

Release Notes for RENESAS RH850/P1x:

RENESAS_SW-AUTOSAR-P1x: MCAL Ver4.01.01.D

Beta Quality

1.1 Purpose:

To deliver AUTOSAR R4.0.3 MCAL software for P1x Ver4.01.01.D release using the following inputs.

Device Manual: r01uh0436ej0111_rh850p1x.pdf

Device File: DF-RH850P1M-EE_V120.zip

Operating Precautions: R01TU0069ED0300_RH850.pdf

Modules supported: DIO, FLS, MCU, PORT, SPI and WDG.

1.2 Package information

Product	RH850/P1x
Variant	P1M
Product Release Version	Ver4.01.01.D
AUTOSAR Specification Version	4.0.3
Device tested on	P1M - R7F701310
Devices supported	<u>RH850/P1M</u> R7F701304 R7F701305 R7F701310 R7F701311 R7F701312 R7F701313 R7F701314 R7F701315 R7F701318 R7F701319 R7F701320 R7F701321 R7F701322 R7F701323
Release Date	31-Oct-2016

Additional to the above list, the following derivatives (with ICU-S units) are also supported:

ICU-S Devices supported	R7F701364 R7F701365 R7F701362 R7F701363 R7F701366 R7F701367
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As there was no impact on MCAL identified due to the ICU-S unit, Renesas recommends to use the below equivalent devices part number without ICU-S unit, during MCAL configuration, instead of the actual device part number with ICU-S unit:

Device (with ICU-S Support)	Equivalent device(w/o ICU-S support)
R7F701364	R7F701320
R7F701365	R7F701321
R7F701362	R7F701318
R7F701363	R7F701319
R7F701366	R7F701322
R7F701367	R7F701323

1.3 Tools

1.3.1 GHS

Tool	Version	Options
GreenHills Multi IDE – compiler	Green Hills Multi V6.1.6 Compiler Version 2015.1.7	-c -Osize -g -cpu=rh850g3m -gsize -prepare_dispose -inline_prologue -sda=all -Wundef -no_callt -reserve_r2 --short_enum --prototype_errors --diag_error 193 -dual_debug -large_sda --no_commons -shorten_loads -shorten_moves -Wshadow -nofloatio -ignore_callt_state_in_interrupts -delete

1.3.2 Configuration code generator

Tool	Version	Options
NA	-	-

1.3.3 Additional software

Tool	Version	Options
NA	-	-

1.4 Generic Information

1.4.1 Release Target

Processor	P1M - R7F701310
Module	Generic
Module Overview User Manual	R20UT3752EJ0100-AUTOSAR.pdf – V1.0.9
Getting Started for P1x MCAL User Manual	R20UT3753EJ0100-AUTOSAR.pdf – V1.0.7
Date	31-Oct-2016

1.4.2 Release Items

Filename	Version	Change Description
Generator Files		
P1x_translation.h	1.0.7	No changes for release Ver4.01.01.D
Common Files		
ComStack_Types.h	1.0.1	No changes for release Ver4.01.01.D
Std_Types.h	1.0.1	No changes for release Ver4.01.01.D
rh850_Types.h	1.0.4	No changes for release Ver4.01.01.D
Platform_Types.h	1.0.1	No changes for release Ver4.01.01.D
Compiler Files		
Compiler.h	1.0.5	No changes for release Ver4.01.01.D
Compiler_Cfg.h	1.0.5	No changes for release Ver4.01.01.D
MemMap.h	1.0.9	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Removed unwanted memory sections. Also corrected the section name of .FLS_CFG_DATA_UNSPECIFIED for FLS module. 2. Removed unwanted memory sections of MCU module. 3. Memory section _NOINIT_ changed to _NO_INIT_ to follow initialization policy of variables for FLS module. 4. Memory section _NOINIT_ changed to _NO_INIT_ to follow initialization policy of variables for MCU module. 5. Removed unwanted memory section SPI_START_SEC_VAR_BOOLEAN for SPI module. 6. Memory section _NOINIT_ changed to _NO_INIT_ to follow initialization policy of variables for WDG module. 7. Removed unwanted memory sections of WDG module. 8. Memory section _NOINIT_ changed to _NO_INIT_ to follow initialization policy of variables for SPI module.

		9. Memory section _NOINIT_ changed to _NO_INIT_ to follow initialization policy of variables for DIO module. 10. Removed unwanted memory sections of DIO module. 11. Removed unwanted memory sections of PORT module. 12. Memory section _NOINIT_ changed to _NO_INIT_ to follow initialization policy of variables for PORT module.
Os.h	1.0.1	No changes for release Ver4.01.01.D
Os.c	1.0.2	No changes for release Ver4.01.01.D
RUCG Tool		
RUCG.exe	1.1	No changes for release Ver4.01.01.D
Getting Started for P1x MCAL User Manual		
R20UT3752EJ0100-AUTOSAR.pdf	1.0.7	Following changes are made in Ver4.01.01.D:- 1. Chapter 2 and 3 removed to make the document independent of any specific tool. 2. Autosar version 3.2.2 version check removed from section 3.2.1.
Module Overview User Manual		
R20UT3753EJ0100-AUTOSAR.pdf	1.0.9	Following changes are made in Ver4.01.01.D:- 1. R-Number has been update. 2. Table 3-12 alignment is corrected.
RUCG Tool User Manual		
R20UT3754EJ0100-AUTOSAR.pdf	1.1.2	Following change is made in Ver4.01.01.D:- 1. R-Number corrected for the document

1.4.3 Known Issues

ID	Description
NA	Please refer to the known issues list as shared from Renesas Ref. P1x_AR4.0_KnownIssues_CW43_2016.xlsx.

1.5 Module Index

[DIO](#)

[FLS](#)

[MCU](#)

[PORT](#)

[SPI](#)

[WDG](#)

2 DIO

2.1 Target Info

Processor	P1M - R7F701310
Module	DIO
Software Version	1.0.11
Embedded User Manual	R20UT3708EJ0100-AUTOSAR.pdf – V1.0.9
Tool User Manual	R20UT3709EJ0100-AUTOSAR.pdf – V1.0.5
Date	31-Oct-2016

2.2 Release Items

Filename	Version	Change Description
P1x- Parameter Definition files		
R403_DIO_P1M_04_05_12_13_20_21.arxml	1.0.5	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> As per EAAR_PN0034_FSR_0001, the Container DioDemEventParameterRefs and Dem error DIO_E_REG_WRITE_VERIFY are added. As per EAAR_PN0034_FSR_0002, the enum parameter DioWriteVerify is added. As per EAAR_PN0034_FSR_0003, the parameter DioUseWVErrorInterface is added. As per EAAR_PN0034_FSR_0004, the callback function is introduced in Dio_Cbk.h file. Corrected warranty disclaimer description.
R403_DIO_P1M_10_11_14_15_18_19_22_23.arxml	1.0.6	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> As per EAAR_PN0034_FSR_0001, the Container DioDemEventParameterRefs and Dem error DIO_E_REG_WRITE_VERIFY are added. As per EAAR_PN0034_FSR_0002, the enum parameter DioWriteVerify is added. As per EAAR_PN0034_FSR_0003, the parameter DioUseWVErrorInterface is added. As per EAAR_PN0034_FSR_0004, the callback function is introduced in Dio_Cbk.h file. Corrected warranty disclaimer description.
BSWMDT		
R403_DIO_P1x_BSWMDT.arxml	1.0.6	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Software patch version is updated. Module entries and Exclusive area tags are added for all

		Called entities.
		3. Corrected warranty disclaimer description.
Source Code		

Dio.c	1.0.23	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. File Dio_Cbk.h is included. 2. The macro DIO_REG_WRITE and DIO_REG_WRITE_VERIFY_RUNTIME are introduced in APIs Dio_WritePort, Dio_WriteChannel, Dio_FlipChannel, Dio_WriteChannelGroup, Dio_MaskedWritePort. 3. Dio_GetVersionInfo API is added. 4. Removed MISRA justifications for 4:4397. 5. Removed dead code. 6. 'DIO_UT_001' Tag added for the non-coverDC q277.66.297 g
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Dio_PBTypes.h	1.0.14	Following change is made in Ver4.01.01.D:- 1. Typecasting added for macro "DIO_DBTOC_VALUE".
Dio_Ram.h	1.0.12	Following changes are made in Ver4.01.01.D:- 1. Removed dead code. 2. Memory sections SEC_VAR_NOINIT_UNSPECIFIED and SEC_VAR_NOINIT_16 changed to SEC_VAR_NO_INIT_UNSPECIFIED and SEC_VAR_NO_INIT_16
Dio_RegWrite.h	1.0.0	Initial Version
Dio_Version.h	1.0.9	Following change is made in Ver4.01.01.D:- 1. Removed dead code.
DLL executable code for DIO configuration generation		
Dio_X1x.dll	1.0.18	Following change is made in Ver4.01.01.D:- 1. Tool .dll updated for tool code changes.
Dio_X1x.cfgxml	1.0.1	No changes for release Ver4.01.01.D
X1x Common Sample Application Source file		
App_DIO_P1M_Sample.c	1.0.6	Following changes are made in Ver4.01.01.D:- 1. Return type of Dio_ReadChannel function is corrected to Dio_LevelType. 2. PMCSR2 register is added to Port_Init function.
X1x Common Sample Application header file		
App_DIO_P1M_Sample.h	1.0.6	Following change is made in Ver4.01.01.D:- 1. Removed pre-compile option for Version information #if (DIO_AR_VERSION == DIO_AR_HIGHER_VERSION).
P1x User Manual		
R20UT3708EJ0100-AUTOSAR.pdf	1.0.9	Following changes are made in Ver4.01.01.D:- 1. Updated section 4.4 Deviation list 2. Updated section 13.3. Memory and throughput details. 3. Added a 'Note' below the table 'Supervisor mode and User mode details'. 4. Updated section 13.2, removed reference to .one and .html files 5. Updated Chapter 6 'Register Details'. 6. Updated section 4.3 Data consistency by adding Table 4-1 Dio driver protected resources list. 7. R Number updated. 8. Updated Chapter 14 'Release Details'. 9. Updated Chapter 12 'Memory Organization'.

		<ul style="list-style-type: none">10. Chapter 8 is updated for Dio_RegWrite.h in C Header files and Std_Types.h added to Stub files.11. Clock frequency mentioned in section 13.3.3 is changed to 80 MHz.12. Updated section 4.2 Preconditions.13. Updated section 3.1.1 Folder Structure.
R20UT3709EJ0100-AUTOSAR.pdf	1.0.5	<p>Following changes are made in Ver4.01.01.D:-</p> <ul style="list-style-type: none">1. Chapter 8.1 Error Messages updated.2. Chapter 2.1 Reference Documents version details are updated.3. Chapter 3, Figure 3-1 is updated.4. Chapter 5, Table 5-1 is updated.5. R-Number updated.6. Table headers added for Table 8.1

2.3 Known Issues

ID	Description
NA	Please refer to the known issues list as shared from Renesas Ref. P1x_AR4.0_KnownIssues_CW43_2016.xlsx.

