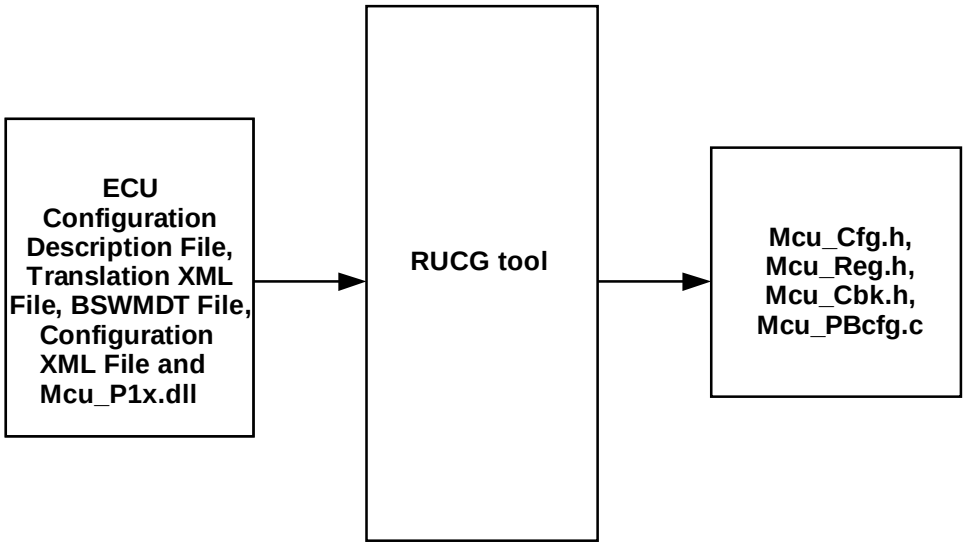

Figure 3-1 Overview of MCU Driver Generation Tool

Renesas Unified Code Generator (RUCG) tool shall be used for MCU driver configuration generation.

MCU Driver Generation Tool is a command line tool that extracts, analyzes the configuration details provided in the input file and validates correctness of the data and provides scalability and configurability for MCU Driver module. It accepts ECU Configuration Description File(s), Translation XML File, BSWMDT File and Configuration XML File as input and displays appropriate context sensitive error messages for wrong input and exits. Tool creates the Log file (Mcu.log) that contains the list of Error/Warning/Information messages in the output directory.

For the error free input file, the tool generates the following output files: Mcu_Cfg.h, Mcu_Reg.h, Mcu_Cbk.h and Mcu_PBcfg.c.

Mcu_Cfg.h, Mcu_Reg.h and Mcu_Cbk.h will be compiled and linked with MCU Driver Module. Mcu_PBcfg.c will be compiled and linked separately from the other C Source files and placed in flash.

ECU Configuration Description File can be created or edited using ECU Configuration Editor.

