Thermal Management Operating System(TMOS)

<<Feature>>

(F003090)

|  |  |  |  |
| --- | --- | --- | --- |
| Document Type | **Feature Implementation Specification (FIS)** | |  |
| Template Version | **6.1a** | |  |
| SysML Report Template Version | **O Beta (11/24/2019)** | |  |
| Document ID | **ffst01.10\_featuredocument\_sysmlreporttemplate** | |  |
| Document Location |  | |  |
| Document Owner | **Lynn Collins** | |  |
| Document Revision | **FD0** | |  |
| Document Status | **Draft** | |  |
| Date Issued | **2021/03/09** | |  |
| Date Revised | **2021/03/09** | |  |
| Document Classification | GIS1 Item Number: | **27.60/35** |  |
| GIS2 Classification: | **Confidential** |

|  |  |  |  |
| --- | --- | --- | --- |
| Document Approval | | | |
| Person | Role | Email | Date |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

This document contains Ford Motor Company Confidential information. Disclosure of the information contained in any portion of this document is not permitted without the expressed, written consent of a duly authorized representative of Ford Motor Company, Dearborn, Michigan, U.S.A.

Copyright © 2019, Ford Motor Company

PRINTED COPIES ARE UNCONTROLLED

**Disclaimer**

**This document contains Ford Motor Company Confidential information. Disclosure of the information contained in any portion of this document is not permitted without the expressed, written consent of a duly authorized representative of Ford Motor Company, Dearborn, Michigan, U.S.A.**

This document contains information developed and accumulated by and for FORD MOTOR COMPANY. As such, it is a proprietary document, which, if disseminated to unauthorized persons, would provide others with restricted information, data, or procedures not otherwise available, exposing the FORD MOTOR COMPANY to potential harm.

Employees and suppliers having custody of this specification or authorized to use it must be cognizant of its proprietary nature and ensure that the information herein is not made available to unauthorized persons.

FORD MOTOR COMPANY reserves the right to protect this work as an unpublished copyrighted work in the event of an inadvertent or deliberate unauthorized publication. FORD MOTOR COMPANY also reserves its rights under copyright laws to protect this work as a published work.

This document or portions thereof shall not be distributed outside FORD MOTOR COMPANY without prior written consent. Refer all questions concerning disclosure to the author(s) or any duly authorized representative of Ford Motor Company.

**Copyright** © **2019 Ford Motor Company**

**Contents**

1 Introduction 6

1.1 Document Purpose 6

1.2 Document Scope 6

1.3 Document Audience 6

1.3.1 Stakeholder List 6

1.4 Document Organization 6

1.4.1 Document Context 6

1.4.2 Document Structure 6

1.5 Document Conventions 7

1.5.1 Requirements Templates 7

1.5.1.1 Identification of requirements 7

1.5.1.2 Requirement Attributes 7

2 Feature Implementation Overview 8

2.1 Description 8

2.2 Input Requirements 8

2.3 Assumptions 9

2.4 References 9

2.4.1 Ford Documents 9

2.4.2 External Documents and Publications 10

2.5 Glossary 10

2.5.1 Definitions 10

2.5.2 Abbreviations 11

3 Feature Implementation Architecture 12

3.1 Functional Architecture 12

3.1.1 Description 12

3.1.2 Function List 12

3.1.2.1 Functions of 13

3.1.2.2 Functions of 14

3.1.3 Signal List 14

3.2 Physical Architecture 18

3.2.1 E/E Architecture 18

3.2.1.1 E/E Architecture Variants 19

3.2.1.2 E/E Components 20

3.2.1.3 E/E Connections 20

3.2.1.4 Signal List 22

3.2.2 Software Component Architecture 22

3.2.2.1 Description 22

3.3 Function Deployment 22

3.3.1 Deployment Variants 23

3.3.1.1 Main (Only) variant 23

3.3.1.2 Deployment “Variant 1” 23

3.3.2 Function Allocation 24

3.3.2.1 Functional Safety 25

4 Feature Implementation Modeling 27

4.1 Component Interaction Diagrams 27

4.1.1 Scenario: “System Startup / Shutdown” 27

4.1.2 Scenario: “Normal Operation” 27

4.1.3 Functional Safety 28

4.1.3.1 Fault Handling Time Analysis 28

4.1.3.2 Requirements Derivation Diagram 29

4.2 Component Interface Behavior Diagrams 29

5 Feature Implementation Requirements 30

6 Open Concerns 31

7 Revision History 32

8 Appendix 33

8.1 Data Dictionary 33

8.1.1 Logical Signals 33

8.1.2 Logical Parameters 33

8.1.3 Technical Signals 33

8.1.3.1 GSDB Signals 34

8.1.3.2 Service Oriented Communication 34

8.1.3.3 Hardwired Signals 34

8.1.3.4 Diagnostic Interfaces 34

8.1.4 Technical Parameters 36

8.1.5 Mappings 36

8.1.6 Technical Interfaces 37

8.1.6.1 AIS Interfaces 37

8.1.6.2 Service Oriented Communcation (SoC) Interfaces 38

8.1.6.3 AUTOSAR Ports (SW Interfaces) 38

8.1.7 Messages 38

8.1.7.1 CAN Bus “<Bus Name>” 38

8.1.7.2 LIN Bus “<Bus Name>” 39

8.1.8 Encoding Types 39

**List of Figures**

Figure 1: 21

Figure 2:  24

Figure 3: 30

**List of Tables**

Table 1‑1: Electrical Architecture(s) referenced in this document 6

Table 1‑2: Functions referenced in this document 6

Table 2‑1: Ford Internal Documents 10

Table 2‑2: Ford Internal Documents *(not specified in SysML model)* 11

Table 2‑3: External Documents and Publications 11

Table 2‑4: External Documents and Publications *(not specified in SysML model)* 11

Table 2‑5: Definitions Used In This Document 12

Table 2‑6: Abbreviations used in this document 12

Table 3‑1: List of Functions 15

Table 3‑2: List of ‑‑ Functions 15

Table 3‑3 List of signals sent by 18

Table 3‑4 List of signals received by 19

Table 3‑5: Electrical Components 21

Table 3‑6: E/E Connections for 23

Table 3‑7: Function Allocation Table 26

Table 3‑8: Function Allocation Table 27

Table 3‑9: Architectural Redundancy Summary 27

Table 4‑1: Fault Handling Time Table 30

Table 5‑1: Input Signal mappings of ‑ 34

Table 5‑2: Output Signal mappings of ‑ 35

Table 5‑3: Parameter mappings of ‑ 36

Table 5‑4: Component Specific Requirements 37

Table 5‑5: Inherited Requirements 37

Table 5‑6: Input Signal mappings of ‑ 39

Table 5‑7: Output Signal mappings of ‑ 40

Table 5‑8: Parameter mappings of ‑ 40

Table 5‑9: Component Specific Requirements 40

Table 5‑10: Inherited Requirements 40

Table 5‑11: Input Signal mappings of Component: ‑ 41

Table 5‑12: Output Signal mappings of Component: ‑ 42

# Introduction

## Document Purpose

The Feature Implementation Specification (FIS) specifies the deployment of the logical functions of a feature to an electrical architecture. The FIS specifies all interactions between the ECUs of the electrical architecture required for the feature including the technical signals and the interfaces. It also gives interface and integration requirements, which are specific to the feature for the electrical architecture.

To get more information about the concept of feature, function and component level abstraction refer to the [Ford RE Wiki](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Engineering+for+SW+Enabled+Features).

## Document Scope

This FIS describes the deployment of the feature <Feature> to the following electrical architecture(s):

*No Electrical Architecture found.*

| **Electrical Architecture Name** | **Owner** | **Reference** |
| --- | --- | --- |
| e.g. CGEA1.3 |  | <Add VSEM Link> |
|  |  |  |

Table 1‑1: Electrical Architecture(s) referenced in this document

## Document Audience

The FIS is authored by - . All Stakeholders, i.e., all people who have a valid interest in the feature implementation should read and, if possible, review the FIS. It needs to be guaranteed, that all stakeholders have access to the currently valid version of the FIS.

### Stakeholder List

For the latest list of the function stakeholders and their roles & responsibilities refer to <Put VSEM Link here>.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **CDSID** | **Role** | **Stakeholder Group** |
| Ananthi Sankaran | asanka11 |  |  |
| John Correia | jcorre36 |  |  |
| Michael Irby | mirby |  |  |
| David Treharne | dtreharn |  |  |
| Angel Porras | aporras3 |  |  |
| Lynn Collins | lcoll109 |  |  |
| Richard Lowhorn | rlowhor3 |  |  |
| John Mckeever | jmckeeve |  |  |
| Benjamin Kitchin | bkitchin |  |  |
| William Johnston | wjohnst2 |  |  |
| Vikram Gokhale | vgokhale |  |  |
| Martin Imhof | mimhof4 |  |  |
| Steve Perry | sperry28 |  |  |
| Aamir Pasha | apasha |  |  |
| Jordan Mazaira | jmazaira |  |  |
| Chuck Badger | cbadger5 |  |  |
| Rohan Shrivastava | rshrivas |  |  |
| Ian Lawler | iparker9 |  |  |

## Document Organization

### Document Context

Refer to the [Specification Structure page](http://wiki.ford.com/display/RequirementsEngineering/Specification+templates) in the [Ford RE Wiki](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Engineering+for+SW+Enabled+Features) to understand how the FIS relates to other Ford Requirements Documents and Specifications.

### Document Structure

The structure of this document is explained below:

**Section 1** – Introduction – Giving an explanation how to use this document including responsibilities and the scope of the document. Additionally it contains the revision history and a list of unsettled but known issues that have to be consolidated in future versions. It explains the terminology and gives a clarification of the definitions, concepts and abbreviations used in the document.

**Section 2** – Feature Implementation Description – Giving an overview of the platform and listing assumptions, constraints or dependencies

**Section 3** – Feature Implementation Architecture – Describing 3 Architecture Views:

* Functional Architecture – Showing the logical architecture of functions
* Physical Architecture – Showing the physical architecture (first of all the E/E Architecture), which the Logical Functions get allocated to.
* Software Architecture – Showing the software architecture relevant for the feature (for features with in-house development only)
* Function Deployment – Presenting the allocation of logical functions and signals to the electrical and other components

**Section 4** – Deployment Specific Modeling –Modeling techniques providing additional detail on e.g. interface behavior

**Section 5** – Deployment Specific Requirements – Deployment specific requirements for ECUs, Network Communication, and Process

**Section 6** – List of Open Concerns

**Section 7** – Revision History

**Section 8** – Appendix - Presenting additional data mainly in a tabular form, e.g., a data dictionary

## Document Conventions

### Requirements Templates

Refer to “[How to use the Specification Templates](http://wiki.ford.com/display/RequirementsEngineering/How+to+use+the+Specification+Templates?src=contextnavpagetreemode)” on how to use the specification templates and the VBA macros to create/edit the requirements in the specifications.

The VBA macro enable the import of the specification to VSEM (refer to ["How to import specifications into VSEM as separate requirements"](http://wiki.ford.com/pages/viewpage.action?pageId=104991616&src=contextnavpagetreemode)).

#### Identification of requirements

The unique requirement ID given in the headline of any requirement follows the requirement throughout the development process. The requirement ID format follows a well-defined syntax.

All identifiers in an FIS shall be composed of 4 parts:

* A leading prefix, which indicates the type of requirement (R=Requirement, UC=Use Case, SC=Scenario, …)
* A prefix, which indicates the abstraction level (F=Feature, FNC=Function, CMP = component).
* Followed by a name, indicating the scope, which the requirement belongs to (e.g. feature or function name )
* Ending with the actual requirement number

*Example:*

*R\_CMP\_LockArbitrator\_00004* This is the fourth requirement on component level for the function Lock Arbitrator.

#### Requirements Attributes

Additionally attributes can be added to each requirement. This helps to classify requirements. A [list of available attributes](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes?src=contextnavpagetreemode) is given in the RE Wiki.

## References

### Ford Documents

The list of all Ford internal documents, which are directly related.

| **Reference** | **Title** | **Doc. ID** | **Revision** | **Document Location** |
| --- | --- | --- | --- | --- |
| Ford GIS Standard | Ford GIS Standard |  |  |  |

Table 1‑2: Ford internal Documents

### External Documents and Publications

The list of external documents could include books, reports and online sources.

| **Reference** | **Document / Publication** |
| --- | --- |
| IEEE Std 1012-2004 IEEE Standard for Software Verification and Validation |  |
| ISO/IEC 19500-2:2003 |  |
| UML Testing Profile (UTP), v1.2 |  |
| Wikipedia |  |

Table 1‑3: External documents and publications

## Glossary

### Definitions

| **Definition** | **Description** |
| --- | --- |
|  |  |
| AC | Air Conditioning |
| CabinHotTemperature | cabin temperature that will initiate cooling >50C |
| COOLING\_CYCLE \_TIME\_THRESHOLD | Fan and AC cooling time 3 minutes |
| Fan\_Only | Fan only run model |
| FAN\_ON\_DURATION | time fan will run before AC is enabled. (default 30 minutes) |
| Fan\_On\_Duration | When in Fan and AC mode, the AC will turn on after 10 minutes |
| Fan\_ON\_TIME\_THRESHOLD | Fan runs for 5 minutes and continues with AC for another 5 minutes |
| HIGH | BEV Key On |
| High speed | Approximately more than 52 mph (83 kph) |
| HMI | Human Machine Interface |
| HPCM | Hybrid Powertrain Control Module |
| HVHotTemperature | HV battery hot temperature |
| HVNormalTemperature | HV battery normal temperature |
| InteriorTemperature | HV Battery Temperature or Cabin Temperature |
| ITS | Interior Temperature Status |
| ITS\_HOT | Interior Temperature HOT |
| ITS\_NORMAL | Interior Temperature NORMAL |
| KEYOFF\_TIMER | Set time for KEYOFF setting to keep engine off |
| KEYOFF\_TRIALS | KEYOFF\_TIME frequency shall be able to recognize the number of key off events. TMOS will not function when KEYOFF\_TIMER reaches a certain predetermined value. |
| Key\_Off\_Trials | Key off Trials. When in fan on only mode the fan is limited to 3 attempts to achieve cooling. |
| LOW | BEV Key Off |
| Low speed | Approximately 12 to 36 mph (19 to 58 kph ) |
| Medium speed | Approximately 36 mph to 52 mph (58 to 83 kph) |
| Minimum SOC | 20% |
| MONITOR\_PERIODICITY | Climate control run time monitor(default time of 1s) |
| ON\_events | Climate system run time |
| OperationDuration | TMOS\_ACTIVATION\_TIME (<=to 20 minutes ) |
| PlugIn mode | HV battery |
| PRNDL | Park Reverse Neutral Drive Lower Gear |
| term | A representation of a Concept expressed in Natural Language. In the vocabulary of a Domain of Discourse a term enables common understanding of domain concepts. |
| term glossary | A term glossary is a table of agreed upon definitions for terms used in project development that may provide clarity or avoid confusion to stakeholders. |
| TLA | Three Letter Acronym |
| VEHICLE\_OFF | VEHICLE\_OFF mode shall be defined as VEHICLE\_STATUS signal = OFF |
| VEHICLE\_ON | Feature operating mode condition shall be enabled when VEHICLE\_STATUS signal = ON |
| Very Low Speed | Approximately 0 to 12 mph (0 to 19 kph) |
| WakeUp\_Cycle\_Time<=60 Minutes | TMOS wakeup cycle time <= 60 minutes |

Table 1‑4: Definitions used in this document

### Abbreviations

| **Abbr.** | **Stands for** | **Description** |
| --- | --- | --- |
| ATLA | Another Three Letter Acronym |  |
| OAT | Outside Air Temperature |  |
| RCCM | Remote Climate Control System |  |
| SIS | Strategy Implementation System |  |
| SOC | State of Charge |  |
| SYNC | Synchronize |  |
| TMOS | Thermal Management Optimization Strategy |  |

Table 1‑5: Abbreviations used in this document.

# Feature Implementation Overview

## Description

F003090 Thermal Management Operating System(TMOS)

•It is a cabin overheat protection feature.

•It balances the capacity of the system to maintain cooler battery and cabin temperatures.

•It optimizes vehicle range.

## Input Requirements/Documents

|  |  |  |  |
| --- | --- | --- | --- |
| **Reference**  (Reference as listed in ch. “References”) | **Section/Requirement** | **Description** | **Derived Requirement**  (optional – reference to requirement in ch. “Feature Implementation Requirements”) |
| **Feature/Function Requirements** | | | |
|  | <Example:  id + title of relevant Function Spec> | <Example: “Function requirements of Logical Function …”> | <Note: If you reference a requirement in this column, then that requirement should have a trace link in its [“Source”/”Source Req.” attribute](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) field pointing back to the input requirement (or to a requirement inside the input document) given in this table row> |
|  |  |  |  |
| **Ford Engineering Standards** | | | |
|  | <Example: some SDS (requirement)> |  |  |
|  |  |  |  |
| **Legal Regulations** | | | |
|  | Compliance with FMVSS101 | The Feature shall comply with FMVSS101. |  |
|  |  |  |  |
| **Industry Standards** | | | |
|  | ISO 26262 | The system should be developed according to Ford's implementation of Functional Safety. |  |
|  |  |  |  |
| **Other Sources** | | | |
|  |  |  |  |
|  | Vehicle Idle Mode | The feature equipped vehicle shall have a set idle condition |  |
|  | Example AR |  |  |
|  | Battery Pack Temperature | Battery pack temperature shall be thermally managed for optimal performance. |  |
|  | HMI Enable/Disable Functionality | HMI shall enable and disable the feature(Touch buttons and screen) |  |
|  | Cabin Temperature | Vehicle cabin thermal management will be enabled based on user selected cooling options |  |
|  | Battery SOC | Battery shall be maintained above a minimum level before the TMOS feature will be enabled |  |
|  | Cabin Cooling | The feature equipped vehicle shall have capability to cool the cabin |  |
|  |  |  |  |

Table 6: Input Requirements/Documents

## Lessons Learned

No lessons learned specified.

## Assumptions

No Assumptions specified.

