**Module Design Document**

**For**

**EcmOutpAndDiagc**

**Feb 07, 2018**

**Prepared By:**

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|  |  |  |  |
| --- | --- | --- | --- |
| **Description** | **Author** | **Version** | **Date** |
| Initial Version | Shruthi Raghavan | 1.0 | 15-Nov-2017 |
| Removed local constant that was removed from NonRte file | Shruthi Raghavan | 2.0 | 07-Feb-2018 |

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# Introduction

## Purpose

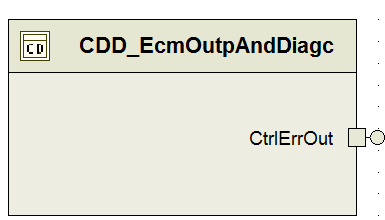
Module Design Document for Implementation of EcmOutpAndDiagc design for P1Mc processor based projects.

# EcmOutpAndDiagc & High-Level Description

Refer FDD.

# Design details of software module

## Graphical representation of EcmOutpAndDiagc



## Data Flow Diagram

### Component level DFD

Refer FDD

### Function level DFD

Refer FDD

# Constant Data Dictionary

## Program (fixed) Constants

### Embedded Constants

#### Local Constants

|  |  |  |  |
| --- | --- | --- | --- |
| Constant Name | Resolution | Units | Value |
| ECMERROUTZPINSTSREGMASK\_CNT\_U32 | 1 | Cnt | 0x80000000U |
| ECMERROUTZPINCOMPERRMASK\_CNT\_U32 | 1 | Cnt | 0x40000000U |
| ERROUTPCLRINVLDREGCMPWBITMASK\_CNT\_U32 | 1 | Cnt | 0x00010000U |
| ECMCOMPERRBITMASK\_CNT\_U32 | 1 | Cnt | 0x10000000U |
| FLASHAPPLCMDIFECMERRMASK\_CNT\_U32 | 1 | Cnt | 0x00080000U |
| NROFCOMPERRSRCSETATMPTS\_CNT\_U08 | 1 | Cnt | 3U |
| FEINTRPTREQFLGBITMASK\_CNT\_U32 | 1 | Cnt | 0x00001000U |
| FEINTRPTEVESRCECMBITMASK\_CNT\_U32 | 1 | Cnt | 0x00000002U |
| ECMERRSETTRIGREGSTSCLRMASK\_CNT\_U32 | 1 | Cnt | 0x40000000U |

# Software Component Implementation

## Sub-Module Functions

## Init: EcmOutpAndDiagcInit1

## Design Rationale

None

## Init: EcmOutpAndDiagcInit3

## Design Rationale

None

## Periodic

None

## Server Runables

## CtrlErrOut\_Oper

## Design Rationale

The TrigReg1 enumeration type is given the type qualifier of EcmOutpAndDiagc so it is not generated in the RTE headers. The header in the include folder contains the typedef for this enum because it is not expected to be needed outside the context of this component (or server runnable call).

## Interrupt Functions

None

## Module Internal (Local) Functions

## Local Function #1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Function Name** | - | Type | Min | Max |
| **Arguments Passed** | - | - | - | - |
| **Return Value** | - | - | - | - |

## GLOBAL Function/Macro Definitions

None

# Known Limitations with Design

None.

# UNIT TEST CONSIDERATION

Register file definitions are in the P1Xc/include folder of AR202A since this component is designed for P1X-c micro.

Abbreviations and Acronyms

| **Abbreviation or Acronym** | **Description** |
| --- | --- |
| EI | Exception Interrupt |
|  |  |

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 | v1.3.0 R4.0 Rev 2 |
| 2 | MDD Guideline | EA4 01.00.01 |
| 3 | [Software Naming Conventions.doc](http://misagweb01.nexteer.com/eRoomReq/Files/erooms8/NextGeneration/0_fc55f/Software%20Naming%20Conventions%2003x(In%20Work).doc) | 1.02 |
| 4 | Software Design and Coding Standards.doc | 2.01 |
| 5 | FDD : CM104B\_EcmOutpAndDiagc\_Design | See Synergy Subproject Ver. |