Ambient Lighting

()

(F000063)

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| --- | --- | --- | --- |
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# 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 Ambient Lighting to the following electrical architecture(s):

|  |  |  |
| --- | --- | --- |
| **Electrical Architecture Name** | **Owner** | **Reference** |
| FNV3 |  |  |
| FNV2 |  |  |

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

## Document Audience

The FIS is authored by **Matheus Clavel** . 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 stakeholder of the feature and their influence refer to:

[Click here to open the latest Stakeholders List.](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=ymrJZvjAx3NrTD)

## 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** | **Document Location** | **Revision** |
| --- | --- | --- | --- | --- |
| Cybersecurity Assessment | Cybersecurity Relevancy Assessment Template V1.2 - Ambient Lighting 09-02-2021 | GIS1 Item Number: 27.60/35 | https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=0VuFivKLx3NrTD | v1.2 |
| FD | FD - Ambient Lighting - F000063 5-28-2021 (Working) | VDOC084911 | https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=xKe9M8cLx3NrTDAAAAAAAAAAAAA&servername=Production\_Server | Draft |
| FIS | FIS - Ambient Lighting F000063 07-20-2021 (Working) | VDOC165786/A | https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=GthJJV8ax3NrTD | Draft |
| Ford GIS Standard | Ford GIS Standard |  |  |  |
| FS | FGS - Ambient Lighting 11-30-2020 | VDOC179646/A | https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=C3qJsAbGx3NrTD | Draft |
| Functional Specification Body Control Module | BCM Functional Specification | FS-RU5T-14B476-AGB001 | https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=CzkF7IK0x3NrTD | 16.01 |
| FUSA documentation guideline for FD | FFSG01.10 Feature Document (Item Definition) Guideline |  |  | 2022.1 |
| HMI Spec - APIM | VEHICLE SETTINGS APIM SPSS V1.23 | VSv2-FUN-REQ-025223 |  | 1.23 |

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** | **Document Location** |
| --- | --- | --- |
| CIE\_1938 Standard | Light Color Standard Pattern - Cx, Cy | https://en.wikipedia.org/wiki/CIE\_1931\_color\_space |
| IEEE Std 1012-2004 IEEE Standard for Software Verification and Validation |  |  |
| ISO/IEC 19500-2:2003 | Information technology -- Open Distributed Processing -- Part 2 |  |
| Lumen definition | Lumen Definition | https://pt.wikipedia.org/wiki/L%C3%BAmen |
| UML Testing Profile (UTP), v1.2 |  |  |

Table 1‑3: External documents and publications

## Glossary

### Definitions

| **Definition** | **Description** |
| --- | --- |
| Ajar | Any door position other than closed. |
| Another Three Letter Acronym | self explanatory |
| Arbitrator | Strategy that chooses an output based on several inputs according to well defined rules. |
| AUTO | Contextual Ambient Lighting Automatic Mode: Lighting color and intensity driven by SDM. |
| Auto Ambient Lighting | Auto Ambient Lighting is a trade name displayed on the HMI for Contextual Ambient Lighting. |
| concept | An abstract idea representing fundamental characteristics of its representation. Concepts are perceptions of an object, its characteristics (i.e., structural and behavioral), and its relationship(s) to another object(s). |
| Contextual Ambient Lighting | Operation mode in which Ambient Lighting can be driven either by user input (in this case it is called MANUAL mode) or by SDM (in this case it is called AUTOMATIC). |
| controlled vocabulary | an organized arrangement of words and phrases used to index content and/or to retrieve content through browsing or searching. It typically includes preferred and variant terms and has a defined scope or describes a specific domain. |
| controlled vocabulary term | An element of a controlled vocabulary |
| Diagnostics and Configuration | Feature / System that deals with vehicle's configuration and diagnostics parameters and services such as lighting ramping up and down times, default colors, diagnostics services, etc. |
| Drive Mode | Current drive mode selected by user through SDM. |
| End of Line | Production line phase in which electronic modules get programmed and configured for a specific product line variant / model. |
| Front HMI | HMI available to driver and passenger at vehicle interior 1st row. |
| Human Machine Interface | Any device that allows for interaction between humans and machines (touch screens, knobs, buttons, voice decoders, microphones, etc). |
| MANUAL | Contextual Ambient Lighting Manual Mode: Lighting color and intensity driven by user selection. |
| Master | Master node in a network. |
| Rear HMI | HMI available to passengers at vehicle 2nd / 3rd interior rows. |
| Selectable Drive Mode | Feature that allows user to select a drive mode. |
| Slave | Slave node in a network. |
| Traceability Matrix | Matrix that establishes relations between model elements. |
| Vehicle Status | Any data that exposes vehicle system state variables such as ignition state, battery state, door ajar status, etc. |
| vocabulary | A set of terms, each representing a single concept in a Domain of Discourse. A fundamental tool for communication and creating a common understanding of a Domain. |
| vocabulary Term | An abstraction, in the form of a natural language expression, representing a concept existing in the Ontology of a Domain of Discourse |

Table 1‑4: Definitions used in this document

### Abbreviations

| **Abbr.** | **Stands for** |
| --- | --- |
| AAL | Auto Ambient Lighting |
| Acc | Accessory |
| AMBL | The Ambient Lighting feature itself. |
| BCM | Body Control Module |
| CAL | Contextual Ambient Lighting |
| ECU | Electronic Control Unit |
| EOL | End of Line |
| HMI | Human Machine Interface |
| LIN | Local Interconnected Network |
| SDM | Selectable Drive Mode |
| WF | Welcome / Farewell |

Table 1‑5: Abbreviations used in this document.

# Feature Implementation Overview

## Description

Ambient Lighting Physical

Representation of the Ambient Lighting feature.

Description of Ambient Lighting:

With the ambient lighting feature, a user can set the mood in the vehicle’s cabin by selecting one of several different accent colors.

When activated ambient lighting illuminates foot wells, cup holders, and door release handles, map pockets, etc., depending on the vehicle model. A user can also adjust brightness settings to further personalize the interior.

On multicolor variants equipped with door handle lights, when Ambient Lighting feature is available to the user experience it will also be capable of indicating a cabin door being ajar by activating the door’s lights in a pre-configured color (Red).

On vehicles equipped with a Contextual Ambient Lighting (CAL) system, the Ambient Lighting will also provide support the Selectable Drive Mode feature. Which means that when the CAL is in Auto mode, the user will see Ambient Lighting lamps being orchestrated by the Selectable Drive Mode feature (colors shift) through traditional drive modes.

Some features such as Welcome & Farewell, Rejuvenate and Selectable Drive Mode use Ambient Lighting lamps as a resource to perform their requirements.

## 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** | | | |
| Cybersecurity Assessment | Cybersecurity Relevancy Assessment Template V1.2 - Ambient Lighting 09-02-2021 | v1.2 |  |
| FD | FD - Ambient Lighting - F000063 5-28-2021 (Working) | Draft |  |
| FIS | FIS - Ambient Lighting F000063 07-20-2021 (Working) | Draft |  |
| Ford GIS Standard | Ford GIS Standard |  |  |
| FS | FGS - Ambient Lighting 11-30-2020 | Draft |  |
| Functional Specification Body Control Module | BCM Functional Specification | 16.01 |  |
| FUSA documentation guideline for FD | FFSG01.10 Feature Document (Item Definition) Guideline | 2022.1 |  |
| HMI Spec - APIM | VEHICLE SETTINGS APIM SPSS V1.23 | 1.23 |  |
|  |
| **Ford Engineering Standards** | | | |
|  |  |  |  |
|  |  |  |  |
| **Legal Regulations** | | | |
|  |  |  |  |
| **Industry Standards** | | | |
|  | Ambient Lighting Strategy (UX / CIED) | Ambient Lighting shall comply with to RQT-002004-022593 the Ambient Lighting Strategy. |  |
|  | ISO 26262 | The system should be developed according to Ford's implementation of Functional Safety. |  |
|  |
| **Other Sources** | | | |
|  | Example AR |  |  |
|  | Execution of Logical Elements | The ambient lighting control function shall evaluate state charts and decision tables a maximum of one (1) time each execution cycle. |  |
|  | Function Execution Cycle Time | The Ambient Lighting Control function shall have an execution cycle time of no more than 21ms from receipt of all necessary input signals. |  |
|  | Light Output Color Range | This function shall be able to emit light in the color coordinates based on CIE 1931 Color Space. |  |
|  | Light Output Intensity Range | This function shall be able to emit light with intensity measurable in lumens [lm] unit at . Its intensity ranges from 0 up to 2.5 lm. |  |
|  |

Table 2‑1: Input Requirements/Documents

## Lessons Learned

No lessons learned specified.

## Assumptions

No Assumptions specified.

# Feature Implementation Architecture

## Functional Architecture

### Description

This functional boundary diagram depicts logical function allocation in terms of logical function units.