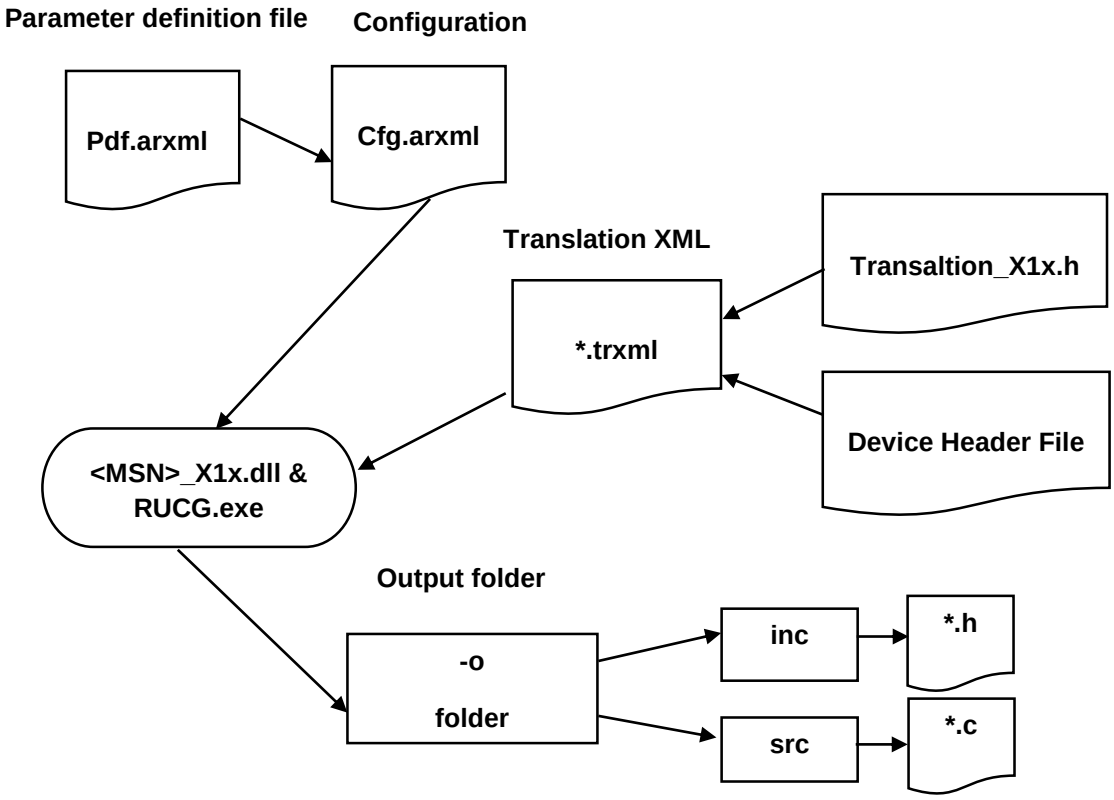

Figure 3-2 Generator Concept Flow Chart

Remark

- In case of errors the generation tool returns a 1, in case of no errors the generation tool returns a 0.
- MCU Driver Generation Tool uses “Common Published Information” from MCU module specific BSWMDT File. MCU module specific BSWMDT File should not be updated manually since it is “Static Configuration” file.

Chapter 4 Input Files

RUCG Tool accepts ECU Configuration Description File(s), Translation XML File, BSWMDT File Configuration XML File and Mcu_P1x.dll as input. MCU Driver Generation Tool needs information about MCU Driver module. Hence ECU Configuration Description File should contain configuration of MCU Driver module. Generation Tool ignores any other AUTOSAR component configured in the ECU Configuration Description File. ECU Configuration Description File can be generated using configuration editor.

ECU Configuration Description File must comply with AUTOSAR standard ECU Configuration Description File format.

Remark The detailed explanation about the parameters and containers are found in Parameter Definition File mentioned in Reference Documents section.

Chapter 5 Output Files

MCU Driver Generation Tool generates configuration details in C Header and C Source files Mcu_Cfg.h, Mcu_Reg.h, Mcu_Cbk.h and Mcu_PBcfg.c.

The content of each output file is given in the table below:

Table 5-1 Output Files Description

Output File	Details
Mcu_Cfg.h	This file contains pre-compile time parameters.
Mcu_Reg.h	This file contains the definitions for addresses of the hardware registers used in the MCU Driver Module.
Mcu_Cbk.h	This file contains callback function prototype declarations to be used by application.
Mcu_PBcfg.c	This file contains post-build configuration data.

Remark Output files generated by MCU Driver Generation Tool should not be modified or edited manually.

Chapter 6 Precautions

- ECU Configuration Description File and BSWMDT File must comply with AUTOSAR standard for R4.0.3 ECU Configuration Description File and BSWMDT File respectively.
- The input file must contain MCU Driver and DEM component related configuration.
- Default Translation XML File (Mcu_P1x.trxml) should be present in same location of Mcu_P1x.dll and RUCG.exe when the variant specific trxml file is not given as input in command line.
- Default Configuration XML File (Mcu_P1x.cfgxml) must be present in same location of Mcu_P1x.dll.
- If Translation XML File is not provided on the command line, Mcu_P1x.trxml which is present in same location of Mcu_P1x.dll is considered as ‘default’ Translation XML File.
- If Configuration XML File is not provided on the command line, Mcu_P1x.cfgxml which is present in same location of Mcu_P1x.dll is considered as ‘default’ Configuration XML File.
- Translation XML File should contain the file extension ‘.trxml’.
- Configuration XML File should contain the file extension ‘.cfgxml’.
- All the function names and the string values configured should follow C syntax for variables. It can only contain alphanumeric characters and “_”. It should start with an alphabet.
- If the output files generated by MCU Driver Generation Tool are modified externally, then they may not produce the expected results or may lead to error/warning/Information messages.
- Short Name for a container should be unique within a name space.
- An error free ECU Configuration Description File generated from configuration editor has to be provided as input to the MCU Driver Generation Tool. Otherwise Tool may not produce the expected results or may lead to errors/warnings/information messages.
- User has to make sure that the respective device specific configuration file is used. Otherwise Tool may not produce the expected results or may lead to errors/warnings/information messages.
- The description file should always be generated using AUTOSAR specified configuration editor and it should not be edited manually.
- There is a limitation to the number of instances of the generator tools running in parallel. Up to 15 instances of the generator tool will run in parallel without any problem.

