Integration Manual – Battery Voltage

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# Dependencies

## SWCs

|  |  |
| --- | --- |
| **Module** | **Required Feature** |
| **ADC** | D\_ADC1CURRENTMODE\_ULS\_LGC configuration constant |
| **Basic System Services** | EnableOvervoltThreshInterrupt()\* |

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.

\* Note: EnableOvervoltThreshInterrupt() must be called from ECUStartup.c as soon as possible, but AFTER Adc\_Init(), so as to allow configuration of the ADC registers (and subsequently magnitude threshold).

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

* ISR(Isr\_OvervoltThresh)
* Since the ISR that contains the overvoltage threshold diagnostic is enabled in ECUStartup.c, the NTC could be set before the RTE starts. In this case the non-Rte “report NTC staus” API should be used. Also, the application that contains the Battery Voltage ISR and NTC is configured at the integration level. A component specific API, BATTERYVOLTAGE\_REPORTERRORSTATUS, is used in the ISR source code and a header file, Template\_BatteryVoltage\_Cfg.h, needs to be configured to link the BATTERYVOLTAGE\_REPORTERRORSTATUS() to the appropriate NxtrDiagMgr**???**\_ReportNTCStatus() function. Remove the “Template\_” from the file name and replace the ??? in the API with the appropriate application and place the file in the Header folder of the integration project.

# Configuration

## Build Time Config

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

## Configuration Files to be provided by Integration Project

<Configuration file that will generated from this components that will require Da Vinci Config generation or manual generation. Describe each parameter >

### Da Vinci Parameter Configuration Changes

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Notes** | **SWC** |
| **None** |  |  |

### DaVinci Interrupt Configuration Changes

|  |  |  |  |
| --- | --- | --- | --- |
| **ISR Name** | **VIM #** | **Priority Dependency** | **Notes** |
| **Isr\_OvervoltThresh** | 31 | None | Category 2 IRQ |

### Manual Configuration Changes

|  |  |  |
| --- | --- | --- |
| **Constant** | **Notes** | **SWC** |
| **BATTERYVOLTAGE\_REPORTERRORSTATUS** |  |  |

# Integration

## Required Global Data Inputs

None

## Required Global Data Outputs

None

## Specific Include Path present

No

# Runnable Scheduling

This section specifies the required runnable scheduling.

|  |  |  |
| --- | --- | --- |
| **Init** | **Scheduling Requirements** | **Trigger** |
| **BatteryVoltage\_Init1** | None | RTE (Warm init) |

|  |  |  |
| --- | --- | --- |
| **Runnable** | **Scheduling Requirements** | **Trigger** |
| **BatteryVoltage\_Per1** | None | RTE (2ms) |
| **BatteryVoltage\_Per2** | None | RTE (4ms) |

# Memory Mapping

## Mapping

|  |  |  |
| --- | --- | --- |
| **Memory Section** | **Contents** | **Notes** |
| **BATTERYVOLTAGE\_START\_SEC\_VAR\_CLEARED\_32** | float32 | None |
| **BATTERYVOLTAGE\_START\_SEC\_VAR\_CLEARED\_16** | uint16 | None |
| **BATTERYVOLTAGE\_START\_SEC\_VAR\_CLEARED\_BOOLEAN** | boolean | None |

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

## Usage

|  |  |  |
| --- | --- | --- |
| **Feature** | **RAM** | **ROM** |
| **<Memmap usuage 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** |
| **OvervoltageData (6 bytes)** |

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 | 16-Apr-13 | Jared |
| 2 | Added Overvoltage Threshold ISR, some cleanup, updated template | 3-Jan-14 | Jared |
| 3 | Added BATTERYVOLTAGE\_REPORTERRORSTATUS and new template header file. | 8-Jan-14 | BDO |