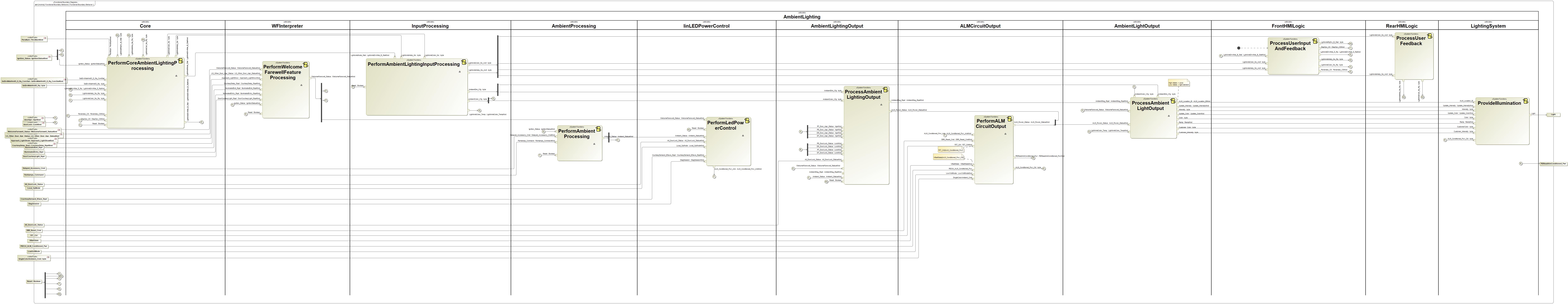


Figure 3‑1: Functional Boundary Behavior

### 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 |
| --- | --- | --- |
|  | 115039898.jpg DetermineDriverRearDoorLockLightBehavior | Determine driver rear door lock light behavior when door is ajar according to Figure 2.2.17-14 Set Driver Rear Door Lock Indication FSM. |
|  | 115039898.jpg DeterminePassengerRearDoorLockLightBehavior | Determine passenger rear door lock light behavior when door is ajar according to Figure 2.2.17-15 Set Passenger Rear Door Lock Indication FSM. |
|  | 115039898.jpg PerformContextualAmbientLightingColorIntensityValueDecision | Returns ambient lighting color and intensity when contextual ambient lighting is active according to Table 2.2.17-26g Contextual Ambient Lighting Color and Intensity Value Decision Table. |
|  | 115039898.jpg PerformAmbientColorMappingDecision | Remaps user color input by user according to Table 2.2.17-11a Ambient Color mapping Decision Table. |
|  | 115039898.jpg DetermineNonDoorLIN Master\_L1\_P00LedState | Determines light color, intensity and behavior of all ambient lights based on state machine Figure 2.2.17-7 Determining non-Door LIN Master\_L1\_P00 FSM. |
|  | 1486707590.jpg ProcessAmbientLightingOutput | Determines which light / group of light is to be turned ON / OFF.  Determines which behavior (Welcome, Farewell, Ajar, etc) is to be performed by a single / group of lights. |
|  | 115039898.jpg DeterminePassengerRearDoorLockIndication | Turns passenger rear door lock indication ON / OFF according to Table 2.2.17-17 Determining Passenger Rear Door Lock Indication. |
|  | 115039898.jpg PerformAmbientLightingMemoryAndPersonalization | Manages user ambient lighting personalization / profile changes. |
|  | 115039898.jpg DeterminePassengerFrontDoorLockIndication | Turns passenger front door lock indication ON / OFF according to Table 2.2.17-19 Determining Passenger Front Door Lock Indication. |
|  | 1486707590.jpg ProcessAmbientLightOutput | Process ambient lighting requests and send them out to ALM through LIN. |
|  | 1486707590.jpg PerformCoreAmbientLightingProcessing | Manages Ambient Lighting features:  - HMI Comm Variant Decoding  - Memory and Personalization  - Contextual Ambient Lighting (Selectable Drive Modes). |
|  | 1486707590.jpg ProcessUserFeedback | Updates HMI 2 with user with current user settings. |
|  | 115039898.jpg DetermineALMPowerStatus | Determines ALM power status according to Table 2.2.36-3 ALM Power Status Decision Table. |
|  | 115039898.jpg DetermineLedLocationID | Determines which individual / group LED light is to be driven in terms of its location ID. |
|  | 115039898.jpg DetermineDriverFrontDoorLockIndication | Turns driver front door lock indication ON / OFF according to Table 2.2.17-17 Determining Driver Front Door Lock Indication. |
|  | 1486707590.jpg PerformLedPowerControl | Command Ambient Light Module power supply ON / OFF according to Table 2.2.17-25 LIN-LED Power Control. |
|  | 115039898.jpg PerformSelectiveDriveModeRangeSelectionDecision | Determine which HMI Index will be used by HMI logic when ambient lighting is in contextual ambient lighting mode according to Table 2.2.17-26f Selective Drive Mode Range Selection Decision Table. |
|  | 115039898.jpg DeterminePassengerFrontDoorLockLightBehavior | Determine passenger front door lock light behavior when door is ajar according to Figure 2.2.17-13 Set Passenger Front Door Lock Indication FSM. |
|  | 115039898.jpg PerformContextualAmbientLighting | Manages ambient lighting when user switches to automatic mode.  In automatic mode ambient lighting changes as drive mode changes. |
|  | 115039898.jpg DetermineDriverFrontDoorLightBehavior | Determine driver front door light behavior when door is Ajar according to Figure 2.2.17-8 Determining Driver Front Door FSM. |
|  | 115039898.jpg CalculateAmbientLightingActiveProfileIndex | Determines current ambient lighting active profile index according to Table 2.2.17-26 Ambient Lighting Active Profile Decision Table. |
|  | 115039898.jpg GenerateMessage0x37AmbientLightingData | Calculate ambient lighting color and intensity for LIN message 0x37 according to Table 5.3.14-3b Process Ambient Color and Intensity Request for LIN Message 0x37. |
|  | 1486707590.jpg PerformAmbientProcessing | Command ambient lighting ON / OFF according to decision table 2.2.17-3 Ambient Lighting Decision Table. |
|  | 1486707590.jpg ProcessUserInputAndFeedback | Updates HMI 1 with user with current user settings. |
|  | 115039898.jpg DeterminePersonalizedAmbientLightingColor | Determines current ambient lighting color according to Table 2.2.17-26b Personalized Ambient Lighting Color Selection Decision Table. |
|  | 1486707590.jpg PerformAmbientLightingInputProcessing | Process ambient lighting color and intensity requested by user and updates HMI. |
|  | 115039898.jpg PerformSelectiveDriveModeRequestDecision | Evaluate selective drive mode enable conditions according to Table 2.2.17-26f Selective Drive Mode Range Selection Decision Table. |
|  | 115039898.jpg CheckLINWakeUp | Enable / disable communication with ALM when LIN wakes up according to Figure 5.3.14-2 ALM LIN Module Wake Up Status FSM. |
|  | 1486707590.jpg PerformWelcomeFarewellFeatureProcessing | Determines which Welcome Farewell behavior is to be used when Ambient Lighting Feature is not operating in Ambient mode. |
|  | 115039898.jpg PerformDriveModeBasedLightAmbientColorDecision | Updates internal user chosen ambient color as user put ambient lighting feature in automatic mode according to Table 2.2.17-11ab Drive Mode Based Light Ambient Color Decision Table. |
|  | 115039898.jpg DeterminePassengerRearDoorLightBehavior | Determine passenger rear door light behavior when door is Ajar according to Figure 2.2.17-11 Determining Passenger Rear Door FSM. |
|  | 115039898.jpg PerformHMICommVariantDecoding | Determine ambient lighting color and intensity to be sent to HMI logic according to Table 2.2.17-25a HMI Comm Variant Color and Intensity Update Decision Table. |
|  | 115039898.jpg DetermineDriverRearDoorLockIndication | Turns driver rear door lock indication ON / OFF according to Table 2.2.17-21 Determining Driver Rear Door Lock Indication. |
|  | 1486707590.jpg PerformALMCircuitOutput | Manages ambient lighting by providing LED light module with pwm duty cycle necessary to light dimming, turn ON/OFF command, diagnostic reading, etc. |
|  | 115039898.jpg DetermineLedParams | Determines Led light commands given by BCM to ALM according to Table 5.3.14-3 Process Ambient Message Request. |
|  | 115039898.jpg DetermineDriverRearDoorLightBehavior | Determine driver rear door light behavior when door is Ajar according to Figure 2.2.17-10 Determining Driver Rear Door FSM. |
|  | 115039898.jpg DetermineALMConditionedPwrCmd | Determines the command to be sent to ALM according to Table 2.2.36-1 ALM Circuit command Decision Table. |
|  | 115039898.jpg PerformContextualAmbientLightingHMIStatusUpdate | Updates HMI Logic with ambient lighting color associated with current drive mode picked by user according to Table 2.2.17-26d Contextual Ambient Lighting HMI Status Update Decision Table. |
|  | 115039898.jpg DeterminePassengerFrontDoorLightBehavior | Determine passenger front door light behavior when door is Ajar according to Figure 2.2.17-9 Determining Passenger Front Door FSM. |
|  | 115039898.jpg DetermineALMCktOutput | Determines output type according to ambient lighting type (single color vs multiple colors) according to Table 2.2.36-2 ALM Circuit Output Decision Table. |
|  | 115039898.jpg PerformAmbientIntensityMappingDecision | Rescale user chosen ambient lighting intensity from 0-100 to 0-15 according to Table 2.2.17-11b Ambient Intensity mapping Decision Table. |
|  | 115039898.jpg DeterminePersonalizedAmbientLightingIntensity | Determines current ambient lighting intensity according to Table 2.2.17-26c Personalized Ambient Lighting Intensity Selection Decision Table. |
|  | 115039898.jpg DeterminePersonalizedAmbientLightingStatus | Returns current ambient lighting status according to Table 2.2.17-26a Personalized Ambient Lighting Status Decision Table. |
|  | 115039898.jpg DetermineDriverFrontDoorLockLightBehavior | Determine driver front door lock light behavior when door is ajar according to Figure 2.2.17-12 Set Driver Front Door Lock Indication FSM. |

Table 3‑1: List of Functions

### Signal List

| **Signal Name** | **Description** |
| --- | --- |
| 1020393122.jpg **All\_DoorLock\_Status** |  |
| 1020393122.jpg **ALM\_Conditioned\_Pwr\_Arb** | Name: ALM\_Conditioned\_Pwr\_Arb  Description: Ambient Light Moudule conditioned power supply. |
| 1020393122.jpg **ALM\_ConditionedPower** |  |
| 1020393122.jpg **ALM\_Location\_ID** | Name: ALM\_Location\_ID  Description: Indicates the ALM module NODE ADDRESS placed at various locations.Generally, lighting elements  will be located in the cupholders, center console, footwells, doors, scuffplates. |
| 1020393122.jpg **ALM\_Power\_Status** | Name: ALM\_Power\_Status  Description: This dataflow is used to convert the numeric output of ALM\_Conditioned\_Pwr\_Ckt to discrete to send  it over LIN |
| 1020393122.jpg **Ambient\_Status** | Name: Ambient\_Status  Description: Dataflow indicating the output of the ambient processing |
| 1020393122.jpg **AmbientColor\_Cfg** | Name: AmbientColor\_Cfg  Description: Currently selected ambient color  DomainElement : 0:15  DomainDescription : Color level for ambient lighting |
| 1020393122.jpg **AmbientDim\_Cfg** | Name: AmbientDim\_Cfg  Description: Currently selected ambient dimming level  DomainElement : 0:15  DomainDescription : Ambient ligiting dimming level |
| 1020393122.jpg **AmbientMsg\_Rqst** | Name: AmbientMsg\_Rqst  Description: This array contains the ambient message request for LIN module.  The index 'n' has following domain values:  ALL  FOOTWELLS  DF\_DOOR  PF\_DOOR  DR\_DOOR  PR\_DOOR  DF\_DOOR\_HANDLE  PF\_DOOR\_HANDLE  DR\_DOOR\_HANDLE  PR\_DOOR\_HANDLE |
| 1020393122.jpg **Approach\_LightShow** | Name: Approach\_LightShow  Description: Indicates when to start approach light show.  Note: It will take care of the maximum time limit of 25 seconds. |
| 1020393122.jpg **Color** | Name: Color  Description: Indicates Color need to set for ambient lighting.  OFF domain value for Color is 0. |
| 1020393122.jpg **CourtesyDelay\_Rqst** | Name: CourtesyDelay\_Rqst  Description: Request to illuminate the interior courtesy lights. |
| 1020393122.jpg **CourtesyDemand\_BSave\_Rqst** | Name: CourtesyDemand\_BSave\_Rqst  Description: Request from Battery Saver to turn off the courtesy lights and the demand lights. |
| 1020393122.jpg **Customer\_Color** | Name: Customer\_Color  Description: Indicates Color need to set for ambient lighting. |
| 1020393122.jpg **Customer\_Intensity** | Name: Customer\_Intensity  Description: Indicates the intesity required to set for ambient lighting. |
| 1020393122.jpg **DBR\_Reset\_Cmd** | Name: DBR\_Reset\_Cmd  Description: Reset command for latching dual battery relay. This opens the latching relay |
| 1020393122.jpg **Delayed\_Accessory\_Cmd** | Name: Delayed\_Accessory\_Cmd  Description: Input to load shedding - delayed accesory status |
| 1020393122.jpg **DF\_Door\_Ajar\_Status** | Name: DF\_Door\_Ajar\_Status  Description: Indicates if the driver's front door is ajar. |
| 1020393122.jpg **DF\_DoorLock\_Status** | Name: DF\_DoorLock\_Status  Description: Driver Front door lock status |
| 1020393122.jpg **DiagSession** | Name: DiagSession  Description: Indicates the active session of Diagnostics |
| 1020393122.jpg **DispOpr\_CS** | Name: DispOpr\_CS  Description: Operation request command for personalization features from Center Stack. |
| 1020393122.jpg **DoorAjar** |  |
| 1020393122.jpg **DoorCourtesyLight\_Rqst** | Name: DoorCourtesyLight\_Rqst  Description: Request to illuminate the interior courtesy lights. |
| 1020393122.jpg **DoorLocked** |  |
| 1020393122.jpg **DR\_Door\_Ajar\_Status** | Name: DR\_Door\_Ajar\_Status  Description: Indicates if the driver's rear door is ajar. |
| 1020393122.jpg **DR\_DoorLock\_Status** | Name: DR\_DoorLock\_Status  Description: Driver rear door lock status |
| 1020393122.jpg **FET\_Ctrl** | Name: FET\_Ctrl  Description: Overrides FET output controller when SHORT. OK allows FET output process to drive the FET. |
| 1020393122.jpg **Ignition\_Status** | Name: Ignition\_Status  Description: The processed value for current Ignition state. |
| 1020393122.jpg **IlluminatedEntry\_Rqst** | Name: IlluminatedEntry\_Rqst  Description: Request to illuminate the interior courtesy lights. |
| 1020393122.jpg **IlluminatedExit\_Rqst** | Name: IlluminatedExit\_Rqst  Description: Request to illuminate the interior courtesy lights. |
| 1020393122.jpg **Intensity** | Name: Intensity  Description: Indicates the intesity required to set for ambient lighting. |
| 1020393122.jpg **LG\_Other\_Door\_Ajar\_Status** | Name: LG\_Other\_Door\_Ajar\_Status  Description: Indicates whether only LG is open or LG along with some other Door is Ajar. |
| 1020393122.jpg **LghtAmbColr\_No\_Rq** | Ambient Lighting Color Selection Request. |
| 1020393122.jpg **LghtAmbDrvMde\_B\_Stat** | Name: LghtAmbDrvMde\_B\_Stat  Description: CAN signal for Contextual Ambient Lighting MANUAL and AUTOMATIC BCM f eedback. |
| 1020393122.jpg **LghtAmbDrvMde\_D\_Rq** | Name: LghtAmbDrvMde\_D\_Rq  Description: CAN signal for setting Contextual Ambient Lighting MANUAL and AUTOMATIC HMI request. |
| 1020393122.jpg **LghtAmbIntns\_No\_Rq** | User request to set ambient intensity level. |
| 1020393122.jpg **LightAmbColor\_No** | Name: LightAmbColor\_No  Description: This number will be derived from CAN inputs from ambient color number depending on whether  Enhanced memory exists. |
| 1020393122.jpg **LightAmbColor\_No\_Actl** | Name: LightAmbColor\_No\_Actl  Description: CAN signal for ambient color level status  DomainElement : 0:15  DomainDescription : ambient color level |
| 1020393122.jpg **LightAmbColor\_No\_Rq** | Name: LightAmbColor\_No\_Rq  Description: CAN signal for setting ambient color level  DomainElement : 0:15  DomainDescription : ambient color level |
| 1020393122.jpg **LightAmbColor\_Temp** | Name: LightAmbColor\_Temp  Description: Ambient color for Lincoln and Ford.  0-ICE\_BLUE; 1- ORANGE; 2-SOFT\_BLUE; 3-RED; 4-GREEN; 5-BLUE; 6-PURPLE; 7-LICOLN\_WHITE; 8-AMBER; 9-TEAL; 10-BURNT\_ORANGE; 11-LINCOLN\_BLUE; 12-LINCOLN\_GREEN; 13-LILAC |
| 1020393122.jpg **LightAmbIntsty\_No** | Name: LightAmbIntsty\_No  Description: This number will be derived from CAN inputs from ambient intensity number depending on whether  Enhanced memory exists |
| 1020393122.jpg **LightAmbIntsty\_No\_Actl** | Name: LightAmbIntsty\_No\_Actl  Description: CAN signal for ambient color level status  DomainElement : 0:100  DomainDescription : ambient dimming level |
| 1020393122.jpg **LightAmbIntsty\_No\_Rq** | Name: LightAmbIntsty\_No\_Rq  Description: CAN signal for setting ambient dim level  DomainElement : 0:255  DomainDescription : ambient dimming level |
| 1020393122.jpg **Local\_OpMode** | Name: Local\_OpMode  Description: initial value changed Awake -> Sleep(Conti.m)  This Dataflow indicates the current state of the ECU. |
| 1020393122.jpg **LowVoltMode** | Name: LowVoltMode  Description: This signal determines if active load will be affected or unaffected by Stop/Start event voltage drop. |
| 1020393122.jpg **Parklamps\_Command** | Name: Parklamps\_Command  Description: Command to control the position/parklamps. |
| 1020393122.jpg **PersIndex\_CS** | Name: PersIndex\_CS  Description: Personality index to use with operation from Center Stack. |
| 1020393122.jpg **PersNum** | Name: PersNum  Description: Indicates which personality is currently selected. |
| 1020393122.jpg **PF\_Door\_Ajar\_Status** | Name: PF\_Door\_Ajar\_Status  Description: Indicates if the passenger's front door is ajar. |
| 1020393122.jpg **PF\_DoorLock\_Status** | Name: PF\_DoorLock\_Status  Description: Passenger Front Door lock status. |
| 1020393122.jpg **PR\_Door\_Ajar\_Status** | Name: PR\_Door\_Ajar\_Status  Description: Indicates if the passenger's rear door is ajar. |
| 1020393122.jpg **PR\_DoorLock\_Status** | Name: PR\_DoorLock\_Status  Description: Passanger rear door lock status. |
| 1020393122.jpg **Ramp** | Name: Ramp  Description: Indicates ramping is required/not required for ambient lighting. |
| 1020393122.jpg **Reset** | Name: Reset  Description: Reset based on Tire Index |
| 1020393122.jpg **SelDrvMdeHmi03\_D\_Rq\_ComStat** | Name: SelDrvMdeHmi03\_D\_Rq\_ComStat  Description: Communication Status Received over CAN for SelDrvMdeHmi03\_D\_Rq. |
| 1020393122.jpg **SelDrvMdeHmi03\_Rq** | Name: SelDrvMdeHmi03\_Rq  Description: CAN signal for the selected drive mode. |
| 1020393122.jpg **Update\_Color** | Name: Update\_Color  Description: Indicates whether the color set for ambient lighting needs update or not. |
| 1020393122.jpg **Update\_Intensity** | Name: Update\_Intensity  Description: Indicates the intesity for ambient lighting needs to be updated or not. |
| 1020393122.jpg **VBattState** | Name: VBattState  Description: Array indicating Current State of a specific Voltage Range. |
| 1020393122.jpg **WelcomeFarewell\_Status** | Name: WelcomeFarewell\_Status  Description: Indicates welcome or farewell status for ambient lighting. |