3 FLS

3.1 Target Info

Processor	P1M - R7F701310
Module	FLS
Software Version	V1.0.3
Embedded User Manual	R20UT3710EJ0100-AUTOSAR.pdf – V1.0.3
Tool User Manual	R20UT3711EJ0100-AUTOSAR.pdf – V1.0.7
Date	31-Oct-2016

3.2 Release Items

Filename	Version	Change Description
P1x- Parameter Definition files		
R403_FLS_P1M_04_05_10_to_15.arxml	1.1.5	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Updated name of FlsWriteVerify parameter values as per requirement EAAR_PN0034_FSR_0002. Updated ADMIN-DATA section. Updated default value of parameter 'FlsDevErrorDetect' to TRUE. Updated the description of the parameters 'FlsSuspendTime' and 'FlsCancelTime' that these parameters are not used for implementation. Devices R7F701304, R7F701305 are added in 'FlsDeviceName' parameter. Updated description of parameter 'FlsUseWVErrorInterface'. Corrected warranty disclaimer description. Updated upper multiplicity tag and value of parameter FlsSpiReference. Minimum value of "FlsErasedValue" is changed to '0'. FlsMaxWriteNormalMode parameter is fixed to 4 bytes. Updated upper multiplicity value of parameter "FlsSector".
R403_FLS_P1M_18_to_23.arxml	1.0.5	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Updated name of FlsWriteVerify parameter values as per requirement EAAR_PN0034_FSR_0002, Updated ADMIN-DATA section. Updated default value of parameter 'FlsDevErrorDetect' to TRUE. Updated the description of the parameters

		<p>'FlsSuspendTime' and 'FlsCancelTime' that these parameters are not used for implementation.</p> <ol style="list-style-type: none"> Updated description of parameter 'FlsUseWVErrorInterface'. Corrected warranty disclaimer description. Updated upper multiplicity tag and value of parameter FlsSpiReference. Minimum value of "FlsErasedValue" is changed to '0'. FlsMaxWriteNormalMode parameter is fixed to 4 bytes. Updated upper multiplicity value of parameter "FlsSector".
BSWMDT		
R403_FLS_P1x_BSWMDT.arxml	1.0.8	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Updated software version. Updated file version. Tag <EXECUTION-CONTEXT> is updated as UNSPECIFIED for all APIs other than Fls_MainFunction. Tag <IS-SYNCHRONOUS> is updated for Fls_MainFunction and Fls_ReadImmediate. Tag CAN-ENTER-EXCLUSIVE-AREA-REF is added for BswInterruptEntity. Corrected warranty disclaimer description. The tag EVENTS and IMPLEMENTED-ENTRY-REF are added for scheduled function Fls_Mainfunction. Added tag CAN-ENTER-EXCLUSIVE-AREA-REF for Fls_MainFunction. Added critical section FLS_CODE_FLASH_DISABLED
Source Code		
Fls.c	1.0.3	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> To reduce exceeding metrics values, APIs Fls_Write, Fls_BlankCheck, Fls_Cancel and Fls_Erase divided to Fls_WriteInternal, Fls_BlankCheckInternal, Fls_CancelInternal and Fls_EraseInternal respectively. Critical section protection is added for IMR register in Fls_Cancel. The pointer analysis tags are added. Removed dead code. Initialized variable 'Fls_GulTimeOutCounter' with FLS_TIMEOUT_INIT_VALUE macro. Address boundary check and alignment check modified in Fls_Erase, Fls_Write, Fls_BlankCheck,

		<p>Fls_ReadImmediate, Fls_Compare and Fls_Read APIs.</p> <ol style="list-style-type: none"> 7. Pre-compile switch for DET is made inside the condition check. 8. Return value check is added in Fls_Erase, Fls_Write and Fls_BlankCheck APIs. 9. File "Fls_RegWrite.h" is included. 10. Updated register write verify implementation. 11. Removed register write verify for IMR register. 12. Placed the constant value on the left side of the comparison operator. 13. QAC warning START and END msgs for Msg (2:3204) are removed as this warning is fixed and added justification for misra warning 4:0857. 14. Updated data type for "TargetAddressPtr" in Fls_Read and Fls_ReadImmediate APIs. 15. Parameter "LenMode" check is added. 16. Corrected naming convention of variables as per requirement EAAR_PN0084_NR_0066. 17. Added justification for QAC warning Msg (2:1475). 18. Updated "registers used" in function banner of Fls_Cancel and Fls_Resume. 19. QAC warning Msg (2:3416) and Misra warning Msg (4:3415) are added at the respective places. 20. Added requirement which is missed to trace in code. 21. Incorrect requirements trace removed.
Fls_Irq.c	1.0.3	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Critical section protection is added for IMR register in FLS_FLENDNM_ISR function. 2. Included header file SchM_Fls.h. 3. The pointer analysis tags are added. 4. Modified the code to skip execution of ISR if the consistency check fails. 5. Removed dead code. 6. Added QAC Warning START and END tag. 7. File "Fls_RegWrite.h" is included. 8. Updated register write verify implementation. 9. Removed register write verify for IMR register. 10. Placed the constant value on the left side of the comparison operator. 11. QAC warning START and END msgs for Msg (4:0857)

		<p>removed as this warning is fixed.</p> <p>12. Corrected naming convention of variables as per requirement EAAR_PN0084_NR_0066.</p> <p>13. Updated "registers used" in function banner of FLS_FLENDNM_ISR.</p>
Fls_Internal.c	1.0.3	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Added functions Fls_WriteInternal, Fls_BlankCheckInternal, Fls_CancelInternal, Fls_EraseInternal, Fls_SetStartEndAddr. 2. Critical section protection added in Fls_TimeOutCheckAndProcessing and Fls_ProcessJobResult functions for IMR register. 3. Declaration of 'LpFACIRegPtr' is made inside a pre-compile switch FLS_TIMEOUT_MONITORING in Fls_InitiateWriteJob and Fls_InitiateEraseJob. 4. Added check (FLS_COMMAND_WRITE! = Fls_GstBackUpVar.GucGenCommand) in Fls_MainWrite (). 5. The pointer analysis tags are added. 6. UT ID Tag added for the uncovered parts of the code. 7. Removed dead code. 8. Condition check for time-out status is added in Fls_ProcessJobResult, Fls_ProcessRead, and Fls_TimeOutCheckAndProcessing functions. 9. Replaced assignment of local variable 'LenStatus' with FLS_FCU_ERR_TIMEOUT macro in 'Fls_ProcessCancel' function. 10. File "Fls_RegWrite.h" is included. 11. Updated status check in Fls_InitiateBlankCheckJob (). 12. Fls_FcuInit () is relocated to Fls_Private_Fcu.c file. 13. Enabling of flash memory software protection in Fls_ProcessRead () is moved to Fls_PerformBlankCheckForReadOp (). 14. In Fls_PreFcuInitCheck () updated reporting of DEM to report failure of both FACI and DF ECC control registers. 15. Renamed function Fls_FcuSuspendCheck () as Fls_SuspendPreCheck (). 16. Updated register write verify implementation. 17. Removed register write verify for IMR register. 18. Corrected naming convention of variables as per

		<p>requirement EAAR_PN0084_NR_0066.</p> <p>19. Placed the constant value on the left side of the comparison operator.</p> <p>20. QAC warning START and END msgs for Msg (4:2742), Msg (2:1252) and Msg (4:2880) are removed as these warnings are fixed and justification for misra warning 4:0857 is added.</p> <p>21. Corrected type-casting of second argument in Fls_FcuPerformBlankCheck function.</p> <p>22. Updated "registers used" in function banner of ls_ProcessJobResult, Fls_EraseInternal, Fls_TimeOutCheckAndProcessing, Fls_BlankCheckInternal and Fls_WriteInternal.</p> <p>23. Added "volatile" where ever pBufferAddress and pTempBufferAddress are typecasted to avoid MISRA violation.</p> <p>24. Added requirement which is missed to trace in code.</p> <p>25. Justification for misra warning 4:2984 is added.</p>
Fls_Private_Fcu.c	1.0.3	<p>Following changes are made in Ver4.01.01.D:-</p> <p>1. Removed dead code.</p> <p>2. Replaced 9:284:23:RFlc2BlankCheckInternal(S)25(tat)-11(u)6(s)-8('</p> <p>FLS_FCU_ERR_TIMEOUT macro if time-out occurs 6.7BT</p>

		<p>12. Corrected naming convention of variables as per requirement EAAR_PN0084_NR_0066.</p> <p>13. SYNC instruction is added before SYNCI in Fls_FcuClearCache().</p> <p>14. Register write verify is done for FENTRYR register.</p>
Fls_Ram.c	1.0.3	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Removed dead code. 2. Global variables which are accessed in ISR is declared as Volatile.
Fls_Version.c	1.0.1	<p>Following change is made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Removed dead code.
Fls.h	1.0.3	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Removed dead code. 2. Updated data type for "TargetAddressPtr" in Fls_Read and Fls_ReadImmediate APIs.
Fls_Debug.h	1.0.1	<p>Following change is made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Removed dead code.
Fls_Internal.h	1.0.2	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Added external declarations of Fls_CancelInternal, Fls_SetStartEndAddr, Fls_ProcessReadImmInternal, Fls_WriteInternal, Fls_BlankCheckInternal, Fls_EraseInternal. 2. Removed dead code. 3. Renamed function Fls_FcuSuspendCheck () as Fls_SuspendPreCheck (). 4. Moved declaration of Fls_FcuInit function to Fls_Private_Fcu.h.
Fls_Private_Fcu.h	1.0.2	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Removed dead code. 2. Relocated declaration of Fls_FcuInit function to this file. 3. Corrected type-casting of second argument in Fls_FcuPerformBlankCheck" function.
Fls_Irq.h	1.0.1	<p>Following change is made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Removed dead code.
Fls_PBTypes.h	1.0.3	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Updated name of FlsWriteVerify macros as per requirement EAAR_PN0034_FSR_0002. 2. Removed dead code. 3. Added 'FLS_TIMEOUT_INIT_VALUE' macro. 4. Write-verify macros are moved to Fls_RegWrite.h.

