**Integration Manual**

**For**

**VehDyn**

**VERSION: 7.0**

**DATE: 08-MAR-2018**

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

**Revision History**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl. No.** | **Description** | **Author** | **Version** | **Date** |
| 1 | Initial version | KMC | 1.0 | 19-Aug-13 |
| 2 | Updated per SF42 - VCDMotPos rev 002 | SB | 2.0 | 21-Aug-14 |
| 3 | Updated to SF42 – VCDMotPos v004 | SB | 3.0 | 16-Jan-15 |
| 4 | Updated to SF42 – VCDMotPos v006 | JK | 4.0 | 13-Aug-15 |
| 5 | New MemMap section added and Input name change | SB | 5.0 | 15-Dec-15 |
| 6 | Updated to SF-42 FDD rev 7.3.0 (Fix for anomaly EA3#6247) | KK | 6.0 | 24-Feb-16 |
| 7 | Updated to FDD rev 9.0.0, new template. | Krzysztof Byrski | 7.0 | 08-Mar-2018 |

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# Abbrevations And Acronyms

|  |  |
| --- | --- |
| **Abbreviation** | **Description** |
| DFD | Design functional diagram |
| MDD | Module design Document |
| FDD | Functional 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 | EA4 Software Naming Conventions | 1.02 |
| 2 | Software Design and Coding Standards | 2.01 |
| 3 | SF042A\_VehCentrDtmnByMotPosn\_Design | 9.0.0 |

# 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

Ap\_VehDyn\_Cfg.h (generated using Ap\_VehDyn\_Cfg.h.tt)

## Da Vinci Parameter Configuration Changes

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Notes** | **SWC** |
| **VehDynGeneral/VehDynCPEnable** | Enable checkpoints if needed | VehDyn |

## DaVinci Interrupt Configuration Changes

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

## Manual Configuration Changes

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

# Integration DATAFLOW REQUIREMENTS

## Required Global Data Inputs

Refer FDD

## Required Global Data Outputs

Refer FDD

## Specific Include Path present

No

# Runnable Scheduling

This section specifies the required runnable scheduling.

|  |  |  |
| --- | --- | --- |
| **Init** | **Scheduling Requirements** | **Trigger** |
| **VehDyn\_Init1** | Called from RTE before first call of periodic function | RTE(Init) |

|  |  |  |
| --- | --- | --- |
| **Runnable** | **Scheduling Requirements** | **Trigger** |
| **VehDyn\_Per1** | Should be called after the 2ms periodic that outputs RelHwPos and before the 2ms periodic that uses VDHwPos and VDAuthority | RTE(2ms) |
| **VehDyn\_SCom\_ForceCenter** | Triggered on event | Rte(Event) |
| **VehDyn\_SCom\_ResetCenter** | Triggered on event | Rte(Event) |
| **VehDyn\_Trns1** | Triggered on entering of Mode <OFF> of ModeDeclarationGroupPrototype <Mode> of PortPrototype <SystemState> | RTE(Shutdown) |

# Memory Map REQUIREMENTS

## Mapping

|  |  |  |
| --- | --- | --- |
| **Memory Section** | **Contents** | **Notes** |
| **VEHDYN\_START\_SEC\_VAR\_CLEARED\_UNSPECIFIED** |  |  |
| **VEHDYN\_START\_SEC\_VAR\_CLEARED\_BOOLEAN** |  |  |
| **RTE\_START\_SEC\_AP\_VEHDYN\_APPL\_CODE** |  |  |
| **VEHDYN\_START\_SEC\_VAR\_CLEARED\_32** |  |  |
| **VEHDYN\_START\_SEC\_VAR\_CLEARED\_8** |  |  |

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

## Usage

|  |  |  |
| --- | --- | --- |
| **Feature** | **RAM** | **ROM** |
| **N/A** |  |  |

Table 1: ARM Cortex R4 Memory Usage

## NvM Blocks

None

# Compiler Settings

## Preprocessor MACRO

None

## Optimization Settings

None

# Appendix