Table 3‑2: List of Logical Signals

## Physical Architecture

### E/E Architecture

#### E/E Architecture Variants

|  |  |  |
| --- | --- | --- |
| **E/E Architecture Variant Name** | **Variant Description** | **Variant Condition (Optional)** |
| FNV2 | BCM interface through HS1-CAN. |  |
| FNV3 | BCM interface through FD1-CAN. |  |

Table 3‑3: List of E/E Architecture Variants

##### E/E Architecture “Architecture Variant: FNV3 Variant “

Physical FNV3 implementation of Ambient Lighting.

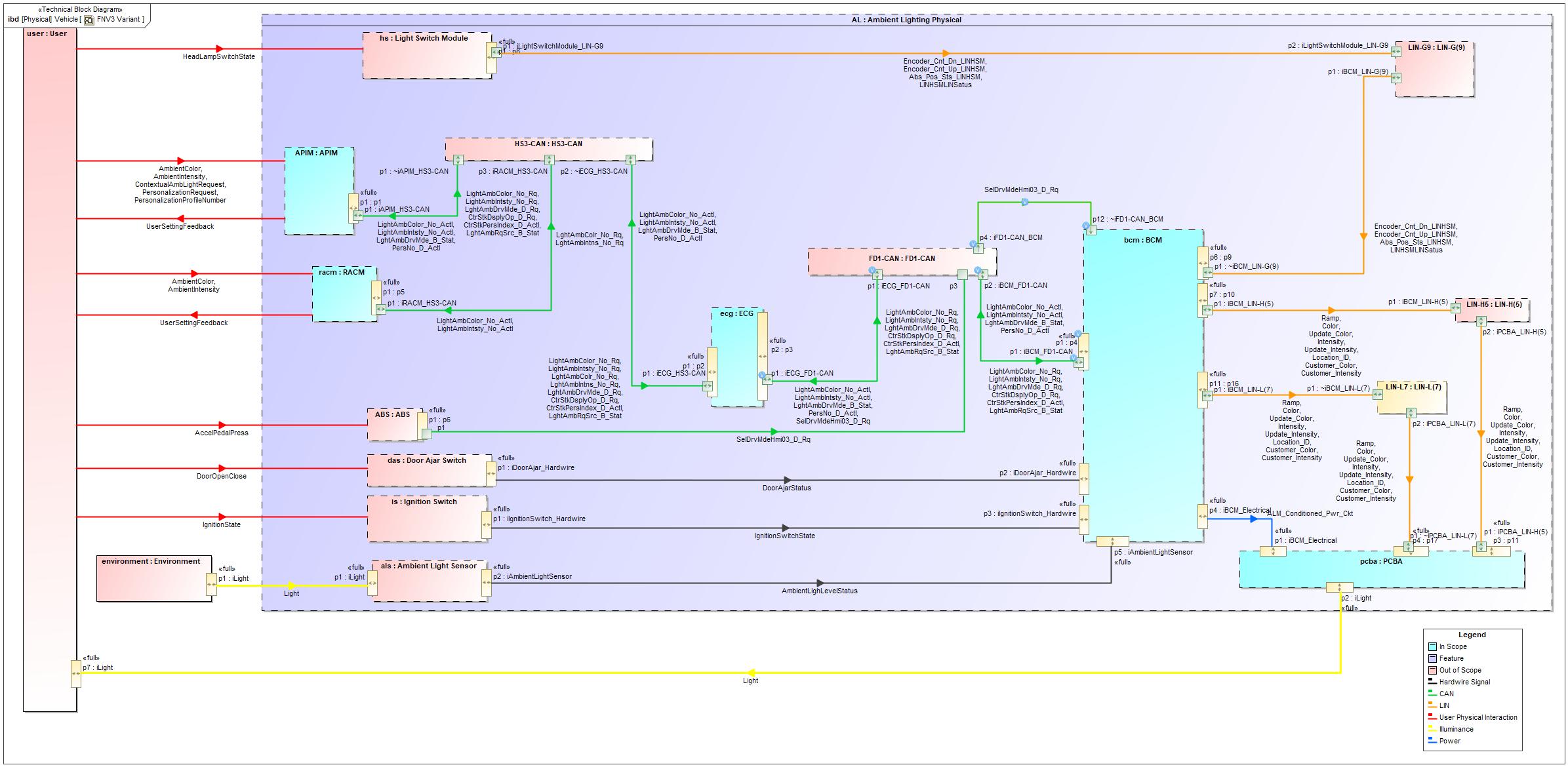


Figure 3‑2-1: FNV3 Variant

##### E/E Architecture “Architecture Variant: FNV2 Variant “

Physical FNV2 implementation of Ambient Lighting.

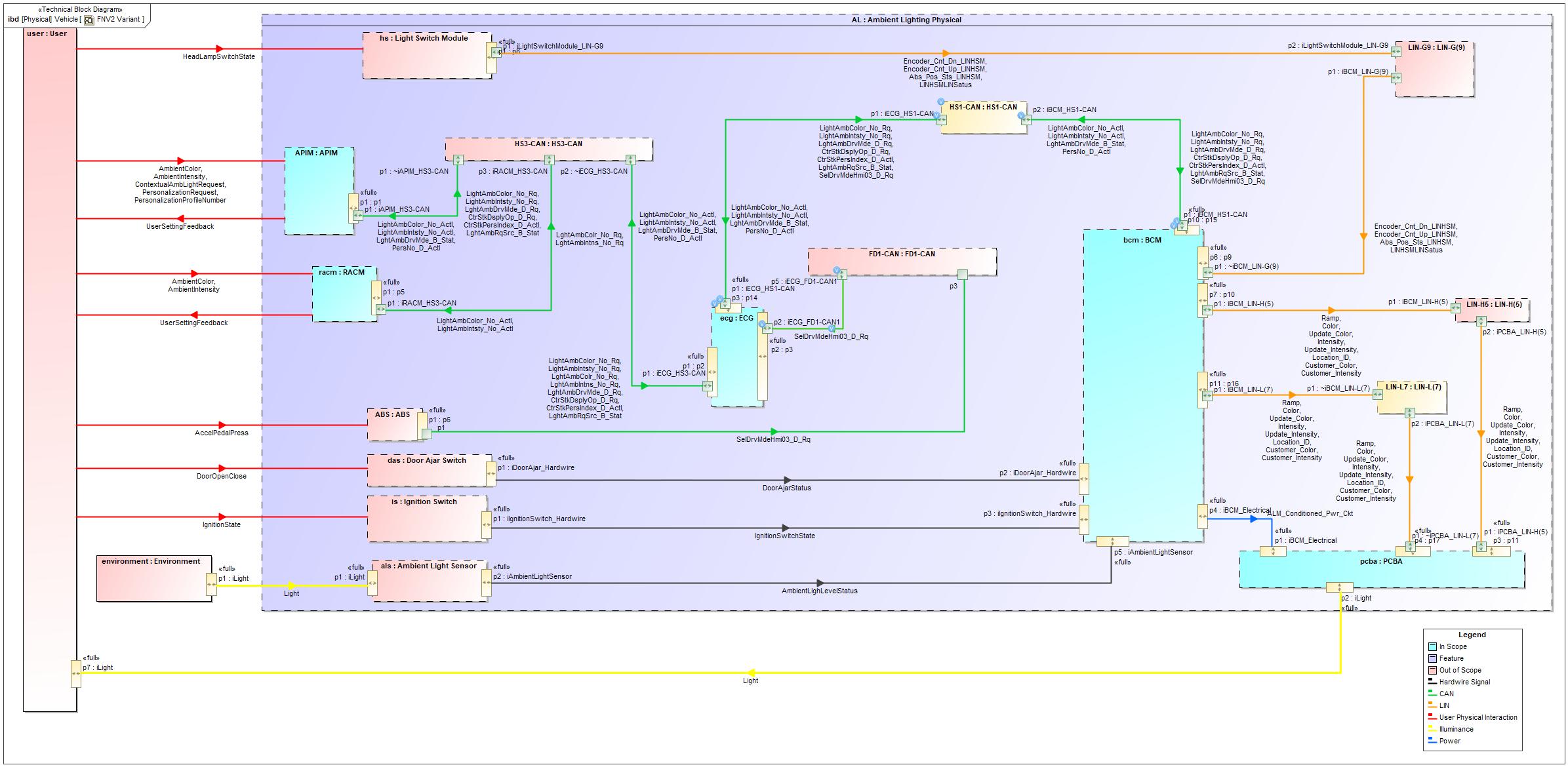


Figure 3‑3-2: FNV2 Variant

#### E/E Components

|  |  |
| --- | --- |
| Component Name | **Description** |
| ABS | Anti-lock breaking system. |
| AL (Ambient Lighting Physical) | Representation of the Ambient Lighting feature. |
| als (Ambient Light Sensor) | Ambient light sensor to indicate either a dark or light vehicle interior. |
| APIM | Accessory Protocol Interface Module - Main HMI. |
| bcm (BCM) | Body control module. |
| das (Door Ajar Switch) | Door ajar switch module. |
| ecg (ECG) | Enhanced Central Gateway. |
| environment (Environment) | Representation of the environment. |
| FD1-CAN | Flexible-data CAN Bus. |
| hs (Light Switch Module) | Head lamp / light switch module. |
| HS3-CAN | HS CAN bus for infotainment. |
| is (Ignition Switch) | Ignition switch module. |
| LIN-G9 (LIN-G(9)) | LIN Bus - H.  For sending commands to PCB. |
| LIN-H5 (LIN-H(5)) | LIN Bus - L.  For sending commands to PCB. |
| pcba (PCBA) | Printed Circuit Board – Ambient Lighting Module containing all LED drivers. |
| racm (RACM) | Rear Audio Control Module. |
| user (User) | Representation of the user. |