Remark Please refer the MCU Component User Manual for deviations from AUTOSAR specifications, if any.

Chapter 7 User Configuration Validation

This section provides help to analyze the error, warning and information messages displayed during the execution of MCU Driver Generation Tool. It ensures conformance of input file with syntax and semantics. It also performs validation on the input file for correctness of the data.

For more details on list of Error/Warning/Information messages that are displayed as a result of input file(s) validation, refer Chapter 8 “*Messages*”.

The Generation Tool displays error or warning or information when the user has configured incorrect inputs. The format of Error/Warning/Information message is as shown below.

- ERR/WRN/INF<mid><xxx>: <Error/Warning/Information Message>.

  where,

<mid>: 101 - MCU Driver Module Id (101) for user configuration checks.

000 - for command line checks.

<xxx>: 001-999 - Message Id.

- File Name: Name of the file in which the error has occurred.
- Path: Absolute path of the container in which the parameter is present.

‘File Name’ and ‘Path’ need not be present for all Error/Warning/Information messages.

Chapter 8 Messages

The messages help to identify the syntax or semantic errors in the ECU Configuration Description File. Hence it ensures validity and correctness of the information available in the ECU Configuration Description File.

The following section gives the list of error, warning and information messages displayed by the Generation Tool.

8.1 Error Messages

ERR101001: Number of fields is not same for the entity 'Structure Name'.

This error occurs, if the number of fields is not same in the structure that is to be generated in the output file.

ERR101002: Field 'Field Name' is empty in the entity 'Structure Name'.

This error occurs, if the structure fields that are to be generated in the output file are empty.

ERR101003: 'MCU Driver' or 'DEM Driver' Component is not present in the input file(s).

This error occurs, if MCU Driver or DEM Driver component is not present in the input ECU Configuration Description File(s).

ERR101004: The parameter 'parameter name' in the container 'container name' should be configured.

This error occurs, if any of the mandatory configuration parameter(s) mentioned below is (are) not configured in ECU Configuration Description File.

The list of mandatory parameters with respect to container is listed below:

Table 8-1 Parameters and Container related to error ERR101004

Parameter Name	Container Name
McuVersionCheckExternalModules	McuGeneralConfiguration
McuDevErrorDetect	
McuGetRamStateApi	
McuInitClock	
McuNoPll	
McuPerformResetApi	
McuVersionInfoApi	
McuCriticalSectionProtection	
McuSwResetCallApi	
McuEcmDelayTimerOverflowValue	

Parameter Name	Container Name
McuEcmErrorOutputMode	McuGeneralConfiguration
McuEcmErrorOutTimer	
McuRamSectorSetting	
McuDeviceName	
McuClm0Operation	
McuClm0MonitoringClockAccuracy	
McuClm0SamplingClockAccuracy	
McuClm1Operation	
McuClm1MonitoringClockAccuracy	
McuClm1SamplingClockAccuracy	
McuClm2Operation	
McuClm2MonitoringClockAccuracy	
McuClm2SamplingClockAccuracy	
McuClm3Operation	
McuClm3MonitoringClockAccuracy	
McuClm3SamplingClockAccuracy	
McuCvmSelfDiagnosticTest	
McuClma0SelfDiagnosticTest	
McuClma1SelfDiagnosticTest	
McuClma2SelfDiagnosticTest	
McuClma3SelfDiagnosticTest	
McuEcmSelfDiagnosticTest	
McuLoopCount	
McuLockStepSelfDiagnosticTest	
McuStartUpSWResetTest	
McuStartUpECMResetTest	
McuInterruptConsistencyCheck	
McuWriteVerify	
McuClockSrcFailureNotification	McuModuleConfiguration
McuLviDetectionLevel	
McuLviResetMask	
McuNumberOfMcuModes	
McuRamSectors	
McuCvmOutMaskFbist	
McuCvmOutMaskDiag	
McuCvmOutputFilter	
McuCvmDiagLockBit	
McuCvmResetEnable	
McuClockSettingId	McuClockSettingConfig
McuMainOsciFrequency	
McuCpuMainSysClk	
McuUnitName	
McuUnitName	McuHighspeedPeriClk
McuPeripheralClock	
McuUnitName	McuLowspeedPeriClk
McuPeripheralClock	

