**Module Design Document**

**For**

**‘AssiSumLim’**

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**Location:** The official version of this document is stored in the Nexteer Configuration Management System.

**Revision History**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl. No.** | **Description** | **Author** | **Version** | **Date** |
| 1 | Initial Version | Sankardu Varadapureddi | 1.0 | 03-Jun-2015 |
| 2 | Updated Graph , added Limitations, Updated Server Runnable Information | Matthew Leser | 2.0 | 15-May-2017 |
| 3 | Removed application data types; PIM range correction noted | Shawn Penning | 3.0 | 14-Jun-2017 |
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**Table of Contents**

[1 Abbrevations And Acronyms 5](#_Toc421537746)

[2 References 6](#_Toc421537747)

[3 AssiSumLim High-Level Description 7](#_Toc421537748)

[4 Design details of software module 8](#_Toc421537749)

[4.1 Graphical representation of AssiSumLim 8](#_Toc421537750)

[4.2 Data Flow Diagram 8](#_Toc421537751)

[4.2.1 Module level DFD 8](#_Toc421537752)

[4.2.2 Sub-Module level DFD 9](#_Toc421537753)

[4.3 COMPONENT FLOW DIAGRAM 9](#_Toc421537754)

[5 Variable Data Dictionary 10](#_Toc421537755)

[5.1 User defined typedef definition/declaration 10](#_Toc421537756)

[5.2 Variable definition for enumerated types 10](#_Toc421537757)

[6 Constant Data Dictionary 11](#_Toc421537758)

[6.1 Program(fixed) Constants 11](#_Toc421537759)

[6.1.1 Embedded Constants 11](#_Toc421537760)

[6.1.1.1 Local 11](#_Toc421537761)

[6.1.1.2 Global 11](#_Toc421537762)

[6.1.2 Module specific Lookup Tables Constants 11](#_Toc421537763)

[7 Software Module Implementation 12](#_Toc421537764)

[7.1 Sub-Module Functions 12](#_Toc421537765)

[7.1.1 Initialization Functions 12](#_Toc421537766)

[7.1.1.1 INIT: AssiSumLimInit1 12](#_Toc421537767)

[7.1.1.1.1 Design Rationale 12](#_Toc421537768)

[7.1.1.1.2 Module Outputs 12](#_Toc421537769)

[7.1.1.1.3 Module Internal 12](#_Toc421537770)

[7.1.2 PERIODIC FUNCTIONS 12](#_Toc421537771)

[7.1.2.1 Per: AssiSumLimPer1 12](#_Toc421537772)

[7.1.2.1.1 Design Rationale 12](#_Toc421537773)

[7.1.2.1.2 Store Module Inputs to Local copies 12](#_Toc421537774)

[7.1.2.1.3 (Processing of function)……… 12](#_Toc421537775)

[7.1.2.1.4 Store Local copy of outputs into Module Outputs 12](#_Toc421537776)

[7.1.3 Interrupt Functions 12](#_Toc421537777)

[7.1.4 Server runnables 13](#_Toc421537778)

[7.1.4.1 SetManTqCmd 13](#_Toc421537779)

[7.1.4.1.1 Design Rationale 13](#_Toc421537780)

[7.1.4.1.2 Store Module Inputs to Local copies 13](#_Toc421537781)

[7.1.4.1.3 (Processing of function)……… 13](#_Toc421537782)

[7.1.4.1.4 Store Local copy of outputs into Module Outputs 13](#_Toc421537783)

[7.1.5 Local Function/Macro Definitions 13](#_Toc421537784)

[7.1.5.1 Local Function #1 13](#_Toc421537785)

[7.1.5.1.1 Description 13](#_Toc421537786)

[7.1.5.2 Local Function #2 13](#_Toc421537787)

[7.1.5.2.1 Description 13](#_Toc421537788)

[7.1.6 GLObAL Function/Macro Definitions 13](#_Toc421537789)

[7.1.7 Tranisition FUNCTIONS 13](#_Toc421537790)

[8 Known Limitations With Design 14](#_Toc421537791)

[9 UNIT TEST CONSIDERATION 15](#_Toc421537792)

[10 Appendix 16](#_Toc421537793)

# Abbrevations And Acronyms

|  |  |
| --- | --- |
| Abbreviation | Description |
| DFD | Design functional diagram |
| MDD | Module design Document |
| FDD | Functional Design Document |