Table 3‑4: Electrical Components

#### E/E Connections

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 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** |
| LIN | Network | N/A | LIN G - Please refer to the HLSM functional spec.  LIN H and L - Please refer to the LDF described on 5.3.1.2 chapter | BCM\_H\_P00 (0x00)  BCM\_H\_P04 (0x37)  BCM\_L\_P00 (0x00)  BCM\_L\_P04 (0x37) |  |
| Analog Hardwired | Analog | N/A | Ambient Light Sensor (ALS - Environment sensor) | AmbientLightLevelStatus |  |
| CAN HS1 | Network | CAN (High Speed) | BCM core processing and status sending | FNV2:  APIM\_Send\_Signals\_2\_HS1 Body\_Info\_10 Personality\_APIM\_Data3\_HS1 Personality\_APIM\_Data\_HS1 Personality\_BCM\_Data Personality\_BCM2\_Data GatewayData8\_HS1 |  |
| CAN FD1 | Network | CAN FD | BCM core processing and status sending | FNV2 Messages: APIM\_Send\_Signals\_2\_FD1  Body\_Info\_10\_FD1  Personality\_APIM\_Data3\_FD1  Personality\_APIM\_Data\_FD1  Personality\_BCM2\_Data\_FD1  SelectDriveModeData  FNV3 Messages: APIM\_Send\_Signals\_2\_FD1  Rear\_Climate\_Data3\_FD1  Body\_Info\_10  Personality\_APIM\_Data3\_FD1  Personality\_APIM\_Data\_FD1  Personality\_BCM\_Data  Personality\_BCM2\_Data  SelectDriveModeData |  |
| PWM Hardwired | PMW | N/A | ALM power supply circuit | ALM\_Conditioned\_Pwr\_Ckt |  |
| CAN HS3 | Network | CAN (High Speed) | HMI sent and received signals | FNV2 Messages:  APIM\_Send\_Signals\_2  Body\_Info\_10\_HS3  Personality\_APIM\_Data3  Personality\_APIM\_Data  Personality\_BCM\_Data\_HS3  Personality\_BCM2\_Data\_HS3  SelectDriveModeData\_HS3  FNV3 Messages: APIM\_Send\_Signals\_2  Rear\_Climate\_Data3  Body\_Info\_10\_HS3  Personality\_APIM\_Data3  Personality\_APIM\_Data  Personality\_BCM\_Data\_HS3  Personality\_BCM2\_Data\_HS3  SelectDriveModeData\_HS3 |  |
| Digital Hardwired | Digital | N/A | Door sensors Ignition switch | DoorAjarStatus IgnitionSwitchState |  |

Table 3‑5: E/E Connections

#### Signal List

| **Signal Name** | **Description** |
| --- | --- |
| 1020393122.jpg **All\_DoorLock\_Status** | This dataflow is used to convert the numeric output of ALM\_Conditioned\_Pwr\_Ckt to discrete to send  it over LIN. |
| 1020393122.jpg **ALM\_Conditioned\_Pwr\_Arb** | Ambient Light Moudule conditioned power supply. |
| 1020393122.jpg **ALM\_Conditioned\_Pwr\_Ckt** | Voltage supply to modules from body control module (BCM). |
| 1020393122.jpg **ALM\_Power\_Status** | This dataflow is used to convert the numeric output of ALM\_Conditioned\_Pwr\_Ckt to discrete. |
| 1020393122.jpg **Ambient\_Status** | Dataflow indicating the output of the ambient processing. |
| 1020393122.jpg **AmbientColor\_Cfg** | Currently selected ambient color |
| 1020393122.jpg **AmbientDim\_Cfg** | Currently selected ambient dimming level. |
| 1020393122.jpg **AmbientMsg\_Rqst** | This array contains the ambient message request for LIN module.  The index 'n' has following domain values:  ALL  FOOTWELLS  DF\_DOOR  PF\_DOOR  DR\_DOOR  PR\_DOOR  DF\_DOOR\_HANDLE  PF\_DOOR\_HANDLE  DR\_DOOR\_HANDLE  PR\_DOOR\_HANDLE |
| 1020393122.jpg **Approach\_LightShow** | Indicates when to start approach light show. |
| 1020393122.jpg **Color** |  |
| 1020393122.jpg **CourtesyDelay\_Rqst** | Request to illuminate the interior courtesy lights. |
| 1020393122.jpg **CourtesyDemand\_BSave\_Rqst** | Request from Battery Saver to turn off the courtesy lights and the demand lights. |
| 1020393122.jpg **CtrStkDsplyOp\_D\_Rq** | Operation request command for personalization features from Center Stack. |
| 1020393122.jpg **CtrStkPersIndex\_D\_Actl** | Personality index to use with operation from Center Stack. |
| 1020393122.jpg **Customer\_Color** | Indicates Color need to set for ambient lighting. |
| 1020393122.jpg **Customer\_Intensity** | Indicates the intesity required to set for ambient lighting. |
| 1020393122.jpg **DBR\_Reset\_Cmd** | Reset command for latching dual battery relay. This opens the latching relay. |
| 1020393122.jpg **Delayed\_Accessory\_Cmd** | Input to load shedding - delayed accesory status. |
| 1020393122.jpg **DF\_Door\_Ajar\_Status** | Driver front door ajar status. |
| 1020393122.jpg **DF\_DoorLock\_Status** | Driver Front door lock status. |
| 1020393122.jpg **DiagSession** | DiagSession. |
| 1020393122.jpg **DoorCourtesyLight\_Rqst** | Request to illuminate the interior courtesy lights. |
| 1020393122.jpg **DR\_Door\_Ajar\_Status** | Driver rear door ajar status. |
| 1020393122.jpg **DR\_DoorLock\_Status** | Driver rear door lock status. |
| 1020393122.jpg **FET\_Ctrl** | Overrides FET output controller when SHORT. OK allows FET output process to drive the FET. |
| 1020393122.jpg **Ignition\_Status** | Provide vehicle ignition status (OFF/ACC/RUN). |
| 1020393122.jpg **IlluminatedEntry\_Rqst** | Request to illuminate the interior courtesy lights. |
| 1020393122.jpg **IlluminatedExit\_Rqst** | Request to illuminate the interior courtesy lights. |
| 1020393122.jpg **Intensity** |  |
| 1020393122.jpg **LG\_Other\_Door\_Ajar\_Status** | Indicates whether only LG is open or LG along with some other Door is Ajared. |
| 1020393122.jpg **LghtAmbColr\_No\_Rq** | Ambient Lighting Color Selection Request. |
| 1020393122.jpg **LghtAmbDrvMde\_B\_Stat** | Feedback signal for Contextual Ambient Lighting status to HMI ECUs. |
| 1020393122.jpg **LghtAmbDrvMde\_D\_Rq** |  |
| 1020393122.jpg **LghtAmbIntns\_No\_Rq** | Ambient Lighting Intensity Selection Request. |
| 1020393122.jpg **LghtAmbRqSrc\_B\_Stat** |  |
| 1020393122.jpg **LightAmbColor\_No** | This number will be derived from CAN inputs from ambient color number depending on whether Enhanced memory exists. |
| 1020393122.jpg **LightAmbColor\_No\_Actl** | Ambient Lighting Color Selection Status. |
| 1020393122.jpg **LightAmbColor\_No\_Rq** | Ambient Lighting Color Selection Request. |
| 1020393122.jpg **LightAmbColor\_Temp** | Ambient color for Lincoln and Ford.  0-ICE\_BLUE; 1- ORANGE; 2-SOFT\_BLUE; 3-RED; 4-GREEN; 5-BLUE; 6-PURPLE; 7-  LICOLN\_WHITE; 8-AMBER; 9-TEAL; 10-BURNT\_ORANGE; 11-LINCOLN\_BLUE; 12-  LINCOLN\_GREEN; 13-LILAC. |
| 1020393122.jpg **LightAmbIntsty\_No** | This number will be derived from CAN inputs from ambient intensity number depending on whether  Enhanced memory exists. |
| 1020393122.jpg **LightAmbIntsty\_No\_Actl** | Ambient Lighting Intensity Selection Status. |
| 1020393122.jpg **LightAmbIntsty\_No\_Rq** | Ambient Lighting Intensity Selection Request. |
| 1020393122.jpg **Local\_OpMode** | initial value changed Awake -> Sleep(Conti.m)  This Dataflow indicates the current state of the ECU. |
| 1020393122.jpg **Location\_ID** | Indicates the ALM module NODE ADDRESS placed at various locations.Generally, lighting elements  will be located in the cupholders, center console, footwells, doors, scuffplates. |
| 1020393122.jpg **LowVoltMode** | This signal determines if active load will be affected or unaffected by Stop/Start event voltage drop. |
| 1020393122.jpg **Parklamps\_Command** | Command to control the position/parklamps. |
| 1020393122.jpg **PersNo\_D\_Actl** | Personalization profile number feedback to HMI. |
| 1020393122.jpg **PF\_Door\_Ajar\_Status** | Passenger Front Door lock status |
| 1020393122.jpg **PF\_DoorLock\_Status** | Passember front door lock status. |
| 1020393122.jpg **PR\_Door\_Ajar\_Status** | Passenger rear door ajar status. |
| 1020393122.jpg **PR\_DoorLock\_Status** | Passenger rear door lock status. |
| 1020393122.jpg **Ramp** | Indicates ramping is required/not required for ambient lighting. |
| 1020393122.jpg **Reset** | BCM reset. |
| 1020393122.jpg **SelDrvMdeHmi03\_D\_Rq** | Drive mode request communication for the SDM interface HMI -Ambient Lighting. |
| 1020393122.jpg **SelDrvMdeHmi03\_D\_Rq\_ComStat** | Communication Status Received over CAN for SelDrvMdeHmi03\_D\_Rq. |
| 1020393122.jpg **Update\_Color** | Indicates whether the color set for ambient lighting needs update or not. |
| 1020393122.jpg **Update\_Intensity** | Indicates the intesity for ambient lighting needs to be updated or not. |
| 1020393122.jpg **VBattState** | Array indicating Current State of a specific Voltage Range. |
| 1020393122.jpg **WelcomeFarewell\_Status** | Indicates welcome or farewell status for ambient lighting. |

Table 3‑6: List of Technical Signals

### Software Component Architecture

**No Software Component Architecture Diagrams identified.**

## Function Deployment

### Deployment Variants

#### Deployment Vehicle System Behavior

FNV3/FNV2 Deployment Diagram.

