**Module Design Document**

**For**

**FordMsg2FDBusHiSpd**

**24-Apr-2018**

**Prepared For:**

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| --- | --- | --- | --- |
| Description | Author | Version | Date |
| Initial Version | Mrudula Paturi | 1 | 24-Apr-2018 |

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# Introduction

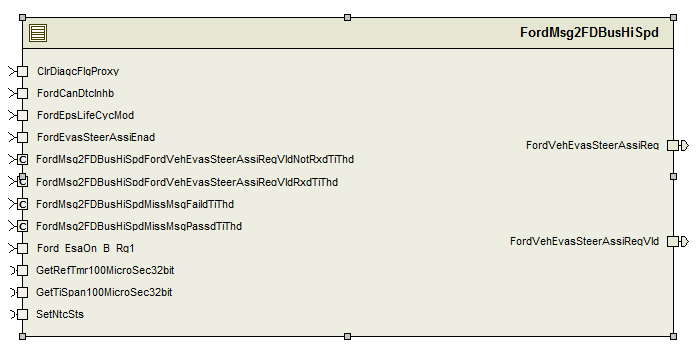
## MDD for FordMsg2FDBusHiSpd

# FordMsg2FDBusHiSpd & High-Level Description

Please refer FDD.

# Design details of software module

## Graphical representation of FordMsg2FDBusHiSpd



## Data Flow Diagram

### Component level DFD

Please refer FDD.

### Function level DFD

Please refer FDD.

# Constant Data Dictionary

## Program (fixed) Constants

### Embedded Constants

#### Local Constants

|  |  |  |  |
| --- | --- | --- | --- |
| Constant Name | Resolution | Units | Value |
| Please refer Data Dictionary .m file | NA | NA | NA |

# Software Component Implementation

## Sub-Module Functions

### 5.1.1 Init: FordMsg2FDBusHiSpdInit1

#### Design Rationale

None

#### Module Outputs

None

### 5.1.2 Per: FordMsg2FDBusHiSpdPer1

#### 5.1.2.1 Design Rationale

None

#### 5.1.2.2 Store Module Inputs to Local copies

None

#### 5.1.2.3 Processing of function

None

#### 5.1.2.4 Store Local copy of outputs into Module Outputs

None

## Server Runnables

### 5.2.1 ComIPduCallout\_Mc\_Send\_Signlas\_2\_FD1

#### 5.2.1.1 Design Rationale

None

#### 5.2.1.2 (Processing of function)

None

### 5.2.2 ComTimeoutNotification\_EsaOn\_B\_Rq

#### 5.2.2.1 Design Rationale

None

#### 5.2.2.2 (Processing of function)

None

## Interrupt Functions

None

## Module Internal (Local) Functions

## DiagEna

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Function Name** | DiagEna | Type | Min | Max |
| Arguments Passed | FordEvasSteerAssiEnad\_Cnt\_T\_logl | boolean | 0U | 1U |
| FordCanDtcInhb\_Cnt\_T\_logl | boolean | 0U | 1U |
| Return Value |  | boolean |  |  |

#### 5.4.1.1 Design Rationale

Refer FDD

#### 5.4.1.2 Processing

Refer FDD

## MsgMiss

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Function Name** | MsgMiss | Type | Min | Max |
| Arguments Passed | FordEpsLifeCycMod\_Cnt\_T\_u08 | Uint8 | 0U | 1U |
| DiagEna\_Cnt\_T\_logl | boolean | 0U | 1U |
| ClrDiagcFlgProxy\_Cnt\_T\_u08 | Uint8 | 0U | 1U |
| Return Value |  | Boolean  Uint8 |  |  |

#### 5.4.2.1 Design Rationale

Refer FDD

#### 5.4.2.2 Processing

Refer FDD

## Enabled

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Function Name** | Enabled | Type | Min | Max |
| Arguments Passed | FordEpsLifeCycMod\_Cnt\_T\_u08 | Uint8 | 0U | 1U |
| Return Value | None |  |  |  |

#### 5.4.3.1 Design Rationale

Refer FDD

#### 5.4.3.2 Processing

Refer FDD

## MsgPrsnt

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Function Name** | MsgPrsnt | Type | Min | Max |
| Arguments Passed | DiagEna\_Cnt\_T\_logl | boolean | 0U | 1U |
| ClrDiagcFlgProxy\_Cnt\_T\_u08 | Uint8 | 0U | 1U |
| Ford\_EsaOn\_B\_Rq\_Cnt\_T\_enum | Ford\_EsaOn\_B\_Rq | 0U | 1U |
| Return Value |  | Boolean  Uint8 |  |  |

#### 5.4.4.1 Design Rationale

Refer FDD

#### 5.4.4.2 Processing

Refer FDD

## GLOBAL Function/Macro Definitions

None

# Known Limitations with Design

The output signal FordVehEvasSteerAssiReq is of type enum in DataDict.m file but it is clarified to be uint8 as per the Architecture team. Same with the associated PIM FordVehEvasSteerAssiReqPrev which is clarified to be uint8.

# UNIT TEST CONSIDERATION

The output signal FordVehEvasSteerAssiReq is of type enum in DataDict.m file but it is clarified to be uint8 as per the Architecture team. Same with the associated PIM FordVehEvasSteerAssiReqPrev which is clarified to be uint8.

Abbreviations and Acronyms

| **Abbreviation or Acronym** | **Description** |
| --- | --- |
|  |  |
|  |  |

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 | FDD: MM134A\_ FordMsg2FDBusHiSpd \_Design | See Synergy subproject version |