Parameter Name	Container Name
McuWdtCounterDivider	McuWdtacounterClk
McuUnitName	
McuPeripheralClock	
McuExternalClk0SourceSel	McuExternalClkOutSetting
McuExternalClk0DividerSel	
McuExternalClock0	
McuExternalClk1SourceSel	
McuExternalClk1DividerSel	
McuExternalClock1	
McuDivClockSel	McuAdcClk
McuUnitName	
McuPeripheralClock	
McuEcmErrorMaskableInterrupt	McuEcmErrorSource0 to McuEcmErrorSource42 (except McuEcmErrorSource2, McuEcmErrorSource3, McuEcmErrorSource13, McuEcmErrorSource25 and McuEcmErrorSource35)
McuEcmErrorNonMaskableInterrupt	
McuEcmErrorInternalReset	
McuEcmErrorNMIDelayTimer	
McuEcmErrorMIDelayTimer	
McuEcmErrorOutputMask	
McuEcmErrorInternalReset	McuEcmErrorSource129
McuEcmErrorOutputMask	
MCU_E_CLOCK_FAILURE	McuDemEventParameterRefs
MCU_E_WRITE_TIMEOUT_FAILURE	
McuModeType	McuModeSettingConf
McuMode	
McuRamDefaultValue	McuRamSectorSettingConf
McuRamSectionBaseAddress	
McuRamSectionSize	
McuRamTypeSel	
McuResetReason	McuRstRsnConfPowOnClr
	McuRstRsnConfPinRst
	McuRstRsnConfSwRst
	McuRstRsnConfWdta
	McuRstRsnConfLockStepCompare
	McuRstRsnConfClkMonUprLimErMosc
	McuRstRsnConfClkMonLwrLimErMosc
	McuRstRsnConfClkMonUprLimErWdt
	McuRstRsnConfClkMonLwrLimErWdt
	McuRstRsnConfClkMonUprLimErPclk
	McuRstRsnConfClkMonLwrLimErPclk
	McuRstRsnConfClkMonUprLimErPe1
	McuRstRsnConfClkMonLwrLimErPe1
	McuRstRsnConfLRamEcc2AddPrty
	McuRstRsnConfInstCacheRamEcc2
	McuRstRsnConfCodeFlsEcc2AddPrty
	McuRstRsnConfDataFlsEcc2
	McuRstRsnConfDtsRamEcc2
	McuRstRsnConfCsihRamEcc2

Parameter Name	Container Name
McuResetReason	McuRstRsnConfCanRamEcc2
	McuRstRsnConfFrRamEcc2
	McuRstRsnConfFlsProgMode
	McuRstRsnConfTestMode
	McuRstRsnConfSingChipModInact
	McuRstRsnConfPeGuard
	McuRstRsnConfPBusGuard
	McuRstRsnConfSarAdcPrty
	McuRstRsnConfBusDataPrty
	McuRstRsnConfEcmCompare
	McuRstRsnConfLvi
	McuRstRsnConfTempSensor
	McuRstRsnConfDmaTrans
	McuRstRsnConfDmaViol
	McuRstRsnConfLRamEcc1
	McuRstRsnConfCodeFlsEcc1
	McuRstRsnConfDataFlsEcc1
	McuRstRsnConfDtsRamEcc1
	McuRstRsnConfPeriRamEcc1
	McuRstRsnConfBistCodeEcc1
	McuRstRsnConfBistCodeEcc2
	McuRstRsnConfFaci
	McuRstRsnConfEcmDelayOverFlow
	McuRstRsnConfRstUndefined
	McuRstRsnConfRstUnknown
	McuRstRsnConfCvmRst

ERR101005: The value for parameter ‘parameter name’ present in the container 'container name' should be same across multiple configuration set 'McuModuleConfiguration'.

This error occurs, if the value configured for the following parameter present in the respective container is not same across multiple configuration set McuModuleConfiguration. The validation for McuWdtCounterDivider parameter will be carried out only if McuClma2operation is TRUE.

Table 8-2 Parameters and containers related to error ERR101005

Parameter	Container
McuMainOsciFrequency	McuClockSettingConfig
McuWdtCounterDivider	McuWdtacounterClk

ERR101006: The value of the parameter 'McuEcmErrorMaskableInterrupt' should configure as <true> since the 'McuMiNotification' parameter is configured in container <Configured ecm error source container>.

This error occurs, if the value of the parameter McuEcmErrorMaskableInterrupt is not configure as true, since the

McuMiNotification parameter is configured in container <Configured ecm error source container>.

ERR101007: The configured value in 'McuPeripheralClock' in container 'McuWdtacounterClk' should be equal to <8000000/configured value of McuWdtCounterDivider parameter>.