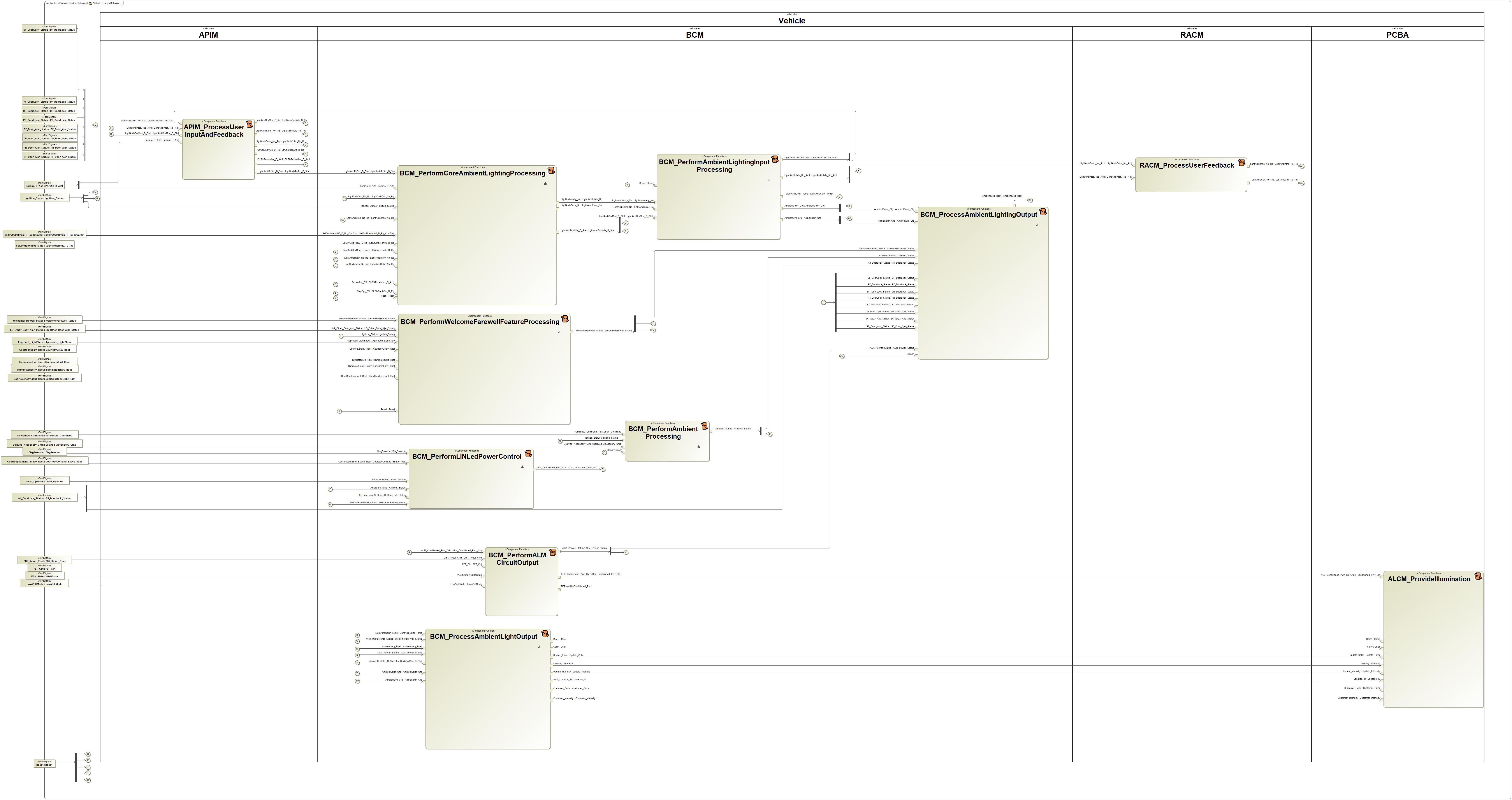


Figure 3‑4: Vehicle System Behavior

### Function Allocation

| Component | Technology Function Name | Logical Function Name |
| --- | --- | --- |
|
| 110167111.jpg APIM | 1598767408.jpg APIM\_ProcessUserInputAndFeedback | 1486707590.jpg ProcessUserInputAndFeedback |
| 110167111.jpg BCM | 1598767408.jpg BCM\_PerformALMCircuitOutput | 115039898.jpg DetermineALMConditionedPwrCmd  115039898.jpg DetermineALMPowerStatus  115039898.jpg DetermineALMCktOutput  1486707590.jpg PerformALMCircuitOutput |
| 1598767408.jpg BCM\_PerformAmbientLightingInputProcessing | 1486707590.jpg PerformAmbientLightingInputProcessing  115039898.jpg PerformAmbientColorMappingDecision  115039898.jpg PerformAmbientIntensityMappingDecision  115039898.jpg PerformDriveModeBasedLightAmbientColorDecision |
| 1598767408.jpg BCM\_PerformWelcomeFarewellFeatureProcessing | 1486707590.jpg PerformWelcomeFarewellFeatureProcessing |
| 1598767408.jpg BCM\_ProcessAmbientLightOutput | 115039898.jpg DetermineLedParams  1486707590.jpg ProcessAmbientLightOutput  115039898.jpg DetermineLedLocationID  115039898.jpg GenerateMessage0x37AmbientLightingData  115039898.jpg CheckLINWakeUp |
| 1598767408.jpg BCM\_PerformAmbientProcessing | 1486707590.jpg PerformAmbientProcessing |
| 1598767408.jpg BCM\_PerformCoreAmbientLightingProcessing | 115039898.jpg PerformContextualAmbientLightingHMIStatusUpdate  115039898.jpg PerformSelectiveDriveModeRangeSelectionDecision  115039898.jpg PerformContextualAmbientLightingColorIntensityValueDecision  115039898.jpg PerformSelectiveDriveModeRequestDecision  115039898.jpg CalculateAmbientLightingActiveProfileIndex  115039898.jpg PerformHMICommVariantDecoding  115039898.jpg PerformContextualAmbientLighting  115039898.jpg DeterminePersonalizedAmbientLightingIntensity  115039898.jpg DeterminePersonalizedAmbientLightingColor  1486707590.jpg PerformCoreAmbientLightingProcessing  115039898.jpg PerformAmbientLightingMemoryAndPersonalization  115039898.jpg DeterminePersonalizedAmbientLightingStatus |
| 1598767408.jpg BCM\_ProcessAmbientLightingOutput | 115039898.jpg DetermineDriverRearDoorLockLightBehavior  115039898.jpg DeterminePassengerRearDoorLightBehavior  115039898.jpg DeterminePassengerFrontDoorLightBehavior  115039898.jpg DetermineDriverFrontDoorLockIndication  115039898.jpg DeterminePassengerFrontDoorLockLightBehavior  115039898.jpg DetermineNonDoorLIN Master\_L1\_P00LedState  115039898.jpg DetermineDriverRearDoorLightBehavior  115039898.jpg DeterminePassengerRearDoorLockLightBehavior  115039898.jpg DetermineDriverFrontDoorLockLightBehavior  115039898.jpg DeterminePassengerFrontDoorLockIndication  115039898.jpg DetermineDriverFrontDoorLightBehavior  1486707590.jpg ProcessAmbientLightingOutput  115039898.jpg DetermineDriverRearDoorLockIndication  115039898.jpg DeterminePassengerRearDoorLockIndication |
| 1598767408.jpg BCM\_PerformLINLedPowerControl | 1486707590.jpg PerformLedPowerControl |
| 110167111.jpg PCBA | 1598767408.jpg ALCM\_ProvideIllumination | *No logical function Realized by this Technology function.* |
| 110167111.jpg RACM | 1598767408.jpg RACM\_ProcessUserFeedback | 1486707590.jpg ProcessUserFeedback |

Table 3‑7: Function Allocation Table (Basic)

# Feature Implementation Modeling

## Component Interaction Diagrams

**No Component Interaction Diagrams identified.**

## Component Interface Behavior Diagrams

**No Component Interface Diagrams identified.**

# Feature Implementation Requirements

## Functional Safety

### ASIL Decomposition of Technical Safety Requirements

ASIL Decompositions not specified.

## Requirements on Components

### APIM

APIM

#### Technology Function 1598767408.jpg APIM\_ProcessUserInputAndFeedback

Takes user input from HMI APIM module and updates it with user with current user input and current feature settings comming from BCM module.

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Input Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| LightAmbColor\_No\_Actl | 1020393122.jpg LightAmbColor\_No\_Actl | 1020393122.jpg LightAmbColor\_No\_Actl | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LightAmbIntsty\_No\_Actl | 1020393122.jpg LightAmbIntsty\_No\_Actl | 1020393122.jpg LightAmbIntsty\_No\_Actl | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LghtAmbDrvMde\_B\_Stat | 1020393122.jpg LghtAmbDrvMde\_B\_Stat | 1020393122.jpg LghtAmbDrvMde\_B\_Stat | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| PersNum | 1020393122.jpg PersNo\_D\_Actl | 1020393122.jpg PersNum | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

Table 5‑1: Input Signal mappings of Function

###### Outputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Output Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Publisher Interface** | **Connection**  (*Optional)* |
| LghtAmbDrvMde\_D\_Rq | 1020393122.jpg LghtAmbDrvMde\_D\_Rq | 1020393122.jpg LghtAmbDrvMde\_D\_Rq | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LightAmbIntsty\_No\_Rq | 1020393122.jpg LightAmbIntsty\_No\_Rq | 1020393122.jpg LightAmbIntsty\_No\_Rq | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LightAmbColor\_No\_Rq | 1020393122.jpg LightAmbColor\_No\_Rq | 1020393122.jpg LightAmbColor\_No\_Rq | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| DispOpr\_CS | 1020393122.jpg CtrStkDsplyOp\_D\_Rq | 1020393122.jpg DispOpr\_CS | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| PersIndex\_CS | 1020393122.jpg CtrStkPersIndex\_D\_Actl | 1020393122.jpg PersIndex\_CS | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LghtAmbRqSrc\_B\_Stat | 1020393122.jpg LghtAmbRqSrc\_B\_Stat | No logical signals Realized by this Technology signal. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

**Table 5‑2: Output Signal mappings of Function**

###### Parameters

| **Config Block** | **Byte** | **Bit(s)** | **Description** | **Default** | **Operation** | **Configuration DTC (E10100)** |
| --- | --- | --- | --- | --- | --- | --- |
| DE00 | 8 | 2 | Ambient Lighting | 0 | 0 – Not Available  1 – Available | N/A |
| DE00 | 10 | 4 | Ambient Lighting Type | 0 | 0 – Pantone  1 – Single Color | N/A |
| DE00 | 11 | 4 | Ambient Lighting System Strategy | 0 | 0 – Variant 1  1 – Variant 2 | N/A |
| DE08 | 21 | 6 | Ambient Light Auto/Manual Setting | 0 | 0 – Disabled  1 – Enabled | N/A |
| DE08 | 9 | 1 | Select Mode | 0 | 0 – Disabled  1 - Enabled | N/A |

###### Interface Requirements

No Interface Requirements identified for Function APIM\_ProcessUserInputAndFeedback

##### Function Requirements

###### Component Specific Requirements

**-360163146.jpg IR2 - Ambient Lighting / Vehicle Settings Client/Server**

The Vehicle Settings Client’s for Ambient Lighting feature responsibility shall be defined as: The Ambient Lighting Settings Client makes requests to the external vehicle settings function to change Ambient lighting color or intensity as requested by the user.

The Vehicle Settings Server for Ambient Lighting feature provides status of color or intensity settings client.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR2 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR3 - Ambient Lighting Drive Mode Client/Server**

The Ambient Lighting Drive Mode Client interfaces with the user via HMI and shall be responsible for sending the Ambient Lighting Drive Mode setting request to the Ambient Lighting Drive Mode Server.

The Ambient Lighting Drive Mode Server shall be responsible for the ambient lighting drive mode function and interfaces with the Ambient Lighting Drive Mode Client.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR3 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR4 - Ambient Lighting / Sending of Request and Response**

The feature shall follow the general rule for sending out the signals stated in APIM SPSS (IFS-MMCAN-FUR-REQ-015114/E-Sending of Request and Response (TcSE ROIN-66252-1)), i.e., request and response signals shall be sent out at the requested value and not put back to inactive/null until 100 msec +/- 10% has elapsed since the requested value was first put on the bus.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR4 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR5 - Ambient Lighting - Variant 2 Specific**

This Ambient Lighting feature implementation shall be according to the Variant 2 specified in the latest infotainment Vehicle Settings SPSS.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR5 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR5.1 - Ambient Lighting Settings Client\_Tx - Variant 2**

The Ambient Lighting Client signals for transmitting the settings and requests to the server shall be the ones stated below:

- Color selection: LightAmbColor\_No\_Rq – Variant 2

- Intensity selection: LightAmbIntsty\_No\_Rq – Variant 2

- Manual or automatic mode status: LghtAmbRqSrc\_B\_Stat

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR5.1 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR5.2 - Ambient Lighting Settings Client\_Rx - Variant 2**

The Ambient Lighting Client signals for reading feature’s status from the server shall be the ones stated below:

- Color selection: LightAmbColor\_No\_Actl – Variant 2

- Intensity selection: LightAmbIntsty\_No\_Actl – Variant 2

The signals are described in the Data Dictionary of this implementation specification.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR5.2 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR6 - Ambient Lighting Server handling of "Inactive" in the Request signals**

The Ambient Lighting Server shall treat LightAmbColor\_No\_Rq = Inactive and LightAmbIntsty\_No\_Rq = Inactive as don’t cares and shall not update the LightAmbColor\_No\_Actl and LightAmbIntsty\_No\_Actl status signals based on the request signals set to Inactive.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR6 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR7 - Ambient Lighting Bus Start-up**

At network bus start-up the Ambient Lighting Server shall only publish the actual ambient lighting values of LightAmbColor\_No\_Actl and LightAmbIntsty\_No\_Actl and shall not publish the network init values.

At network bus start-up the Ambient Lighting Client shall set the request signals to Inactive.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR7 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR8 - Ambient Lighting HMI**

The Ambient Lighting Client shall only display, on the ambient lighting HMI, the values indicated in the LightAmbColor\_No\_Actl and LightAmbIntsty\_No\_Actl status signals from the Ambient Lighting Server.

If the Ambient Lighting HMI is being displayed, a change in the ambient lighting status signal shall update the HMI.