# Feature Implementation Architecture

## Functional Architecture

### Description

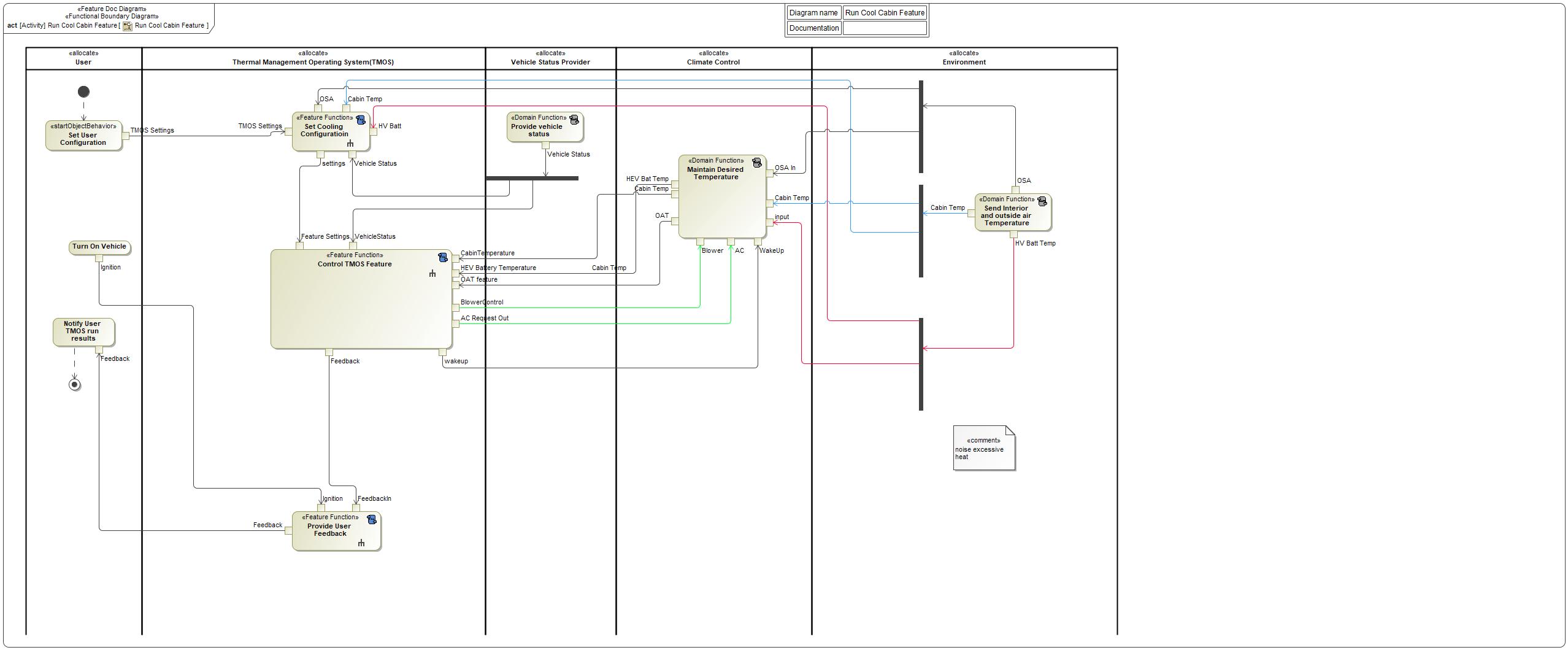


Figure 8: Run Cool Cabin Feature

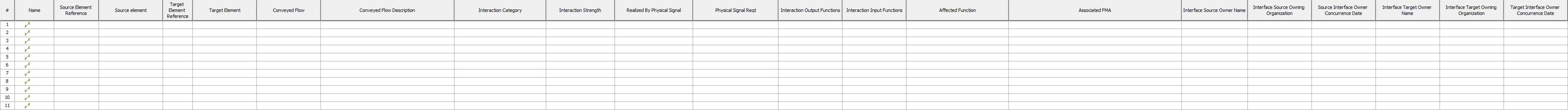
### Function List

The following functions from the [Global Feature & Function List](https://www.vsemweb.ford.com:443/tc/launchapp?-attach=true&-s=226TCSession&-o=ZmZNi0JHx3NrTDAAAAAAAAAAAAA) are referenced in this Feature Implementation Specification:

| **Function ID** | Function Name | Function Description |
| --- | --- | --- |
|  | *(activity)* Turn On Vehicle | *(activity)* Function provides ignition status for provide user feedback feature function |
|  | *(activity)* Provide User Feedback | *(activity)* Provide User Feedback Feature Function has inputs of Ignition Status and FeedbackInformation and outputs Display TMOS Run activity to HMI |
|  | *(activity)* Maintain Desired Temperature | *(activity)* Maintain Desired Temperature domain function notifies TMOS feature of the cabin temperature and ambient temperature status |
|  | *(activity)* Notify User TMOS run results | *(activity)* Notify User TMOS run results function provides the user through the HMI the results of TMOS run activity |
|  | *(activity)* Set Cooling Configuratioin | *(activity)* Set Cooling Configuration feature function has inputs TMOS Settings and Vehicle Status and outputs desired TMOS Settings |
|  | *(activity)* Control TMOS Feature | *(activity)* Control TMOS Feature function receives inputs of vehicle status, Feature Settings, OAT, and Cabin Temperature and outputs WakeUpSignal, Blower Signal, Compressor Signal, and FeedbackInformation |
|  | *(activity)* Provide vehicle status | *(activity)* Provide vehicle Status funtion provides TMOS feature with the Battery Status, Ignition Status, Transmission Status, Vehicle Speed, and WakeUpSignal |
|  | *(activity)* Send Interior and outside air Temperature | *(activity)* Send Cabin and Outside Air Temperature domain function provides TMOS with the most recent Cabin and OSA temperatures |

Table 16: List of Functions

### Signal List



|  |  |  |
| --- | --- | --- |
| **Signal Name** | **Description** | **Details** |

## Physical Architecture

### E/E Architecture

#### E/E Architecture Variants

*No E/E Architecture Variant found.*

|  |  |  |
| --- | --- | --- |
| E/E Architecture Variant Name | Variant Description | Variant Condition (optional) |
| e.g “FNV2” |  | Example:   * VOpt\_NetworkTopology = FNV2   AND   * DATGen = 2.0 |
| e.g. “CGEA Low Content” |  | Example:   * (VOpt\_NetworkTopology = CGEA13   OR  VOpt\_NetworkTopology = CGEA11)  AND   * VOpt\_ABS = None   AND   * VOpt\_PTModule = ECM |
|  |  |  |

##### E/E Architecture “Architecture Variant 1”: Vehicle

This E/E Architecture variant … <add some explanatory text here>

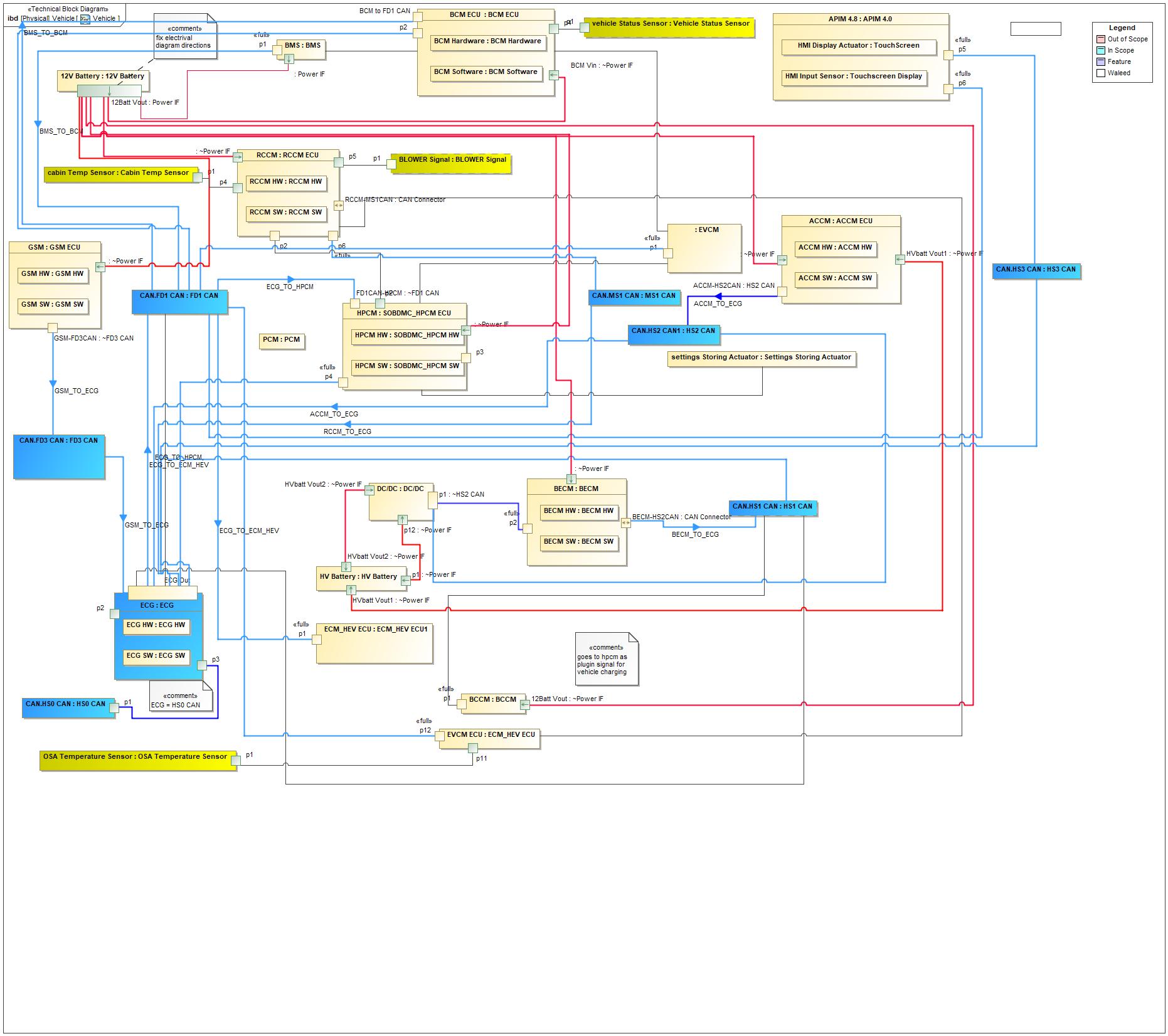


Figure 1: Vehicle

#### E/E Components

|  |  |
| --- | --- |
| Component Name | **Description** |
| BCM ECU |  |
| BECM | Battery Energy Control Module |
| DC/DC | DC to DC Converter |
| ECG (ECG ) | Enhanced Central Gateway |
| ECM\_HEV ECU (ECM\_HEV ECU1) |  |
| GSM (GSM ECU) | Gear Selector Module |
| HPCM (SOBDMC\_HPCM ECU) | Hybrid Powertrain Control Module |
| RCCM (RCCM ECU) | Remote Climate Control Module |

Table 3‑2: Electrical Components

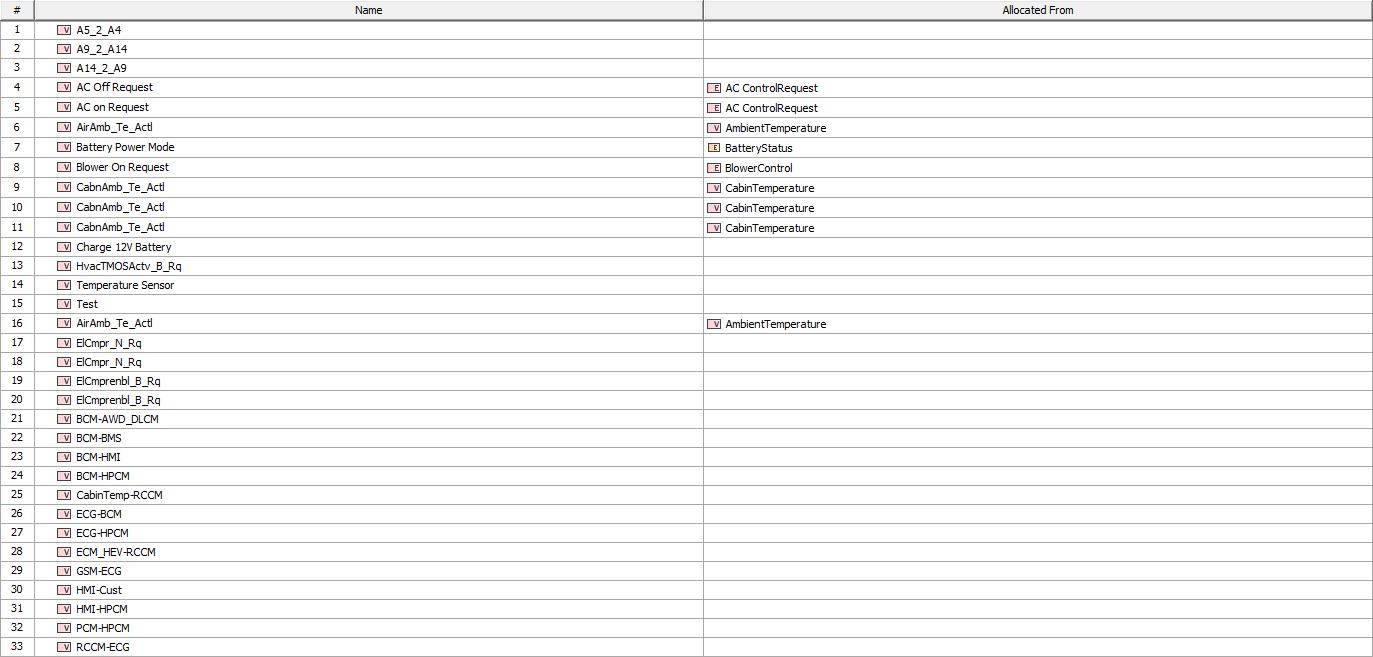
#### E/E Connections

*No E/E Connections found.*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Connection Name | **Connection Type** | **Protocol**  Only if ‘Connection Type’ is “Network”/”RF-Digital” | **Description** | **Allocated Messages**  Only if ‘Connection Type’ is “Network”/”RF-Digital” | **Connected Nodes** |
| <Give a Connection Name>  *#Hint:*   * *For ‘Connection Type’ “Network” check with Netcom for naming conventions for busses/networks* * *For other ‘Connection Types’  use PSF naming convention of the* [*EDAS signal database in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server)*. You may directly link* to the VSEM entry. Refer to the “Event Notification Signal” example below”. | Choose an item. | Choose an item. | <Provide a brief description> | <Give a list of relevant messages >  *#Hint:*  *The message name should be linked.*  *E.g.*   * *for CAN signals to the VSEM CMDB (refer e.g. to* [*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server) *or* [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)*).* * *for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g.* [*Central SW Service Catalog*](http://wiki.ford.com/display/CS/Service+Catalog)*)*   *If a message is not yet managed in VSEM or any other central repository, add a link to the section “Messages” in the Data Dictionary. In the subsections of that data dictionary chapter you may add a definition of your message.* | <Give a list of relevant nodes> |
| e..g. HS-CAN4 | Network | CAN (High Speed) | Infotainment High Speed CAN bus | … | … |
| e..g. [CELLULAR TCUB WIFI](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=WZe1wsPXx3NrTDAAAAAAAAAAAAA&servername=Production_Server%5e) | RF-Digital | WiFi (FTCP) |  | … | … |
| e.g. [CR167·CTRL MOD. - RCM # EVENT NOTIFICATION SIGNAL 1](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=LjXtx$M9x3NrTDAAAAAAAAAAAAA&servername=Production_Server) | PMW | n/a | Event Notification Signal | n/a |  |
|  |  |  |  |  |  |

Table 3‑3: E/E Connections

#### Signal List



|  |  |  |
| --- | --- | --- |
| **Signal Name** | **Description** | **Details** |
| **Charge 12V Battery** | Signal requesting 12 volt battery to be charged | Satisfies:  *No reqs. satisfied* |
| **ElCmprenbl\_B\_Rq** | Signal enabling electric compressor | Satisfies:  *No reqs. satisfied* |
| **ElCmprenbl\_B\_Rq** | Electric Compressor enable signal | Satisfies:  *No reqs. satisfied* |
| **Blower On Request** | Signal requesting blower on | Satisfies:  *No reqs. satisfied* |
| **CabnAmb\_Te\_Actl** | Cabin ambient temperature sensor | Satisfies:  *No reqs. satisfied* |
| **AC on Request** | Signal requesting HV battery to turn on AC compressor | Satisfies:  *No reqs. satisfied* |
| **BCM-AWD\_DLCM** | Signal from BCM to All Wheel Drive\_Driveline Control Module | Satisfies:  *No reqs. satisfied* |
| **ECM\_HEV-RCCM** | Signal from ECM\_HEV to RCCM | Satisfies:  *No reqs. satisfied* |
| **AC Off Request** | Signal requesting HV battery to turn off AC compressor | Satisfies:  *No reqs. satisfied* |
| **CabnAmb\_Te\_Actl** | Cabin ambient temperature sensor signal | Satisfies:  *No reqs. satisfied* |
| **Battery Power Mode** | Signal providing SOC | Satisfies:  *No reqs. satisfied* |
| **CabnAmb\_Te\_Actl** | Cabin air temperature signal | Satisfies:  *No reqs. satisfied* |
| **AirAmb\_Te\_Actl** | Signal to detect outside air temperature | Satisfies:  *No reqs. satisfied* |
| **CabinTemp-RCCM** | Signal sensing cabin temperature sent to RCCM | Satisfies:  *No reqs. satisfied* |
| **HMI-Cust** | Feedback signal from HMI to HMI Display Screen | Satisfies:  *No reqs. satisfied* |
| **ElCmpr\_N\_Rq** | Signal requesting electric compressor rpm | Satisfies:  *No reqs. satisfied* |
| **BCM-BMS** | Signal from Body Control Module to Battery Management Module | Satisfies:  *No reqs. satisfied* |
| **ElCmpr\_N\_Rq** | Electric Compressor RPM signal | Satisfies:  *No reqs. satisfied* |
| **A14\_2\_A9** | Signal from ACCM to HPCM | Satisfies:  *No reqs. satisfied* |
| **Temperature Sensor** |  | Satisfies:  *No reqs. satisfied* |
| **HvacTMOSActv\_B\_Rq** |  | Satisfies:  *No reqs. satisfied* |
| **AirAmb\_Te\_Actl** | OSA temperature signal | Satisfies:  *No reqs. satisfied* |
| **ECG-BCM** | Signal from ECG to BCM | Satisfies:  *No reqs. satisfied* |
| **PCM-HPCM** | Signal from PCM to HPCM | Satisfies:  *No reqs. satisfied* |
| **A5\_2\_A4** | Signal from BMS to BCM | Satisfies:  *No reqs. satisfied* |
| **A9\_2\_A14** | Signal from HPCM to ACCM | Satisfies:  *No reqs. satisfied* |
| **Test** |  | Satisfies:  *No reqs. satisfied* |
| **RCCM-ECG** | Signal from RCCM to ECG | Satisfies:  *No reqs. satisfied* |
| **BCM-HMI** | Signal from BCM to HMI | Satisfies:  *No reqs. satisfied* |
| **HMI-HPCM** | Signal from HMI to HPCM | Satisfies:  *No reqs. satisfied* |
| **BCM-HPCM** | Signal from BCM to HPCM | Satisfies:  *No reqs. satisfied* |
| **ECG-HPCM** | Signal from ECG to HPCM | Satisfies:  *No reqs. satisfied* |
| **GSM-ECG** | Signal from GSM to ECG | Satisfies:  *No reqs. satisfied* |

### Software Component Architecture

#### Description

This Software Component Architecture … <add some explanatory text here>

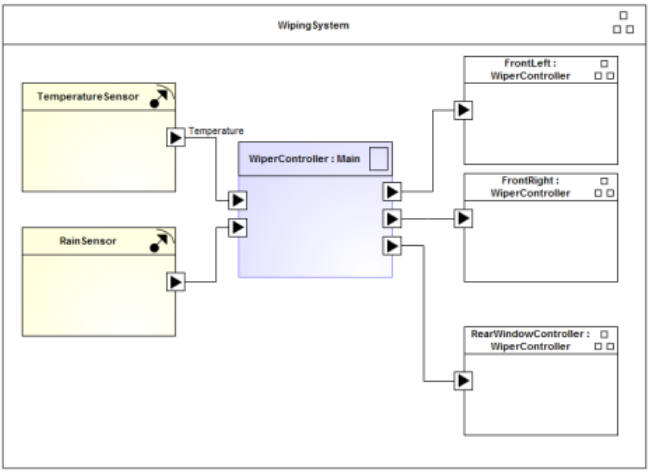


Figure 3‑4: AUTOSAR compliant SW Component Architecture

## Function Deployment

### Deployment Variants

|  |  |  |
| --- | --- | --- |
| **Deployment Variant Name** | Variant Description | Variant Condition (optional) |
| “Variant 1” (e.g. for CGEA1-3) | Some explanatory text characterizing the variant |  |
| “Variant 2” (e.g. for FNV) |  |  |
|  |  |  |
|  |  |  |