This error occurs, if the configured value in McuPeripheralClock in container McuWdtacounterClk is not equal to <8000000/configured value of McuWdtCounterDivider parameter>.

ERR101008: The configured value in 'McuExternalClockX' in container 'McuExternalClkOutSetting' should be equal to <McuExternalClkXSourceSel/McuExternalClkXDividerSel>.

This error occurs, if the configured value in McuExternalClockX in container McuExternalClkOutSetting is not equal to <McuExternalClkXSourceSel/McuExternalClkXDividerSel>.

Remark Where X=0 or 1

ERR101009: The value of the parameter 'McuEcmErrorNonMaskableInterrupt' should configure as <true> since the 'McuNmiNotification' parameter is configured in container <Configured ecm error source container>.

This error occurs, if the value for parameter McuEcmErrorNonMaskableInterrupt is not configure as true, since the McuNmiNotification parameter is configured in container <Configured ecm error source container>.

ERR101017: The value for parameter 'parameter name' configured in container 'container name' should be <expected value of parameter>. In general per configuration set, the value of 'parameter name' parameter should start with <0> and should be sequential without any gaps.

This error occurs, if the value configured for the following parameter in the respective container does not start with 0 and not sequential in multiple configurations set container McuModuleConfiguration.

Table 8-3 Parameter and Container related to error ERR101017

Parameter	Container
McuClockSettingId	McuClockSettingConfig

Remark As issue raised in Bugzilla: 54536 Autosar parameter McuClockSettingId in McuClockSettingConfig container range is changed to 0 to 255 instead of 1 to 255.

ERR101020: The value for parameter ' McuRamSectionBaseAddress ' in container ' McuRamSectorSettingConf ' should be in the range.

This error occurs, if value for parameter McuRamSectionBaseAddress in container McuRamSectorSettingConf is not in the range of <configured value for McuRamTypeSel>.

ERR101022: Atleast one 'McuRamSectorSettingConf' container should be configured. Since 'McuRamSectorSetting' parameter in 'McuGeneralConfiguration' container is configured as <true>.

This error occurs, if no McuRamSectorSettingConf container is configured and parameter McuRamSectorSetting in McuGeneralConfiguration container is configured as <true>.

ERR101026: The reference path <McuDemEventParameterRefs> provided for the parameter 'Parameter Name' within the container 'Container Name' is incorrect.

This error occurs, if the reference path <McuDemEventParameterRefs> provided for the following parameters in McuDemEventParameterRefs container is not correct.

Table 8-4 Parameters and Container related to error ERR101026

Parameter	Container
MCU_E_CLOCK_FAILURE	McuDemEventParameterRefs
MCU_E_WRITE_TIMEOUT_FAILURE	
MCU_E_CVM_SELFDIAG_FAILURE	
MCU_E_CLM_SELFDIAG_FAILURE	
MCU_E_ECM_SELFDIAG_FAILURE	
MCU_E_LOCKSTEP_SELFDIAG_FAILURE	
MCU_E_RESETCONTROLLER_STARTUP_FAILURE	
MCU_E_INT_INCONSISTENT	
MCU_E_REG_WRITE_VERIFY	

ERR101027: The short name of the container 'McuClockSettingConfig' should be same for clock having 'McuClockSettingId' <value of McuClockSettingId> across multiple configuration sets.

This error occurs, if the short name of the container McuClockSettingConfig is not same for clock having same McuClockSettingId across multiple configuration sets.

ERR101029: The value for parameter 'McuLviResetMask' present in container 'McuModuleConfiguration' should be same across multiple configurations set.

This error occurs, if the value for parameter McuLviResetMask present in container McuModuleConfiguration is not same across multiple configurations set.

ERR101031: The value for parameter 'McuInitClock' present in container 'McuGeneralConfiguration' should not be configured as <false>.

This error occurs, if the value for parameter McuInitClock present in container McuGeneralConfiguration is configured as false.

ERR101032: The value for the parameter 'Parameter Name' present in the container 'Container Name' should be same across multiple configuration set 'McuModuleConfiguration'.

This error occurs, if the value configured for the following parameters in McuDemEventParameterRefs container is not same across multiple configuration set container McuModuleConfiguration.

Table 8-5 Parameters and Container related to error ERR101032

Parameter	Container
MCU_E_CLOCK_FAILURE	McuDemEventParameterRefs
MCU_E_WRITE_TIMEOUT_FAILURE	
MCU_E_CVM_SELFDIAG_FAILURE	
MCU_E_CLM_SELFDIAG_FAILURE	
MCU_E_ECM_SELFDIAG_FAILURE	
MCU_E_LOCKSTEP_SELFDIAG_FAILURE	
MCU_E_RESETCONTROLLER_STARTUP_FAILURE	
MCU_E_INT_INCONSISTENT	
MCU_E_REG_WRITE_VERIFY	

ERR101035: The value for parameter 'McuClockSettingId' present in container 'McuClockSettingConfig' should be same across multiple configurations set container 'McuModuleConfiguration'.