If the Ambient Lighting Server sends LightAmbIntsty\_No\_Actl = “0% Intensity / Ambient Lighting OFF” then the Ambient Lighting Client HMI shall set Ambient Lighting HMI OFF.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR8 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR9 - Ambient Lighting Request and Response signals**

The Ambient Lighting Client, when requesting an Ambient Lighting Color or Ambient Lighting Intensity value, shall set the color or intensity being requested and then set the request signal back to inactive.

When setting the request signal back to inactive the Ambient Lighting Client shall set to Inactive within 50 msec of making the request.

When setting the request signal back to inactive the Ambient Lighting Client shall set to Inactive no sooner than 20 msec after making the request.

The Ambient Lighting Server shall respond back to the LightAmbColor\_No\_Rq and LightAmbIntsty\_No\_Rq request signals within 150 msec of receiving the ambient lighting request.

Ex.

1. User selects a new ambient lighting color from the HMI

2. Ambient Lighting Client sets LightAmbIntsty\_No\_Rq = Color X and then 35 msec later sets LightAmbIntsty\_No\_Rq = Inactive.

3. The Ambient Lighting Server responds back within 150 msec of receiving LightAmbIntsty\_No\_Rq = Color X with LightAmbColor\_No\_Actl = Color X.

4. The Ambient Lighting Client updates the Ambient Lighting HMI based on the LightAmbColor\_No\_Actl status signal.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR9 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR10 - Turning ON and OFF Ambient Lighting**

The Ambient Lighting Client can request the Ambient Lighting is turned ON using LightAmbIntsty\_No\_Rq = “Ambient Lighting Turn ON” or Ambient Lighting is turned OFF using “0% Intensity / Ambient Lighting Turn OFF”.

The Ambient Lighting Server is responsible for remembering the Color and Intensity values between Power Mode / Ignition cycles, network bus wake-ups, and B+ resets.

If Ambient Lighting is turned OFF the Ambient Lighting Server shall remember the color and intensity values before ambient lighting was turned OFF.

If Ambient Lighting is turned off (ie LightAmbIntsty\_No\_Actl = 0% Intensity / Ambient Lighting OFF) and if the Ambient Lighting Server receives LightAmbIntsty\_No\_Rq = “Ambient Lighting Turn ON” then the Ambient Lighting Server shall be responsible for publishing the Color and Intensity values to be used when turned ON.

- The Ambient Lighting Client could request Ambient Lighting ON with a particular Color set, OR

- The Ambient Lighting Client could request Ambient Lighting ON with the Color and Intensity set to Inactive

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR10 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR11 - Enhanced Memory - Ambient Lighting**

If Enhanced Memory is configured ON in the Ambient Lighting Client than this “Ambient Lighting – Variant 2” strategy shall be used.

If Enhanced Memory is configured ON in the Ambient Lighting Server than this “Ambient Lighting – Variant 2” strategy shall be used.

The Ambient Lighting Server shall update the LightAmbColor\_No\_Actl and LightAmbIntsty\_No\_Actl status signals when changing to new enhanced memory profiles (ie when the active personality profile changes).

- If the Ambient Lighting Server is turned OFF the Ambient Lighting Server shall remember what all the personality profiles where before they were turned off (in case turned back on).

If the Ambient Lighting Client HMI is active the Ambient Lighting Client HMI will automatically update to whatever the new Color and Intensity values are when there is a new active personality since the Ambient Lighting Client will use the LightAmbColor\_No\_Actl and LightAmbIntsty\_No\_Actl status signals when they are updated.

Satisfied by:

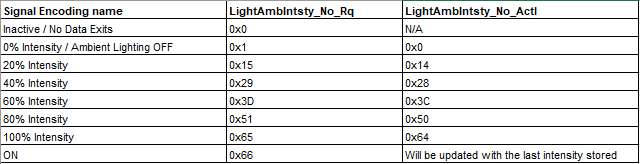
* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR11 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR12 - Ambient Lighting Insensity - Variant 2 Specific**

For FNV2 and FVN3 the Ambient Lighting Server only supports the intensity values called out in the table below.

The Ambient Lighting Client is only allowed to request the intensity values called out in the table below.



Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR12 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR13 - Ambient Lighting Sequence Diagrams**

The implementation of the feature in the Client and its interaction with the server shall be per the following sequence diagrams:

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

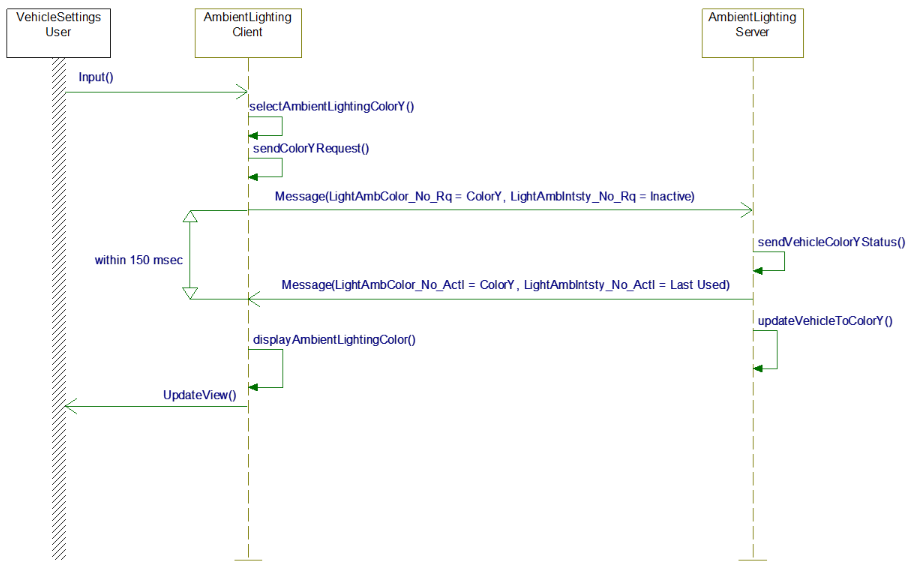
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR13 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-360163146.jpg IR13.1 - Changing Ambient Lighting Color**

Pre-condition: Color Y is not the active color.

Event: User selects color Y.

Post-condition: Color Y is active on the HMI and the vehicle.



Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

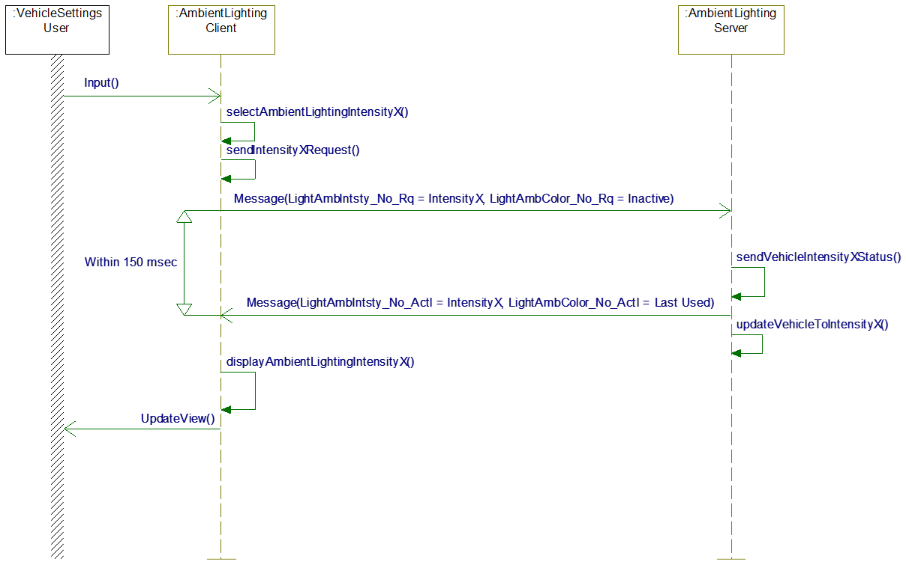
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR13.1 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-409284714.jpg IR13.2 - Changing Ambient Lighting Intensity**

Pre-condition: Intensity X is not the active intensity.

Event: User selects intensity X.

Post-Condition: Intensity X is shown on the HMI and Intensity X is active in the vehicle.



Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR13.2 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-409284714.jpg IR13.3 - Turning ON Ambient Lighting by selecting a Color**

Pre-Condition:

Ambient Lighting was previously turned OFF via the HMI

Ambient Lighting in the vehicle is OFF

Event:

User selects colorX to turn ON ambient lighting

Post-Condition:

Ambient Lighting HMI is shown with ColorX active

Ambient Lighting Intensity is shown with last Intensity before turned back ON

Ambient Lighting is turned ON in the vehicle



Note: if enhanced memory is turned on then in the sequence diagram for network signal LightAmbIntsty\_No\_Actl = ‘Last Used’ is referring to the last used Intensity for the personality profile being turned on.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR13.3 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-409284714.jpg IR13.4 - Turning ON Ambient Lighting via ON/OFF HMI Selection**

Pre-Condition:

Ambient Lighting turned OFF with the previous Color when last ON set to ColorY.

Ambient Lighting turned OFF with the previous Intensity when last ON set to IntensityX.

Event:

The user selects Ambient Lighting ON via the HMI.

Post-Condition:

Ambient Lighting HMI shows Ambient Lighting ON with ColorY and IntensityX.

Ambient Lighting is turned ON in the vehicle with ColorY and IntensityX.



Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR13.4 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-409284714.jpg IR13.5 - Turning OFF Ambient Lighting**

Pre-Condition:

Ambient Lighting HMI is active showing Ambient Lighting is ON.

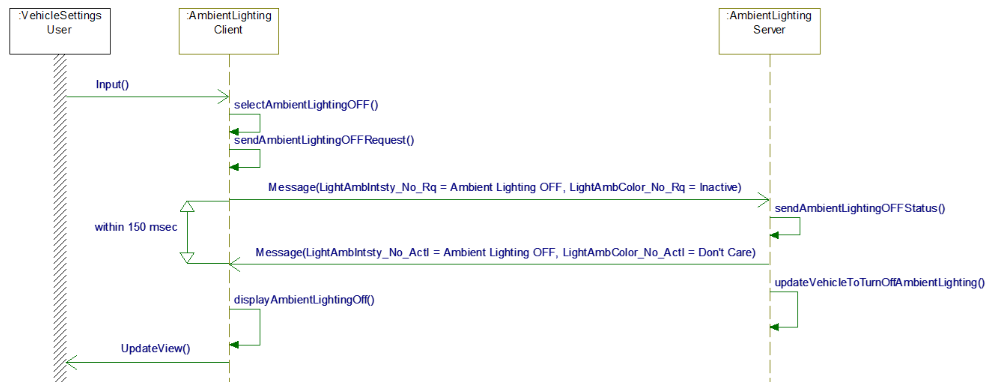
Event:

The user selects Ambient Lighting OFF via the HMI.

Post-Condition:

The HMI shows Ambient Lighting turned OFF.

Ambient Lighting is OFF in the vehicle.



Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

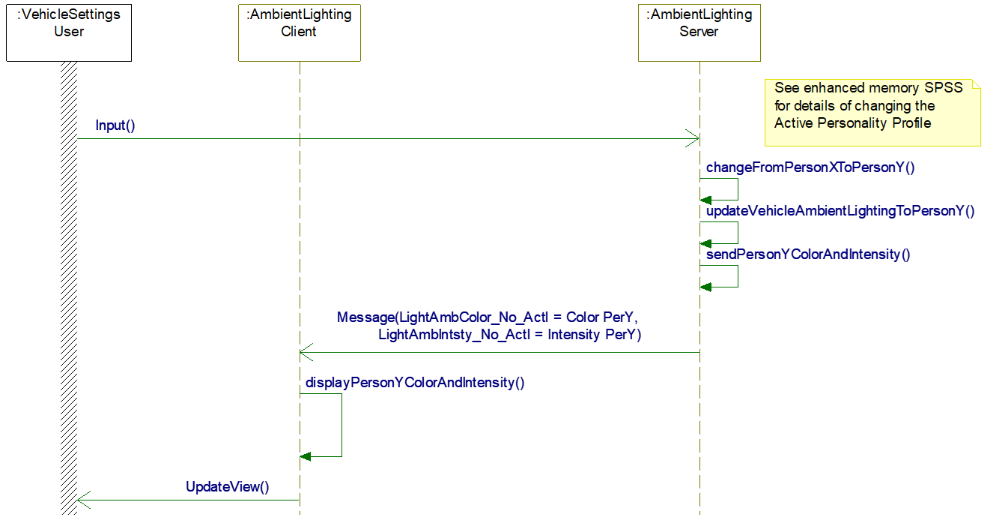
|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR13.5 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-409284714.jpg IR13.6 - Enhanced Memory - Recall new personality profile with Ambient Lighting active**

Pre-Condition: Ambient Lighting HMI is active for PersonX.