		5. Removed MISRA warning Msg (4:3412) from MISRA list of deviations.
Fls_Ram.h	1.0.3	Following changes are made in Ver4.01.01.D:- 1. Removed dead code. 2. Global variables which are accessed in ISR is declared as Volatile. 3. Removed MISRA warning Msg (4:0828) from MISRA list of deviations.
Fls_RegWrite.h	1.0.0	Initial Version
Fls_Types.h	1.0.3	Following changes are made in Ver4.01.01.D:- 1. Updated name of FlsWriteVerify macros as per requirement EAAR_PN0034_FSR_0002. 2. Removed dead code. 3. Write-verify macros are moved to Fls_RegWrite.h. 4. Corrected naming convention of variables in structures Fls_GstVarProperties and Fls_FcuDataType as per requirement EAAR_PN0084_NR_0066. 5. Global variables which are accessed in ISR is declared as Volatile.
Fls_Version.h	1.0.1	Following change is made in Ver4.01.01.D:- 1. Removed dead code.
DLL executable code for FLS configuration generation		
Fls_X1x.dll	1.3.10	Following change is made in Ver4.01.01.D:- 1. Tool .dll updated for tool code changes.
Fls_X1x.cfgxml	1.0.0	No changes for release Ver4.01.01.D
X1x Common Sample Application Source file		
App_FLS_Common_Sample.c	1.1.13	Following changes are made in Ver4.01.01.D:- 1. APIs Fls_Suspend and Fls_Resume are added. 2. Removed 'MddLoopCount' and 'MddLoopCount1' as it is not required. 3. Parameter for callback function EccSedNotification and EccDedNotification are updated. 4. The callback WriteVerifyErrorReport are added. 5. Added pre-compile switch for Fls_SetMode, Fls_Resume and Fls_Suspend APIs. 6. Pre-compile switch FLS_INTERRUPT_MODE == STD_ON is used for function IVMethod_Init (void).
X1x Common Sample Application header file		
App_FLS_Common_Sample.h	1.0.2	No changes for release Ver4.01.01.D

P1x Sample Application P1M Source file		
App_FLS_P1M_Sample.c	1.0.1	No changes for release Ver4.01.01.D
P1x Sample Application P1M header file		
App_FLS_P1M_Sample.h	1.0.2	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. The file Fls_Cbk.h is included for callback WriteVerifyErrorReport. 2. Updated copyright information.
P1x User Manual		
R20UT3710EJ0100-AUTOSAR.pdf	1.0.3	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Added precondition items about critical protection and transient hardware faults in chapter 4.2 'Precondition'. 2. Updated Chapter 14 'Release Details'. 3. Added a 'Note' below the table 'Supervisor mode and User mode details'. 4. Updated Chapter 13.3 'Memory and Throughput'. 5. In chapter 8, heading changed to "The Stub C header files:" and missing stub files are added. 6. Table 4-1 is added to list protected resources in FLS driver 7. Section 13.2 reference to .one and .html files are removed 8. Note added in section 13.2.1 ISR function. 9. Description added for the FLS Driver Component Files. 10. Updated Chapter 6 'Register Details' to add IMR register details. 11. Merged parameter definition files in sections 13.1.3 and 13.2.1 12. Added new header file 'Fls_RegWrite.h' in section 3.1.1 and section 8. 13. Updated R-Number 14. Chapter 12 is updated for the modification of Memory sections 15. Updated section 4 'Forethoughts' 16. Updated the table 'Development and Production Errors' to add Fls_SetMode API under DET 'FLS_E_PARAM_CONFIG' 17. Updated chapter 12 Memory Organization. 18. Updated section 13.1.2 Services Provided by FLS Driver Component to the User.
R20UT3711EJ0100-AUTOSAR.pdf	1.0.7	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Updated section 2.1 Reference Documents to correct the

		<p>file name and version of parameter definition files.</p> <ol style="list-style-type: none">2. Updated R Number3. Removed not used mandatory parameters from section 8.14. Error message ERR092041 is added in section 8.15. Table headers are added6. Info message INF092001 is updated.
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3.3 Known Issues

ID	Description
NA	<p>Please refer to the known issues list as shared from Renesas</p> <p>Ref. P1x_AR4.0_KnownIssues_CW43_2016.xlsx.</p>

4 MCU

4.1 Target Info

Processor	P1M - R7F701310
Module	MCU
Software Version	V1.0.7
Embedded User Manual	R20UT3720EJ0100-AUTOSAR.pdf- V1.0.8
Tool User Manual	R20UT3721EJ0100-AUTOSAR.pdf- V1.0.7
Date	31-Oct-2016

4.2 Release Items

Filename	Version	Change Description
P1x- Parameter Definition files		
R403_MCU_P1M_04_05.arxml	1.1.8	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. As per general requirements, Mcu_UseWVErrorInterface and McuWVErrorNotification parameters are added and changed McuWriteVerify to enumeration parameter 2. Added parameter McuCvmDiagLockBit under McuModuleConfiguration 3. <UPPER-MULTIPLICITY-INFINITE> tag corrected by <UPPER-MULTIPLICITY> for McuRamSectorSettingConf and McuClockReferencePoint. 4. McuRamSectorSettingConf upper multiplicity value updated to 255. 5. As per REE MO comment, removed parameter McuResetControllerStartUpTest and added McuStartUpSWResetTest and McuStartUpECMResetTest in General container. 6. Warranty disclaimer updated. 7. <UPPER-MULTIPLICITY> tag of McuResetReasonConf container changed to <UPPER-MULTIPLICITY-INFINITE>, also its value changed to true from 1. 8. <UPPER-MULTIPLICITY> tag of McuClockReferencePoint container changed to <UPPER-MULTIPLICITY-INFINITE>.
R403_MCU_P1M_10_to_15_18_to_23.arxml	1.0.5	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. As per general requirements, Mcu_UseWVErrorInterface

		<p>and McuWVErrorNotification parameters are added and changed McuWriteVerify to enumeration parameter</p> <ol style="list-style-type: none"> Added parameter McuCvmDiagLockBit under McuModuleConfiguration <UPPER-MULTIPLICITY-INFINITE> tag corrected by <UPPER-MULTIPLICITY> for McuRamSectorSettingConf and McuClockReferencePoint. McuRamSectorSettingConf upper multiplicity value updated to 255. As per REE MO comment, removed parameter McuResetControllerStartUpTest and added McuStartUpSWResetTest and McuStartUpECMResetTest in General container. Warranty disclaimer updated. <UPPER-MULTIPLICITY> tag of McuResetReasonConf container changed to <UPPER-MULTIPLICITY-INFINITE>, also its value changed to true from <UPPER-MULTIPLICITY> tag of McuClockReferencePoint container changed to <UPPER-MULTIPLICITY-INFINITE>.
BSWMDT		
R403_MCU_P1x_BSWMDT.arxml	1.0.9	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Software Version is updated. Warranty disclaimer updated. BswCalledEntity_11 added for Mcu_GetVersionInfo VARIABLE_PROTECTION renamed to MCU_VARIABLE_PROTECTION as per MO comments.
Source Code		
Mcu.c	1.0.9	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Mcu_CvmNormalModeSetting API added to meet software metrics requirements. Added Write verify for all registers and updated the macro MCU_REG_WRITE_VERIFY. Updated API Mcu_HWInit and Mcu_ConfigureCvm Updated API Mcu_ClmaSelfDiagnosticTest As per REE MO review comments, <ol style="list-style-type: none"> Changed function name Mcu_HardWareInit to

		<p>Mcu_HWInit</p> <p>b) Moved global variables Mcu_GblDriverStatus, Mcu_GblResetStatusSaved, Mcu_GulMcuSavedResfStatus, Mcu_GulLastResetReasonStatus to Mcu.c file.</p> <p>c) Updated function Mcu_ConfigureEcm and Mcu_ClearEcmErrorOutput.</p> <p>d) Added functions Mcu_StartUPEcmTest and Mcu_StartUPSwTest</p> <p>6. Warranty disclaimer updated.</p> <p>7. Design requirement IDs added and trace IDs removed.</p> <p>8. VARIABLE_PROTECTION renamed to MCU_VARIABLE_PROTECTION.</p> <p>9. MISRA messages 2992, 2996, 2880, 2983, 4499 removed and added 4391, 0317, 1881, 3218.</p> <p>10. Updated Mcu_ConfigureCvm for verifying cvm self diag locking functionality.</p> <p>11. UT ID TAG added for the non-covered parts of the code.</p> <p>12. As per safety analysis updated function Mcu_ConfigureEcmDelayTimer by adding critical section and updated Mcu_CvmNormalModeSetting for correct status checking.</p> <p>13. Unmapped design requirements mapped.</p> <p>14. Updated write verification of RESF registers.</p> <p>15. Following MISRA warnings messages added: Msg(4:2986), Msg(4:2983).</p>
Mcu_Irq.c	1.0.9	<p>Following changes are made in Ver4.01.01.D:-</p> <p>1. Removed some of the MISRA violations.</p> <p>2. MISRA violations and QAC warnings are separated.</p> <p>3. Mcu_IrqHandling and Mcu_IrqRamHandling are merged.</p> <p>4. As per REE MO review comment modified MCU_ECM_EIC_ISR for interrupt consistency check.</p> <p>5. Warranty disclaimer updated.</p> <p>6. Updated Mcu_IrqHandling for correcting the clearing of ECM status registers</p> <p>7. Design requirement IDs, MCU_ESDD_UD_xxx Ids added and trace IDs removed.</p>
Mcu_Ram.c	1.0.6	<p>Following changes are made in Ver4.01.01.D:-</p> <p>1. Removed unwanted declaration of Mcu_GpRamSetting.</p> <p>2. 2 Memory section _NOINIT_ changed to _NO_INIT_ to</p>

		<p>follow initialization policy of variables.</p> <ol style="list-style-type: none"> Moved global variables Mcu_GblDriverStatus, Mcu_GblResetStatusSaved, Mcu_GulMcuSavedResfStatus, Mcu_GulLastResetReasonStatus to Mcu.c file. Warranty disclaimer updated. Design requirement IDs, MCU_ESDD_UD_xxx Ids added and trace IDs removed. Volatile declaration is added for Mcu_GblRAMInitStatus. QAC warning Message 0862 justification added. Unmapped design requirements mapped.
Mcu_Version.c	1.0.4	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Warranty disclaimer updated. Design requirement IDs, MCU_ESDD_UD_xxx Ids added and trace IDs removed.
Mcu.h	1.0.6	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Added Write verify for all registers and updated the macro MCU_REG_WRITE_VERIFY. Corrected order of variable declarations. Warranty disclaimer updated. Moved Write verify macros to Mcu_RegWrite.h file. Design requirement IDs, MCU_ESDD_UD_xxx Ids added and trace IDs removed. The value of MCU_ISR_SID updated.
Mcu_Debug.h	1.0.3	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Warranty disclaimer updated. Copyright year updated. Design requirement IDs, MCU_ESDD_UD_xxx Ids added and trace IDs removed.
Mcu_Irq.h	1.0.3	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Warranty disclaimer updated. Design requirement IDs, MCU_ESDD_UD_xxx Ids added and trace IDs removed. Copyright year updated.
Mcu_PBTypes.h	1.0.7	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> The macro MCU_CVM_DIAG_MASK is updated. Warranty disclaimer updated. Design requirement IDs, MCU_ESDD_UD_xxx Ids added and trace IDs removed. Added macro MCU_CVM_DIAG_LOCK_MASK