This error occurs, if the value for parameter McuClockSettingId present in container McuClockSettingConfig does not same across multiple configurations set container McuModuleConfiguration.

ERR101036: Parameter 'MCU_E_CVM_SELFDIAG_FAILURE' should be configured, since parameter 'McuCvmSelfDiagnosticTest' inside container ‘McuGeneralConfiguration' is configured as <true>.

This error occurs, if parameter 'MCU_E_CVM_SELFDIAG_FAILURE' is not configured, since parameter 'McuCvmSelfDiagnosticTest' inside container ‘McuGeneralConfiguration' is configured as true.

ERR101037: Parameter 'MCU_E_CLM_SELFDIAG_FAILURE' should be configured, since one or more of parameters 'McuClma0SelfDiagnosticTest', 'McuClma1SelfDiagnosticTest', 'McuClma2SelfDiagnosticTest' and 'McuClma3SelfDiagnosticTest' inside container ‘McuGeneralConfiguration’ is configured as <true>.

This error occurs, if parameter 'MCU_E_CLM_SELFDIAG_FAILURE' is not configured, since one or more of parameters 'McuClma0SelfDiagnosticTest',

'McuClma1SelfDiagnosticTest', 'McuClma2SelfDiagnosticTest' and 'McuClma3SelfDiagnosticTest' inside container ‘McuGeneralConfiguration’ is configured as true.

ERR101038: Parameter 'MCU_E_ECM_SELFDIAG_FAILURE' should be configured, since parameter 'McuEcmSelfDiagnosticTest' inside container 'McuGeneralConfiguration' is configured as <true>.

This error occurs, if parameter 'MCU_E_ECM_SELFDIAG_FAILURE' is not configured, since parameter 'McuEcmSelfDiagnosticTest' inside container ‘McuGeneralConfiguration' is configured as true.

ERR101039: Parameter 'MCU_E_LOCKSTEP_SELFDIAG_FAILURE' should be configured, since parameter 'McuLockStepSelfDiagnosticTest' inside container 'McuGeneralConfiguration' is configured as <true>.

This error occurs, if parameter 'MCU_E_LOCKSTEP_SELFDIAG_FAILURE' is not configured, since parameter 'McuLockStepSelfDiagnosticTest' inside container ‘McuGeneralConfiguration' is configured as true.

ERR101040: The value for parameters 'McuEcmErrorNMIDelayTimer' and 'McuEcmErrorMIDelayTimer' should not be configured as <true> for containers 'McuEcmErrorSource4 to McuEcmErrorSource11'.

This error occurs, if the value for parameter 'McuEcmErrorNMIDelayTimer' and 'McuEcmErrorMIDelayTimer' are configured as true for containers 'McuEcmErrorSource4 to McuEcmErrorSource11'.

ERR101041: The value for parameter ‘Parameter Name’ present in container McuGeneralConfiguration' should be configured as <true> since parameter 'Parameter Name' is configured as <true> ".

This error occurs, if the value configured for parameter on left column of following table present in container McuGeneralConfiguration is true but value configured for parameter on right column of following table is configured as false.

Table 8-6 Parameters and Containers related to error ERR101041

The Parameter which is configured as <true>	Parameter that should be configured as <true>
McuClma0SelfDiagnosticTest	McuClm0Operation
McuClma1SelfDiagnosticTest	McuClm1Operation
McuClma2SelfDiagnosticTest	McuClm2Operation
McuClma3SelfDiagnosticTest	McuClm3Operation

ERR101042: The value for the parameters 'parameter name' and 'parameter name' present in the container 'McuDemEventParameterRefs' should be unique.

This error occurs, if the value configured for the following parameters in McuDemEventParameterRefs container is not unique.

Table 8-7 Parameters and Container related to error ERR101042

Parameter	Container
MCU_E_CLOCK_FAILURE	McuDemEventParameterRefs
MCU_E_WRITE_TIMEOUT_FAILURE	
MCU_E_CVM_SELFDIAG_FAILURE	
MCU_E_CLM_SELFDIAG_FAILURE	
MCU_E_ECM_SELFDIAG_FAILURE	
MCU_E_LOCKSTEP_SELFDIAG_FAILURE	
MCU_E_RESETCONTROLLER_STARTUP_FAILURE	
MCU_E_INT_INCONSISTENT	
MCU_E_REG_WRITE_VERIFY	

ERR101043: At least one 'McuWdtacounterClk' container should be configured. Since 'McuClm2Operation' parameter in 'McuGeneralConfiguration' container is configured as <true>.