#### Deployment “Variant 1”

This deployment variant … <add some explanatory text here>

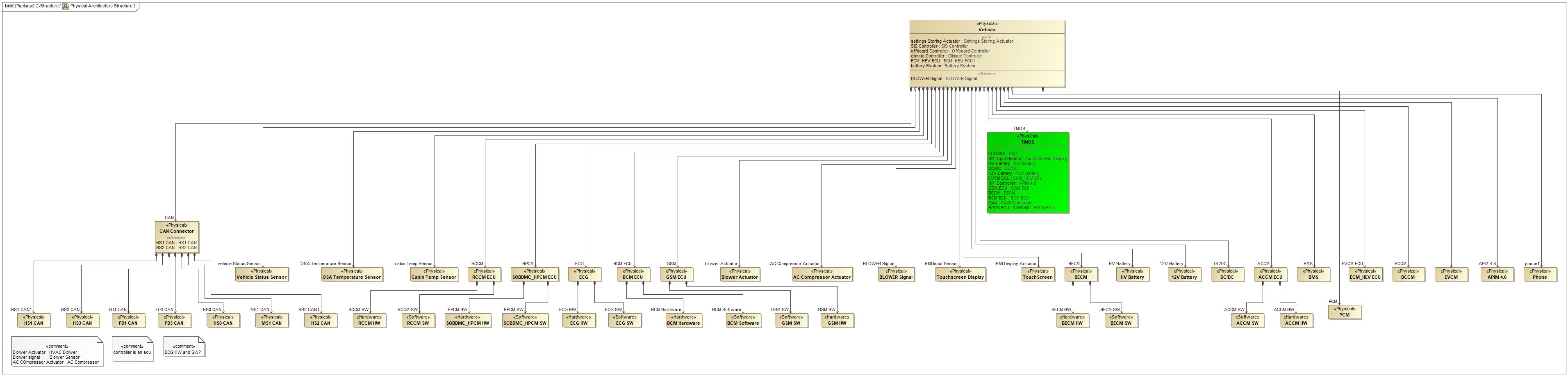


Figure 8: Physical Architecture Structure

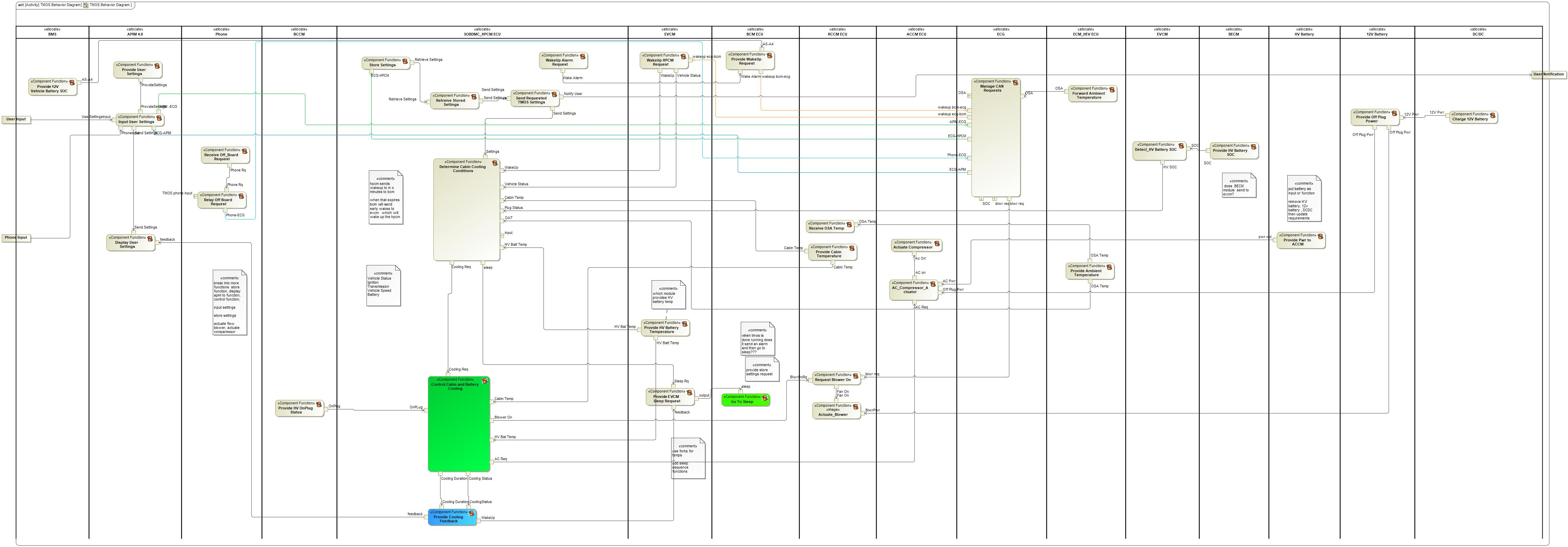


Figure 8: TMOS Behavior Diagram

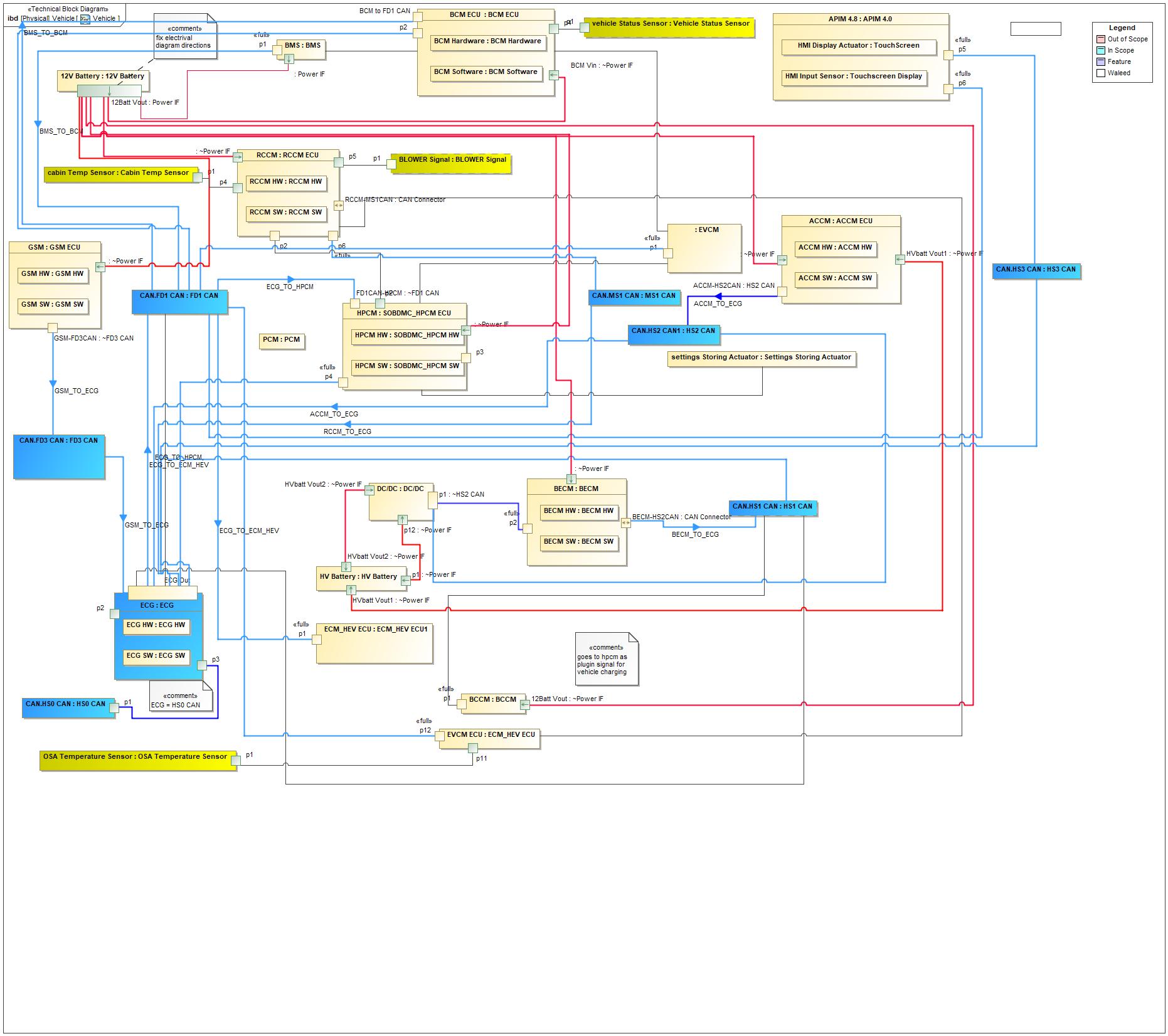


Figure 8: Vehicle

### Function Allocation

| Component | Technology Function Name | Logical Function Name |
| --- | --- | --- |
|
| Component 1 | Impl. Function (or MBSE Technology Function) 1 | (Atomic) Logical Function 1 |
| Impl. Function (or MBSE Technology Function) 2a | (Atomic) Logical Function 2 |
| Impl. Function (or MBSE Technology Function) 2b |
| Impl. Function (or MBSE Technology Function) 3 | n/a  *#Hint: Some Technology Functions might not be derived from logical functions. This can occur in an MBSE context if the technology (=Technology) function is decomposed from another technology function* |
| Component 2 | Impl. Function (or MBSE Technology Function) 4 | (Atomic) Logical Function 3 |
| Impl. Function (or MBSE Technology Function) 5 | (Atomic) Logical Function 4 |
| Impl. Function (or MBSE Technology Function) 6 | (Atomic) Logical Function 5 |
| Vehicle |  |
| Vehicle Status Sensor | Check Cabin and Battery Temperatures | * Check Cabin Status |
|  |
| BCCM | Provide HV OnPlug Status | * Check Cabin Status |
|  |
| EVCM change to PCM | WakeUp HPCM Request | * Check Cabin Status |
| Provide HV Battery Temperature | * Check Cabin Status |
| Detect\_HV Battery SOC | * Check Cabin Status |
| Provide EVCM Sleep Request | * Receive\_Run\_Display\_Request |
|  |
| DC/DC | Charge 12V Battery | * Check Cabin Status |
|  |
| Climate System |  |
| HS3 CAN |  |
| ACCM ECU | AC\_Compressor\_Actuator | * Control Cabin Cooling |
| Actuate Compressor | * Control Cabin Cooling |
|  |
| APIM 4.0 | Display User Settings | * Provide Feedback * Send\_Display\_Message |
| Provide User Settings | * Detect User Input * Check Cooling Conditions |
| Input User Settings | * Detect User Input |
|  |
| BMS | Provide 12V Vehicle Battery SOC | * Check Cooling Conditions |
| Charge 12V Battery | * Check Cabin Status |
|  |
| SOBDMC\_HPCM ECU | Store Settings | * Store Configuration Settings |
| Retreive Stored Settings | * Retrieve\_TMOS\_Run\_Results |
| Determine Cabin Cooling Conditions | * Check Cooling Conditions |
| Control Cabin Cooling Request | * Check Cooling Conditions |
| Provide Cooling Feedback | * Receive\_Run\_Display\_Request |
| WakeUp Alarm Request | * Check Cabin Status |
| Send Requested TMOS Settings | * Detect User Input |
| Control Cabin and Battery Cooling | * Control Cabin Cooling |
|  |
| BECM | Provide HV Battery SOC | *No logical function allocated* |
|  |
| Climate Controller | Check Cabin and Battery Temperatures | * Check Cabin Status |
| Control Cabin and Battery Cooling | * Control Cabin Cooling |
|  |
| GSM ECU | Control Cabin and Battery Cooling | * Control Cabin Cooling |
|  |
| FD3 CAN |  |
| BCM ECU check for duplicates |  |
| Settings Storing Actuator | Store Settings | * Store Configuration Settings |
|  |
| 12V Battery | Provide Off Plug Power | * Check Cabin Status |
|  |
| FD1 CAN |  |
| AC Compressor Actuator | AC\_Compressor\_Actuator | * Control Cabin Cooling |
|  |
| Touchscreen Display | Display User Settings | * Provide Feedback * Send\_Display\_Message |
| Receive Off\_Board Request | * Store Configuration Settings |
|  |
| HS2 CAN |  |
| HS0 CAN |  |
| HV Battery | Provide Pwr to ACCM | * Control Cabin Cooling |
|  |
| Phone | Receive Off\_Board Request | * Store Configuration Settings |
| Relay Off Board Request | * Detect User Input |
|  |
| RCCM ECU | Request Blower On | * Control Cabin Cooling |
| Actuate\_Blower | * Control Cabin Cooling |
| Provide Cabin Temperature | * Check Cabin Status |
| Receive OSA Temp | * Check Cooling Conditions |
|  |
| Blower Actuator | Actuate\_Blower | * Control Cabin Cooling |
|  |
| BLOWER Signal | Actuate\_Blower | * Control Cabin Cooling |
|  |
| CAN Connector |  |
| ECM\_HEV ECU | Forward Ambient Temperature | * Check Cabin Status |
| Provide Ambient Temperature | * Check Cabin Status |
|  |
| MS1 CAN |  |
| SIS Controller | Input User Settings | * Detect User Input |
|  |
| Battery System |  |
| OSA Temperature Sensor | Provide Ambient Temperature | * Check Cabin Status |
|  |
| BCM ECU | Settings\_Storing\_Actuator | * Store Cooling Cycle Data * Detect User Input |
| Provide WakeUp Request | * Check Cooling Conditions |
| Go To Sleep | * Control Cabin Cooling |
| WakeUp HPCM | * Check Cabin Status |
| WakeUp HPCM Request | * Check Cabin Status |
|  |
| Cabin Temp Sensor | Check Cabin and Battery Temperatures | * Check Cabin Status |
|  |
| TMOS | Provide User Settings | * Detect User Input * Check Cooling Conditions |
| Control Cabin and Battery Cooling | * Control Cabin Cooling |
| Control Cabin Cooling Request | * Check Cooling Conditions |
| Store Settings | * Store Configuration Settings |
| Retreive Stored Settings | * Retrieve\_TMOS\_Run\_Results |
| Send Requested TMOS Settings | * Detect User Input |
| WakeUp Alarm Request | * Check Cabin Status |
|  |
| HS1 CAN |  |
| ECG | Manage CAN Requests | *No logical function allocated* |
|  |
| Offboard Controller | Receive Off\_Board Request | * Store Configuration Settings |
|  |
| HMI |  |
| PCM | WakeUp HPCM Request | * Check Cabin Status |
|  |
| TouchScreen | Display User Settings | * Provide Feedback * Send\_Display\_Message |
| Receive Off\_Board Request | * Store Configuration Settings |
|  |