		5. Added macro MCU_BURAM_SIGN_INIT
Mcu_Ram.h	1.0.6	Following changes are made in Ver4.01.01.D:- 1. Removed unwanted declaration of Mcu_GpRamSetting. 2. Warranty disclaimer updated. 3. Design requirement IDs, MCU_ESDD_UD_xxx Ids added and trace IDs removed. 4. Volatile declaration is added for Mcu_GblRAMInitStatus.
Mcu_RegWrite.h	1.0.0	Initial Version
Mcu_Types.h	1.0.7	Following changes are made in Ver4.01.01.D:- 1. Warranty disclaimer updated. 2. Design requirement IDs, MCU_ESDD_UD_xxx Ids added and trace IDs removed.
Mcu_Version.h	1.0.2	Following changes are made in Ver4.01.01.D:- 1. Warranty disclaimer updated. 2. Design requirement IDs, MCU_ESDD_UD_xxx Ids added and trace IDs removed. 3. Copyright year updated.
DLL executable code for MCU configuration generation		
Mcu_P1x.dll	1.1.4	Following change is made in Ver4.01.01.D:- 1. Tool .dll updated for tool code changes.
Mcu_P1x.cfgxml	1.0.0	No changes for release Ver4.01.01.D
P1x Sample Application P1M Source file		
App_MCU_P1M_Sample.c	1.0.5	Following change is made in Ver4.01.01.D:- 1. Removed ECMMESSTR0 check in MI and NMI notification function as it is getting cleared in Mcu_IrqHandling.
P1x Sample Application P1M Header file		
App_MCU_P1M_Sample.h	1.0.3	No changes for release Ver4.01.01.D
P1x User Manual		
R20UT3720EJ0100-AUTOSAR.pdf	1.0.8	Following changes are made in Ver4.01.01.D:- 1. Chapter 4 section 4.1 General 5 points added. 2. Section 4.4 a Note is added below the table 'Supervisor mode and User mode details'. 3. Table 4-1 MCU Driver Protected Resources List added in section 4.3 Data consistency. 4. VARIABLE_PROTECTION changed to MCU_VARIABLE_PROTECTION in section 4.3 Data consistency. 5. Chapter 6 Register details are updated.

		6. Section 3.1.1 Folder structure, chapter 8 C header file section, Table 8-1 updated by adding Mcu_RegWrite.h. 7. DEM error for register write verify added in Table 11-2 DEM Errors of MCU Driver Component. 8. Chapter 12 Memory Organization updated to follow initialization policy. 9. Section 13.2 reference to .one and .html files are removed. 10. Note added in section 13.2.1 ISR function. 11. Added new section 13.3.4 Critical section details. 12. R Number updated. 13. Section 13.3 updated with throughput values. 14. Chapter 4 forethoughts section updated by adding points for STATIC tag and for multiple invoke of Mcu_Init multiple times. 15. Chapter 14 release details updated.
R20UT3721EJ0100-AUTOSAR.pdf	1.0.7	Following changes are made in Ver4.01.01.D:- 1. Errors ERR101051, ERR101052 added in section 8.1. 2. R number updated. 3. ERR101005, ERR101049 description updated. 4. McuCvmDiagLockBit added in McuModuleConfiguration container under Table 8-1. 5. Reference document version updated.

4.3 Known Issues

ID	Description
NA	Please refer to the known issues list as shared from Renesas Ref. P1x_AR4.0_KnownIssues_CW43_2016.xlsx

5 PORT

5.1 Target Info

Processor	P1M - R7F701310
Module	PORT
Software Version	V1.5.3
Embedded User Manual	R20UT3722EJ0100-AUTOSAR.pdf – V1.0.8
Tool User Manual	R20UT3723EJ0100-AUTOSAR.pdf – V1.0.8
Date	31-Oct-2016

5.2 Release Items

Filename	Version	Change Description
P1x- Parameter Definition files		
R403_PORT_P1M_04_05.arxml	1.0.4	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Parameters PortWriteVerify, PortWriteVerifyErrorInterface, PortUseWriteVerifyErrorInterface and PORT_E_REG_WRITE_VERIFY are added. TAUD0TCKEN0_DNFCKS108C is added for the parameter PortClockSource1 Literal of the parameter PortPinInitialMode is updated for the pins Portgroup0:Pin10_Pin13, Portgroup2:Pin0_Pin5, Portgroup1:Pin4, Portgroup3:Pin7_Pin10, Portgroup4:Pin1_Pin2, Portgroup5:Pin1_Pin10, PortGroupJtag0:Pin3_Pin4_Pin5. Default value of the parameters PortPinDirection and PortOpenDrainControl_Expansion are updated for Portgroup0:Pin10. The parameter PortSamplingClockFrequency in all digital filter group container is updated to mention about all the pre-scalars. The parameter PortDigitalFilterModeSelection is added in all digital filters, PortDigitalFilterClockSelection in PortFilterGroupConfig container. Warranty Disclaimer is updated. Upper Multiplicity of PortContainer and PortPin is changed to 1. Default value of the parameter PortLoopTimeout is updated to 5. Parameter 'PortDriveStrengthControl' is renamed to

		PortOutputDriveStrength and the parameter 'PortUnlimitedCurrentControl' is removed from all portpins.
R403_PORT_P1M_12_13.arxml	1.0.5	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Parameters PortWriteVerify, PortWriteVerifyErrorInterface, PortUseWriteVerifyErrorInterface and PORT_E_REG_WRITE_VERIFY are added. TAUD0TCKEN0_DNFCKS108C is added for the parameter PortClockSource1 Literal of the parameter PortPinInitialMode is updated for the pins Portgroup0:Pin10_Pin13, Portgroup2:Pin0, Portgroup3:Pin10_Pin14, Portgroup4:Pin1_Pin2, Portgroup5:Pin1_Pin10, Portgroup1:Pin4, PortGroupJtag0:Pin3_Pin4_Pin5. Default value of the parameters PortPinDirection and PortOpenDrainControl_Expansion are updated for Portgroup0:Pin10. The parameter PortSamplingClockFrequency in all digital filter group container is updated to mention about all the pre-scalars. The parameter PortDigitalFilterModeSelection is added in all digital filters, PortDigitalFilterClockSelection in PortFilterGroupConfig container. Warranty Disclaimer is updated. Upper Multiplicity of PortContainer and PortPin is changed to 1. Default value of the parameter PortLoopTimeout is updated to 5. Parameter 'PortDriveStrengthControl' is renamed to PortOutputDriveStrength and the parameter 'PortUnlimitedCurrentControl' is removed from all portpins.
R403_PORT_P1M_18_19_22_23.arxml	1.0.4	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Parameters PortWriteVerify, PortWriteVerifyErrorInterface, PortUseWriteVerifyErrorInterface and PORT_E_REG_WRITE_VERIFY are added. TAUD0TCKEN0_DNFCKS108C is added for the parameter PortClockSource1 Literal of the parameter PortPinInitialMode is updated for the pins Portgroup0:Pin7_Pin9_to_Pin14, Portgroup2:Pin0, Portgroup3:Pin10_Pin14, Portgroup4:Pin1_Pin2_Pin7,

		<p>Portgroup5:Pin1_Pin3_Pin11_Pin12_Pin14_Pin15, Portgroup1:Pin4, PortGroupJtag0:Pin3_Pin4_Pin5.</p> <ol style="list-style-type: none"> Default value of the parameters PortPinDirection and PortOpenDrainControl_Expansion are updated for Portgroup0:Pin10. The parameter PortSamplingClockFrequency in all digital filter group container is updated to mention about all the pre-scalars. The parameter PortDigitalFilterModeSelection is added in all digital filters, PortDigitalFilterClockSelection in PortFilterGroupConfig container. Warranty Disclaimer is updated. Upper Multiplicity of PortContainer and PortPin is changed to 1. Default value of the parameter PortLoopTimeout is updated to 5. Parameter 'PortDriveStrengthControl' is renamed to PortOutputDriveStrength and the parameter 'PortUnlimitedCurrentControl' is removed from all portpins.
R403_PORT_P1M_20_21.arxml	1.0.4	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> .Parameters PortWriteVerify, PortWriteVerifyErrorInterface, PortUseWriteVerifyErrorInterface and PORT_E_REG_WRITE_VERIFY are added. TAUD0TCKEN0_DNFCKS108C is added for the parameter PortClockSource1 Literal of the parameter PortPinInitialMode is updated for the pins Portgroup0:Pin10_Pin13, Portgroup2:Pin0, Portgroup3:Pin10_Pin14, Portgroup4:Pin1_Pin2, Portgroup5:Pin1_Pin10, Portgroup1:Pin4, PortGroupJtag0:Pin3_Pin4_Pin5. Default value of the parameters PortPinDirection and PortOpenDrainControl_Expansion are updated for Portgroup0:Pin10. The parameter PortSamplingClockFrequency in all digital filter group container is updated to mention about all the pre-scalars. The parameter PortDigitalFilterModeSelection is added in all digital filters, PortDigitalFilterClockSelection in PortFilterGroupConfig container. Warranty Disclaimer is updated. Upper Multiplicity of PortContainer and PortPin is changed

		<p>to 1.</p> <p>8. Default value of the parameter PortLoopTimeout is updated to 5.</p> <p>9. Parameter 'PortDriveStrengthControl' is renamed to PortOutputDriveStrength and the parameter 'PortUnlimitedCurrentControl' is removed from all portpins.</p>
R403_PORT_P1M_10_11_14_15.arxml	1.0.7	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Parameters PortWriteVerify, PortWriteVerifyErrorInterface, PortUseWriteVerifyErrorInterface and PORT_E_REG_WRITE_VERIFY are added. TAUD0TCKEN0_DNFCKS108C is added for the parameter PortClockSource1 Literal of the parameter PortPinInitialMode is updated for the pins Portgroup0:Pin7_Pin9_to_Pin14, PortGroup1:Pin4, PortGroup2:Pin0, Portgroup3:Pin10_Pin14, Portgroup4:Pin1_Pin2_Pin7, Portgroup5:Pin1_Pin3_Pin11_Pin12_Pin15 PortGroupJtag0:Pin3_Pin4_Pin5. Default value of the parameters PortPinDirection and PortOpenDrainControl_Expansion are updated for Portgroup0:Pin10. The parameter PortSamplingClockFrequency in all digital filter group container is updated to mention about all the pre-scalars. The parameter PortDigitalFilterModeSelection is added in all digital filters, PortDigitalFilterClockSelection in PortFilterGroupConfig container. Warranty Disclaimer is updated. Upper Multiplicity of PortContainer and PortPin is changed to 1. Default value of the parameter PortLoopTimeout is updated to 5. Parameter 'PortDriveStrengthControl' is renamed to PortOutputDriveStrength and the parameter 'PortUnlimitedCurrentControl' is removed from all portpins.
BSWMDT		
R403_PORT_P1x_BSWMDT.arxml	1.0.6	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> SW-VERSION is updated BSW-CALLED-ENTITY and BSW-MODULE-ENTRY is added

