Integration Manual -- VehDyn

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# 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 refered. Developer should track the references.

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

< Global function (except the ones that are defined in RTE modules) that is defined in this component but used by other function>

None

# Configuration

## 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

## Required Global Data Inputs

VehicleSpeed\_Kph\_f32

HwTorque\_HwNm\_f32

TorqueCmdCRF\_MtrNm\_f32

VehicleSpeedValid\_Cnt\_lgc

MotorVelCRF\_MtrRadpS\_f32

RelHwPos\_HwDeg\_f32

CcwEOT\_HwDeg\_f32

CwEOT\_HwDeg\_f32

HwAuth\_Uls\_f32

HandwheelPosition\_HwDeg\_f32

MechMtrPos\_Rev\_f32

SrlHwAgVld\_Cnt\_lgc

SrlHwAg\_HwDeg\_f32

## Required Global Data Outputs

SensorlessHwAuth\_Uls\_f32

SensorlessHwPos\_HwDeg\_f32

## 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 at 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 2 ms |

|  |  |  |
| --- | --- | --- |
| Runnable | Scheduling Requirements | Trigger |
| VehDyn\_Trns1 | triggered on entering of Mode <OFF> of ModeDeclarationGroupPrototype <Mode> of PortPrototype <SystemState> | RTE at shutdown |

**.**

# Memory Mapping

## 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 |
| <Memmap usage info> |  |  |

Table 1: ARM Cortex R4 Memory Usage

## Non RTE NvM Blocks

|  |
| --- |
| Block Name |
| None |

Note : Size of the NVM block if configured in developer

## RTE NvM Blocks

|  |
| --- |
| Block Name |
| VehDynReset |

Note : Size of the NVM block if configured in developer

# Compiler Settings

## Preprocessor MACRO

<Define all the preprocessor Macros needed and conditions when needed>.

## Optimization Settings

<Define Optimization levels that are needed and conditions when needed>.

# Revision Control Log

|  |  |  |  |
| --- | --- | --- | --- |
| **Rev #** | **Change Description** | **Date** | **Author** |
| 1 | Initial version | 19-Aug-13 | KMC |
| 2 | Updated per SF42 - VCDMotPos rev 002 | 21-Aug-14 | SB |
| 3 | Updated to SF42 – VCDMotPos v004 | 16-Jan-15 | SB |
| 4 | Updated to SF42 – VCDMotPos v006 | 13-Aug-15 | JK |
| 5 | New MemMap section added and Input name change | 15-Dec-15 | SB |