Table 3‑5: Function Allocation Table (Basic)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Component | | Technology Function Name | TSR | |
| Name | ASIL |  | ID | ASIL |
| Component 1 |  | Impl. Function 1 | Req 1-1: “Some req name” |  |
|  |  |
| … |  |
|  |  |
| Req 1-n: “Another req name” |  |
| Impl. Function 2a | Req 2a-1 |  |
| … |  |
| Req 2a-n |  |
| Impl. Function 2b | Req 2b-1 |  |
| … |  |
| Req 2b-n |  |
| Impl. Function 6 | Req 6-1 |  |
| … |  |
| Req 6-n |  |
| n/a  *#Hint: TSRs may be directly allocated to components. This is necessary for requirements such as ASIL hardware metric values and safety measures that don’t relate to functions (ex. thermal shielding or something like a fan cover to prevent access to moving parts).* | Req x |  |
| Component 2 |  | Impl. Function 3 | Req 3-1 |  |
| … |  |
| Req 3-n |  |
| Impl. Function 4 | Req 4-1 |  |
| … |  |
|  |  |
| Req 4-n |  |
| Impl. Function 5 | Req 5-1 |  |
| … |  |
| Req 5-n |  |
| Vehicle |  |  |  |
| Vehicle Status Sensor |  | Check Cabin and Battery Temperatures | * Check Cooling Conditions |  |
|  |  |  |
| BCCM |  | Provide HV OnPlug Status | * Vehicle Status |  |
|  |  |  |
| EVCM |  | WakeUp HPCM Request | * WakeUp Time * WakeUp Timer |  |
|  | Provide HV Battery Temperature | * Vehicle Status |  |
|  | Detect\_HV Battery SOC | * Battery Charge By DCDC * Battery SOC |  |
|  | Provide EVCM Sleep Request | *No reqs. satisfied by tech. fx.* |  |
|  |  |  |
| DC/DC |  | Charge 12V Battery | * Vehicle Status |  |
|  |  |  |
| Climate System |  |  |  |
| HS3 CAN |  |  |  |
| ACCM ECU |  | AC\_Compressor\_Actuator | * ACCM Power * Compressor Request |  |
|  | Actuate Compressor | * Compressor Duration * Compressor Request |  |
|  |  |  |
| APIM 4.0 |  | Display User Settings | * Detect TMOS Settings from APIM * Cooling Status Feedback |  |
|  | Provide User Settings | * Detect TMOS Settings from APIM |  |
|  | Input User Settings | * APIM User Input * APIM Phone Input |  |
|  |  |  |
| BMS |  | Provide 12V Vehicle Battery SOC | *No reqs. satisfied by tech. fx.* |  |
|  | Charge 12V Battery | * Vehicle Status |  |
|  |  |  |
| SOBDMC\_HPCM ECU |  | Store Settings | * HPCM Settings Storage and Sleep Conditions * Store Settings |  |
|  | Retreive Stored Settings | * HPCM Settings Retrieval |  |
|  | Determine Cabin Cooling Conditions | * Check Cooling Conditions |  |
|  | Control Cabin Cooling Request | * TMOS Run Condition 1 * TMOS Run Condition 2 * TMOS Run Condition 3 * TMOS Run Condition 4 * TMOS Run Feedback |  |
|  | Provide Cooling Feedback | * APIM feedback to User * Blower Run Time * Cooling Status Feedback |  |
|  | WakeUp Alarm Request | * WakeUp Step 1 |  |
|  | Send Requested TMOS Settings | * TMOS Run Condition 1 * TMOS Run Condition 2 * TMOS Run Condition 3 * TMOS Run Condition 4 |  |
|  | Control Cabin and Battery Cooling | * TMOS Run Condition 1 * TMOS Run Condition 2 * TMOS Run Condition 3 * TMOS Run Condition 4 * TMOS Run Feedback |  |
|  |  |  |
| BECM |  | Provide HV Battery SOC | * Vehicle Status |  |
|  |  |  |
| Climate Controller |  | Check Cabin and Battery Temperatures | * Check Cooling Conditions |  |
|  | Control Cabin and Battery Cooling | * TMOS Run Condition 1 * TMOS Run Condition 2 * TMOS Run Condition 3 * TMOS Run Condition 4 * TMOS Run Feedback |  |
|  |  |  |
| GSM ECU |  | Control Cabin and Battery Cooling | * TMOS Run Condition 1 * TMOS Run Condition 2 * TMOS Run Condition 3 * TMOS Run Condition 4 * TMOS Run Feedback |  |
|  |  |  |
| FD3 CAN |  |  |  |
| BCM ECU |  |  |  |
| Settings Storing Actuator |  | Store Settings | * HPCM Settings Storage and Sleep Conditions * Store Settings |  |
|  |  |  |
| 12V Battery |  | Provide Off Plug Power | * Vehicle Status |  |
|  |  |  |
| FD1 CAN |  |  |  |
| AC Compressor Actuator |  | AC\_Compressor\_Actuator | * ACCM Power * Compressor Request |  |
|  |  |  |
| Touchscreen Display |  | Display User Settings | * Detect TMOS Settings from APIM * Cooling Status Feedback |  |
|  | Receive Off\_Board Request | *No reqs. satisfied by tech. fx.* |  |
|  |  |  |
| HS2 CAN |  |  |  |
| HS0 CAN |  |  |  |
| HV Battery |  | Provide Pwr to ACCM | *No reqs. satisfied by tech. fx.* |  |
|  |  |  |
| Phone |  | Receive Off\_Board Request | *No reqs. satisfied by tech. fx.* |  |
|  | Relay Off Board Request | *No reqs. satisfied by tech. fx.* |  |
|  |  |  |
| RCCM ECU |  | Request Blower On | * Blower Request On * Blower Run Time * Compressor Duration |  |
|  | Actuate\_Blower | * Blower Request Off * Blower Request On * Compressor Duration * HPCM before Sleep Condition |  |
|  | Provide Cabin Temperature | * Cabin Temp Interval * Cabin Temperature Provider * Vehicle Status |  |
|  | Receive OSA Temp | * OSA Temperature ECM\_HEV to HPCM * OSA Temperture Provided to RCCM |  |
|  |  |  |
| Blower Actuator |  | Actuate\_Blower | * Blower Request Off * Blower Request On * Compressor Duration * HPCM before Sleep Condition |  |
|  |  |  |
| BLOWER Signal |  | Actuate\_Blower | * Blower Request Off * Blower Request On * Compressor Duration * HPCM before Sleep Condition |  |
|  |  |  |
| CAN Connector |  |  |  |
| ECM\_HEV ECU |  | Forward Ambient Temperature | *No reqs. satisfied by tech. fx.* |  |
|  | Provide Ambient Temperature | * OSA Detection * Vehicle Status |  |
|  |  |  |
| MS1 CAN |  |  |  |
| SIS Controller |  | Input User Settings | * APIM User Input * APIM Phone Input |  |
|  |  |  |
| Battery System |  |  |  |
| OSA Temperature Sensor |  | Provide Ambient Temperature | * OSA Detection * Vehicle Status |  |
|  |  |  |
| BCM ECU |  | Settings\_Storing\_Actuator | *No reqs. satisfied by tech. fx.* |  |
|  | Provide WakeUp Request | *No reqs. satisfied by tech. fx.* |  |
|  | Go To Sleep | * ECU Sleep Request |  |
|  | WakeUp HPCM | * WakeUp Step 2 |  |
|  | WakeUp HPCM Request | * WakeUp Time * WakeUp Timer |  |
|  |  |  |
| Cabin Temp Sensor |  | Check Cabin and Battery Temperatures | * Check Cooling Conditions |  |
|  |  |  |
| TMOS |  | Provide User Settings | * Detect TMOS Settings from APIM |  |
|  | Control Cabin and Battery Cooling | * TMOS Run Condition 1 * TMOS Run Condition 2 * TMOS Run Condition 3 * TMOS Run Condition 4 * TMOS Run Feedback |  |
|  | Control Cabin Cooling Request | * TMOS Run Condition 1 * TMOS Run Condition 2 * TMOS Run Condition 3 * TMOS Run Condition 4 * TMOS Run Feedback |  |
|  | Store Settings | * HPCM Settings Storage and Sleep Conditions * Store Settings |  |
|  | Retreive Stored Settings | * HPCM Settings Retrieval |  |
|  | Send Requested TMOS Settings | * TMOS Run Condition 1 * TMOS Run Condition 2 * TMOS Run Condition 3 * TMOS Run Condition 4 |  |
|  | WakeUp Alarm Request | * WakeUp Step 1 |  |
|  |  |  |
| HS1 CAN |  |  |  |
| ECG |  | Manage CAN Requests | *No reqs. satisfied by tech. fx.* |  |
|  |  |  |
| Offboard Controller |  | Receive Off\_Board Request | *No reqs. satisfied by tech. fx.* |  |
|  |  |  |
| HMI |  |  |  |
| PCM |  | WakeUp HPCM Request | * WakeUp Time * WakeUp Timer |  |
|  |  |  |
| TouchScreen |  | Display User Settings | * Detect TMOS Settings from APIM * Cooling Status Feedback |  |
|  | Receive Off\_Board Request | *No reqs. satisfied by tech. fx.* |  |
|  |  |  |

Table 3‑6: Function Allocation Table (Functional Safety Extension)

# Feature Implementation Modeling

## Component Interaction Diagrams

### Scenario: “System Startup / Shutdown”

### Scenario: “Normal Operation”

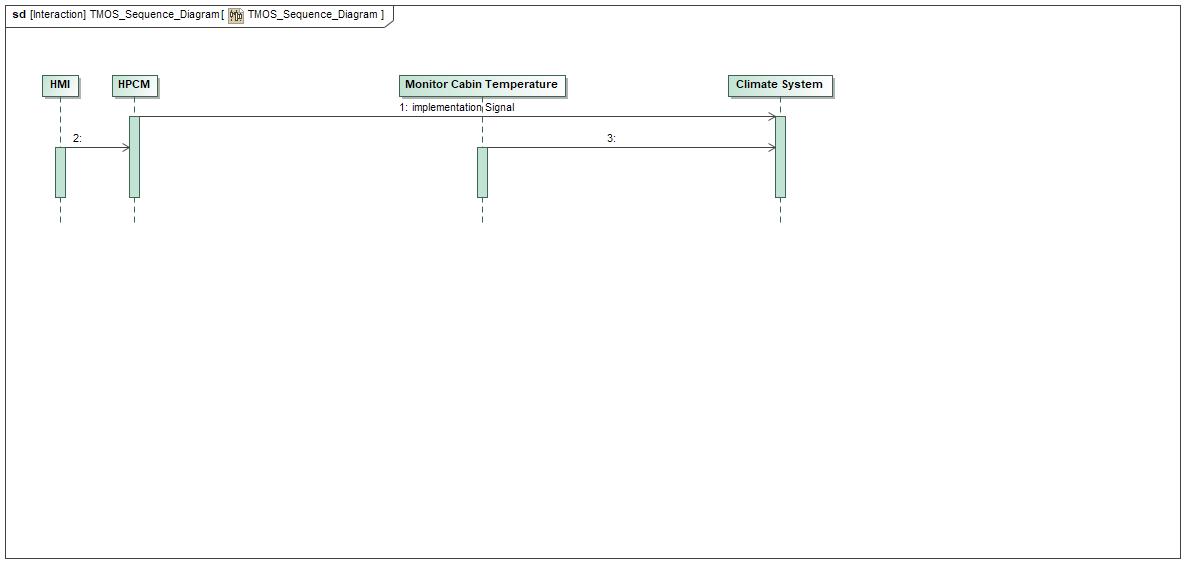


Figure 8: TMOS\_Sequence\_Diagram

See Section 4.2 for State Machine Diagram illustrating operation.

## Component Interface Behavior Diagrams

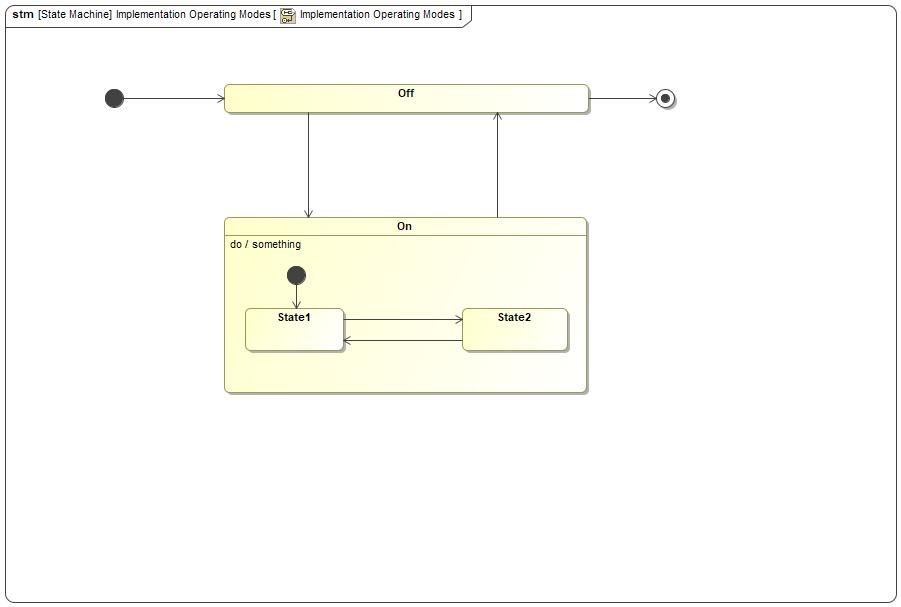


Figure 2: Implementation Operating Modes

|  |  |  |
| --- | --- | --- |
| **State** | **Description** | **Requirements Reference** (optional) |
| Off |  |  |
| On | Do behavior: something |  |
| State1 |  |  |
| State2 |  |  |

Table 10: Operation Modes and States on Implementation Operating Modes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Transition ID** | **Source** | **Destination** | **Description** | **Requirements Reference**  (optional) |
| T1 | On | Off |  |  |
| T2 | Off | On |  |  |
| T3 |  |  |  |  |
| T4 | Off | a |  |  |
| T5 | State1 | State2 |  |  |
| T6 |  |  |  |  |
| T7 | State2 | State1 |  |  |

Table 11: Transitions between Operation Modes and States on Implementation Operating Modes

# Feature Implementation Requirements

## Functional Safety

### ASIL Decomposition of Technical Safety Requirements

<Place the input TSR here above the decomposition table>

| **Input TSR** | <Provide the ID of the TSR which shall be decomposed. That TSR is given above> | |
| --- | --- | --- |
| **Decomposition Rationale** | <Give a reason why the decomposition was performed> | |
| **Method for Decomposition** | Choose a Method | |
| **TSR 1 after Decomposition** | **TSR ID** | <Provide the ID of the decomposed TSR> |
| **TSR Title** | <Provide the title of the decomposed TSR> |
| **ASIL** |  |
| **Rationale** | <Provide a reason and thought behind that particular requirement. Should include how the requirement is able to independently fulfill the needs of the parent requirement> |
| **Satisfied by** | <Provide an Technology Function, physical signal, or physical component satisfying the requirement. This element shall be independent of the element satisfied by the other half of the ASIL decomposition.> |
| **TSR 2 after Decomposition** | **TSR ID** | <Provide the ID of the decomposed TSR> |
| **TSR Title** | <Provide the title of the decomposed TSR> |
| **ASIL** |  |
| **Rationale** | <Provide a reason and thought behind that particular requirement. Should include how the requirement is able to independently fulfill the needs of the parent requirement> |
| **Satisfied by** | <Provide an Technology Function, physical signal, or physical component satisfying the requirement. This element shall be independent of the element satisfied by the other half of the ASIL decomposition.> |
| **TSR for Independence**  *Note: should consider commonly used input, output and processing*  *Note: additional row should be added if additional* *requirements for Independence are necessary* | **TSR ID** |  |
| **TSR Title** |  |
| **ASIL** |  |
| **Rationale** |  |

Table 5‑1: ASIL Decomposition Table

## Requirements on Components

### FD3 CAN

FD3 CAN

### BMS

BMS

#### Technology Function -837153502.jpg **Provide 12V Vehicle Battery SOC**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Power Status | Power Status | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Provide 12V Vehicle Battery SOC

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

#### Technology Function -837153502.jpg **Charge 12V Battery**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  12V Pwr | 12V Pwr | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Charge 12V Battery

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Vehicle Status

The BMS module shall provide the BCM module with the vehicle status signals "Battery Status", "Ignition Status", "Transmission Status", "Vehicle Speed", and "WakeUp"

Satisfied by:

* Functions:
  + Charge 12V Battery
  + Provide Ambient Temperature
  + Provide Battery SOC
  + Provide Cabin Temperature
  + Provide HV Battery SOC
  + Provide HV Battery Temperature
  + Provide HV OnPlug Status
  + Provide Off Plug Power

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 379594838.jpg Provide Vehicle Status * 379594838.jpg Key On Summary Conditions * 379594838.jpg Check Vehicle Status Subfunction | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### SIS Controller

SIS Controller

#### Technology Function -837153502.jpg **Input User Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  UserSettingsInput | UserSettingsInput | | |  |  |  |
| Review in model  ECG-APIM | ECG-APIM | | |  |  |  |
| Review in model  PhoneInput | PhoneInput | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Input User Settings

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Send Settings | Send Settings | | |  |  |  |
| Review in model  User Input | User Input | | |  |  |  |
| Review in model  APIM -ECG | APIM -ECG | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Input User Settings

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

APIM Phone Input

When APIM module receives the signals "FAN\_ON", FAN\_OFF", "FAN\_AND\_AC\_ON", or "NONE" from the hand held device, It shall forward them to the HPCM

Satisfied by:

* Functions:
  + Input User Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Phone Placeholder 1 * -746142700.jpg Display Settings Control * -746142700.jpg Control TMOS functionality * -746142700.jpg Phone Placeholder 2 * -746142700.jpg Detect User Input * -746142700.jpg Phone Placeholder 3 * -746142700.jpg Feature Settings Remote Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | Ready for Review |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

APIM User Input

When APIM module receives the signals "FAN\_ON", FAN\_OFF", "FAN\_AND\_AC\_ON", or "NONE", from touch screen selections, It shall forward them to the HPCM

Satisfied by:

* Functions:
  + Input User Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Display Settings Control * -746142700.jpg Control TMOS functionality * -746142700.jpg Detect User Input | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | Ready for Review |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### Battery System

Battery System

### DC/DC

DC/DC

#### Technology Function -837153502.jpg **Charge 12V Battery**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  12V Pwr | 12V Pwr | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Charge 12V Battery

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Vehicle Status

The BMS module shall provide the BCM module with the vehicle status signals "Battery Status", "Ignition Status", "Transmission Status", "Vehicle Speed", and "WakeUp"

Satisfied by:

* Functions:
  + Charge 12V Battery
  + Provide Ambient Temperature
  + Provide Battery SOC
  + Provide Cabin Temperature
  + Provide HV Battery SOC
  + Provide HV Battery Temperature
  + Provide HV OnPlug Status
  + Provide Off Plug Power

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 379594838.jpg Provide Vehicle Status * 379594838.jpg Key On Summary Conditions * 379594838.jpg Check Vehicle Status Subfunction | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### AC Compressor Actuator

AC Compressor Actuator

#### Technology Function -837153502.jpg **AC\_Compressor\_Actuator**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  AC Req | AC Req | | |  |  |  |
| Review in model  Off Plug Pwr | Off Plug Pwr | | |  |  |  |
| Review in model  AC Pwr | AC Pwr | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function AC\_Compressor\_Actuator

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  AC on | AC on | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function AC\_Compressor\_Actuator

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

ACCM Power

The HEV Battery shall supply the ACCM module with power to run the compressor when vehicle is in PlugIn mode

Satisfied by:

* Functions:
  + AC\_Compressor\_Actuator

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -749302699.jpg Activate Compressor On | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | Ready for Review |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Compressor Request

When HPCM module receives the TMOS settings "FAN\_AND\_AC\_ON", it shall provide a signal "compressor on" to the ACCM module to request that the compressor be activated

Satisfied by:

* Functions:
  + Actuate Compressor
  + AC\_Compressor\_Actuator

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** | Observation of compressor on | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -749302699.jpg Compressor Function * -749302699.jpg Achieved Cabin\_Normal Temperature * -749302699.jpg Request Fan+AC Subfunction * -749302699.jpg Cool Request Detection * -749302699.jpg Request Cooling With AC * -749302699.jpg Fan On and AC Request * -749302699.jpg AC Activation Wake Up Conditon | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### BCM ECU

BCM ECU

### Climate System

Climate System

### Settings Storing Actuator

Settings Storing Actuator

#### Technology Function -837153502.jpg **Store Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  ECG-APIM | ECG-APIM | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Store Settings

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Retrieve Settings | Retrieve Settings | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Store Settings

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Store Settings

The HPCM module shall provide a means to store TMOS user settings

Satisfied by:

* Functions:
  + Store Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** | Feedback message sent to HMI showing TMOS run summary | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1252563699.jpg HMI Controller Requirements * -1252563699.jpg Cycle Data Storage * -1252563699.jpg Store Configuration Settings * -1252563699.jpg Settings Storage and Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

HPCM Settings Storage and Sleep Conditions

When HPCM module has stored TMOS options "FAN\_ON", "FAN\_OFF"," FAN\_AND\_AC\_ON", or "NONE" from APIM, Modules HPCM, and BCM shall go to sleep

Satisfied by:

* Functions:
  + Store Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1252563699.jpg Go To Sleep Condition * -1252563699.jpg Go2Sleep | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### HMI

HMI

### OSA Temperature Sensor

OSA Temperature Sensor

#### Technology Function -837153502.jpg **Provide Ambient Temperature**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  OSA Temp | OSA Temp | | |  |  |  |
| Review in model  OSA Temp | OSA Temp | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Provide Ambient Temperature

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Vehicle Status

The BMS module shall provide the BCM module with the vehicle status signals "Battery Status", "Ignition Status", "Transmission Status", "Vehicle Speed", and "WakeUp"

Satisfied by:

* Functions:
  + Charge 12V Battery
  + Provide Ambient Temperature
  + Provide Battery SOC
  + Provide Cabin Temperature
  + Provide HV Battery SOC
  + Provide HV Battery Temperature
  + Provide HV OnPlug Status
  + Provide Off Plug Power

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 379594838.jpg Provide Vehicle Status * 379594838.jpg Key On Summary Conditions * 379594838.jpg Check Vehicle Status Subfunction | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

OSA Detection

The ECM\_HEV module shall receive the signal "AirAmb\_Te\_Actl" from the ambient temperature sensor

Satisfied by:

* Functions:
  + Provide Ambient Temperature

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -873149929.jpg Provide OAT Temperature | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### Climate Controller

Climate Controller

#### Technology Function -837153502.jpg **Check Cabin and Battery Temperatures**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  input | input | | |  |  |  |
| Review in model  input1 | input1 | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Check Cabin and Battery Temperatures

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Check Cooling Conditions

When the HPCM module is awakened, it shall check signals "Cabn\_Amb\_Te\_Actl", "AirAmb\_Te\_Actl", and "HV\_Amb\_Te\_Actl" and if cooling is needed retrieve signals "FANON", "FANONAC", "NONE" or "FANOFF"

Satisfied by:

* Functions:
  + Check Cabin and Battery Temperatures
  + Determine Cabin Cooling Conditions