		3. Warranty Disclaimer is updated.
Source Code		
Port.c	1.5.12	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Internal functions Port_HWInitConfig, Port_OpenDrainCtrlRegInit, Port_DriveUnivCtrlRegInit, Port_PinModeDetCheck, Port_OutputLevelInvRegInit, Port_PinDirectionDetCheck, Port_PinModeHWRegSet, Port_PinModeCtrlRegSet, Port_PinModeFuncRegSet, Port_PinDefModeFuncRegSet and Port_PinDefModeDetCheck are added for software metrics improvement. 2. PORT_DEM_ERROR_DETECT macro has been removed. 3. All Apis are updated to implement the Fusa requirements EAAR_PN0034_FSR_0001,0002,0003 and 0004 4. Function Port_SetInitialValue is removed. 5. MISRA warning 4:4397 is removed. 6. QAC warning messages are given under separate section and all the warning messages are re-numbered. 7. Port_GetVersionInfo is implemented as a function. 8. usDNFAEN is changed to ucDNFAENL in the function Port_FilterConfig. 9. Enter and Exit of critical section protection is corrected in Port_SetPinDefaultDirection API. 10. Accessing the pointer LulOsBaseAddress before initialization is corrected in Port_InitConfig () function. 11. .PORT_UT_001 Start and End tags are removed from Port_RefreshPortInternal and Port_InitConfig after Unit testing. 12. ASR3.2.2 version information is removed and the functions Port_FilterConfig, Port_DriveUnivCtrlRegInit, Port_SetPinDirection, Port_OutputLevelInvRegInit, Port_GetVersionInfo Port_InitConfig and Port_OpenDrainCtrlRegInit are updated. 13. Unit design ID and requirement tags are added at applicable places. 14. Return type of Port_InitConfig is made Std_ReturnType. Port_Init () is updated. Protected registers inside the functions Port_OutputLevelInvRegInit,

		Port_SetPinDirection, Port_DriveUnivCtrlRegInit, Port_OpenDrainCtrlRegInit are written using the macro Port_ProtectedWrite.
Port_Ram.c	1.0.5	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. The name of the MISRA violation section is changed to QAC Warning 2. ASR3.2.2 version information is removed. 3. Unit design ID and requirement tags are added at applicable places.
Port_Version.c	1.0.5	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. ASR3.2.2 version information is removed 2. Unit design ID and requirement tags are added at applicable places. 3. Included Port_PBTypes.h file to avoid the QAC warning (2.3313) in Port_Types.h file.
Port.h	1.5.6	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Macro declaration of Port_GetVersionInfo is replaced with function declaration and PORT_E_PARAM_POINTER macro is added 2. Unwanted Misra violations are removed. 3. ASR3.2.2 version information is removed 4. Unit design ID and requirement tags are added at applicable places. 5. Macro Port_ProtectedWrite is added.
Port_Debug.h	1.0.2	<p>Following change is made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Requirement tags are added at applicable places.
Port_PBTypes.h	1.4.9	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Macro PORT_DEM_ERROR_DETECT has been removed 2. Macros PORT_SIXTEEN, PORT_SET_BYTE, PORT_SET_WORD and PORT_SET_LONG_WORD are added. 3. Macro PORT_DBTOC_VALUE is modified for removing MISRA violation 4:4397. 4. Unwanted Misra violations are removed. 5. usDNFAEN is changed to ucDNFAENL in typedef Port_DNFARegs. 6. ASR3.2.2 version information, macros PORT_IOHOLD_MASK, PORT_IOHOLD_CLEAR, the

		<p>structure declaration Port_EDCRegs and the external variables related to analog,input,alpha ports are removed.Port_GroupType is updated to remove the enum values related to Alphabetic,Analog and Input ports</p> <p>7. Unit design ID and requirement tags are added at applicable places.</p> <p>8. PORT_DNF_CLK_SRC_AVAILABLE switch is removed for the structure STag_Port_DNFCKSRegs to avoid MISRA violation.</p>
Port_Ram.h	1.0.3	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. ASR3.2.2 version information is removed. 2. Requirement tags are added at applicable places.
Port_RegWrite.h	1.0.0	Initial Version
Port_Types.h	1.3.3	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. ASR3.2.2 version information, structure members pPortEDCRegs,ucNoOfEDCRegs, ucNoOfNumRestoredRegs, ucNoOfAlphaRestoredRegs, ucNoOfAnalogRestoredRegs and members related to analog,input,alpha ports inside Port_ConfigType are removed. 2. Unit design ID and requirement tags are added at applicable places.
Port_Version.h	1.0.6	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. ASR3.2.2 version information is removed 2. Requirement tags are added at applicable places.
DLL executable code for PORT configuration generation		
port_X1x.dll	1.3.14	<p>Following change is made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Tool .dll updated for tool code changes.
Port_X1x.cfgxml	1.0.0	No changes for release Ver4.01.01.D
P1x Sample Application P1M Source file		
App_PORT_P1M_Sample.c	1.0.6	<p>Following change is made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Check value for PINV3 register after Port_SetPinDirection () call is updated.
P1x Sample Application P1M Header file		
App_PORT_P1M_Sample.h	1.0.1	No changes for release Ver4.01.01.D
P1x User Manual		
R20UT3722EJ0100-AUTOSAR.pdf	1.0.8	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Chapter 1 Introduction is updated. 2. Chapter 4.1 General is updated with DFMEA findings.

		<ol style="list-style-type: none"> 3. The point regarding digital filter time delay has been removed and the information on Port_GetVersionInfo is updated in 4.5 Deviation list. 4. Chapter 5 Architecture Details is updated with the information on Port_GetVersionInfo. 5. Chapter 7 is updated with the information on PORT Driver features. 6. Chapter 8 is updated to add the information about Port_Cbk.h file. 7. Table 11-2 is updated to add the DEM error PORT_E_REG_WRITE_VERIFY. 8. Table 11-1 is updated to add the DET error PORT_E_PARAM_POINTER. 9. Chapter 14 Release Details is updated with Port Driver Software version. 10. Section 4.3 is updated with note on critical section. 11. Chapter 8 PORT Driver Component Header and Source File Description is updated for adding stub files. 12. Chapter 6 Register details is updated. 13. Section 13.2.1 and section 13.2.2 are updated. 14. Chapter 3 and 9 are updated with R-Numbered Tool User manual name. 15. Version of R-number is updated at the end of document. 16. Memory section NOINIT_RAM_UNSPECIFIED is updated to NO_INIT_RAM_UNSPECIFIED in Figure 12-1, Table 13-2 and 13-3. 17. Added precondition items about critical protection and transient hardware faults in chapter 4.2 'Precondition' and worst case duration value is updated as Note in Chapter 4.4 Data Consistency. 18. Section 10.2.1 Port_ConfigType is updated. 19. Port_RegWrite.h added for the section 3.1.1, chapter 8 and Table 8-1. 20. Table 4-2 PORT Driver Protected Resources List added in the section 4.4. 21. Reference document updated in chapter 2. 22. In Page 6 definitions section is updated. 23. In Page 6 definitions section is updated. 24. Chapter 14 is updated for PORT driver component version information.
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		<p>25. Chapter 13.3 updated for ROM/RAM Usage, Stack Depth and Throughput Details.</p> <p>26. Critical section value updated in the Table 4-2.</p> <p>27. Preconditions updated in section 4.2.</p> <p>28. Port Pin level inversion information is updated in 4.5 Deviation list.</p> <p>29. Section 4.1.General is updated with the information on keyword STATIC.</p> <p>30. Deviation regarding the parameter PortPinlevelValue of JTag PortPin is added in the section 4.5.Deviation List.</p>
R20UT3723EJ0100-AUTOSAR.pdf	1.0.8	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Parameter definition file name versions are updated in section 2.1 2. Port_Cbk.h information added in the chapter 1, 3 and 5. 3. Error message ERR124019 to ERR124027 are added in section 8.1. 4. R number is updated at end of the document. 5. Warning message WRN124003 removed from section 8.2. 6. Table number is added for table present in Chapter 8.1 Error Messages. 7. Parameter definition file name versions are updated in section 2.1 8. Parameters PortDriveStrengthControl and PortUnlimitedCurrentControl are removed and PortOutputDriveStrength is added to the Table 8.1

5.3 Known Issues

ID	Description
NA	<p>Please refer to the known issues list as shared from Renesas</p> <p>Ref. P1x_AR4.0_KnownIssues_CW43_2016.xlsx.</p>

6 SPI

6.1 Target Info

Processor	P1M - R7F701310
Module	SPI
Software Version	V1.6.4
Embedded User Manual	R20UT3726EJ0100-AUTOSAR.pdf – V1.0.10
Tool User Manual	R20UT3727EJ0100-AUTOSAR.pdf – V1.0.11
Date	31-Oct-2016

6.2 Release Items

Filename	Version	Change Description
P1x- Parameter Definition files		
R403_SPI_P1M_04_05_12_13_20_21.xml	1.0.7	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Write-verify user interface implementation, added Spi_UseWriteVerifyErrorInterface, SpiWriteVerifyErrorInterface parameters in SpiGeneral container. 2. Updated the description of the parameter SpiJobEndNotification as part of review. 3. Warranty disclaimer is updated. 4. Write verification functionality updated to support enumeration parameter. 5. Renamed the parameters SpiWriteVerify and SpiDmaWriteVerify to SpiCSIGHWriteVerify and SpiDMAWriteVerify. 6. Updated the upper multiplicity of the containers SpiJobAssignment and SpiExternalDevice.
R403_SPI_P1M_10_11_14_15_18_19_22_23.xml	1.0.7	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Write-verify user interface implementation, added Spi_UseWriteVerifyErrorInterface, SpiWriteVerifyErrorInterface parameters in SpiGeneral container. 2. Updated the description of the parameter SpiJobEndNotification as part of review. 3. Warranty disclaimer is updated. 4. Write verification functionality updated to support enumeration parameter. 5. Renamed the parameters SpiWriteVerify and

		<p>SpiDmaWriteVerify to SpiCSIGHWriteVerify and SpiDMAWriteVerify.</p> <p>6. Updated the upper multiplicity of the containers SpiJobAssignment and SpiExternalDevice.</p>
BSWMDT		
R403_SPI_P1x_BSWMDT.arxml	1.0.10	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Interrupt category updated for BswInterruptEntity_3. 2. Entry reference updated for BswInterruptEntity_46 from SPI_DMA04_ISR to SPI_DMA04_CAT2_ISR for category CAT-2. 3. BSW-CALLED-ENTITY section is added. 4. CAN-ENTER-EXCLUSIVE-AREA-REF tags are updated for BSW-CALLED-ENTITY and BSW-INTERRUPT-ENTITY. 5. Warranty disclaimer section updated. 6. The tag EVENTS and IMPLEMENTED-ENTRY-REF are added for scheduled function Spi_MainFunction_Handling. 7. Software version information is updated.
Source Code		
Spi.c	1.5.10	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Updated Spi_SyncTransmit function as part of metrics improvement activity. 2. As part of Write-verify implementation, added APIID as argument for Spi_StaticInit, Spi_InternalWriteIB Spi_HWCancel functions. 3. Updated Spi_SetAsyncMode and Spi_GetErrorInfo functions to fix DFMEA findings. 4. Updated Spi_GetErrorInfo API to perform the checking if SPI driver is initialized or not. 5. Removed the compiler switch #if (SPI_MAX_CSIH_HW_INDEX!= SPI_ONE) from Spi_Init API. 6. Added NULL pointer check for Spi_GpConfigPtr->pStatusArray in Spi_Init and Spi_AsyncTransmit APIs. 7. Fixed QAC and MISRA warning. 8. Added the justifications for the pointers as part of pointer analysis activity. 9. Spi_GetErrorInfo and Spi_SetAsyncMode APIs are updated to do range check for input parameters

