**Module Design Document**

**For**

**MotAg4Meas**

**26-Mar-2018**

**Prepared For:**

**Software Engineering**

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**Change History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Description** | **Author** | **Version** | **Date** |
| Initial Version | Shruthi Raghavan | 1.0 | 7-Nov-16 |
| Updated unit test considerations | Tata | 2.0 | 26-Mar-2018 |

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# Introduction

## Purpose

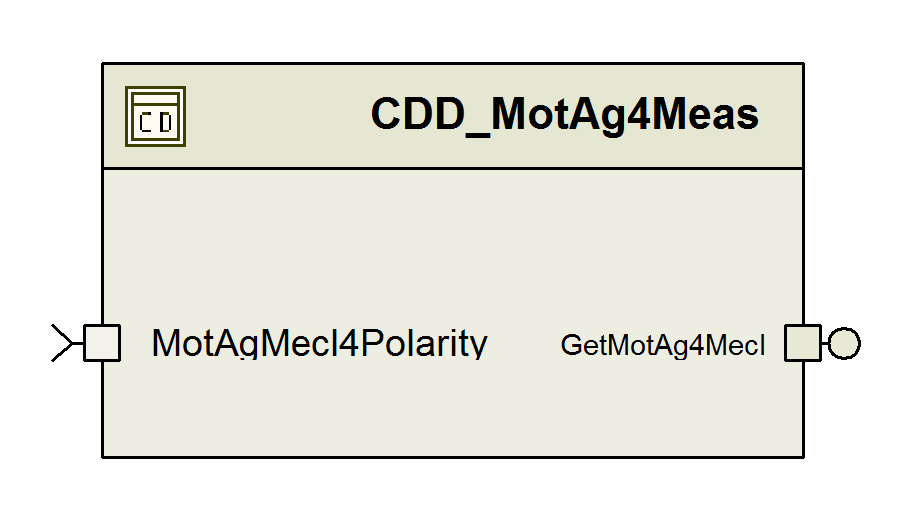
Module design document for MotAg4Meas SWC.

# MotAg4Meas & High-Level Description

*Refer to design.*

# Design details of software module

## Graphical representation of MotAg4Meas



## Data Flow Diagram

### Component level DFD

N/A

### Function level DFD

N/A

# Constant Data Dictionary

## Program (fixed) Constants

### Embedded Constants

#### Local Constants

Refer DataDict.m file for rest of the constants.

|  |  |  |  |
| --- | --- | --- | --- |
| Constant Name | Resolution | Units | Value |
| REGENCA1CTLINITVAL\_CNT\_U16 | 1 | Cnt | 0x03U |
| REGENCA1IOC1INITVAL\_CNT\_U08 | 1 | Cnt | 0x04U |
| REGENCA1TTINITVAL\_CNT\_U08 | 1 | Cnt | 0x01U |
| REGENCA1TSINITVAL\_CNT\_U08 | 1 | Cnt | 0x01U |

# Software Component Implementation

## Sub-Module Functions

## Init: MotAg4MeasInit1

#### Design Rationale

Initialization of registers according to CM515A\_MotAg4Meas\_RegisterConfiguration.xlsm

#### Module Outputs

None

## Per: None

#### Design Rationale

#### Module Outputs

## Server Runables

### GetMotAg4Mecl\_Oper

#### Design Rationale

Refer to FDD

#### (Processing of function)………

Refer to FDD

## Interrupt Functions

None

### Interrupt Function Name

#### Design Rationale

#### (Processing of the ISR function)…..

## Module Internal (Local) Functions

None

### Local Function #1

#### Design Rationale

#### Processing

## GLOBAL Function/Macro Definitions

None

### GLOBAL Function #1

#### Design Rationale

#### Processing

# Known Limitations with Design

None

# UNIT TEST CONSIDERATION

MOTAG4\_SNSRRLVBITWIDTHEXP\_CNT\_U08 is a config param which is defined as an extern. This is defined in “CDD\_MotAg4Meas\_Cfg.h” tools/local/include folder. The range of this config param shall be tested.

Abbreviations and Acronyms

| **Abbreviation or Acronym** | **Description** |
| --- | --- |
| FDD | Functional Design Document |

Glossary

**Note**: Terms and definitions from the source “Nexteer Automotive” take precedence over all other definitions of the same term. Terms and definitions from the source “Nexteer Automotive” are formulated from multiple sources, including the following:

* ISO 9000
* ISO/IEC 12207
* ISO/IEC 15504
* Automotive SPICE® Process Reference Model (PRM)
* Automotive SPICE® Process Assessment Model (PAM)
* ISO/IEC 15288
* ISO 26262
* IEEE Standards
* SWEBOK
* PMBOK
* Existing Nexteer Automotive documentation

| **Term** | **Definition** | **Source** |
| --- | --- | --- |
| MDD | Module Design Document |  |
| DFD | Data Flow Diagram |  |

References

|  |  |  |
| --- | --- | --- |
| Ref. # | Title | Version |
| 1 | AUTOSAR Specification of Memory Mapping (Link:AUTOSAR\_SWS\_MemoryMapping.pdf) | v1.3.0 R4.0 Rev 2 |
| 2 | MDD Guideline | EA4 01.00 |
| 3 | Software Naming Conventions.doc | EA4 01.02 |
| 4 | Software Design and Coding Standards.doc | EA4 2.01 |
| 5 | CM515A\_MotAg4Meas\_Design | See Synergy subproject version |