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 283232927.jpg check cabin cooling conditions * 283232927.jpg Blower and AC Operation Conditions * 283232927.jpg OAT Wake Up Conditions * 283232927.jpg Verify Cabin Temperature * -746142700.jpg Control TMOS functionality * 283232927.jpg Fan and AC Cooling Request * 283232927.jpg Temperature Sensor Read Conditions * -749302699.jpg AC Activation Wake Up Conditon | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Control Cabin and Battery Cooling**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Cabin Temp | Cabin Temp | | |  |  |  |
| Review in model  Cooling Re | Cooling Re | | |  |  |  |
| Review in model  sleep | sleep | | |  |  |  |
| Review in model  OnPLug | OnPLug | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Control Cabin and Battery Cooling

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  AC Req | AC Req | | |  |  |  |
| Review in model  Blower On | Blower On | | |  |  |  |
| Review in model  Cooling Duration | Cooling Duration | | |  |  |  |
| Review in model  Cooling Status | Cooling Status | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Control Cabin and Battery Cooling

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

TMOS Run Condition 2

When HPCM module receives the signal "CabnAmb\_Te\_Actl"<45-50C and "HVBat\_Te\_Actl">38-40C it shall send the signal "GoToSeep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Feedback

When the HPCM module receives the signals "Cooling Status" and "Cooling Duration" it shall forward them to the APIM module display

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Track Usage Time

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1733049635.jpg TMOS Run Display Message Request * -1252563699.jpg HMI Controller Requirements * 1733049635.jpg Operation Run Time | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 1

When HPCM receives the signals "CabnAmb\_Te\_Actl" > 45-50C and "HVBat\_Te\_Actl">38-40C, and vehicle is in park, it shall activate TMOS feature

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 4

When HPCM module receives the signal "CabnAmb\_Te\_Actl<45-50C and "HVBat\_Te\_Actl<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 3

When HPCM module receives the signal "CabnAmb\_Te\_Actl>45-50C and "HVBat\_Te\_Actl"<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### Offboard Controller

Offboard Controller

#### Technology Function -837153502.jpg **Receive Off\_Board Request**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Phone Rq | Phone Rq | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Receive Off\_Board Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

### Vehicle

Vehicle

### HS0 CAN

HS0 CAN

### BLOWER Signal

BLOWER Signal

#### Technology Function -837153502.jpg **Actuate\_Blower**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Fan On | Fan On | | |  |  |  |
| Review in model  BlwrPwr | BlwrPwr | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Actuate\_Blower

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

HPCM before Sleep Condition

When the HPCM module reeives the signal "AirAmb\_Te\_Actl" from module ECM\_HEV, the ECM\_HEV will receive the signal "go to sleep"

Satisfied by:

* Functions:
  + Actuate\_Blower

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1252563699.jpg Go To Sleep Condition * 283232927.jpg check cabin cooling conditions * -1252563699.jpg Go2Sleep | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Compressor Duration

When HPCM receives the signal "Cabn\_Amb\_Te\_Actl" >50C after 7 to 8 minutes with TMOS setting signal "FAN\_AND\_AC\_ON" it shall provide the ACCM with the signal "Compressor Off" the the RCCM with the signal "Blower Off"

Satisfied by:

* Functions:
  + Actuate Compressor
  + Actuate\_Blower
  + Request Blower On
  + Request Fan

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -749302699.jpg Compressor Function * -1652557700.jpg Activate Fan | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Blower Request Off

The RCCM module shall provide signal "BlwrOff" to the Blower Motor to deactivate the fan

Satisfied by:

* Functions:
  + Actuate\_Blower

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** | * -1652557700.jpg Request Fan Off Subfunction * -1652557700.jpg Blower Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Blower Request On

When the signal "FAN\_ON" or FAN\_AND\_AC\_ON is requested from HPCM, The RCCM module shall provide signal "BlwrOn" to the Blower Motor to activate the fan

Satisfied by:

* Functions:
  + Actuate\_Blower
  + Request Blower On

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** | Observation of blower motor running | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1652557700.jpg Request Cooling With Fan On * -1652557700.jpg Fan On Cooling Request * -749302699.jpg Request Fan+AC Subfunction * -1652557700.jpg Activate Fan * -749302699.jpg Cool Request Detection * -749302699.jpg Request Cooling With AC * -749302699.jpg Fan On and AC Request * -1652557700.jpg Blower Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | Ready for Review |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### HS2 CAN

HS2 CAN

### GSM ECU

GSM ECU

#### Technology Function -837153502.jpg **Control Cabin and Battery Cooling**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Cabin Temp | Cabin Temp | | |  |  |  |
| Review in model  Cooling Re | Cooling Re | | |  |  |  |
| Review in model  sleep | sleep | | |  |  |  |
| Review in model  OnPLug | OnPLug | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Control Cabin and Battery Cooling

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  AC Req | AC Req | | |  |  |  |
| Review in model  Blower On | Blower On | | |  |  |  |
| Review in model  Cooling Duration | Cooling Duration | | |  |  |  |
| Review in model  Cooling Status | Cooling Status | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Control Cabin and Battery Cooling

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

TMOS Run Condition 2

When HPCM module receives the signal "CabnAmb\_Te\_Actl"<45-50C and "HVBat\_Te\_Actl">38-40C it shall send the signal "GoToSeep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Feedback

When the HPCM module receives the signals "Cooling Status" and "Cooling Duration" it shall forward them to the APIM module display

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Track Usage Time

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1733049635.jpg TMOS Run Display Message Request * -1252563699.jpg HMI Controller Requirements * 1733049635.jpg Operation Run Time | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 1

When HPCM receives the signals "CabnAmb\_Te\_Actl" > 45-50C and "HVBat\_Te\_Actl">38-40C, and vehicle is in park, it shall activate TMOS feature

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 4

When HPCM module receives the signal "CabnAmb\_Te\_Actl<45-50C and "HVBat\_Te\_Actl<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 3

When HPCM module receives the signal "CabnAmb\_Te\_Actl>45-50C and "HVBat\_Te\_Actl"<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### HS3 CAN

HS3 CAN

### SOBDMC\_HPCM ECU

SOBDMC\_HPCM ECU

#### Technology Function -837153502.jpg **Store Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  ECG-APIM | ECG-APIM | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Store Settings

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Retrieve Settings | Retrieve Settings | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Store Settings

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Store Settings

The HPCM module shall provide a means to store TMOS user settings

Satisfied by:

* Functions:
  + Store Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** | Feedback message sent to HMI showing TMOS run summary | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1252563699.jpg HMI Controller Requirements * -1252563699.jpg Cycle Data Storage * -1252563699.jpg Store Configuration Settings * -1252563699.jpg Settings Storage and Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

HPCM Settings Storage and Sleep Conditions

When HPCM module has stored TMOS options "FAN\_ON", "FAN\_OFF"," FAN\_AND\_AC\_ON", or "NONE" from APIM, Modules HPCM, and BCM shall go to sleep

Satisfied by:

* Functions:
  + Store Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1252563699.jpg Go To Sleep Condition * -1252563699.jpg Go2Sleep | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Retreive Stored Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Retrieve Settings | Retrieve Settings | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Retreive Stored Settings

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Send Settings | Send Settings | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Retreive Stored Settings

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

HPCM Settings Retrieval

When HPCM module receives the signal "WakeUp" from the BCM module, it shall provide a request signal "get user settings" to retrieve user settings from storage

Satisfied by:

* Functions:
  + Retreive Stored Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** | Observation of user settings running with feature | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1535786636.jpg SIS Controller Storage * 1535786636.jpg Retrieve TMOS Run Request * -1252563699.jpg Settings Storage and Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Determine Cabin Cooling Conditions**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  WakeUp | WakeUp | | |  |  |  |
| Review in model  Cabin Temp | Cabin Temp | | | CabnAmb\_Te\_Actl |  |  |
| Review in model  HV Batt Temp | HV Batt Temp | | |  |  |  |
| Review in model  Settings | Settings | | |  |  |  |
| Review in model  OAT | OAT | | |  |  |  |
| Review in model  Vehicle Status | Vehicle Status | | |  |  |  |
| Review in model  input | input | | |  |  |  |
| Review in model  Plug Status | Plug Status | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Determine Cabin Cooling Conditions

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Cooling Req | Cooling Req | | |  |  |  |
| Review in model  sleep | sleep | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Determine Cabin Cooling Conditions

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Check Cooling Conditions

When the HPCM module is awakened, it shall check signals "Cabn\_Amb\_Te\_Actl", "AirAmb\_Te\_Actl", and "HV\_Amb\_Te\_Actl" and if cooling is needed retrieve signals "FANON", "FANONAC", "NONE" or "FANOFF"

Satisfied by:

* Functions:
  + Check Cabin and Battery Temperatures
  + Determine Cabin Cooling Conditions

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 283232927.jpg check cabin cooling conditions * 283232927.jpg Blower and AC Operation Conditions * 283232927.jpg OAT Wake Up Conditions * 283232927.jpg Verify Cabin Temperature * -746142700.jpg Control TMOS functionality * 283232927.jpg Fan and AC Cooling Request * 283232927.jpg Temperature Sensor Read Conditions * -749302699.jpg AC Activation Wake Up Conditon | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Control Cabin Cooling Request**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  input | input | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Control Cabin Cooling Request

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  output | output | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Control Cabin Cooling Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

TMOS Run Condition 2

When HPCM module receives the signal "CabnAmb\_Te\_Actl"<45-50C and "HVBat\_Te\_Actl">38-40C it shall send the signal "GoToSeep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Feedback

When the HPCM module receives the signals "Cooling Status" and "Cooling Duration" it shall forward them to the APIM module display

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Track Usage Time

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1733049635.jpg TMOS Run Display Message Request * -1252563699.jpg HMI Controller Requirements * 1733049635.jpg Operation Run Time | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 1

When HPCM receives the signals "CabnAmb\_Te\_Actl" > 45-50C and "HVBat\_Te\_Actl">38-40C, and vehicle is in park, it shall activate TMOS feature

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 4

When HPCM module receives the signal "CabnAmb\_Te\_Actl<45-50C and "HVBat\_Te\_Actl<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 3

When HPCM module receives the signal "CabnAmb\_Te\_Actl>45-50C and "HVBat\_Te\_Actl"<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Provide Cooling Feedback**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Cooling Duration | Cooling Duration | | |  |  |  |
| Review in model  CoolingStatus | CoolingStatus | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Provide Cooling Feedback

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  feedback | feedback | | |  |  |  |
| Review in model  WakeUp | WakeUp | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Provide Cooling Feedback

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

APIM feedback to User

When APIM module receives the signals "Cooling Status" and "Cooling Duration" from the HPCM module it shall display the status and duration of the cooling cycle

Satisfied by:

* Functions:
  + Provide Cooling Feedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1505875524.jpg Provide Feedback * 1505875524.jpg Send HMI TMOS Message * 1505875524.jpg Cooling Status and Duration Feedback * 1505875524.jpg Cooling Successful Status * 1505875524.jpg Failed To Cool Status * 1733049635.jpg TMOS Run Display Message Request * 1505875524.jpg Run Summary Display * 1505875524.jpg Cooling Feedback | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | Ready for Review |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Blower Run Time

When HPCM module receives the signal "Cabn\_Amb\_Te\_Aclt" > than 50C for 5 minutes, it shall send the signal "blower off" to the RCCM module when TMOS setting is set to "FAN\_ON"

Satisfied by:

* Functions:
  + Provide Cooling Feedback
  + Request Blower On

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1652557700.jpg Request Fan Off Subfunction * 1505875524.jpg Activate Fan Conditions * -749302699.jpg Request Fan+AC Subfunction | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Cooling Status Feedback

When HPCM module completes TMOS cooling, it shall provide the APIM with the Cooling Status signal of "FAILED\_TO\_COOL" or "COOLING\_SUCCESSFUL"

Satisfied by:

* Functions:
  + Display User Settings
  + Provide Cooling Feedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1505875524.jpg Cabin Cooling Successful Condition * 1505875524.jpg Cooling Status and Duration Feedback * 1505875524.jpg Failed To Cool Status * 1505875524.jpg Battery Cooling Successful Condition * 1505875524.jpg Request Climate System Off Condition | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **WakeUp Alarm Request**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Wake Alarm | Wake Alarm | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function WakeUp Alarm Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

WakeUp Step 1

When BCM module receives the alarm signal "wake up" it shall provide AWD\_DLCM module with a wakeup signal "WakeUp"

Satisfied by:

* Functions:
  + WakeUp Alarm Request

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1154617152.jpg Wakeup Conditions | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Send Requested TMOS Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Send Settings | Send Settings | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Send Requested TMOS Settings

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Send Settings | Send Settings | | |  |  |  |
| Review in model  Notify User | Notify User | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Send Requested TMOS Settings

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

TMOS Run Condition 2

When HPCM module receives the signal "CabnAmb\_Te\_Actl"<45-50C and "HVBat\_Te\_Actl">38-40C it shall send the signal "GoToSeep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 1

When HPCM receives the signals "CabnAmb\_Te\_Actl" > 45-50C and "HVBat\_Te\_Actl">38-40C, and vehicle is in park, it shall activate TMOS feature

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 4

When HPCM module receives the signal "CabnAmb\_Te\_Actl<45-50C and "HVBat\_Te\_Actl<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 3

When HPCM module receives the signal "CabnAmb\_Te\_Actl>45-50C and "HVBat\_Te\_Actl"<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Control Cabin and Battery Cooling**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Cabin Temp | Cabin Temp | | |  |  |  |
| Review in model  Cooling Re | Cooling Re | | |  |  |  |
| Review in model  sleep | sleep | | |  |  |  |
| Review in model  OnPLug | OnPLug | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Control Cabin and Battery Cooling

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  AC Req | AC Req | | |  |  |  |
| Review in model  Blower On | Blower On | | |  |  |  |
| Review in model  Cooling Duration | Cooling Duration | | |  |  |  |
| Review in model  Cooling Status | Cooling Status | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Control Cabin and Battery Cooling

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

TMOS Run Condition 2

When HPCM module receives the signal "CabnAmb\_Te\_Actl"<45-50C and "HVBat\_Te\_Actl">38-40C it shall send the signal "GoToSeep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Feedback

When the HPCM module receives the signals "Cooling Status" and "Cooling Duration" it shall forward them to the APIM module display

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Track Usage Time

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1733049635.jpg TMOS Run Display Message Request * -1252563699.jpg HMI Controller Requirements * 1733049635.jpg Operation Run Time | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 1

When HPCM receives the signals "CabnAmb\_Te\_Actl" > 45-50C and "HVBat\_Te\_Actl">38-40C, and vehicle is in park, it shall activate TMOS feature

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 4

When HPCM module receives the signal "CabnAmb\_Te\_Actl<45-50C and "HVBat\_Te\_Actl<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 3

When HPCM module receives the signal "CabnAmb\_Te\_Actl>45-50C and "HVBat\_Te\_Actl"<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### ACCM ECU

ACCM ECU

#### Technology Function -837153502.jpg **AC\_Compressor\_Actuator**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  AC Req | AC Req | | |  |  |  |
| Review in model  Off Plug Pwr | Off Plug Pwr | | |  |  |  |
| Review in model  AC Pwr | AC Pwr | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function AC\_Compressor\_Actuator

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  AC on | AC on | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function AC\_Compressor\_Actuator

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

ACCM Power

The HEV Battery shall supply the ACCM module with power to run the compressor when vehicle is in PlugIn mode

Satisfied by:

* Functions:
  + AC\_Compressor\_Actuator

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -749302699.jpg Activate Compressor On | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | Ready for Review |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Compressor Request

When HPCM module receives the TMOS settings "FAN\_AND\_AC\_ON", it shall provide a signal "compressor on" to the ACCM module to request that the compressor be activated

Satisfied by:

* Functions:
  + Actuate Compressor
  + AC\_Compressor\_Actuator

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** | Observation of compressor on | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -749302699.jpg Compressor Function * -749302699.jpg Achieved Cabin\_Normal Temperature * -749302699.jpg Request Fan+AC Subfunction * -749302699.jpg Cool Request Detection * -749302699.jpg Request Cooling With AC * -749302699.jpg Fan On and AC Request * -749302699.jpg AC Activation Wake Up Conditon | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Actuate Compressor**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Ac On' | Ac On' | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Actuate Compressor

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Compressor Request

When HPCM module receives the TMOS settings "FAN\_AND\_AC\_ON", it shall provide a signal "compressor on" to the ACCM module to request that the compressor be activated

Satisfied by:

* Functions:
  + Actuate Compressor
  + AC\_Compressor\_Actuator

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** | Observation of compressor on | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -749302699.jpg Compressor Function * -749302699.jpg Achieved Cabin\_Normal Temperature * -749302699.jpg Request Fan+AC Subfunction * -749302699.jpg Cool Request Detection * -749302699.jpg Request Cooling With AC * -749302699.jpg Fan On and AC Request * -749302699.jpg AC Activation Wake Up Conditon | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Compressor Duration

When HPCM receives the signal "Cabn\_Amb\_Te\_Actl" >50C after 7 to 8 minutes with TMOS setting signal "FAN\_AND\_AC\_ON" it shall provide the ACCM with the signal "Compressor Off" the the RCCM with the signal "Blower Off"

Satisfied by:

* Functions:
  + Actuate Compressor
  + Actuate\_Blower
  + Request Blower On
  + Request Fan

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -749302699.jpg Compressor Function * -1652557700.jpg Activate Fan | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### TMOS

TMOS

#### Technology Function -837153502.jpg **Provide User Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  User Input | User Input | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Provide User Settings

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Detect TMOS Settings from APIM

When HPCM module receives TMOS user settings signal "FAN\_ON", "FAN\_OFF", "FAN\_AND\_AC\_ON", or "NONE" from the APIM module, it shall store the settings

Satisfied by:

* Functions:
  + Display User Settings
  + Provide User Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1505875524.jpg Activate Fan Conditions * -1137684208.jpg Feature Settings in SYNC | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Control Cabin and Battery Cooling**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Cabin Temp | Cabin Temp | | |  |  |  |
| Review in model  Cooling Re | Cooling Re | | |  |  |  |
| Review in model  sleep | sleep | | |  |  |  |
| Review in model  OnPLug | OnPLug | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Control Cabin and Battery Cooling

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  AC Req | AC Req | | |  |  |  |
| Review in model  Blower On | Blower On | | |  |  |  |
| Review in model  Cooling Duration | Cooling Duration | | |  |  |  |
| Review in model  Cooling Status | Cooling Status | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Control Cabin and Battery Cooling

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

TMOS Run Condition 2

When HPCM module receives the signal "CabnAmb\_Te\_Actl"<45-50C and "HVBat\_Te\_Actl">38-40C it shall send the signal "GoToSeep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Feedback

When the HPCM module receives the signals "Cooling Status" and "Cooling Duration" it shall forward them to the APIM module display

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Track Usage Time

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1733049635.jpg TMOS Run Display Message Request * -1252563699.jpg HMI Controller Requirements * 1733049635.jpg Operation Run Time | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 1

When HPCM receives the signals "CabnAmb\_Te\_Actl" > 45-50C and "HVBat\_Te\_Actl">38-40C, and vehicle is in park, it shall activate TMOS feature

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 4

When HPCM module receives the signal "CabnAmb\_Te\_Actl<45-50C and "HVBat\_Te\_Actl<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 3

When HPCM module receives the signal "CabnAmb\_Te\_Actl>45-50C and "HVBat\_Te\_Actl"<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Control Cabin Cooling Request**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  input | input | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Control Cabin Cooling Request

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  output | output | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Control Cabin Cooling Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

TMOS Run Condition 2

When HPCM module receives the signal "CabnAmb\_Te\_Actl"<45-50C and "HVBat\_Te\_Actl">38-40C it shall send the signal "GoToSeep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Feedback