		<p>10. Spi_AsyncTransmit API is updated for start sequence notification.</p> <p>11. Spi_GetVersionInfo API is implemented as a function</p> <p>12. Removed AR 3.2.2 related version checks and removed the switch #if(SPI_AR_VERSION == SPI_AR_HIGHER_VERSION)</p> <p>13. Updated the check for maximum buffer size based on user configured value in function Spi_GetErrorInfo.</p> <p>14. Updated the function header with the list of used registers, global variables and function invoked.</p> <p>15. A check for driver status is added in Spi_SelfTest API for calling the Spi_StaticInit function as part of testing activity.</p> <p>16. Added UD ID's 'SPI_ESDD_UD_xxx' and Requirements in respective places.</p> <p>17. Added conditional check against the LenReturnValue in Spi_SetupEB API for the DET check SPI_E_PARAM_LENGTH.</p> <p>18. Updated the function Spi_SelfTest to return the correct status when invalid mode is passed as an input parameter.</p> <p>19. Removed the unwanted multiple declaration of the local variable LucVar.</p> <p>20. Updated Spi_SelfTest API to perform the Spi_GddDriverStatus busy check even when DET is off.</p> <p>21. Updated Spi_ReadIB API to put the accessing of Spi_GpConfigPtr->pChannelIBRead under correct pre-compile switch.</p> <p>22. Added untraced requirements.</p>
Spi_Irq.c	1.2.11	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Magic numbers are replaced with the Macro names. 2. Updated the ISR's to not to perform any operation in case of interrupt consistency error as part of fixing assessment comments. 3. SPI_DMA08_ISR and SPI_DMA09_ISR has been updated to replace the octal digit with correct macro. 4. Removed the ISRs related CSIGN(n= 1 to 7) since P1x hardware supports only CSIG0 hardware unit and removed AR 3.2.2 related version checks 5. Updated the function header with the list of used registers, global variables and function invoked. 6. Added UD ID's 'SPI_ESDD_UD_xxx' and Requirements in

		<p>respective places.</p> <ol style="list-style-type: none"> Updated SPI_DMA15_ISR function Updated SPI_CSIH1_TIR_ISR function to get the correct address. Updated all Error isr functions to clear the pending interrupts after Spi_ComErrorISR execution.
Spi_Driver.c	1.4.8	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Software metrics improvement, following changes are made: <ol style="list-style-type: none"> Spi_ReceiveDirectAccessData is called from Spi_ReceiveISR. Spi_ProcesSeqInDualOrTxMod is called from Spi_ProcessSequence. Spi_CheckAndInvokeTxIsr and Spi_CheckAndInvokeRxIsr are called from Spi_HWMainFunction_Handling. Spi_SetEojAndCsriBits & Spi_SetEojBit are called from Spi_SyncProcessData. Spi_ProcessTransmission is called from Spi_AsyncInDirAccOrFifoMod. Spi_GetTxRegValue is called from Spi_ProcessChannelInDirAccMod. Spi_CfgRegSettings is called from Spi_AsyncChannelRegSettings. Renamed functions and return types as per the coding standards. As part of Write-verify user interface implementation, added APIID to the macros for writing to registers and added macros for writing in to status clear registers. Updated the functions Spi_DmaISR, Spi_CsihStaticInit to support DMA functionality for High priority hardware sequences in Tx-Only mode. Removed unused local variables from the Spi_ProcessCsigData function. Updated the functions Spi_CsigLoopBackSelfTest and Spi_CsihLoopBackSelfTest for adding the hardware error check in loop back mode. Start sequence notification is removed from Spi_ProcesSeqInDualOrTxMod function and added in Spi_ProcessTransmission function. MBS bit of register CSIGNCTL0 is set to one while setting

		<p>PWR bit for CSIG HW unit in the function Spi_HWTransmitSyncJob.</p> <p>8. Setting of global variable Spi_GblSyncTx is moved from Spi_InitiateSyncTransmit function to Spi_HWTransmitSyncJob function for correctly updating the registers for next job when channel properties are same.</p> <p>9. Condition checking for last job is added before decrementing the local variable LpJobList in Spi_CsihStaticInit function.</p> <p>10. RH850_SV_MODE_ICR_AND is added for 'pErrorIntCntlAddress' and 'pTxCancelIntCntlAddress' in Spi_HWDisableInterrupts function. For 'pTxCancelIntCntlAddress', RH850_SV_MODE_ICR_AND is added for CSIH hardware unit only.</p> <p>11. Global variable 'Spi_GusDataAccess' has been split into variables 'Spi_GusSynDataAccess' and 'Spi_GusAsynDataAccess' for Synchronous and Asynchronous transmission respectively.</p> <p>12. Null Pointer check is added for pPortGrpRegAddress in Spi_HWDeActivateCS and Spi_HWActivateCS function.</p> <p>13. In order to update all CSIHnCFGx registers for all configured chip selects, do-while loop is added in function Spi_CsihStaticInit, Spi_CfgRegSettings and Spi_SeqJobChannelInit.</p> <p>14. Spi_HWTransmitSyncJob function has been updated to replace LblDemReported with LenReturnValue to improve the code quality.</p> <p>15. Updated functions Spi_HWMainFunction_Handling and Spi_CheckAndInvokeTxIsr for direct access mode.</p> <p>16. Added NULL pointer check for Spi_GpConfigPtr->pStatusArray in Spi_TransmitCancelISR and Spi_ChkCancelReqForSeq functions.</p> <p>17. Spi_ProcessCsihData function has been updated to set EOJ bit.</p> <p>18. Spi_EccSelfTest API has been updated to add against the LenReturnValue in the while loop that checks against the maximum HW unit configured.</p> <p>19. Spi_TxDmaConfig function has been updated.</p> <p>20. Fixed QAC and MISRA warning.</p> <p>21. Updated the function Spi_ProcessChannelInDirAccMod</p> <p>22. Updated the functions Spi_ProcessChannelInFifoMod and</p>
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		<p>Spi_AsyncChannelRegSettings for handling high priority hardware sequences.</p> <p>23. Updated Spi_ProcessChannelInDirAccMod function to add the conditional check if ((SPI_FALSE == LpJobConfig->blHWUnitDmaMode) (SPI_ONE < LddNoOfBuffers)).</p> <p>24. Removed AR 3.2.2 related version checks and DMA_TYPE_ONE related code implementation since P1M supports DMA of DMA_TYPE_TWO only and removed the switch #if (SPI_AR_VERSION == SPI_AR_HIGHER_VERSION) and GPIO_CS check if CSIH is configured in Spi_HWDeInit function.</p> <p>25. Updated Spi_DmaISR function to support high priority sequences when TX only mode is configured.</p> <p>26. Updated the functions Spi_ProcessFifoData and Spi_ProcessChannelInFifoMod for handling 128 bytes FIFO data.</p> <p>27. Updated the function header with the list of used registers, global variables and function invoked.</p> <p>28. Spi_HWInit, Spi_HWDeInit functions are updated.</p> <p>29. Updated Spi_HWWriteIB to set memory mode as Tx only or Dual buffer in register CSIHnMCTL0 before writing into CSIHnTX0W and CSIHnMRWP0 to avoid setting of bits which are prohibited in other memory modes.</p> <p>30. Updated Spi_EccAllOneTest, Spi_EccAllZeroTest, Spi_EccWalkOneTest and Spi_EccTwoBitTest.</p> <p>31. Invoked Spi_CheckErrorInt function after reception to check for errors in Spi_GetCsigRxData and Spi_GetCsihRxData functions.</p> <p>32. Added UD ID's 'SPI_ESDD_UD_xxx' and Requirements in respective places.</p> <p>33. Updated register write verification implementation.</p> <p>34. UT ID TAGs 'SPI_UT_xxx' are added for the non-covered parts of the code.</p> <p>35. Updated Spi_ProcessChannelInFifoMod, Spi_ProcessFifoData, Spi_DmaISR and Spi_TxDmaConfig functions for permitting more than 128 bytes of data when DMA is enabled in FIFO mode.</p> <p>36. Updated Spi_CsihStaticInit and Spi_SyncRegSettings to remove the compiler switches before the CSIHnMCTL0</p>
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		<p>registers are updated so that in direct access mode also, the register shall get updated with the generated value which is 0.</p> <p>37. As part of safety analysis, updated the write verification of registers involving OR/AND operations.</p> <p>38. As part of safety analysis, updated the function <code>Spi_ProcessCsihData</code> to remove the setting of EOJ bit and corrected the condition check in <code>Spi_ProcessExtendedData</code> function.</p> <p>39. MISRA C RULE VIOLATION section is updated for (4:2995).</p> <p>40. <code>Spi_HWDeInit</code> is updated for the variables <code>LpHWUnitInfo</code> and <code>LpMainOsBaseAddr</code> are initialized inside the while loop, so that the addresses will be updated for each hardware unit.</p> <p>41. Updated <code>Spi_FifoReadData</code> function.</p> <p>42. Updated <code>Spi_ComErrorISR</code> function.</p> <p>43. Updated <code>Spi_ProcessCsihData</code> function.</p> <p>44. Updated <code>Spi_InitiateJobTx</code> and <code>Spi_ReceiveISR</code> functions to add the pre compile check for Internal buffers.</p> <p>45. Updated <code>Spi_ComErrorISR</code> function to handle the other sequences when an error is reported.</p> <p>46. In <code>Spi_TxDmaConfig</code> function, DMA Trigger factor is set as hardware trigger for all cases except FIFO mode and when number of buffers to be transmitted is one.</p> <p>47. Added null pointer check before accessing <code>pTxCancelImrAddress</code> and <code>pTxCancelIntCntlAddress</code> in <code>Spi_HWInit</code>, <code>Spi_HWDeInit</code> and <code>Spi_HWDisableInterrupts</code> functions.</p> <p>48. Removed the dead code "if(SPI_FALSE == <code>LpCurrentCommData->blTxEDL</code>)" present in <code>Spi_ProcessCsihData</code> function and removed the code related to CSIH HW Unit regarding the setting of loop back mode in CSIHnCTL1 register in <code>Spi_CsigLoopBackSelfTest</code> function.</p> <p>49. Updated <code>Spi_HWDeInit</code> function to correct the values written to status clear registers.</p> <p>50. Added untraced requirements.</p> <p>51. Corrected mask value <code>SPI_CSIHMCTL0_MASK_1</code> to <code>SPI_CSIHMCTL0_MASK</code> in <code>Spi_HWWriteIB</code> function and updated the mask value while performing the write</p>
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		<p>verification for CSIGNCTL1 register.</p> <p>52. Updated Spi_CheckAndInvokeTxIsr and Spi_HWMainFunction_Handling to correct the invocation of Spi_ReceiveISR in case of direct access mode.</p>
Spi_Ram.c	1.2.11	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Declaration of global variable 'Spi_GusDataAccess' has been split into variables 'Spi_GusSynDataAccess' and 'Spi_GusAsynDataAccess' for Synchronous and Asynchronous transmission respectively. 2. Removed AR 3.2.2 related version checks and memory section definitions. 3. Updated INIT policy of memory sections from NOINIT to NO_INIT. 4. Added UD ID's 'SPI_ESDD_UD_xxx' and Requirements in respective places. 5. Added volatile qualifier for global variables.
Spi_Scheduler.c	1.2.15	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Spi_PushWhenQueueNotEmpty is called from Spi_PushInterruptableSeqJobs. 2. Arguments are updated for Spi_PopRemainingJobs function. 3. Start sequence notification is removed from Spi_PopRemainingJobs function. 4. Variable LddJobCount is replaced with a new variable LddJobCountVal in Spi_PushRemainingJobsToQueue function for the condition check as LddJobCount is used later for filling Spi_GddQueueIndex. 5. In order to update status as 'SPI_JOB_QUEUED' of all jobs which are pushed in to job queue, updated Spi_PushWhenQueueNotEmpty and Spi_PushRemainingJobsToQueue functions. 6. Added condition in the function Spi_PopFromQueue to avoid error while transmission of more than one job from a single sequence. 7. Added NULL pointer check for Spi_GpConfigPtr->pStatusArray in Spi_ProcessCompletedSequence and Spi_ProcessCancelledSequence functions. 8. Fixed QAC and MISRA warnings. 9. Removed AR 3.2.2 related version checks and removed the switch #if (SPI_AR_VERSION ==