Event: User changes from PersonX to PersonY.

Post-Condition: Ambient Lighting HMI is active for PersonY.



Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR13.6 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**-409284714.jpg IR13.7 - Enhanced Memory - New Profile at Network Wake-up**

Pre-Condition:

Network bus is asleep.

When Network bus last awake Person Z was the active profile.

Event:

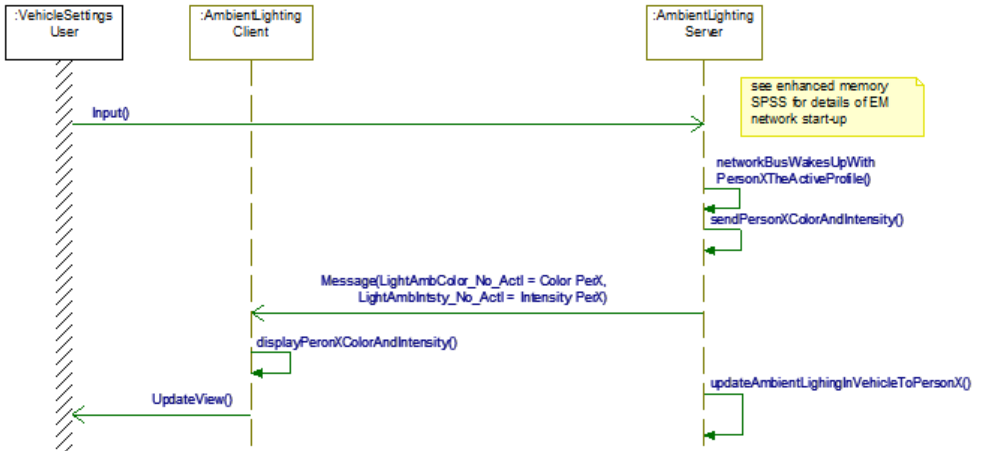
1. Network bus wakes up.

2. The Active Profile is Person X.

3. The Ambient Lighting HMI screen is selected.

Post-Condition:

Ambient Lighting HMI is active for Person X.



Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR13.7 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**650289990.jpg IR14 - Ambient Lighting Drive Mode Client\_Tx**

The Ambient Lighting Drive Mode Client signals for transmitting the settings and requests to the server shall be the ones stated below:

Selection if Ambient Lighting is tied to Drive Mode or not: LghtAmbDrvMde\_D\_Rq.

Color selection: LightAmbColor\_No\_Rq – Variant 2 Specific.

The signals are described in the Data Dictionary of this implementation specification.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR14 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**650289990.jpg IR15 - Ambient Lighting Drive Mode Client\_Rx**

The Ambient Lighting Drive Mode Client signals for reading feature’s status from the server shall be the ones stated below:

Color selection: LightAmbColor\_No\_Actl – Variant 2 Specific.

Status of whether Ambient Lighting is tied to Drive Mode or not: LghtAmbDrvMde\_B\_Stat

The signals are described in the Data Dictionary of this implementation specification.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR15 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**650289990.jpg IR16 - Ambient Lighting Strategy required to be used when supporting Automatic/Manual Ambient Lighting Drive Mode**

In order to support Manual and Auto Mode (color tied to drive mode in auto) both the Ambient Lighting Drive Mode Client and Server shall support the function requirements “VSv2-FUN-192195-Ambient Lighting – Variant 2” described in the latest infotainment Vehicle Setting SPSS.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR16 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**650289990.jpg IR17 - Ambient Lighting Drive Mode Server functional requirement**

The Ambient Lighting Drive Mode Server shall publish the Auto/Manual mode status via the LghtAmbDrvMde\_B\_Stat signal.

When in Auto mode, only the ambient lighting color is tied to Drive Mode. The Ambient Lighting Drive Mode Server shall update the ambient lighting color based on drive mode.

Ambient Lighting Intensity is not tied to auto mode (ie not tied to drive mode).

If enhanced memory is supported the Ambient Lighting Drive Mode Server shall update the LghtAmbDrvMde\_B\_Stat signal to reflect the Auto/Manual status for the new personality profile. See Ambient Lighting Drive Mode Server enhanced memory specification for details.

If the user selects a color during auto mode (ie receives LightAmbColor\_No\_Rq) then the Ambient Lighting Drive Mode Server shall change to manual mode and update LghtAmbDrvMde\_B\_Stat to manual mode to reflect the update.

See Ambient Lighting Drive Mode Server specification for additional details and requirements.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR17 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**650289990.jpg IR18 - Ambient Lighting Drive Mode Client functional requirement**

The Ambient Lighting Drive Mode Client shall use the LghtAmbDrvMde\_B\_Stat status signal to update the settings HMI to show whether the Ambient Lighting is in Auto or Manual mode.

The Ambient Lighting Drive Mode Client shall use the LghtAmbDrvMde\_D\_Rq signal to request Auto or Manual mode.

**HMI Setting ID: 1026**

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR18 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**650289990.jpg IR19 - Enabling/Disabling Ambient Lighting Auto/Manual setting via the HMI**

When the Ambient Lighting Automatic / Manual Drive Mode setting is selected via the HMI:

1. The Ambient Lighting Drive Mode Client shall set LghtAmbDrvMde\_D\_Rq to select Automatic or Manual based on what the user selected.

2. The Ambient Lighting Drive Mode Server shall respond with T\_LghtAmbDrvMde\_Rsp to the LghtAmbDrvMde\_D\_Rq Manual or Automatic request with the response via the LghtAmbDrvMde\_B\_Stat signal.

3. The Ambient Lighting Drive Mode Client shall update its HMI (if there is an update) with the Ambient Lighting Auto/Manual mode status after receiving the LightAmbDrvMde\_B\_Stat response to the request

Note: See sequence diagrams with examples

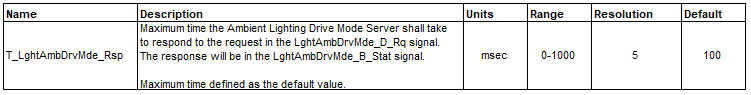
The Auto/Manual setting on the HMI should only be available for selection when the ignition\_status = Run.

Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR19 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**650289990.jpg IR20 - T\_LghtAmbDrvMde\_Rsp**



Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR20 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**650289990.jpg IR21 - Ambient Lighting Drive Mode Sequence Diagrams**

The implementation of the Ambient Lighting Drive Mode settings in the Client and its interaction with the server shall be per the following sequence diagrams:

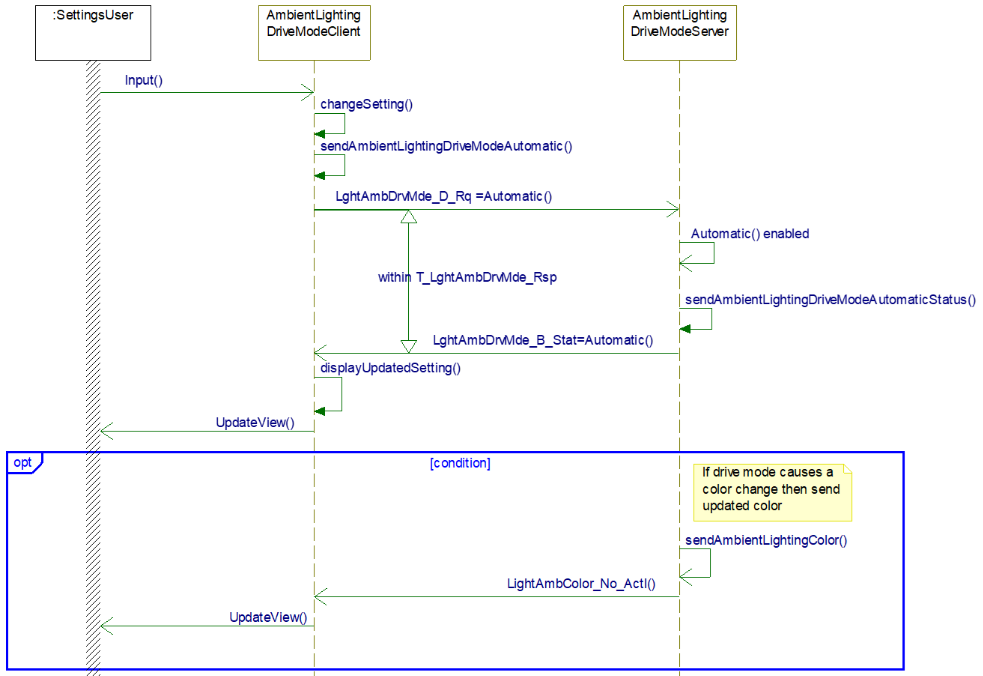
Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR21 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**650289990.jpg IR21.1 - Ambient Lighting Drive Mode set to Automatic via the HMI**

Pre-Condition: Ambient Lighting Drive Mode set to manual.



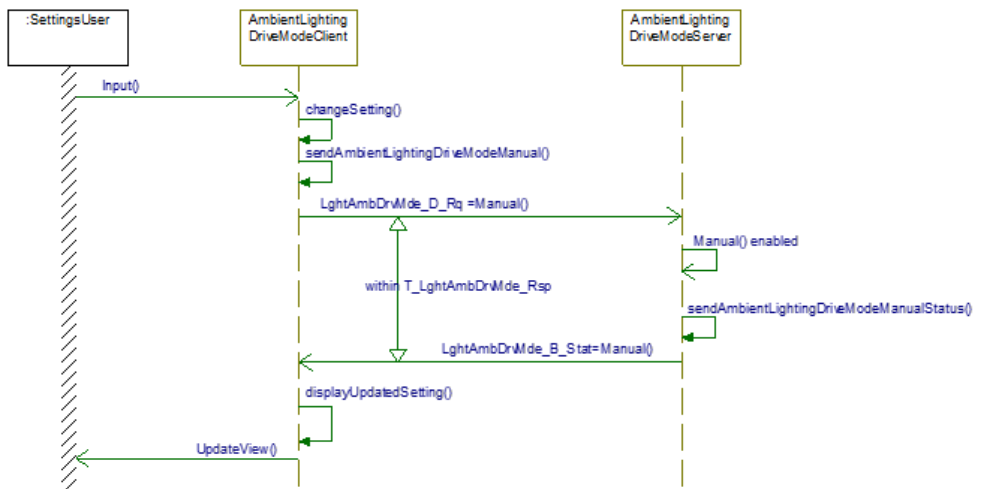
Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR21.1 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

**650289990.jpg IR21.2 - Ambient Lighting Drive Mode set to Manual via the HMI**

Pre-Condition: Ambient Lighting Drive Mode in Auto Mode.



Satisfied by:

* 1390955927.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR21.2 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

-119769947.jpg IR21.3 - User changes ambient lighting color while in auto mode

Pre-Condition: Ambient Lighting Drive Mode in Auto mode.



Satisfied by:

* 1598767408.jpg APIM\_ProcessUserInputAndFeedback

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Requirement ID: IR21.3 | | | | | | | |
| **Rationale** |  | | | | | | |
| **Acceptance Criteria** |  | | | | | | |
| **Notes** |  | | | | | | |
| **Source** |  | | | | | **Owner** |  |
| **Source Req.** |  | | | | | **V&V Method** |  |
| **Type** |  | | | **Priority** |  | **Status** | Approved |
| [Req. Template](http://wiki.ford.com/display/RequirementsEngineering/Requirements+Attributes) Version | | 6.0c | End of Requirement | | | | |

### BCM

BCM

#### Technology Function 1598767408.jpg BCM\_PerformALMCircuitOutput

Provides ALM with physical pwm / duty cycle necessary to Power Up/Down ALM.

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Input Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| ALM\_Conditioned\_Pwr\_Arb | 1020393122.jpg ALM\_Conditioned\_Pwr\_Arb | 1020393122.jpg ALM\_Conditioned\_Pwr\_Arb | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| DBR\_Reset\_Cmd | 1020393122.jpg DBR\_Reset\_Cmd | 1020393122.jpg DBR\_Reset\_Cmd | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| FET\_Ctrl | 1020393122.jpg FET\_Ctrl | 1020393122.jpg FET\_Ctrl | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| VBattState | 1020393122.jpg VBattState | 1020393122.jpg VBattState | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LowVoltMode | 1020393122.jpg LowVoltMode | 1020393122.jpg LowVoltMode | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

Table 5‑3: Input Signal mappings of Function

###### Outputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Output Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Publisher Interface** | **Connection**  (*Optional)* |
| ALM\_Power\_Status | 1020393122.jpg ALM\_Power\_Status | 1020393122.jpg ALM\_Power\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| PIDReadAlmConditioned\_Pwr |  | No logical signals Realized by this Technology signal. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| ALM\_Conditioned\_Pwr\_Ckt | 1020393122.jpg ALM\_Conditioned\_Pwr\_Ckt | 1020393122.jpg ALM\_ConditionedPower | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

**Table 5‑4: Output Signal mappings of Function**

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| No logical parameters Realized by this Technology parameter. | -511864460.jpg (AmbientLighting\_CfgKind) AmbientLighting\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | -511864460.jpg (DBRInCar\_CfgKind) DBRInCar\_Cfg |  | Choose an item. |  |

**Table 5‑5: Parameter mappings of Function**

###### Interface Requirements

No Interface Requirements identified for Function BCM\_PerformALMCircuitOutput

##### Function Requirements

###### Component Specific Requirements

No “Approved” or “Ready for Review” requirements identified for this function.