When the HPCM module receives the signals "Cooling Status" and "Cooling Duration" it shall forward them to the APIM module display

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Track Usage Time

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1733049635.jpg TMOS Run Display Message Request * -1252563699.jpg HMI Controller Requirements * 1733049635.jpg Operation Run Time | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 1

When HPCM receives the signals "CabnAmb\_Te\_Actl" > 45-50C and "HVBat\_Te\_Actl">38-40C, and vehicle is in park, it shall activate TMOS feature

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 4

When HPCM module receives the signal "CabnAmb\_Te\_Actl<45-50C and "HVBat\_Te\_Actl<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 3

When HPCM module receives the signal "CabnAmb\_Te\_Actl>45-50C and "HVBat\_Te\_Actl"<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Store Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  ECG-APIM | ECG-APIM | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Store Settings

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Retrieve Settings | Retrieve Settings | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Store Settings

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Store Settings

The HPCM module shall provide a means to store TMOS user settings

Satisfied by:

* Functions:
  + Store Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** | Feedback message sent to HMI showing TMOS run summary | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1252563699.jpg HMI Controller Requirements * -1252563699.jpg Cycle Data Storage * -1252563699.jpg Store Configuration Settings * -1252563699.jpg Settings Storage and Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

HPCM Settings Storage and Sleep Conditions

When HPCM module has stored TMOS options "FAN\_ON", "FAN\_OFF"," FAN\_AND\_AC\_ON", or "NONE" from APIM, Modules HPCM, and BCM shall go to sleep

Satisfied by:

* Functions:
  + Store Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1252563699.jpg Go To Sleep Condition * -1252563699.jpg Go2Sleep | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Retreive Stored Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Retrieve Settings | Retrieve Settings | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Retreive Stored Settings

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Send Settings | Send Settings | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Retreive Stored Settings

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

HPCM Settings Retrieval

When HPCM module receives the signal "WakeUp" from the BCM module, it shall provide a request signal "get user settings" to retrieve user settings from storage

Satisfied by:

* Functions:
  + Retreive Stored Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** | Observation of user settings running with feature | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1535786636.jpg SIS Controller Storage * 1535786636.jpg Retrieve TMOS Run Request * -1252563699.jpg Settings Storage and Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Send Requested TMOS Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Send Settings | Send Settings | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Send Requested TMOS Settings

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Send Settings | Send Settings | | |  |  |  |
| Review in model  Notify User | Notify User | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Send Requested TMOS Settings

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

TMOS Run Condition 2

When HPCM module receives the signal "CabnAmb\_Te\_Actl"<45-50C and "HVBat\_Te\_Actl">38-40C it shall send the signal "GoToSeep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 1

When HPCM receives the signals "CabnAmb\_Te\_Actl" > 45-50C and "HVBat\_Te\_Actl">38-40C, and vehicle is in park, it shall activate TMOS feature

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 4

When HPCM module receives the signal "CabnAmb\_Te\_Actl<45-50C and "HVBat\_Te\_Actl<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

TMOS Run Condition 3

When HPCM module receives the signal "CabnAmb\_Te\_Actl>45-50C and "HVBat\_Te\_Actl"<38-40C it shall send the signal "GoToSleep" to the BCM module

Satisfied by:

* Functions:
  + Charge Battery Request
  + Control Cabin and Battery Cooling
  + Control Cabin Cooling Request
  + Send Requested TMOS Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Control TMOS functionality * 1733049635.jpg Check Cabin Status | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **WakeUp Alarm Request**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Wake Alarm | Wake Alarm | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function WakeUp Alarm Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

WakeUp Step 1

When BCM module receives the alarm signal "wake up" it shall provide AWD\_DLCM module with a wakeup signal "WakeUp"

Satisfied by:

* Functions:
  + WakeUp Alarm Request

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1154617152.jpg Wakeup Conditions | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### TouchScreen

TouchScreen

#### Technology Function -837153502.jpg **Display User Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Send Settings | Send Settings | | |  |  |  |
| Review in model  feedback | feedback | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Display User Settings

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Cooling Status Feedback

When HPCM module completes TMOS cooling, it shall provide the APIM with the Cooling Status signal of "FAILED\_TO\_COOL" or "COOLING\_SUCCESSFUL"

Satisfied by:

* Functions:
  + Display User Settings
  + Provide Cooling Feedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1505875524.jpg Cabin Cooling Successful Condition * 1505875524.jpg Cooling Status and Duration Feedback * 1505875524.jpg Failed To Cool Status * 1505875524.jpg Battery Cooling Successful Condition * 1505875524.jpg Request Climate System Off Condition | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Detect TMOS Settings from APIM

When HPCM module receives TMOS user settings signal "FAN\_ON", "FAN\_OFF", "FAN\_AND\_AC\_ON", or "NONE" from the APIM module, it shall store the settings

Satisfied by:

* Functions:
  + Display User Settings
  + Provide User Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1505875524.jpg Activate Fan Conditions * -1137684208.jpg Feature Settings in SYNC | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Receive Off\_Board Request**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Phone Rq | Phone Rq | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Receive Off\_Board Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

### HV Battery

HV Battery

#### Technology Function -837153502.jpg **Provide Pwr to ACCM**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  pwr out | pwr out | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Provide Pwr to ACCM

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

### EVCM

EVCM

#### Technology Function -837153502.jpg **WakeUp HPCM Request**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  wakeup ecg-bcm | wakeup ecg-bcm | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function WakeUp HPCM Request

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  WakeUp | WakeUp | | |  |  |  |
| Review in model  Vehicle Status | Vehicle Status | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function WakeUp HPCM Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

WakeUp Time

When WakeUp timer expires, the BCM module shall send the signal "WakeUpHPCM" to the AWD\_DLCM module.

Satisfied by:

* Functions:
  + WakeUp HPCM Request

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 680369622.jpg Settings Wake Up Tasks * 1154617152.jpg Wakeup Conditions | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

WakeUp Timer

The HPCM module shall send a signal "Wake Up" every X number of minutes to the BCM module

Satisfied by:

* Functions:
  + WakeUp HPCM Request

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 680369622.jpg Settings Wake Up Tasks * 680369622.jpg Wake Up Time * 1154617152.jpg Wakeup Conditions | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Provide HV Battery Temperature**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  HV Bat Temp | HV Bat Temp | | |  |  |  |
| Review in model  HV Batt Temp | HV Batt Temp | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Provide HV Battery Temperature

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Vehicle Status

The BMS module shall provide the BCM module with the vehicle status signals "Battery Status", "Ignition Status", "Transmission Status", "Vehicle Speed", and "WakeUp"

Satisfied by:

* Functions:
  + Charge 12V Battery
  + Provide Ambient Temperature
  + Provide Battery SOC
  + Provide Cabin Temperature
  + Provide HV Battery SOC
  + Provide HV Battery Temperature
  + Provide HV OnPlug Status
  + Provide Off Plug Power

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 379594838.jpg Provide Vehicle Status * 379594838.jpg Key On Summary Conditions * 379594838.jpg Check Vehicle Status Subfunction | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Detect\_HV Battery SOC**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  SOC | SOC | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Detect\_HV Battery SOC

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  HV SOC | HV SOC | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Detect\_HV Battery SOC

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Battery SOC

While vehicle is running, The BMS module shall provide a signal "Battery SOC" to the BCM module

Satisfied by:

* Functions:
  + Detect\_HV Battery SOC

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -2061547218.jpg Battery SOC Detection * -2061547218.jpg Battery SOC Wake Up Conditions | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | Ready for Review |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Battery Charge By DCDC

When DC/DC converter is awakened it shall charge the 12V Battery if TMOS signal "FAN\_ON" is selected

Satisfied by:

* Functions:
  + Detect\_HV Battery SOC

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** | * -2061547218.jpg Battery SOC Detection * -2061547218.jpg Battery SOC Wake Up Conditions | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Provide EVCM Sleep Request**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Sleep Rq | Sleep Rq | | |  |  |  |
| Review in model  feedback | feedback | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Provide EVCM Sleep Request

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  output | output | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Provide EVCM Sleep Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

### Phone

Phone

#### Technology Function -837153502.jpg **Receive Off\_Board Request**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Phone Rq | Phone Rq | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Receive Off\_Board Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

#### Technology Function -837153502.jpg **Relay Off Board Request**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Phone Rq | Phone Rq | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Relay Off Board Request

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  TMOS phone input | TMOS phone input | | |  |  |  |
| Review in model  Phone-ECG | Phone-ECG | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Relay Off Board Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

### RCCM ECU

RCCM ECU

#### Technology Function -837153502.jpg **Request Blower On**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  blwr req | blwr req | | |  |  |  |
| Review in model  BlwrOnRq | BlwrOnRq | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Request Blower On

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Fan On | Fan On | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Request Blower On

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Blower Run Time

When HPCM module receives the signal "Cabn\_Amb\_Te\_Aclt" > than 50C for 5 minutes, it shall send the signal "blower off" to the RCCM module when TMOS setting is set to "FAN\_ON"

Satisfied by:

* Functions:
  + Provide Cooling Feedback
  + Request Blower On

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1652557700.jpg Request Fan Off Subfunction * 1505875524.jpg Activate Fan Conditions * -749302699.jpg Request Fan+AC Subfunction | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Compressor Duration

When HPCM receives the signal "Cabn\_Amb\_Te\_Actl" >50C after 7 to 8 minutes with TMOS setting signal "FAN\_AND\_AC\_ON" it shall provide the ACCM with the signal "Compressor Off" the the RCCM with the signal "Blower Off"

Satisfied by:

* Functions:
  + Actuate Compressor
  + Actuate\_Blower
  + Request Blower On
  + Request Fan

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -749302699.jpg Compressor Function * -1652557700.jpg Activate Fan | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Blower Request On

When the signal "FAN\_ON" or FAN\_AND\_AC\_ON is requested from HPCM, The RCCM module shall provide signal "BlwrOn" to the Blower Motor to activate the fan

Satisfied by:

* Functions:
  + Actuate\_Blower
  + Request Blower On

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** | Observation of blower motor running | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1652557700.jpg Request Cooling With Fan On * -1652557700.jpg Fan On Cooling Request * -749302699.jpg Request Fan+AC Subfunction * -1652557700.jpg Activate Fan * -749302699.jpg Cool Request Detection * -749302699.jpg Request Cooling With AC * -749302699.jpg Fan On and AC Request * -1652557700.jpg Blower Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | Ready for Review |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Actuate\_Blower**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Fan On | Fan On | | |  |  |  |
| Review in model  BlwrPwr | BlwrPwr | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Actuate\_Blower

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

HPCM before Sleep Condition

When the HPCM module reeives the signal "AirAmb\_Te\_Actl" from module ECM\_HEV, the ECM\_HEV will receive the signal "go to sleep"

Satisfied by:

* Functions:
  + Actuate\_Blower

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1252563699.jpg Go To Sleep Condition * 283232927.jpg check cabin cooling conditions * -1252563699.jpg Go2Sleep | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Compressor Duration

When HPCM receives the signal "Cabn\_Amb\_Te\_Actl" >50C after 7 to 8 minutes with TMOS setting signal "FAN\_AND\_AC\_ON" it shall provide the ACCM with the signal "Compressor Off" the the RCCM with the signal "Blower Off"

Satisfied by:

* Functions:
  + Actuate Compressor
  + Actuate\_Blower
  + Request Blower On
  + Request Fan

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -749302699.jpg Compressor Function * -1652557700.jpg Activate Fan | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Blower Request Off

The RCCM module shall provide signal "BlwrOff" to the Blower Motor to deactivate the fan

Satisfied by:

* Functions:
  + Actuate\_Blower

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** | * -1652557700.jpg Request Fan Off Subfunction * -1652557700.jpg Blower Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Blower Request On

When the signal "FAN\_ON" or FAN\_AND\_AC\_ON is requested from HPCM, The RCCM module shall provide signal "BlwrOn" to the Blower Motor to activate the fan

Satisfied by:

* Functions:
  + Actuate\_Blower
  + Request Blower On

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** | Observation of blower motor running | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1652557700.jpg Request Cooling With Fan On * -1652557700.jpg Fan On Cooling Request * -749302699.jpg Request Fan+AC Subfunction * -1652557700.jpg Activate Fan * -749302699.jpg Cool Request Detection * -749302699.jpg Request Cooling With AC * -749302699.jpg Fan On and AC Request * -1652557700.jpg Blower Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | Ready for Review |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Provide Cabin Temperature**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Cabin Temp | Cabin Temp | | | CabnAmb\_Te\_Actl |  |  |
| Review in model  Cabin Temp | Cabin Temp | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Provide Cabin Temperature

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Vehicle Status

The BMS module shall provide the BCM module with the vehicle status signals "Battery Status", "Ignition Status", "Transmission Status", "Vehicle Speed", and "WakeUp"

Satisfied by:

* Functions:
  + Charge 12V Battery
  + Provide Ambient Temperature
  + Provide Battery SOC
  + Provide Cabin Temperature
  + Provide HV Battery SOC
  + Provide HV Battery Temperature
  + Provide HV OnPlug Status
  + Provide Off Plug Power

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 379594838.jpg Provide Vehicle Status * 379594838.jpg Key On Summary Conditions * 379594838.jpg Check Vehicle Status Subfunction | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Cabin Temp Interval

When HPCM module is awake it shall receive the signal "Cabn\_Amb\_Te\_Actl" at a regular interval from the RCCM module

Satisfied by:

* Functions:
  + Provide Cabin Temperature

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1012510944.jpg Cabin Temperature Monitor * 283232927.jpg Temperature Sensor Read Conditions * 1733049635.jpg Check Cabin Status * -873149929.jpg Provide OAT Temperature | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Cabin Temperature Provider

The RCCM module shall provide the signal "Cabn\_Amb\_Te\_Actl" for cabin temperature to the HPCM module Conditions???????????

Satisfied by:

* Functions:
  + Provide Cabin Temperature

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1012510944.jpg Provide Cabin Temperature * 1012510944.jpg Cabin Temperature Monitor * 283232927.jpg Verify Cabin Temperature * 283232927.jpg Temperature Sensor Read Conditions | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Receive OSA Temp**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  OSA Temp | OSA Temp | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Receive OSA Temp

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

OSA Temperture Provided to RCCM

When ECM\_HEV module recieves the signal "AirAmb\_Te\_Actl" it shall provide the signal to the RCCM module

Satisfied by:

* Functions:
  + Receive OSA Temp

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -873149929.jpg Provide OAT Temperature | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

OSA Temperature ECM\_HEV to HPCM

When ECM\_HEV module receives the signal "AirAmb\_Te\_Actl", it shall provide the signal to the HPCM module

Satisfied by:

* Functions:
  + Receive OSA Temp

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -873149929.jpg Provide OAT Temperature | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### 12V Battery

12V Battery

#### Technology Function -837153502.jpg **Provide Off Plug Power**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  12V Pwr | 12V Pwr | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Provide Off Plug Power

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Off Plug Pwr | Off Plug Pwr | | |  |  |  |
| Review in model  Off Plug Pwr | Off Plug Pwr | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Provide Off Plug Power

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Vehicle Status

The BMS module shall provide the BCM module with the vehicle status signals "Battery Status", "Ignition Status", "Transmission Status", "Vehicle Speed", and "WakeUp"

Satisfied by:

* Functions:
  + Charge 12V Battery
  + Provide Ambient Temperature
  + Provide Battery SOC
  + Provide Cabin Temperature
  + Provide HV Battery SOC
  + Provide HV Battery Temperature
  + Provide HV OnPlug Status
  + Provide Off Plug Power

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 379594838.jpg Provide Vehicle Status * 379594838.jpg Key On Summary Conditions * 379594838.jpg Check Vehicle Status Subfunction | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### FD1 CAN

FD1 CAN

### PCM

PCM

#### Technology Function -837153502.jpg **WakeUp HPCM Request**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  wakeup ecg-bcm | wakeup ecg-bcm | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function WakeUp HPCM Request

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  WakeUp | WakeUp | | |  |  |  |
| Review in model  Vehicle Status | Vehicle Status | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function WakeUp HPCM Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

WakeUp Time

When WakeUp timer expires, the BCM module shall send the signal "WakeUpHPCM" to the AWD\_DLCM module.

Satisfied by:

* Functions:
  + WakeUp HPCM Request

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 680369622.jpg Settings Wake Up Tasks * 1154617152.jpg Wakeup Conditions | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

WakeUp Timer

The HPCM module shall send a signal "Wake Up" every X number of minutes to the BCM module

Satisfied by:

* Functions:
  + WakeUp HPCM Request

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 680369622.jpg Settings Wake Up Tasks * 680369622.jpg Wake Up Time * 1154617152.jpg Wakeup Conditions | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### Vehicle Status Sensor

Vehicle Status Sensor

#### Technology Function -837153502.jpg **Check Cabin and Battery Temperatures**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  input | input | | |  |  |  |
| Review in model  input1 | input1 | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Check Cabin and Battery Temperatures

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Check Cooling Conditions

When the HPCM module is awakened, it shall check signals "Cabn\_Amb\_Te\_Actl", "AirAmb\_Te\_Actl", and "HV\_Amb\_Te\_Actl" and if cooling is needed retrieve signals "FANON", "FANONAC", "NONE" or "FANOFF"

Satisfied by:

* Functions:
  + Check Cabin and Battery Temperatures
  + Determine Cabin Cooling Conditions

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 283232927.jpg check cabin cooling conditions * 283232927.jpg Blower and AC Operation Conditions * 283232927.jpg OAT Wake Up Conditions * 283232927.jpg Verify Cabin Temperature * -746142700.jpg Control TMOS functionality * 283232927.jpg Fan and AC Cooling Request * 283232927.jpg Temperature Sensor Read Conditions * -749302699.jpg AC Activation Wake Up Conditon | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### Touchscreen Display

Touchscreen Display

#### Technology Function -837153502.jpg **Display User Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Send Settings | Send Settings | | |  |  |  |
| Review in model  feedback | feedback | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Display User Settings

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Cooling Status Feedback

When HPCM module completes TMOS cooling, it shall provide the APIM with the Cooling Status signal of "FAILED\_TO\_COOL" or "COOLING\_SUCCESSFUL"

Satisfied by:

* Functions:
  + Display User Settings
  + Provide Cooling Feedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1505875524.jpg Cabin Cooling Successful Condition * 1505875524.jpg Cooling Status and Duration Feedback * 1505875524.jpg Failed To Cool Status * 1505875524.jpg Battery Cooling Successful Condition * 1505875524.jpg Request Climate System Off Condition | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Detect TMOS Settings from APIM

When HPCM module receives TMOS user settings signal "FAN\_ON", "FAN\_OFF", "FAN\_AND\_AC\_ON", or "NONE" from the APIM module, it shall store the settings

Satisfied by:

* Functions:
  + Display User Settings
  + Provide User Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1505875524.jpg Activate Fan Conditions * -1137684208.jpg Feature Settings in SYNC | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Receive Off\_Board Request**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Phone Rq | Phone Rq | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Receive Off\_Board Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

### BCM ECU

BCM ECU

#### Technology Function -837153502.jpg **Settings\_Storing\_Actuator**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  input | input | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Settings\_Storing\_Actuator

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

#### Technology Function -837153502.jpg **Provide WakeUp Request**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Pwr Status | Pwr Status | | |  |  |  |
| Review in model  Wake Alarm | Wake Alarm | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Provide WakeUp Request

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  wakeup | wakeup | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Provide WakeUp Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

#### Technology Function -837153502.jpg **Go To Sleep**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  sleep | sleep | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Go To Sleep

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

ECU Sleep Request

When HPCM module sends the RCCM signal "Blower Off" and the ACCM signal "Compressor On", all ECU's shall go to sleep

Satisfied by:

* Functions:
  + Go To Sleep

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** | * -1252563699.jpg Go To Sleep Condition | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **WakeUp HPCM**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  output | output | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function WakeUp HPCM

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

WakeUp Step 2

When the AWD\_DLCM receives a signal "WakeUpHPCM" from the BCM it shall forward the signal to the HPCM

Satisfied by:

* Functions:
  + WakeUp HPCM

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 680369622.jpg Settings Wake Up Tasks * 155361227.jpg WAKE Up Frequency | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **WakeUp HPCM Request**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  wakeup ecg-bcm | wakeup ecg-bcm | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function WakeUp HPCM Request

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  WakeUp | WakeUp | | |  |  |  |
| Review in model  Vehicle Status | Vehicle Status | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function WakeUp HPCM Request

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

WakeUp Time

When WakeUp timer expires, the BCM module shall send the signal "WakeUpHPCM" to the AWD\_DLCM module.