		<p>SPI_AR_HIGHER_VERSION).</p> <p>10. Updated the function header with the list of used registers, global variables and function invoked</p> <p>11. Added UD ID's 'SPI_ESDD_UD_xxx' and Requirements in respective places.</p> <p>12. UT ID TAGs 'SPI_UT_xxx' are added for the non-covered parts of the code.</p> <p>13. MISRA Warnings are fixed in Spi_PushToQueue function.</p> <p>14. Added untraced requirements.</p>
Spi_Version.c	1.0.7	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Added UD ID's 'SPI_ESDD_UD_xxx' in respective places. 2. Updated Copyright information.
Spi.h	1.1.8	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Added SID for Spi_GetErrorInfo API as part DFMEA fixing. 2. Removed the macro function definition Spi_GetVersionInfo() API and added the extern declaration of Spi_GetVersionInfo() API. 3. Removed AR 3.2.2 related version checks and removed the switch #if(SPI_AR_VERSION == SPI_AR_HIGHER_VERSION)
Spi_Driver.h	1.2.12	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Function declarations are added for newly added functions. 2. As part of Write-verify implementation, added APIID as argument for the required functions. 3. Fixed QAC and MISRA warning. 4. Spi_CfgRegSettings function is made available when High priority hardware is enabled. 5. Removed AR 3.2.2 related version checks and removed the switch #if(SPI_AR_VERSION == SPI_AR_HIGHER_VERSION)
Spi_Irq.h	1.2.5	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Removed AR 3.2.2 related version checks and also removed the extern declaration of CSIGN HW unit ISR functions. (n = 1 to 7). 2. Updated Copyright information.
Spi_LTypes.h	1.2.14	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Updated the type of MACRO definitions to fix QAC warnings. 2. Updates the value of SPI_LOOPBACK_DLS_SETTING macro for specify the parity and added macro

		<p>SPI_LOOPBACK_ERROR.</p> <ol style="list-style-type: none"> Macro SPI_SET_MBS is added to set MBS bit of register CSIGNCTL0 is set to one. Updated macro definitions to fix QAC warnings. Removed AR 3.2.2 related version checks, removed the the switch #if (SPI_AR_VERSION == SPI_AR_HIGHER_VERSION) and removed macros related to DMA_TYPE_ONE. Updated INIT policy of memory sections from NOINIT to NO_INIT. Removed unnecessary macro (SPI_HUNDRED). Added macros SPI_CTL_32BIT_REG_VAL, SPI_CTL_16BIT_REG_DEINIT, SPI_CTL_8BIT_REG_MASK SPI_CTL2_16BIT_REG_DEINIT, SPI_MCTL0_16BIT_REG_DEINIT, and SPI_DMA_DEINIT. Removed unused type definition of STag_Spi_BitPattern. Updated the macro value ECC_CTL_ECER1F_ECER2F_CLEAR. Added macros SPI_CFG_REG_COUNT, SPI_BRS_REG_COUNT. Added mask values for registers. Removed the compiler switches above the structure element usCSIHMCTL0 for generation of its address in all memory modes. Macros SPI_DMA_HARDWARE_TRIGGER and SPI_DMA_DRS_MLE_MASK are added. Renamed SPI_STCR0_VAL to SPI_CSIH_STCR0_VAL and added SPI_CSIG_STCR0_VAL. Removed the macro SPI_CSIHMCTL0_MASK_1 and added SPI_CSIG_CTLREG_MASK.
Spi_PBTypes.h	1.2.14	<p>Following change is made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Added the parameter blCSRIMasked to Spi_GstJobConfig structure.
Spi_Ram.h	1.2.11	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Added justification for the QAC warning MISRA warnings. Extern declaration of global variable 'Spi_GusDataAccess' has been split into variables 'Spi_GusSynDataAccess' and 'Spi_GusAsynDataAccess' for Synchronous and

		<p>Asynchronous transmission respectively.</p> <ol style="list-style-type: none"> 3. Removed AR 3.2.2 related version checks, removed the switch #if (SPI_AR_VERSION == SPI_AR_HIGHER_VERSION). 4. Updated INIT policy of memory sections from NOINIT to NO_INIT. 5. Added volatile qualifier for global variables
Spi_RegWrite.h	1.0.0	Initial version
Spi_Scheduler.h	1.2.6	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Added function declarations for newly added functions as part of metrics improvement. 2. Removed AR 3.2.2 related version checks, removed the switch #if (SPI_AR_VERSION == SPI_AR_HIGHER_VERSION).
Spi_Types.h	1.2.10	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. MISRA justifications are added. 2. As part of Write-verify user interface implementation, updated the macros for calling the error notification function when SPI_USE_WV_ERROR_INTERFACE is ON and also added macros for writing in to status clear registers. 3. Updated macro definitions to fix QAC warnings. 4. Added SPI_DMAUNIT_EIGHT and SPI_DMAUNIT_NINE macros. 5. Removed AR 3.2.2 related version checks, removed the the switch #if (SPI_AR_VERSION == SPI_AR_HIGHER_VERSION). 6. Write verification functionality updated to support enumeration parameter. 7. Added the macros SPI_TX_ONLY_MODE_SET, SPI_DUAL_BUFFER_MODE_SET, SPI_CHECK_BUFFER_MODE. 8. Created file Spi_RegWrite.h to move all the macros related to register write functionality. 9. Changed the type defines of Spi_AsyncModeType, Spi_JobResultType and Spi_SeqResultType to enumeration. 10. Updated pre compile switches for the declaration of Spi_GaaChannelIBWrite.
Spi_Version.h	1.0.7	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Removed AR 3.2.2 related version checks, removed the switch #if (SPI_AR_VERSION ==

		SPI_AR_HIGHER_VERSION).
		2. Updated copyright information.
DLL executable code for ICU configuration generation		
Spi_X1x.dll	1.2.16	Following change is made in Ver4.01.01.D:- 1. Tool .dll updated for tool code changes.
Spi_X1x.cfgxml	1.0.0	No changes for release Ver4.01.01.D
X1x Common Sample Application Source file		
App_SPI_Common_Sample.c	1.0.8	Following changes are made in Ver4.01.01.D:- 1. Invoked Spi_GetErrorInfo API. 2. Updated Copyright information. 3. Include file name updated from App_Spi_Device_Sample.h to App_Spi_P1M_Sample.h.
X1x Common Sample Application header file		
App_SPI_Common_Sample.h	1.0.5	No changes for release Ver4.01.01.D
P1x Sample Application P1M Source file		
App_SPI_P1M_Sample.c	1.0.4	Following changes are made in Ver4.01.01.D:- 1. Include file name updated from App_Spi_Device_Sample.h to App_Spi_P1M_Sample.h. 2. Updated Copyright information. 3. PIPC register has been set for CSIG0 HW unit.
P1x Sample Application P1M header file		
App_SPI_P1M_Sample.h	1.0.3	Following changes are made in Ver4.01.01.D:- 1. File name is changed from App_SPI_Device_Sample.h to App_SPI_P1M_Sample.h 2. Added definition of CSIG0_PIPC5_VAL and SPI_PIPC5 3. Updated copyright information.
P1x User Manual		
R20UT3726EJ0100-AUTOSAR.pdf	1.0.10	Following changes are made in Ver4.01.01.D:- 1. Software patch version is updated in Chapter 14. 2. Section 4.1 is updated for adding the notes as part of requirement analysis. 3. Section 4.3, User mode and Supervisor mode details are updated for Spi_SetAsyncMode. 4. Tables, figures links and numbering is corrected. 5. Stub header files heading is updated and missing header files are added. 6. Section 13.3.1, sample application file structure is updated and Section 13.3.2, Building sample application is updated. 7. Updated Table 6-1 to rename global variable

		<p>‘Spi_GusDataAccess’ as ‘Spi_GusSynDataAccess’ or ‘Spi_GusAsynDataAccess’ for synchronous and asynchronous transmission respectively.</p> <p>8. Updated section 13.3.1 Sample Application Structure to add details about Spi_GetErrorInfo API.</p> <p>9. Added Spi_GetErrorInfo API in section 11.1 under Related API(s) corresponding to the error SPI_E_UNINIT.</p> <p>10. Updated 4.1 ‘General’ to add a caution regarding usage of buffers for transmission/reception during DMA operation.</p> <p>11. Updated Chapter 12 to correct the INIT policy of memory sections from NOINIT to NO_INIT.</p> <p>12. Chapter 13.1.3 ISR Function “Interrupt Handler” table is updated with note.</p> <p>13. Updated 4.1 ‘General’ to add the information regarding the number of buffers to be configured in Direct Access or FIFO mode when DMA is configured.</p> <p>14. Chapter 6, Register access details are updated.</p> <p>15. Spi_GetErrorInfo details have been added. Chapter 4, 5 and 7 are updated for the same.</p> <p>16. Section 4.2 Preconditions and Section 4.5 Data Consistency is updated for information about critical section protection.</p> <p>17. Chapter 6, Register access details are updated.</p> <p>18. Updated Table 4-1 for information regarding user mode and supervisor mode.</p> <p>19. Section 3.1.1 is updated to add the header file Spi_RegWrite.h as part of implementing the register write functionality.</p> <p>20. Section 4.3, a note is added regarding the critical section usage.</p> <p>21. Spi_RegWrite.h is added to the folder structure in the section 3.1.1.</p> <p>22. Chapter 11 is updated for the API details of the DET and DEM errors.</p> <p>23. Updated Section 10.2 to add details regarding Spi_CommErrorType, Spi_HWErrorsType, Spi_SelfTestType and Spi_ReturnStatus type definitions.</p> <p>24. Chapter 13.3 updated for ROM/RAM Usage, Stack Depth and Throughput Details.</p>
R20UT3727EJ0100-AUTOSAR.pdf	1.0.11	<p>Following changes are made in Ver4.01.01.D:-</p> <p>1. ERR083127 error message is updated.</p>

		<ol style="list-style-type: none">2. Error messages ERR083129 and ERR083130 are added.3. R-number is updated.4. Removed the error messages ERR083109, ERR083110, ERR083111, ERR083113, ERR083115, ERR083116, ERR083114 and ERR083112 and updated the error description of ERR083108.5. Added information message INF083010.6. Updated error description of ERR083066.7. Renamed the macros SpiWriteVerify and SpiDmaWriteVerify to SpiCSIGHWriteVerify and SpiDMAWriteVerify.8. Removed the warning message WRN083080.9. Table numbers are added for tables present in Chapter 8.10. Updated error description of ERR083016 and ERR083017.
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6.3 Known Issues

ID	Description
NA	Please refer to the known issues list as shared from Renesas Ref. P1x_AR4.0_KnownIssues_CW43_2016.xlsx.