This error occurs, if container McuWdtacounterClk is not configured since parameter McuClm2Operation of container McuGeneralConfiguration is configured as true.

ERR101044: The configured value for parameter 'McuExternalClockX' in container 'McuExternalClkOutSetting' should be equal to 0 when McuExternalClkXSourceSel is MCU_NO_OUTPUT.

This error occurs, if the value configured for the parameter McuExternalClockX in container McuExternalClkOutSetting is not equal to 0.

Remark Where X=0 or 1

ERR101045: The value for parameters 'McuEcmErrorMaskableInterrupt' or 'McuEcmErrorNonMaskableInterrupt' should be <true> in all container McuEcmErrorSource<12 and 34> since 'McuGetRamStateApi' is configured as <true> in 'McuGeneralConfiguration' container.

This error occurs, if the value configured for the parameters McuEcmErrorMaskableInterrupt or should be <true> in all containers McuEcmErrorSource<12 and 34> when McuGetRamStateApi' is configured as <true> in 'McuGeneralConfiguration' container.

ERR101046: The order of container 'McuRamSectorSettingConf' configuration and their short names should be same across multiple configuration sets.

This error occurs, if the order of container 'McuRamSectorSettingConf' configuration and their short are not same across multiple configuration

ERR101047: The number of 'McuRamSectorSettingConf' containers should be same across multiple configuration sets.

This error occurs, if the number of 'McuRamSectorSettingConf' containers are not same across multiple configuration sets.

ERR101048: The configured value for ‘McuPeripheralClock’ in container ‘McuAdcClk’ should be equal to <20000000, 40000000> since parameter ‘McuDivClockSel’ is configured as <CLK_LSB, CLK_LSB_BY_2>.

This error occurs, if there is a mismatch in the setting of parameters ‘McuPeripheralClock’ and ‘McuDivClockSel’ in ‘McuAdcClk’ container.

ERR101049: Parameter 'MCU_E_RESETCONTROLLER_STARTUP_FAILURE' should be configured, since parameter 'McuStartUpSWResetTest' inside container 'McuGeneralConfiguration' is configured as <true>.

This error occurs, if parameter ‘MCU_E_RESETCONTROLLER_STARTUP_FAILURE’ is not configured, since parameter ‘McuStartUpSWResetTest’ inside container ‘McuGeneralConfiguration' is configured as true.

ERR101050: Parameter ‘MCU_E_INT_INCONSISTENT’ should be configured, since parameter ‘McuInterruptConsistencyCheck’ inside container 'McuGeneralConfiguration' is configured as <true>.

This error occurs, if parameter ‘MCU_E_INT_INCONSISTENT’ is not configured, since parameter ‘McuInterruptConsistencyCheck’ inside container ‘McuGeneralConfiguration' is configured as true.

ERR101051: Parameter 'Mcu_UseWVErrorInterface' should be configured, since parameter 'McuWriteVerify' inside container 'McuGeneralConfiguration' is configured as <true>.

This error occurs, if parameter Mcu_UseWVErrorInterface is not configured, when parameter McuWriteVerify inside McuGeneralConfiguration is configured as true.

ERR101052: Parameter 'McuWVErrorNotification' should be configured, since parameter 'Mcu_UseWVErrorInterface' inside container 'McuGeneralConfiguration' is configured as <true>.

This error occurs, if parameter McuWVErrorNotification is not configured, when parameter 'Mcu_UseWVErrorInterface inside McuGeneralConfiguration is configured as true.

8.2 Warning Messages

WRN101001: The value of the parameters 'McuEcmErrorNonMaskableInterrupt' and 'McuEcmErrorMaskableInterrupt' should not be <true> since the parameter 'McuEcmErrorInternalReset' of the container <configured Ecm error sources>is configured as <true>.

This warning occurs, if the value of the parameters McuEcmErrorNonMaskableInterrupt and McuEcmErrorMaskableInterrupt is <true> since the parameter McuEcmErrorInternalReset of the container <configured Ecm error sources>is configured as <true>.

WRN101002: The value of the parameter 'McuEcmErrorMaskableInterrupt' should not be <true> since the parameter 'McuEcmErrorNonMaskableInterrupt' of the container

<configured Ecm error sources> is configured as <true>.