Satisfied by:

* Functions:
  + WakeUp HPCM Request

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 680369622.jpg Settings Wake Up Tasks * 1154617152.jpg Wakeup Conditions | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

WakeUp Timer

The HPCM module shall send a signal "Wake Up" every X number of minutes to the BCM module

Satisfied by:

* Functions:
  + WakeUp HPCM Request

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 680369622.jpg Settings Wake Up Tasks * 680369622.jpg Wake Up Time * 1154617152.jpg Wakeup Conditions | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### Cabin Temp Sensor

Cabin Temp Sensor

#### Technology Function -837153502.jpg **Check Cabin and Battery Temperatures**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  input | input | | |  |  |  |
| Review in model  input1 | input1 | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Check Cabin and Battery Temperatures

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Check Cooling Conditions

When the HPCM module is awakened, it shall check signals "Cabn\_Amb\_Te\_Actl", "AirAmb\_Te\_Actl", and "HV\_Amb\_Te\_Actl" and if cooling is needed retrieve signals "FANON", "FANONAC", "NONE" or "FANOFF"

Satisfied by:

* Functions:
  + Check Cabin and Battery Temperatures
  + Determine Cabin Cooling Conditions

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 283232927.jpg check cabin cooling conditions * 283232927.jpg Blower and AC Operation Conditions * 283232927.jpg OAT Wake Up Conditions * 283232927.jpg Verify Cabin Temperature * -746142700.jpg Control TMOS functionality * 283232927.jpg Fan and AC Cooling Request * 283232927.jpg Temperature Sensor Read Conditions * -749302699.jpg AC Activation Wake Up Conditon | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### HS1 CAN

HS1 CAN

### Blower Actuator

Blower Actuator

#### Technology Function -837153502.jpg **Actuate\_Blower**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Fan On | Fan On | | |  |  |  |
| Review in model  BlwrPwr | BlwrPwr | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Actuate\_Blower

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

HPCM before Sleep Condition

When the HPCM module reeives the signal "AirAmb\_Te\_Actl" from module ECM\_HEV, the ECM\_HEV will receive the signal "go to sleep"

Satisfied by:

* Functions:
  + Actuate\_Blower

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1252563699.jpg Go To Sleep Condition * 283232927.jpg check cabin cooling conditions * -1252563699.jpg Go2Sleep | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Compressor Duration

When HPCM receives the signal "Cabn\_Amb\_Te\_Actl" >50C after 7 to 8 minutes with TMOS setting signal "FAN\_AND\_AC\_ON" it shall provide the ACCM with the signal "Compressor Off" the the RCCM with the signal "Blower Off"

Satisfied by:

* Functions:
  + Actuate Compressor
  + Actuate\_Blower
  + Request Blower On
  + Request Fan

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -749302699.jpg Compressor Function * -1652557700.jpg Activate Fan | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Blower Request Off

The RCCM module shall provide signal "BlwrOff" to the Blower Motor to deactivate the fan

Satisfied by:

* Functions:
  + Actuate\_Blower

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** | * -1652557700.jpg Request Fan Off Subfunction * -1652557700.jpg Blower Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Blower Request On

When the signal "FAN\_ON" or FAN\_AND\_AC\_ON is requested from HPCM, The RCCM module shall provide signal "BlwrOn" to the Blower Motor to activate the fan

Satisfied by:

* Functions:
  + Actuate\_Blower
  + Request Blower On

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** | Observation of blower motor running | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -1652557700.jpg Request Cooling With Fan On * -1652557700.jpg Fan On Cooling Request * -749302699.jpg Request Fan+AC Subfunction * -1652557700.jpg Activate Fan * -749302699.jpg Cool Request Detection * -749302699.jpg Request Cooling With AC * -749302699.jpg Fan On and AC Request * -1652557700.jpg Blower Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | Ready for Review |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### APIM 4.0

APIM 4.0

#### Technology Function -837153502.jpg **Display User Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Send Settings | Send Settings | | |  |  |  |
| Review in model  feedback | feedback | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Display User Settings

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Cooling Status Feedback

When HPCM module completes TMOS cooling, it shall provide the APIM with the Cooling Status signal of "FAILED\_TO\_COOL" or "COOLING\_SUCCESSFUL"

Satisfied by:

* Functions:
  + Display User Settings
  + Provide Cooling Feedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1505875524.jpg Cabin Cooling Successful Condition * 1505875524.jpg Cooling Status and Duration Feedback * 1505875524.jpg Failed To Cool Status * 1505875524.jpg Battery Cooling Successful Condition * 1505875524.jpg Request Climate System Off Condition | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

Detect TMOS Settings from APIM

When HPCM module receives TMOS user settings signal "FAN\_ON", "FAN\_OFF", "FAN\_AND\_AC\_ON", or "NONE" from the APIM module, it shall store the settings

Satisfied by:

* Functions:
  + Display User Settings
  + Provide User Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1505875524.jpg Activate Fan Conditions * -1137684208.jpg Feature Settings in SYNC | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Provide User Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  User Input | User Input | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Provide User Settings

###### Outputs

(No outputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details**  *(Conditional)* | **Publisher Interface** | **Connection**  *(Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑3: Output Signal mappings of Function “MyLogicalFunctionA\_Component1”A

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Detect TMOS Settings from APIM

When HPCM module receives TMOS user settings signal "FAN\_ON", "FAN\_OFF", "FAN\_AND\_AC\_ON", or "NONE" from the APIM module, it shall store the settings

Satisfied by:

* Functions:
  + Display User Settings
  + Provide User Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 1505875524.jpg Activate Fan Conditions * -1137684208.jpg Feature Settings in SYNC | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

#### Technology Function -837153502.jpg **Input User Settings**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  UserSettingsInput | UserSettingsInput | | |  |  |  |
| Review in model  ECG-APIM | ECG-APIM | | |  |  |  |
| Review in model  PhoneInput | PhoneInput | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Input User Settings

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  Send Settings | Send Settings | | |  |  |  |
| Review in model  User Input | User Input | | |  |  |  |
| Review in model  APIM -ECG | APIM -ECG | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Input User Settings

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

APIM Phone Input

When APIM module receives the signals "FAN\_ON", FAN\_OFF", "FAN\_AND\_AC\_ON", or "NONE" from the hand held device, It shall forward them to the HPCM

Satisfied by:

* Functions:
  + Input User Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Phone Placeholder 1 * -746142700.jpg Display Settings Control * -746142700.jpg Control TMOS functionality * -746142700.jpg Phone Placeholder 2 * -746142700.jpg Detect User Input * -746142700.jpg Phone Placeholder 3 * -746142700.jpg Feature Settings Remote Activation | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | Ready for Review |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

APIM User Input

When APIM module receives the signals "FAN\_ON", FAN\_OFF", "FAN\_AND\_AC\_ON", or "NONE", from touch screen selections, It shall forward them to the HPCM

Satisfied by:

* Functions:
  + Input User Settings

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -746142700.jpg Display Settings Control * -746142700.jpg Control TMOS functionality * -746142700.jpg Detect User Input | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | Ready for Review |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### BCCM

BCCM

#### Technology Function -837153502.jpg **Provide HV OnPlug Status**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  OnPlug | OnPlug | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Provide HV OnPlug Status

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Vehicle Status

The BMS module shall provide the BCM module with the vehicle status signals "Battery Status", "Ignition Status", "Transmission Status", "Vehicle Speed", and "WakeUp"

Satisfied by:

* Functions:
  + Charge 12V Battery
  + Provide Ambient Temperature
  + Provide Battery SOC
  + Provide Cabin Temperature
  + Provide HV Battery SOC
  + Provide HV Battery Temperature
  + Provide HV OnPlug Status
  + Provide Off Plug Power

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 379594838.jpg Provide Vehicle Status * 379594838.jpg Key On Summary Conditions * 379594838.jpg Check Vehicle Status Subfunction | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### ECM\_HEV ECU

ECM\_HEV ECU

#### Technology Function -837153502.jpg **Forward Ambient Temperature**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  OSA | OSA | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Forward Ambient Temperature

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

#### Technology Function -837153502.jpg **Provide Ambient Temperature**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  OSA Temp | OSA Temp | | |  |  |  |
| Review in model  OSA Temp | OSA Temp | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Provide Ambient Temperature

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Vehicle Status

The BMS module shall provide the BCM module with the vehicle status signals "Battery Status", "Ignition Status", "Transmission Status", "Vehicle Speed", and "WakeUp"

Satisfied by:

* Functions:
  + Charge 12V Battery
  + Provide Ambient Temperature
  + Provide Battery SOC
  + Provide Cabin Temperature
  + Provide HV Battery SOC
  + Provide HV Battery Temperature
  + Provide HV OnPlug Status
  + Provide Off Plug Power

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 379594838.jpg Provide Vehicle Status * 379594838.jpg Key On Summary Conditions * 379594838.jpg Check Vehicle Status Subfunction | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

OSA Detection

The ECM\_HEV module shall receive the signal "AirAmb\_Te\_Actl" from the ambient temperature sensor

Satisfied by:

* Functions:
  + Provide Ambient Temperature

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * -873149929.jpg Provide OAT Temperature | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### MS1 CAN

MS1 CAN

### BECM

BECM

#### Technology Function -837153502.jpg **Provide HV Battery SOC**

##### Function Interfaces

###### Inputs

(No inputs have been defined)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Name should be a Word reference to the *“Logical Signals”* name bookmark in the Data Dictionary | Name of aTechnical Signal, e.g.:   * A [*GSDB signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here) * a data element in a SOA Service Contract or MQTT/FTCP message (put a link to the central MQTT message repository/service catalog here) * A hard-wired signal [*EDAS signal in VSEM*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=gPXpSoIbx3NrTDAAAAAAAAAAAAA&servername=Production_Server) (just give the VSEM link here)   If the signal is not yet managed in VSEM or any other central signal repository, add a link to the section “*Technical Signals*”in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your technical signal | If mapping is not 1:1, you might reference a Mapping description object from the *Mappings* section. | Name should be Word reference to the “*Technical Interfaces”* name bookmark in the Data Dictionary (e.g. *AIS Interfaces* for CAN signals). | Connection Name should be reference to a Connection as given in the *E/E Connections*.  For network connections add the name of the Message (which the Technical Signal is mapped to) to the connection name (Naming convention *<ConnectionName>*)::*<MessageName>*.  The message name should be linked, e.g.   * for CAN signals to the VSEM CMDB (refer e.g. to[*CGEA 1.3*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=n0SJN9h0x3NrTDAAAAAAAAAAAAA&servername=Production_Server)or [*FNV2*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=jXfpx2PHx3NrTDAAAAAAAAAAAAA&servername=Production_Server)). * for SOA Service API data elements to the SOA Service API or MQTT/FTCP message in the corresponding central repository (e.g. Central SW Service Catalog)   If a message is not yet managed in VSEM or any other central repository, add a link to the section “*Messages”* in the *Data Dictionary*. In the subsections of that data dictionary chapter you may add a definition of your message. |
|  |  |  |  |  |

Table 5‑2: Input Signal mappings of Function “MyLogicalFunctionA\_Component1”

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  SOC | SOC | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Provide HV Battery SOC

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

Vehicle Status

The BMS module shall provide the BCM module with the vehicle status signals "Battery Status", "Ignition Status", "Transmission Status", "Vehicle Speed", and "WakeUp"

Satisfied by:

* Functions:
  + Charge 12V Battery
  + Provide Ambient Temperature
  + Provide Battery SOC
  + Provide Cabin Temperature
  + Provide HV Battery SOC
  + Provide HV Battery Temperature
  + Provide HV OnPlug Status
  + Provide Off Plug Power

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** | Lynn Collins |
| **Source Req.** | * 379594838.jpg Provide Vehicle Status * 379594838.jpg Key On Summary Conditions * 379594838.jpg Check Vehicle Status Subfunction | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** | 2 - Medium | **Status** | In-Progress |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | | |

### ECG

ECG

#### Technology Function -837153502.jpg **Manage CAN Requests**

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  OSA | OSA | | |  |  |  |
| Review in model  blwr req | blwr req | | |  |  |  |
| Review in model  WakeUp | WakeUp | | |  |  |  |
| Review in model  APIM-ECG | APIM-ECG | | |  |  |  |
| Review in model  Phone-ECG | Phone-ECG | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑2: Input Signal mappings of Function Manage CAN Requests

###### Outputs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: | | | | | | |
| **Logical Signal Name** | **Technical Signal Name** | | | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Review in model  blwr req | blwr req | | |  |  |  |
| Review in model  ECG-APIM | ECG-APIM | | |  |  |  |
| Review in model  OSA | OSA | | |  |  |  |
| Review in model  SOC | SOC | | |  |  |  |
| Review in model  wakeup ecg-bcm | wakeup ecg-bcm | | |  |  |  |
| Review in model  ECG-APIM | ECG-APIM | | |  |  |  |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0 | End of Requirement | | | |

Table 5‑3: Output Signal mappings of Function Manage CAN Requests

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Parameter Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| Name should be a Word reference to the “*Logical Parameters*” name bookmark in the Data Dictionary | Name should be a Word reference to the “*Technical Parameters*” name bookmark in the Data Dictionary | If mapping is not 1:1 you might reference a Mapping description object from the *Mappings* section | Choose an item. | Depends on Method selection. For Method 2 a DID including start bit and length could be given. For Central Car Config a signal could be referenced |
|  |  |  |  |  |

Table 5‑4: Parameter mappings of Function “MyLogicalFunctionA\_Component1”

###### Interface Requirements

##### Function Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Modification** | **Requirement ID**  (of Technology Function) | **Comment** |
| REQ\_abc |  | Removed | -- |  |
| REQ\_def |  | Replaced | REQ\_xyz |  |
| -- |  | Added | REQ\_123 |  |

Table 5‑5: Component Specific Requirements

|  |  |  |
| --- | --- | --- |
| **Requirement ID**  (of Logical Function) | **Requirement Title** | **Comment** |
|  |  |  |
|  |  |  |
| … |  |  |

Table 5‑6: Inherited Requirements

###### Component Specific Requirements

## Requirements on Connections (TO BE DETERMINED)

### Networks

#### “CAN Bus xxx”

##### Protocol Requirements

##### Electrical Requirements

#### “LIN Bus xxx”

##### Protocol Requirements

###### Schedule Table

##### Electrical Requirements

#### “Ethernet xxx”

### HW I/Os

#### “HW I/O xxx”

## Requirements on Development Process

# Open Concerns

| ID | Concern Description | e-Tracker Reference | Status | Solution |
| --- | --- | --- | --- | --- |
| 1 | How to fully capture Wake/Sleep requirements. Currently we have a mismatch between what is captured in old EuCD SRD requirements and what is captured in AIS Publisher Interfaces (Publishing Network Sleep Inhibitor, Network Wake Up) |  | Open | Extend AIS attributes? |
| 2 | Clarify how to export Message list entries from CMDB in VSEM |  | Open |  |
| 3 | Needing to create new CAN Messages |  | Open |  |
| 4 |  |  |  |  |

Table 6‑1: Open Concerns

# Revision History

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Revision | Date | Description | Approved by | Responsible |
| A |  | Initial version |  | Jbaden1 |
|  |  |  |  |  |

