**Module Design Document**

**For**

**NxtrDet**

**Oct 6, 2015**

**Prepared For:**

**Software Engineering**

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| **Description** | **Author** | **Version** | **Date** |
| Initial Version | Lucas Wendling | 1 | 10/06/15 |

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# Introduction

## Purpose

## Scope

The following definitions are used throughout this document:

* **Shall**: indicates a mandatory requirement without exception in compliance.
* **Should**: indicates a mandatory requirement; exceptions allowed only with documented justification.
* **May**: indicates an optional action.

# NxtrDet High-Level Description

*See FDD*

# Design details of software module

## Graphical representation of NxtrDet

*None*

## Data Flow Diagram

### Component level DFD

**N/A**

### Function level DFD

**N/A**

# Constant Data Dictionary

## Program (fixed) Constants

### Embedded Constants

**Constants containing the Nexteer ModuleIDs defined for Det functionality are defined in the .m file included in the doc folder of this component. This is to allow new SWCs adding new Det errors to not drive changes to the design project, only to the implementation project.**

#### Local Constants

|  |  |  |  |
| --- | --- | --- | --- |
| Constant Name | Resolution | Units | Value |
| None |  |  |  |

# Software Component Implementation

## Sub-Module Functions

## Init: NxtrDet

None

## Per: NxtrDet

None

## Server Runables

*None*

## Interrupt Functions

*None*

## Module Internal (Local) Functions

## Local Function #1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Function Name** | (Exact name used) | Type | Min | Max |
| **Arguments Passed** | None | <Refer MDD guidelines[1]> | <Refer MDD guidelines[1]> | <Refer MDD guidelines[1]> |
|  |  |  |  |  |
| **Return Value** |  |  |  |  |

## Design Rationale

## Processing

## GLOBAL Function/Macro Definitions

## GLOBAL Function #1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Function Name** | (Exact name used) | Type | Min | Max |
| **Arguments Passed** | None | <Refer MDD guidelines[1]> | <Refer MDD guidelines[1]> | <Refer MDD guidelines[1]> |
|  |  |  |  |  |
| **Return Value** |  |  |  |  |

## Design Rationale

## Processing

# Known Limitations with Design

None

# UNIT TEST CONSIDERATION

None

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](http://www.autosar.org/download/R4.0/AUTOSAR_SWS_MemoryMapping.pdf)) | v1.3.0 R4.0 Rev 2 |
| 2 | MDD Guideline | EA4 01.00.00 |
| 3 | [Software Naming Conventions.doc](http://misagweb01.nexteer.com/eRoomReq/Files/erooms8/NextGeneration/0_fc55f/Software%20Naming%20Conventions%2003x(In%20Work).doc) | 1.0 |
| 4 | [Software Design and Coding Standards.doc](http://eroom1.nexteer.com/eRoomReq/Files/erooms8/NextGeneration/0_1a67a9/Software%20Design%20and%20Coding%20Standards.doc) | 2.0 |