**Integration Manual**

**For**

**XCP Interface (XcpIf)**

**VERSION: 3.0**

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**Location:** The official version of this document is stored in the Nexteer Configuration Management System.

**Revision History**

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| **Sl. No.** | **Description** | **Author** | **Version** | **Date** | **Approved By** |
| 1 | Initial version | K. Smith | 1.0 | 6-Jun-15 |  |
| 2 | Updates for intial online calibration support | K. Smith | 2.0 | 9-Oct-15 |  |
| 3 | Updates for new configuration value | K. Smith | 3.0 | 12-Feb-18 |  |

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# Abbrevations And Acronyms

|  |  |
| --- | --- |
| **Abbreviation** | **Description** |
| DFD | Design functional diagram |
| MDD | Module design Document |
|  |  |

# References

This section lists the title & version of all the documents that are referred for development of this document

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Title** | **Version** |
| 1 | MDD Guidelines | Process 04.02.00 |
| 2 | Software Naming Conventions | Process 04.02.00 |
| 3 | Coding standards | Process 04.02.00 |
| 4 | FDD | Not available |
|  | <Add if more available> |  |

# Dependencies

## SWCs

|  |  |
| --- | --- |
| **Module** | **Required Feature** |
| **None** |  |

Note : Referencing the external components should be avoided in most cases. Only in unavoidable circumstance external components should be referred. Developer should track the references.

## Global Functions(Non RTE) to be provided to Integration Project

None

# Configuration REQUIREMeNTS

## Build Time Config

|  |  |  |
| --- | --- | --- |
| **Modules** | **Notes** |  |
| **None** |  |  |

## Configuration Files to be provided by Integration Project

## Da Vinci Parameter Configuration Changes

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Notes** | **SWC** |
| /Nexteer/EcucDefs\_XcpIf/XcpIf/XcpIfCommon/XcpDriverSelection | Integrators should set this to auto detect. However, if the need is there to override the options are available. | XcpIf |
| /Nexteer/EcucDefs\_XcpIf/XcpIf/XcpIfCommon/TunSelnMngtOsApplicationRef | The OS application that holds ES400A. | XcpIf |

## DaVinci Interrupt Configuration Changes

|  |  |  |  |
| --- | --- | --- | --- |
| **ISR Name** | **VIM #** | **Priority Dependency** | **Notes** |
| **None** |  |  |  |

## Manual Configuration Changes

|  |  |  |
| --- | --- | --- |
| **Constant** | **Notes** | **SWC** |
| **None** |  |  |

## OS Configuration Changes

|  |  |  |
| --- | --- | --- |
| **Trusted Function** | **Parameters** | **Notes** |
| **ApplXcpWrCmn** | MTABYTEPTR addr  vuint8 size  const BYTEPTR data | This function should be defined as trusted. |
| **Rte\_Call\_SetCalPageReq\_Oper** |  | This function shall be defined as a non-trusted function call to the application that TunSelnMngt is integrated. |
| **Rte\_Call\_CopyCalPageReq\_Oper** |  | This function shall be defined as a non-trusted function call to the application that TunSelnMngt is integrated. |

# Integration DATAFLOW REQUIREMENTS

## Required Global Data Inputs

None

## Required Global Data Outputs

None

## Specific Include Path present

Yes

## Other Header Changes

|  |  |  |
| --- | --- | --- |
| **File** | **Change** | **Reason** |
| **usrostyp.h** | Add include statement for CDD\_XcpIf.h | The include is needed since for the OS has the function prototypes and datatypes required for the trusted function call. |

# Runnable Scheduling

This section specifies the required runnable scheduling.

|  |  |  |
| --- | --- | --- |
| **Init** | **Scheduling Requirements** | **Trigger** |
| **CDD\_XcpIfInit** | None | Rte |

|  |  |  |
| --- | --- | --- |
| **Runnable** | **Scheduling Requirements** | **Trigger** |
| **Xcp2msDaq** | 2ms | RTE |
| **CDD\_XcpIfPer1** | None | 100ms |

# Memory Map REQUIREMENTS

## Mapping

|  |  |  |
| --- | --- | --- |
| **Memory Section** | **Contents** | **Notes** |
| **None** |  |  |

\* Each …START\_SEC… constant is terminated by a …STOP\_SEC… constant as specified in the AUTOSAR Memory Mapping requirements.

## Usage

|  |  |  |
| --- | --- | --- |
| **Feature** | **RAM** | **ROM** |
| **None** |  |  |

Table 1: ARM Cortex R4 Memory Usage

## NvM Blocks

None

# Compiler Settings

## Preprocessor MACRO

The file xcp.cfg needs to have “#define XCP\_ENABLE\_CALIBRATION\_MEM\_ACCESS\_BY\_APPL” added. When the XCP component is generated in GENy, this will enable the application read/write calls.

The #defile XCPIF\_MAXCALSEG\_CNT\_U08 points to a generated value by the Xcp component. Vector currently only allows one segment to be defined. This will have to be manually changed in the xcp.cfg file by the following:

#undef kXcpMaxSegment

#define kXcpMaxSegment XX

*XX is the number of tuning groups that are defined in your program.*

## Optimization Settings

None

# Appendix

*N/A*