## Template Revisions

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Version | Rev. | Date | Description | Responsible |
| 0 | 2 | 2015-08-05 | * TOC corrected * Document Properties adapted to match needs of VBA macros | Awegman1 |
| 1 | 0 | 2015-11-16 | * Revision History moved to chapter 7 * Table-Styles removed | Awegman1 |
| 1 | 1 | 2016-03-02 | * Rework according to PCL example | Jbaden1 |
| 1 | 2 | 2016-03-22 | * V1.3: Footer formating corrected (Issue 19) * “Constraints” chapter renamed to “Input Requirements” (Issue 20) | Jbaden1 |
| 1 | 3 | 2016-04-20 | * Broken Wiki links repaired | Jbaden1 |
| 2 | 0 | 2016-05-23 | * Prepared for Specification\_Macros.dotm v2.0 * Additional explanations added to ch. 2.2 “Input Requirements” (ARL and SDS requirements often go here) | Jbaden1 |
| 2 | 1 | 2016-07-08 | * Template version added to footer | Jbaden1 |
| 2 | 2 | 2016-07-15 | * Sample SysML diagrams added * Data Dictionary reworked * Alignment with relevant sections in SRD templated | Jbaden1 |
| 3 | 0 | 2016-09-05 | * Lessons learned from IPRB incorporated | Jbaden1 |
| 4 | 0 | 2016-09-27 | * Alignment with QPIP Feature Function Ownership workstream. Platform Spec renamed to Feature Implementation Spec | Jbaden1 |
| 4 | 1 | 2016-11-04 | * Chapters “Purpose” and “Scope” reworked. | Jbaden1 |
| 4 | 1 | 2016-11-10 | * Subsection for “Logical Service Interfaces” added. | Jbaden1 |
| 5 | 0 | 2017-01-13 | * Meta data updated for specification macros, version 3.1 * SW Unit chapter removed for the time being * Green boxes added for user hints | Jbaden1 |
| 5 | 1 | 2017-01-18 | * Minor editorial changes (e.g. hyperlinks highlighted in comments) | Jbaden1 |
| 5 | 1b | 2017-01-20 | * Some editorial corrections * Substructure of old Network Communication (now Connections) moved to Requirements on Connections | Jbaden1 |
| 6 | 0 | 2018-07-24 | * CR53: * Add new cover sheet * Add disclaimer section * Add the following meta-data to the doc properties for the the new cover sheet   + DocGis1ItemNumber   + DocGis2Classification   + DocType   + DocStatus   + DocIssueDate   + DocReleaseDate * CR63: Update FuSa sharepoint references in templates | Jbaden1 |
| 6 | 0 | 2018-08-06 | * CR81: Incorporate lessons learned from System Service Spec pilot (Vehicle Speed) into AFS and FIS | Jbaden1 |
| 6 | 0 | 2018-09-28 | * Broken links to RE Wiki repaired | Jbaden1 |
| 6 | 0 | 2018-10-31 | * Minor corrections on cover sheet and in footer to be more GIS compliant and VSEM aligned * “Overview” and “Description” exchanged in headings (following common sense) | Jbaden1 |
| 6 | 0 | 2018-11-30 | * Update of Functional Safety sections after review by Functional Safety Team * Initial support for variant handling | Jbaden1 |
| 6 | 0 | 2018-12-01 | * Variant condition fields added consistently * Links updated | Jbaden1 |
| 6 | 0 | 2018-12-11 | * Variant condition fields removed from mapping/allocation tables * Mapping tables simplified * Explanatory text for “Variants” sections revised | Jbaden1 |
| 6 | 0a | 2019-01-04 | * Chapter heading “Inherited Function Requirements” removed. Corresponding table renamed to “Requirements not cascaded”. * E/E Connection table got another column for allocated messages * Naming conventions for Implemented Functions corrected (FncName\_CmpName instead of FncName\_on\_CmpName) * Editorial corrections on the cover sheet * Explanatory text added to “Ethernet” section in chapter “Requirements on Connections” * AIS templates updated. Linked to Wiki page | Jbaden1 |
| 6 | 0a | 2019-01-04 | * Minor restructuring in FuSa chapter – after aligning with ECU Functional Spec * Bugfix: table 13 renamed from FTTI table to FHT table, includes a bug fix: each FSR is allocated to only one ECU/component | Jbaden1 |
| 6 | 0b | 2019-02-04 | * Change: Chapter “Interface Requirements” added to “Implemented Function xxx” section (to have a single chapter for to collect subscriber/publisher interface and mapping requirements which to not conform to the corresponding Data Dictionary objects) * Change: “CAN Interface” subsection renamed to “AIS Interfaces” again. Although several Subscriber/Publisher interface attributes are probably CAN bus specific, other attributes seem to be well suited for other networks than CAN. * Change: Chapter “ECU Specific Requirements” renamed to “Component Specific Requirements” in chapter “Implemented Function xxx”. Table “Requirements not cascaded” renamed to “Component Specific Requirements” and refined to describe changes from Logical Function requirements set more formally. This is also to help during VSEM import to identify those requirements of the Logical Function which cannot be simply carried over to the ECU. * Change: Explanatory text in section “Implemented Function xxx” improved. | Jbaden1 |
| 6 | 0c | 2019-02-05 | * Change: Layout of AIS Interfaces in Data Dictionary reworked to enable Excel Import | Jbaden1 |
| 6 | 0c | 2019-02-20 | * Bugfix: In AIS Interfaces none-picklist fields formatted as invisible | Jbaden1 |
| 6 | 1a | 2019-02-05 | Functional Safety related changes:   * Table “Architectural Redundancy Summary” updated * Section “Functional Flows for FTTI ‘xyz’” added to chapter “Component Interaction Diagrams” * Fault Tolerant Time Summary section added to Functional Safety chapter * Chapter “HW Metrics” added | Jbaden1 |
| 6 | 1a | 2019-04-02 | Headings of “Architectural Redundancy Summary” table clarified | Jbaden1 |
| 6 | 1a | 2019-04-10 | * ASIL Decomposition table moved from Function Spec into the Feature Implementation Spec (ASIL Decomposition of Technical Safety Requirements) * 2 alternative versions of the Function Allocation Table (Standard variant vs. Functional Safety variant) placed next to each other. | Jbaden1 |
| 6 | 1a | 2019-05-31 | * Function Allocation Table split into a base (non FuSa) part and a FuSa part to allow a more flexible mapping of MBSE functions (Logical and Technology) to RE functions (Atomic Logical and Implemented). | Jbaden1 |
| 6 | 1a | 2019-05-31 | * “Input Requirement” section reworked (symmetrically to all other templates). * Sections “Functional Flows for FTTI xyz” and “Fault Tolerant Time Summary” removed, because guidance is not available yet. * “Reference” and “Glossary” section moved back to introduction, i.e., to the very beginning of the document (such that also section 2 can already rely on it). * Some mostly editorial changes per request from FuSa team. | Jbaden1 |
| 6 | 1a | 2019-07-02 | * "Important" box added on cover sheet which points to the macros * “Input Requirements” section renamed to Input Information (after discussion with FuSa team) | Jbaden1 |
| 6 | 1a | 2019-07-17 | * Chapter “Message List” removed from CAN and LIN specific chapters of section “Requirements on Connections” | Jbaden1 |
| 6 | 1a | 2019-10-08 | * Chapter “ASIL Decomposition of Technical Safety Requirements”: Input TSRs are specified in the chapter right above the decomposition table. | Jbaden1 |
| 6 | 1a | 2019-10-09 | * Chapter “Service Oriented Communication” moved to section “Messages” in the Data Dictionary. Details from Central SW Wiki about FNV2 SOA added | Jbaden1 |
| 6 | 1a | 2019-10-25 | * Minor updates for HW IOs/Signals * Subsection “Functional Safety” removed from chapter “Feature Implementation Modeling”. Per requrest from FuSa team since no guidance is available how to model e.g. FHT timing diagram. | Jbaden1 |
| 6 | 1a | 2019-05-11 | * Copyright notice shortened and moved to cover sheet and added to footer (to be compliant [with Ford copyright guidelines](http://www.fgti.ford.com/client/NewFGTI/CopyrightNotice.html)) * Term “Disclaimer” no longer used for what is actually only a copyright notice | Jbaden1 |
| 6 | 1a | 2019-22-11 | * Some minor modifications for the SOA APIs/MQTT Messages in the section “Messages” of the Data Dictionary (section references Service Contracts via the API name) * Some minor updates of the Input/Output mapping tables in section “Requirements on Components” for mappings to SOA APIs and EDAS signals. | Jbaden1 |
| 6 | 1a | 2019-12-05 | * Upstream Documents section added to “Input Requirements/Documents” table * Custom style table formatting removed | Jbaden1 |
| 6 | 1a | 2020-01-07 | * Some fine tuning for naming conventions of E/E components and connections. * List of HW I/O signal types reduced to RF-A, RF-D, D, A, Networked and PWM. * Protocol column added to the E/E connection table | Jbaden1 |
| 6 | 1a | 2020-01-07 | * “HW Metric” and “Architecture Redundancy Summary” sections removed per request from the Functional Architecture Team (based on Governance Board decision [FSTGB-97](mailto:TrackLite%20%23%20FSTGB-97:%20https://www.tracklite.ford.com/prweb/PRAuth/TrackLiteSSO?pyActivity=@baseclass.RedirectAndRunWraper&ThreadName=WorkLinkThread&bPurgeTargetThread=true&AccessGroupName=FSTGB:ProjectAdministrators&Location=pyActivity%3DWork-.Open%26Action%3DReview%26HarnessPurpose%3DReview%26InsHandle%3DFORD-FSTGB-WORK+FSTGB-97)) * “Functional Safety” chapter moved to “Feature Implementation Requirements” section. “Function Allocation” chapter seemed no longer appropriate. | Jbaden1 |
| 6 | 1a | 2020-01-07 | * Ordering of fields in AIS interfaces tables modified to conform with the Macro Template and the Importer Sheet * Page Header: no longer in bold letters | Jbaden1 |
| 6 | 1a | 2020-03-09 | * Missing doc property “LatestSigMappingID” and “LatestAisInterfaceID” added * doc property “CopyrightDate” re-formatted to text and copyright date field in footer corrected * Version numbering re-initialized as 0.1 * Init value of version/revision date set to “yyyy/mm/dd” instead of “yyyy-mm-dd” to be in line with the “Edit Document Property” dialog * Type of “Latest….ID” doc properties changed from Text to Number | Jbaden1 |
| 6 | 1a | 2020-03-11 | * “Mapping” table removed from template. Has been migrated to macro. | Jbaden1 |
| 6 | 1a | 2020-03-13 | * Separate chapter “Technical Safety Requirements” removed. Content already covered by Allocation Table in chapter Function Allocation. * “Implemented Function” replaced by term “Technology Function” | Jbaden1 |

# Appendix

## Data Dictionary

### Logical Signals (TO BE DETERMINED)

|  |  |  |
| --- | --- | --- |
| **Signal Name** | **Description** | **Details** |
| **Key\_On** |  | Satisfies:  *No reqs. satisfied*  Source ECU:  Target ECU: |
| **Example Signal** | The description of the signal in the Documentation field. | Satisfies:  *No reqs. satisfied*  Source ECU:  Target ECU: |
| **End** |  | Satisfies:  *No reqs. satisfied*  Source ECU:  Target ECU: |
| **Trigger Name Transition 1** |  | Satisfies:  *No reqs. satisfied*  Source ECU:  Target ECU: |
| **implementation Signal** |  | Satisfies:  -1322985690.jpg Example Implementation Reqt  Source ECU:  Target ECU: |
| **Usage Data** |  | Satisfies:  *No reqs. satisfied*  Source ECU:  Target ECU: |
| **HV Batt DTE greater than or equal to 60 miles** |  | Satisfies:  *No reqs. satisfied*  Source ECU:  Target ECU: |
| **Tamb greater or equal to 60** |  | Satisfies:  *No reqs. satisfied*  Source ECU:  Target ECU: |
| **HV Batt temp not equal to hot** |  | Satisfies:  *No reqs. satisfied*  Source ECU:  Target ECU: |
| **Run** |  | Satisfies:  *No reqs. satisfied*  Source ECU:  Target ECU: |
|  |  | Satisfies:  *No reqs. satisfied*  Source ECU:  Target ECU: |

### Logical Parameters

### Technical Signals

|  |  |  |
| --- | --- | --- |
| **Signal Name** | **Description** | **Details** |
| **Charge 12V Battery** | Signal requesting 12 volt battery to be charged | Satisfies:  *No reqs. satisfied* |
| **ElCmprenbl\_B\_Rq** | Signal enabling electric compressor | Satisfies:  *No reqs. satisfied* |
| **ElCmprenbl\_B\_Rq** | Electric Compressor enable signal | Satisfies:  *No reqs. satisfied* |
| **Blower On Request** | Signal requesting blower on | Satisfies:  *No reqs. satisfied* |
| **CabnAmb\_Te\_Actl** | Cabin ambient temperature sensor | Satisfies:  *No reqs. satisfied* |
| **AC on Request** | Signal requesting HV battery to turn on AC compressor | Satisfies:  *No reqs. satisfied* |
| **BCM-AWD\_DLCM** | Signal from BCM to All Wheel Drive\_Driveline Control Module | Satisfies:  *No reqs. satisfied* |
| **ECM\_HEV-RCCM** | Signal from ECM\_HEV to RCCM | Satisfies:  *No reqs. satisfied* |
| **AC Off Request** | Signal requesting HV battery to turn off AC compressor | Satisfies:  *No reqs. satisfied* |
| **CabnAmb\_Te\_Actl** | Cabin ambient temperature sensor signal | Satisfies:  *No reqs. satisfied* |
| **Battery Power Mode** | Signal providing SOC | Satisfies:  *No reqs. satisfied* |
| **CabnAmb\_Te\_Actl** | Cabin air temperature signal | Satisfies:  *No reqs. satisfied* |
| **AirAmb\_Te\_Actl** | Signal to detect outside air temperature | Satisfies:  *No reqs. satisfied* |
| **CabinTemp-RCCM** | Signal sensing cabin temperature sent to RCCM | Satisfies:  *No reqs. satisfied* |
| **HMI-Cust** | Feedback signal from HMI to HMI Display Screen | Satisfies:  *No reqs. satisfied* |
| **ElCmpr\_N\_Rq** | Signal requesting electric compressor rpm | Satisfies:  *No reqs. satisfied* |
| **BCM-BMS** | Signal from Body Control Module to Battery Management Module | Satisfies:  *No reqs. satisfied* |
| **ElCmpr\_N\_Rq** | Electric Compressor RPM signal | Satisfies:  *No reqs. satisfied* |
| **A14\_2\_A9** | Signal from ACCM to HPCM | Satisfies:  *No reqs. satisfied* |
| **Temperature Sensor** |  | Satisfies:  *No reqs. satisfied* |
| **HvacTMOSActv\_B\_Rq** |  | Satisfies:  *No reqs. satisfied* |
| **AirAmb\_Te\_Actl** | OSA temperature signal | Satisfies:  *No reqs. satisfied* |
| **ECG-BCM** | Signal from ECG to BCM | Satisfies:  *No reqs. satisfied* |
| **PCM-HPCM** | Signal from PCM to HPCM | Satisfies:  *No reqs. satisfied* |
| **BMS-BCM** | Signal from BMS to BCM | Satisfies:  *No reqs. satisfied* |
| **SOBDMC\_HPCM-ACCM** | Signal from HPCM to ACCM | Satisfies:  *No reqs. satisfied* |
| **Test** |  | Satisfies:  *No reqs. satisfied* |
| **RCCM-ECG** | Signal from RCCM to ECG | Satisfies:  *No reqs. satisfied* |
| **BCM-HMI** | Signal from BCM to HMI | Satisfies:  *No reqs. satisfied* |
| **HMI-HPCM** | Signal from HMI to HPCM | Satisfies:  *No reqs. satisfied* |
| **BCM-HPCM** | Signal from BCM to HPCM | Satisfies:  *No reqs. satisfied* |
| **ECG-HPCM** | Signal from ECG to HPCM | Satisfies:  *No reqs. satisfied* |
| **GSM-ECG** | Signal from GSM to ECG | Satisfies:  *No reqs. satisfied* |

#### GSDB Signals

#### HW I/Os

#### Diagnostic Interfaces

##### DTCs

<Some Description of the DTC.

Refer to VSEM document “[Diagnostic Fault Coverage and DTC Numbers](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=yAUtrNhnx3NrTDAAAAAAAAAAAAA&servername=Production_Server)

[Design Consideration](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=yAUtrNhnx3NrTDAAAAAAAAAAAAA&servername=Production_Server)”, what to fill into the attributes below>

|  |  |
| --- | --- |
| **Test Period Time** |  |
| **Test Run Criteria,** |  |
| **Enable Criteria (EC)** |  |
| **Applicable** |  |
| **FailureTypeBytes** |  |
| **Test Period Time** |  |
| **Test Run Criteria,** |  |

##### DIDs

### Technical Parameters

### Mappings

### Technical Interfaces

#### AIS Interfaces

##### Publisher Interfaces

##### Subscriber Interfaces

#### AUTOSAR Ports

### Messages/APIs

#### CAN Bus “<Bus Name>”

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CAN ID** | **Transmission Mode** | **Period** | **Signal Names** | **Transmitter(s)** | **Receiver(s)** |
|  |  |  |  |  |  |
|  |
|  |
|  |

#### LIN Bus “<Bus Name>”

#### AUTOSAR Interfaces

#### SOA Service Contracts

<Service contract purpose/behavior>

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Messaging Pattern | Frequency  (For Data Broadcast Only) | Message Data Element(s)  (Must Match GPB) or applicable CAN signal | Description of Data Element(s) | Topic Name |
| Choose an item. |  | GBP Data element / CAN Signal name 1 | Detailed encoding of data element 1 |  |
| … |  |  |
| GBP Data element / CAN Signal name 1 | Detailed encoding of data element 3 |  |

### Encoding Types

#### DisplayUserRequest

Displays user request to HMI

#### ElCmprenbl\_B\_Rq

Signal enabling electric compressor

#### ElCmprenbl\_B\_Rq

Electric Compressor enable signal

#### BlowerControlSettings

Signal that requests blower fan state of FANON, FANONAC, or FANOFF

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| FANON |  |
| FANONAC |  |
| FANOFF |  |

#### DataStoreStatus

Signal that sends STORED, STORING, or FAILED\_TO\_STORE status

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| STORED |  |
| STORING |  |
| FAILED\_TO\_STORE |  |

#### CabnAmb\_Te\_Actl

Cabin ambient temperature sensor

#### BCM-PCM

Signal from BCM to PCM

#### WakeUpAmbientTemp

Signal that provides LastKnownAmbientTemp

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| LastKnownAmbTemp |  |

#### AirAmb\_Te\_Actl

Signal to detect outside air temperature

#### CabinTemp-RCCM

Signal sensing cabin temperature sent to RCCM

#### CabinTemperature

Signal that sends cabin temperature in degrees C

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| CABIN\_TEMPERATURE |  |

#### Cooling Request

#### FeedbackInformation

Signal that provides FeedbackInformation Cooling Status or CoolingDuration

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
|  |  |
|  |  |

#### BCM-BMS

Signal from Body Control Module to Battery Management Module

#### Temperature Sensor

#### HvacTMOSActv\_B\_Rq

#### AirAmb\_Te\_Actl

OSA temperature signal

#### test signal

#### PCM-HPCM

Signal from PCM to HPCM

#### ECG-BCM

Signal from ECG to BCM

#### HPCM-ACCM

Signal from HPCM to ACCM

#### Test

#### BCM-HMI

Signal from BCM to HMI

#### VehicleSpeed

#### OffboardClientRequest

Signal that sends YES or NO

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| Yes |  |
| No |  |

#### HMI-HPCM

Signal from HMI to HPCM

#### BCM-HPCM

Signal from BCM to HPCM

#### PlugInStatus

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| PluggedIn |  |
| UnPlugged |  |

#### Compressor\_Control\_Out

Signal that requests compressor on or off

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| ON |  |
| OFF |  |

#### InteriorStatus

Signal providing cabin temperature status of CABIN\_HOT or CABIN\_NORMAL

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| ITS\_HOT |  |
| ITS\_NORMAL |  |

#### GSM-ECG

Signal from GSM to ECG

#### Vehicle Status

Signal that provides BatteryStatus, IgnitionStatus, TransmissionStatus, VehicleSpeed, WakeUpSignal

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| PlugInStatus |  |
|  |  |

#### Charge 12V Battery

Signal requesting 12 volt battery to be charged

#### AC ControlRequest

Signal that requests AC compressor on or off

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| ON |  |
| OFF |  |

#### Blower On Request

Signal requesting blower on

#### AC on Request

Signal requesting HV battery to turn on AC compressor

#### ECM\_HEV-RCCM

Signal from ECM\_HEV to RCCM

#### AC Off Request

Signal requesting HV battery to turn off AC compressor

#### CabnAmb\_Te\_Actl

Cabin ambient temperature sensor signal

#### CabnAmb\_Te\_Actl

Cabin air temperature signal

#### Battery Power Mode

Signal providing SOC

#### HMI-Cust

Feedback signal from HMI to HMI Display Screen

#### BlowerControl

Signal that requests blower turn ON or OFF

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| ON |  |
| OFF |  |

#### HVBatteryTemperature

High Voltage Battery Temperature

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| HV\_BATTERY\_TEMPERATURE |  |

#### Interior Temperature Status

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| HOT |  |
| NORMAL |  |

#### ElCmpr\_N\_Rq

Signal requesting electric compressor rpm

#### ElCmpr\_N\_Rq

Electric Compressor RPM signal

#### ACCM-HPCM

Signal from ACCM to HPCM

#### WakeUpSignal

Signal that sends WAKEUP or SLEEP

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| WAKEUP |  |
| SLEEP |  |

#### CoolingDuration

Signal that sends Cooling Time

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| CoolingTime |  |

#### Feature Settings

Signal that sends Feature Settings TMOS Settings and System Settings

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
|  |  |

#### A5\_2\_A4

Signal from BMS to BCM

#### RCCM-ECG

Signal from RCCM to ECG

#### AmbientTemperature

Signal that sends ambient temperature in degrees C

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| AMBIENT\_TEMPERATURE |  |

#### Vehicle Speed

#### ECG-HPCM

Signal from ECG to HPCM

#### Fan Number of Trials

Signal that sends the number of fan trials ONE, TWO, or THREE counts

##### Encoding values

|  |  |
| --- | --- |
| **Enumeration Values** | **Enumeration Value Description** |
| ONE |  |
| TWO |  |
| THREE |  |

#### blower ON

Document ends here.