This warning occurs, if the value of the parameter McuEcmErrorMaskableInterrupt is <true> since the parameter McuEcmErrorNonMaskableInterrupt of the container <configured Ecm error sources>is configured as <true>.

WRN101003: The configured External Clock value for McuExternalClockx exceeds 20Mhz

This warning occurs, if the configured External Clock value for McuExternalClockx (x = 0 or 1) exceeds 20Mhz.

8.3 Information Messages

INF101001: The configured 'McuRamSectorSettingConf' container is not used. Since 'McuRamSectorSetting' parameter in 'McuGeneralConfiguration' container is configured as <false>.

This information occurs, if McuRamSectorSettingConf container is configured and parameter McuRamSectorSetting in McuGeneralConfiguration container is configured as <false>.

INF101002: The configured value for parameter 'McuExternalClockX' will be ignored if parameter 'McuExternalClkXSourceSel' is configured as 'MCU_NO_OUTPUT'.

This information occurs, if the configured value of parameter McuExternalClockX is ignored when parameter McuExternalClkXSourceSel is configured as MCU_NO_OUTPUT.

Remark Where X=0 or 1

INF101003: The parameter 'McuEcmErrorMIDelayTimer' / ' McuEcmErrorNMIDelayTimer' does not have any effect since the corresponding interrupt 'McuEcmErrorMaskableInterrupt' / 'McuEcmErrorNonMaskableInterrupt' is configured as <false> in container 'McuEcmErrorSource' .

This information occurs, if the parameter McuEcmErrorMIDelayTimer is configured when McuEcmErrorMaskableInterrupt is configured as false in same or the parameter McuEcmErrorNMIDelayTimer is configured when McuEcmErrorNonMaskableInterrupt is configured as false.

Chapter 9 Notes

"Generation Tool" and "Tool" terminologies are used interchangeably to refer MCU Driver Generation Tool.

Revision History

Sl.No.	Description	Version	Date
1	Initial Version	1.0.0	18-Oct-2013
2	Following changes are made: • Error message ERR101004 is updated in section 8.1 to add the parameter McuRamSectorSetting, McuRamTypeSel, McuModeType and McuLockStepSelfDiagnosticTest and to remove the parameters MCU_E_CVM_SELFDIAG_FAILURE, MCU_E_CLM_SELFDIAG_FAILURE and MCU_E_ECM_SELFDIAG_FAILURE. • Error messages ERR101020, ERR101022, ERR101036, ERR101037, ERR101038, ERR101039, ERR101040, ERR101041, ERR101042, ERR101043 and ERR101044 are added newly in section 8.1. • Information message INF101001 and INF101002 is added newly in section 8.3. • Error messages ERR101026 and ERR101032 are updated in section 8.1.	1.0.1	15-Apr-2014
3	Following changes are made: • Error message ERR101004 is updated in section 8.1. • Reference Documents section is updated for adding Parameter Definition Files. • Chapter 6 Precautions is updated. • Remark of Chapter 4 Input Files is updated for PDF reference. • Error messages ERR101045, ERR101046 and ERR101047 are added newly in section 8.1. • Information message INF101003 is added newly in section 8.3. • McuRstRsnConfCvmRst container is added in error message ERR101004 table.	1.0.2	30-Oct-2014
4	The following changes are made: • Pdf name and version are updated in Section 2.1 • Updated version and copyright year.	1.0.3	28-Apr-2015

Sl.No.	Description	Version	Date
5	The following changes are made: • Figure 3-2 Generator Concept Flow Chart is added. • Chapter 6 Precautions is updated. • Table numbers are added for tables present in Chapter 8.1 Error Messages. • In table 8.1 Parameters and Container related to error ERR101004, parameters of containers McuModuleConfiguration and McuAdcClk are updated. • Added Error message ERR101048, ERR101049 and ERR101050.	1.0.4	08-Jan-2016
6	The following changes are made: • Error ERR101045 is updated. • Warning WRN101003 is added. • Copyright information is updated.	1.0.5	25-Mar-2016
7	The following changes are made: • Errors ERR101051, ERR101052 added in section 8.1. • R number updated. • ERR101005, ERR101049 description updated. • McuCvmDiagLockBit added in McuModuleConfiguration container under table Table 8-1.	1.0.6	28-Jun-2016
8	Following changes are made; • Reference document version updated.	1.0.7	06-Sep-2016
9	The following changes are made: • Updated Abbreviations and Acronyms. • Updated Error ERR101044. • Updated R number. • Updated Notice and Copyright information.	1.0.8	07-Feb-2017

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