# References

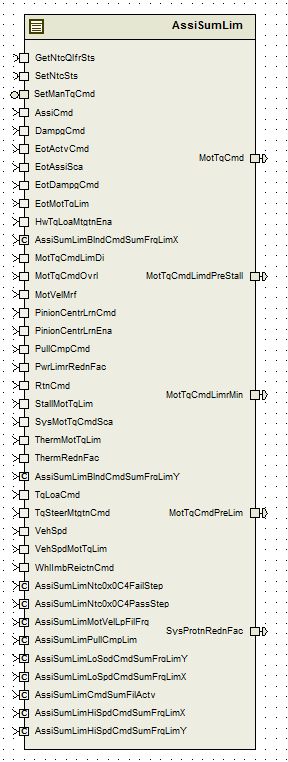
This section lists the title & version of all the documents that are referred for development of this document

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| --- | --- | --- |
| Sr. No. | Title | Version |
| 1 | MDD Guidelines | Process 3.06.00 |
| 2 | Software Naming Conventions | 2.0 |
| 3 | Software Design and Coding standards | 2.1 |
| 4 | FDD - SF004B\_AssiSumLim\_Design | See Synergy sub project version |
|  |  |  |

# AssiSumLim High-Level Description

# Design details of software module

## Graphical representation of AssiSumLim



## Data Flow Diagram

*Refer FDD*

## Module level DFD

*Refer FDD*

## Sub-Module level DFD

*Refer FDD*

## COMPONENT FLOW DIAGRAM

*Refer FDD*

# Variable Data Dictionary

## User defined typedef definition/declaration

*<This section documents any user types uniquely used for the module.>*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Typedef Name | Element Name | User Defined Type | Legal Range  (min) | Legal Range  (max) |
| None |  |  |  |  |
|  |  |  |  |  |

## Variable definition for enumerated types

|  |  |  |
| --- | --- | --- |
| Enum Name | Element Name | Value |
| None |  |  |

# Constant Data Dictionary

## Program(fixed) Constants

## Embedded Constants

## Local

|  |  |  |  |
| --- | --- | --- | --- |
| Constant Name | Resolution | Units | Value |
|  |  |  |  |

**Note**: Refer .m file for constants definitions.

## Global

|  |
| --- |
| Constant Name |
| None |

## Module specific Lookup Tables Constants

|  |  |  |  |
| --- | --- | --- | --- |
| Constant Name | Resolution | Value | Software Segment |
| None |  |  |  |

# Software Module Implementation

## Sub-Module Functions

## Initialization Functions

*AssiSumLimInit1*

## INIT: AssiSumLimInit1

## Design Rationale

*Design follows implemenetation in FDD.*

## Module Outputs

*Refer ‘AssiSumLimInit1’ block in FDD*

## Module Internal

None

## PERIODIC FUNCTIONS

## Per: AssiSumLimPer1

## Design Rationale

*Design follows implementation in FDD.*

## Store Module Inputs to Local copies

*Refer to FDD*

## (Processing of function)………

*Refer to FDD (Block ‘AssiSumLmtPer1’)*

## Store Local copy of outputs into Module Outputs

*Refer to FDD*

## Interrupt Functions

*None*

## Server runnables

## SetManTqCmd

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Function Name** | SetManTqCmd\_Oper | Type | Min | | Max |
| **Arguments Passed** | VehSpd\_Kph\_T\_f32 | float32 | 0.0F | 511.0F | |
|  | ManTqCmd | float32 | -8.8 | 8.8 | |
|  | ManTqCmdEna | boolean | FALSE | TRUE | |
| **Return Value** | ManTqCmdRtn\_Uls\_T\_enum | Std\_ReturnType | 0 | 1 | |

## Design Rationale

*Argument names should have \_arg added to end of names for ManTqCmd and ManTqCmdEna.*

## Store Module Inputs to Local copies

*None*

## (Processing of function)………

*Refer ‘SetManTqCmd’ block in FDD*

## Store Local copy of outputs into Module Outputs

*None*

## Local Function/Macro Definitions

None

## GLObAL Function/Macro Definitions

None

## Tranisition FUNCTIONS

None

# Known Limitations With Design

.

Tustin Filter does not have a library block in design or code (could be added to component after CR EA4#6619 is completed).

SetNtcSts.CallLocation should include AssiSumLimInit1 in DataDict.m (see CR EA4#12283).

Range for MotVelFilLp is incorrect and could cause overflow. Should be max of 1350, not 62500. This will be addressed in future design with CR EA4#12743.

# UNIT TEST CONSIDERATION

None

# Appendix

*None*