7 WDG

7.1 Target Info

Processor	P1M - R7F701310
Module	WDG
Software Version	V1.0.11
Embedded User Manual	R20UT3728EJ0100-AUTOSAR.pdf – V1.0.7
Tool User Manual	R20UT3729EJ0100-AUTOSAR.pdf – V1.0.5
Date	31-Oct-2016

7.2 Release Items

Filename	Version	Change Description
P1x- Parameter Definition files		
R403_WDG_P1M_04_05_10_to_15_18_to_23.arxml	1.0.4	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> Parameters are added, WdgWriteVerify, WdgUseWriteVerifyErrorInterface, WdgWriteVerifyErrorInterface, WdgInterruptConsistencyCheck, WDG_E_INT_INCONSISTENT and WDG_E_REG_WRITE_VERIFY. Copyright information updated. ADMIN-DATA updated. Default value of parameter WdgDisableAllowed is changed to false and description updated. Description for container WdgExternalConfiguration is updated. Warranty Disclaimer description is updated. WDG_E_TRIGGER_TIMEOUT parameter in container WdgDemEventParameterRefs is removed as P1X do not support NMI mode.
BSWMDT		
R403_WDG_P1x_BSWMDT.arxml	1.0.6	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> BSW-CALLED-ENTITY added for AUTOSAR API Wdg_GetVersionInfo Software patch version is updated. CAN-ENTER-EXCLUSIVE-AREA-REF is updated. Warranty Disclaimer description is updated. BSW-MODULE-ENTRY added for AUTOSAR APIs

Source Code	
Wdg_59_DriverA.c	<p>Following changes are made in V4.0.1.01.D:-</p> <ol style="list-style-type: none"> 1. New Header file "Wdg_59_DriverA_RegWrite.h" is included to support Write verify functionality. 2. New macros WDG_59_DRIVER_A_REG_WRITE , WDG_59_DRIVER_A_REG_WRITE_VERIFY_INIT and WDG_59_DRIVER_A_REG_WRITE_VERIFY_RUNTIME are added. 3. Wdg_59_DriverA_GetVersionInfo API is added 4. Wdg_59_DriverA_SetMode API is updated to add pre compile check to enable or disable E_MODE_FAILED and E_DISABLE_REJECTED DEM reporting. 5. Wdg_59_DriverA_SetMode, Wdg_59_DriverA_SetTriggerCondition and Wdg_59_DriverA_Init APIs are updated to remove implementation of 'WDG_59_DRIVER_A_DISABLE_ALLOWED' macro. 6. Wdg_59_DriverA_GetVersionInfo and Wdg_59_DriverA_Init APIs are updated to add proper justifications for pointer usage. 7. Wdg_59_DriverA_Trigger API is removed as it is applicable in Autosar lower version only, dead code removed 8. Wdg_59_DriverA_SetMode and Wdg_59_DriverA_SetTriggerCondition APIs are updated where usFastTimeValue and usSlowTimeValue are used to calculate Trigger counter and the check if these time values will be ZERO is removed. 9. Wdg_59_DriverA_Init API is updated to add DET reporting for WDG_E_PARAM_POINTER. 10. 'WDG_ESDD_UD_XXX' and Req ID Tags are added. 11. Wdg_59_DriverA_SetMode API is updated for updating Wdg_59_DriverA_GusTiggerCounter value. 12. Requirements are mapped to code.

		<p>API is updated to add pre compile check to enable or disable E_MODE_FAILED DEM reporting.</p> <p>3. Function</p> <p>WDG_59_DRIVER_A_TRIGGERFUNCTION_ISR is updated with WDG_59_DRIVER_A_E_DRIVER_STATE DET reporting and WDG driver state updation.</p> <p>4. Function</p> <p>WDG_59_DRIVER_A_ERROR_ISR is removed and WUFC register check is removed from WDG_59_DRIVER_A_TRIGGERFUNCTION_ISR function, other dead code removed.</p> <p>5. Added QAC warning justification for Msg (2:3892).</p> <p>6. UD ID requirement tags added.</p> <p>7. Function</p> <p>WDG_59_DRIVER_A_TRIGGERFUNCTION_ISR is updated to remove uint16 typecast from WDG_59_DRIVER_A_ZERO macro.</p> <p>8. Requirements are mapped to code.</p>
Wdg_59_DriverA_Private.c	1.0.7	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. New Header file "Wdg_59_DriverA_RegWrite.h" and rh850_Types.h included to support Write verify functionality. 2. New API Wdg_59_DriverA_SetModeDetCheck added. 3. Wdg_59_DriverA_TriggerFunc API updated to implement write verify, Read back functionality is removed as it is not supported. 4. Wdg_59_DriverA_InitDetCheck API is updated to remove NULL_PTR DET check. 5. Added QAC warning justification for Msg (2:3227) and Msg (2:2814). 6. Dead code removed. 7. UT ID TAG added for the non-covered parts of the code 8. 'WDG_ESDD_UD_XXX' and Req ID Tags are added. 9. Wdg_59_DriverA_InitDetCheck API is updated to add uint16 typecast to WDG_59_DRIVER_A_ZERO macro. 10. Requirements are mapped to code. 11. Wdg_59_DriverA_InitDetCheck and Wdg_59_DriverA_SetModeDetCheck API updated to remove compilation warning and UT ID TAG.

Wdg_59_DriverA_Ram.c

1.0.7

Following changes are made in Ver4.01.01.D:-

- 1.

		<p>WDG_EIC_EIMK_MASK, WDG_59_DRIVER_A_WDTAWDTE_MASK, WDG_59_DRIVER_A_WDTAEVAC_MASK and removed macros related to READBACK functionality.</p> <p>2. WDG_59_DRIVER_A_THOUSAND macro is added to convert microseconds to milliseconds.</p> <p>3. Lower version related code is removed.</p> <p>4. Value for WDG_59_DRIVER_A_ZERO, WDG_59_DRIVER_A_THOUSAND updated.</p> <p>5. Requirements are mapped to code.</p>
Wdg_59_DriverA_Private.h	1.0.5	<p>Following change is made in Ver4.01.01.D:-</p> <p>1. Requirements are mapped to code.</p>
Wdg_59_DriverA_Ram.h	1.0.7	<p>Following changes are made in Ver4.01.01.D:-</p> <p>1. Lower version related code is removed.</p> <p>2. Memory section SEC_VAR_NOINIT_UNSPECIFIED and SEC_VAR_NOINIT_16 are renamed to SEC_VAR_NO_INIT_UNSPECIFIED and SEC_VAR_NO_INIT_16.</p> <p>3. Variable type for Wdg_59_DriverA_GusTiggerCounter is changed from uint16 to uint32.</p> <p>4. Variable Wdg_59_DriverA_GusTiggerCounter and Wdg_59_DriverA_GddDriverState declared volatile.</p> <p>5. Requirements are mapped to code.</p>
Wdg_59_DriverA_RegWrite.h	1.0.0	Initial Version
Wdg_59_DriverA_Types.h	1.0.5	<p>Following changes are made in Ver4.01.01.D:-</p> <p>1. Structure STag_Wdg_59_DriverA_ConfigType is updated to remove element usDefaultTimeValue.</p> <p>2. Copyright information is updated.</p> <p>3. Lower version related code is removed.</p> <p>4. 'WDG_ESDD_UD_XXX' and Req ID Tags are added.</p> <p>5. Variable type for usInitTimerCountValue, usSlowTimeValue and usFastTimeValue changed from uint16 to uint32.</p> <p>6. Requirements are mapped to code.</p>
Wdg_59_DriverA_Version.h	1.0.6	<p>Following changes are made in Ver4.01.01.D:-</p> <p>1. Lower version related code is removed.</p> <p>2. Copyright information is updated.</p> <p>3. Requirements are mapped to code.</p>

DLL executable code for WDG configuration generation		
Wdg_X1x.dll	1.0.20	Following change is made in Ver4.01.01.D:- 1. Tool .dll updated for tool code changes.
Wdg_X1x.cfgxml	1.0.0	No changes for release Ver4.01.01.D
X1x Common Sample Application Source file		

App_WDG_Common_Sample

		<p>14. Table 11.1 is updated to add the DET error WDG_59_DRIVER_A_E_PARAM_POINTER</p> <p>15. Chapter 14 Release details is updated with WDG Driver.</p> <p>16. Chapter 3 and 9 are updated with R-Numbered Tool User manual name.</p> <p>17. Version of R-number is updated at the end of document.</p> <p>18. Section 13.3 Memory and throughput Values are updated.</p> <p>19. Section 4.2 and 4.3 is updated with critical section information.</p> <p>20. Section 4.6 General is updated.</p> <p>21. Chapter 12 is updated to remove NO_INIT_RAM_16BIT and add NO_INIT_RAM_32BIT.</p>
R20UT3729EJ0100-AUTOSAR.pdf	1.0.5	<p>Following changes are made in Ver4.01.01.D:-</p> <ol style="list-style-type: none"> 1. Chapters 1,3 and 5 are updated to add new output file Wdg_59_DriverA_Cbk.h 2. Updated Chapter 8.1, error message ERR102005 for new Dem parameters and removed ERR102009. 3. ERR102004 is updated to add new parameters under container WdgGeneral. 4. ERR102012 error message is updated, ERR102017 is deleted as READBACK feature is no longer supported. 5. Added new error IDs ERR102020, ERR102021 and ERR102022. 6. Chapter 8.3 is updated to add information messages INF102003 and INF102004. 7. Updated Chapter 2 to add PDF version. 8. Section 8.2 is updated to add new warning message WRN102002. 9. Table headers added for Table 8.1 and Table 8.2

7.3 Known Issues

ID	Description
NA	<p>Please refer to the known issues list as shared from Renesas</p> <p>Ref. P1x_AR4.0_KnownIssues_CW43_2016.xlsx.</p>

