Integration Manual –Motor Velocity

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# Dependencies

## SWCs

|  |  |
| --- | --- |
| Module | Required Feature |
|  |  |
|  |  |
|  |  |

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.

## Functions to be provided to Integration Project

MtrVel3\_Per1

# Configuration

## Build Time Config

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

## Configuration Files to be provided by Integration Project

MtrVel\_Cfg.h (Refer MtrVel\_Cfg\_Template.h in tools folder)

### Da Vinci Config Configuration Changes

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

### Manual Configuration Changes

|  |  |  |
| --- | --- | --- |
| Constant | Notes | SWC |
| None |  |  |
| D\_MTRVELOSBUFSZ\_CNT\_U08 | D\_MTRVELOSBUFSZ\_CNT\_U08” is defined as Cal “k\_BuffSize\_Cnt” in SF40AB  Confirm with the Program being integrated on for the value that needs to be configured for this constant |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# Integration

## Required Global Data Inputs

Motor Position calculated in Motor Control ISR should be used. Motor Position Non RTE inputs should be processed at the same time rate of Motor Velocity Buffering Periodic

MtrVel\_Read\_MechMtrPos1TimeStamp\_uS\_u32 /\* MtrPos Timestamp Calculated in 0.062 mSec should be used. Motor Pos should be processed at the same time rate of Motor Velocity 3 periodic 1\*/

MtrVel\_Read\_MechMtrPos1\_Rev\_u0p16 /\* MtrPos Calculated in 0.062 mSec should be used. Motor Pos should be processed at the same time rate of Motor Velocity 3 periodic 1 \*/

## Specific Include Path present

Yes

# Runnable Scheduling

This section specifies the required runnable scheduling.

|  |  |  |
| --- | --- | --- |
| Init | Scheduling Requirements | Trigger |
| MtrVel3\_Init1 | Once | RTE |
| MtrVel\_Init | Once | RTE |
| MtrVel2\_Init | Once | RTE |

|  |  |  |
| --- | --- | --- |
| Runnable | Scheduling Requirements | Trigger |
| MtrVel3\_Per1 | After DigMSBCorrPer1 Motor ISR periodic (ES51 ) | Motor Control ISR |
| MtrVel\_Per1 | After DigMSBCorr Per2 periodic (ES51 ) | RTE(2mS) |
| MtrVel\_Per2 |  | RTE(2mS) |
| MtrVel2\_Per1 |  | RTE(2mS) |
| MtrVel2\_Per2 |  | RTE(2mS) |

Note : The Scheduling of the periodic between MtrVel\_Per1, MtrVel\_Per2, MtrVel2\_Per1 should take care of the following constraints. MtrVel\_Per1 and MtrVel\_Per2 should reside on the same application . MtrVel2\_Per1 should reside on the separate application.

MtrVel\_Per1output is used by MtrVel2\_Per1 and MtrVel\_Per2

MtrVel2\_Per1 Output is used by MtrVel\_Per2

Hence scheduler should schedule in such a way that there is consistent set of data are used as inputs for MtrVel\_Per2.

# Memory Mapping

## Mapping

|  |  |  |
| --- | --- | --- |
| Memory Section | Contents | Notes |
| MTRVEL\_START\_SEC\_VAR\_CLEARED\_32 |  |  |
| MTRVEL\_START\_SEC\_VAR\_CLEARED\_16 |  |  |
| MTRVEL\_START\_SEC\_VAR\_CLEARED\_8 |  |  |
| MTRVEL2\_START\_SEC\_VAR\_CLEARED\_32 |  |  |
| MTRVEL2\_START\_SEC\_VAR\_CLEARED\_16 |  |  |
| MTRVEL2\_START\_SEC\_VAR\_CLEARED\_8 |  |  |
| MTRVEL3\_START\_SEC\_VAR\_CLEARED\_16 |  |  |
| MTRVEL3\_START\_SEC\_VAR\_CLEARED\_8 |  |  |
| MTRVEL3\_START\_SEC\_VAR\_CLEARED\_32 |  |  |

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

## Usage

|  |  |  |
| --- | --- | --- |
| Feature | RAM | ROM |
|  |  |  |

Table 1: ARM Cortex R4 Memory Usage

## RTE NvM Blocks

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

Note : Size of the NVM block if configured in developer

## Non RTE NvM Blocks

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

Note : Size of the NVM block if configured in developer

# Compiler Settings

## Preprocessor MACRO

None

## Optimization Settings

None

# Revision Control Log

|  |  |  |  |
| --- | --- | --- | --- |
| **Rev #** | **Change Description** | **Date** | **Author** |
| 1 | Initial version | 1-Aug-13 | nzt9hv |
|  |  |  |  |