No removed/modified/added requirements from the logical specification (100% reuse/carry over of the Logical Function requirements – please refer to the latest Functional Specification).

#### Technology Function 1598767408.jpg BCM\_PerformAmbientLightingInputProcessing

The Ambient Lighting Input processing will process ambient light color and intensity as well as user profile number requested by user from either APIM or RACM and keep them updated with the current feature settings.

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Input Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| LightAmbIntsty\_No | 1020393122.jpg LightAmbIntsty\_No | 1020393122.jpg LightAmbIntsty\_No | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LightAmbColor\_No | 1020393122.jpg LightAmbColor\_No | 1020393122.jpg LightAmbColor\_No | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LghtAmbDrvMde\_B\_Stat | 1020393122.jpg LghtAmbDrvMde\_B\_Stat | 1020393122.jpg LghtAmbDrvMde\_B\_Stat | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Reset | 1020393122.jpg Reset | 1020393122.jpg Reset | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

Table 5‑6: Input Signal mappings of Function

###### Outputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Output Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Publisher Interface** | **Connection**  (*Optional)* |
| AmbientDim\_Cfg | 1020393122.jpg AmbientDim\_Cfg | 1020393122.jpg AmbientDim\_Cfg | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| AmbientColor\_Cfg | 1020393122.jpg AmbientColor\_Cfg | 1020393122.jpg AmbientColor\_Cfg | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LightAmbIntsty\_No\_Actl | 1020393122.jpg LightAmbIntsty\_No\_Actl | 1020393122.jpg LightAmbIntsty\_No\_Actl | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LightAmbColor\_No\_Actl | 1020393122.jpg LightAmbColor\_No\_Actl | 1020393122.jpg LightAmbColor\_No\_Actl | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LightAmbColor\_Temp | 1020393122.jpg LightAmbColor\_Temp | 1020393122.jpg LightAmbColor\_Temp | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

**Table 5‑7: Output Signal mappings of Function**

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| No logical parameters Realized by this Technology parameter. | 894004615.jpg (byte) EntryColor\_Cfg |  | Choose an item. |  |

**Table 5‑8: Parameter mappings of Function**

###### Interface Requirements

No Interface Requirements identified for Function BCM\_PerformAmbientLightingInputProcessing

##### Function Requirements

###### Component Specific Requirements

No “Approved” or “Ready for Review” requirements identified for this function.

No removed/modified/added requirements from the logical specification (100% reuse/carry over of the Logical Function requirements – please refer to the latest Functional Specification).

#### Technology Function 1598767408.jpg BCM\_PerformWelcomeFarewellFeatureProcessing

Determines which Welcome Farewell behavior is to be used when Ambient Lighting Feature is not operating in Ambient mode.

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Input Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Ignition\_Status | 1020393122.jpg Ignition\_Status | 1020393122.jpg Ignition\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| DoorCourtesyLight\_Rqst | 1020393122.jpg DoorCourtesyLight\_Rqst | 1020393122.jpg DoorCourtesyLight\_Rqst | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| IlluminatedEntry\_Rqst | 1020393122.jpg IlluminatedEntry\_Rqst | 1020393122.jpg IlluminatedEntry\_Rqst | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| IlluminatedExit\_Rqst | 1020393122.jpg IlluminatedExit\_Rqst | 1020393122.jpg IlluminatedExit\_Rqst | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| CourtesyDelay\_Rqst | 1020393122.jpg CourtesyDelay\_Rqst | 1020393122.jpg CourtesyDelay\_Rqst | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Approach\_LightShow | 1020393122.jpg Approach\_LightShow | 1020393122.jpg Approach\_LightShow | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LG\_Other\_Door\_Ajar\_Status | 1020393122.jpg LG\_Other\_Door\_Ajar\_Status | 1020393122.jpg LG\_Other\_Door\_Ajar\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| WelcomeFarewell\_Status | 1020393122.jpg WelcomeFarewell\_Status | 1020393122.jpg WelcomeFarewell\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Reset | 1020393122.jpg Reset | 1020393122.jpg Reset | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

Table 5‑9: Input Signal mappings of Function

###### Outputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Output Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Publisher Interface** | **Connection**  (*Optional)* |
| WelcomeFarewell\_Status | 1020393122.jpg WelcomeFarewell\_Status | 1020393122.jpg WelcomeFarewell\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

**Table 5‑10: Output Signal mappings of Function**

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| No logical parameters Realized by this Technology parameter. | -511864460.jpg (AmbientLighting\_CfgKind) AmbientLighting\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | -511864460.jpg (Lincoln\_Experience\_CfgKind) Lincoln\_Experience\_Cfg |  | Choose an item. |  |

**Table 5‑11: Parameter mappings of Function**

###### Interface Requirements

No Interface Requirements identified for Function BCM\_PerformWelcomeFarewellFeatureProcessing

##### Function Requirements

###### Component Specific Requirements

No “Approved” or “Ready for Review” requirements identified for this function.

No removed/modified/added requirements from the logical specification (100% reuse/carry over of the Logical Function requirements – please refer to the latest Functional Specification).

#### Technology Function 1598767408.jpg BCM\_ProcessAmbientLightOutput

Send out feature commands regarding LED dimming behavior, LED color / intensity updates, LED turning ON/OFF to ALM through LIN.

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Input Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| AmbientMsg\_Rqst | 1020393122.jpg AmbientMsg\_Rqst | 1020393122.jpg AmbientMsg\_Rqst | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| ALM\_Power\_Status | 1020393122.jpg ALM\_Power\_Status | 1020393122.jpg ALM\_Power\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LghtAmbDrvMde \_B\_Stat | 1020393122.jpg LghtAmbDrvMde\_B\_Stat | 1020393122.jpg LghtAmbDrvMde\_B\_Stat | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| AmbientColor\_Cfg | 1020393122.jpg AmbientColor\_Cfg | 1020393122.jpg AmbientColor\_Cfg | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| AmbientDim\_Cfg | 1020393122.jpg AmbientDim\_Cfg | 1020393122.jpg AmbientDim\_Cfg | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| WelcomeFarewell\_Status | 1020393122.jpg WelcomeFarewell\_Status | 1020393122.jpg WelcomeFarewell\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LightAmbColor\_Temp | 1020393122.jpg LightAmbColor\_Temp | 1020393122.jpg LightAmbColor\_Temp | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

Table 5‑12: Input Signal mappings of Function

###### Outputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Output Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Publisher Interface** | **Connection**  (*Optional)* |
| Ramp | 1020393122.jpg Ramp | 1020393122.jpg Ramp | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Color | 1020393122.jpg Color | 1020393122.jpg Color | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Update\_Color | 1020393122.jpg Update\_Color | 1020393122.jpg Update\_Color | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Intensity | 1020393122.jpg Intensity | 1020393122.jpg Intensity | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Update\_Intensity | 1020393122.jpg Update\_Intensity | 1020393122.jpg Update\_Intensity | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| ALM\_Location\_ID | 1020393122.jpg Location\_ID | 1020393122.jpg ALM\_Location\_ID | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Customer\_Color | 1020393122.jpg Customer\_Color | 1020393122.jpg Customer\_Color | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Customer\_Intensity | 1020393122.jpg Customer\_Intensity | 1020393122.jpg Customer\_Intensity | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

**Table 5‑13: Output Signal mappings of Function**

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| No logical parameters Realized by this Technology parameter. | 894004615.jpg (byte) Run\_Active\_Count\_Min\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | 894004615.jpg (byte) Run\_Active\_Count\_Max\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | 894004615.jpg (byte) ALM\_CommUp\_Time\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | 894004615.jpg (byte) Stat\_Seq\_Time\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | 894004615.jpg (byte) EntryInt\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | 894004615.jpg (byte) AjarColor\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | 894004615.jpg (Integer) Stat\_Seq\_Wait\_Time\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | 894004615.jpg (byte) EntryColor\_Cfg |  | Choose an item. |  |

**Table 5‑14: Parameter mappings of Function**

###### Interface Requirements

No Interface Requirements identified for Function BCM\_ProcessAmbientLightOutput

##### Function Requirements

###### Component Specific Requirements

No Requirements with Status “Approved” or “Ready for Review” satisfied by this function.

No removed/modified/added requirements from the logical specification (100% reuse/carry over of the Logical Function requirements – please refer to the latest Functional Specification).

#### Technology Function 1598767408.jpg BCM\_PerformAmbientProcessing

Checks feature enabling conditions.

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Input Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Parklamps\_Command | 1020393122.jpg Parklamps\_Command | 1020393122.jpg Parklamps\_Command | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Ignition\_Status | 1020393122.jpg Ignition\_Status | 1020393122.jpg Ignition\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Delayed\_Accessory\_Cmd | 1020393122.jpg Delayed\_Accessory\_Cmd | 1020393122.jpg Delayed\_Accessory\_Cmd | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Reset | 1020393122.jpg Reset | 1020393122.jpg Reset | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

Table 5‑15: Input Signal mappings of Function

###### Outputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Output Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Publisher Interface** | **Connection**  (*Optional)* |
| Ambient\_Status | 1020393122.jpg Ambient\_Status | 1020393122.jpg Ambient\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

**Table 5‑16: Output Signal mappings of Function**

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| No logical parameters Realized by this Technology parameter. | -511864460.jpg (AmbientLighting\_CfgKind) AmbientLighting\_Cfg |  | Choose an item. |  |

**Table 5‑17: Parameter mappings of Function**

###### Interface Requirements

No Interface Requirements identified for Function BCM\_PerformAmbientProcessing

##### Function Requirements

###### Component Specific Requirements

No “Approved” or “Ready for Review” requirements identified for this function.

No removed/modified/added requirements from the logical specification (100% reuse/carry over of the Logical Function requirements – please refer to the latest Functional Specification).

#### Technology Function 1598767408.jpg BCM\_PerformCoreAmbientLightingProcessing

Manages Ambient Lighting features:

- HMI Comm Variant Decoding

- Memory and Personalization

- Contextual Ambient Lighting (Selectable Drive Modes).

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Input Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| DispOpr\_CS | 1020393122.jpg CtrStkDsplyOp\_D\_Rq | 1020393122.jpg DispOpr\_CS | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| PersIndex\_CS | 1020393122.jpg CtrStkPersIndex\_D\_Actl | 1020393122.jpg PersIndex\_CS | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LightAmbColor\_No\_Rq | 1020393122.jpg LightAmbColor\_No\_Rq | 1020393122.jpg LightAmbColor\_No\_Rq | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LightAmbIntsty\_No\_Rq | 1020393122.jpg LightAmbIntsty\_No\_Rq | 1020393122.jpg LightAmbIntsty\_No\_Rq | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LghtAmbDrvMde\_D\_Rq | 1020393122.jpg LghtAmbDrvMde\_D\_Rq | 1020393122.jpg LghtAmbDrvMde\_D\_Rq | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| SelDrvMdeHmi03\_D\_Rq | 1020393122.jpg SelDrvMdeHmi03\_D\_Rq | 1020393122.jpg SelDrvMdeHmi03\_Rq | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Ignition\_Status | 1020393122.jpg Ignition\_Status | 1020393122.jpg Ignition\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Reset | 1020393122.jpg Reset | 1020393122.jpg Reset | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LghtAmbDrvMde\_B\_Stat | 1020393122.jpg SelDrvMdeHmi03\_D\_Rq\_ComStat | 1020393122.jpg SelDrvMdeHmi03\_D\_Rq\_ComStat | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| PersNum | 1020393122.jpg PersNo\_D\_Actl | 1020393122.jpg PersNum | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LghtAmbIntns\_No\_Rq | 1020393122.jpg LghtAmbIntns\_No\_Rq | 1020393122.jpg LghtAmbIntns\_No\_Rq | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LghtAmbColr\_No\_Rq | 1020393122.jpg LghtAmbColr\_No\_Rq | 1020393122.jpg LghtAmbColr\_No\_Rq | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LghtAmbRqSrc\_B\_Stat | 1020393122.jpg LghtAmbRqSrc\_B\_Stat | No logical signals Realized by this Technology signal. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

Table 5‑18: Input Signal mappings of Function

###### Outputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Output Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Publisher Interface** | **Connection**  (*Optional)* |
| LightAmbIntsty\_No | 1020393122.jpg LightAmbIntsty\_No | 1020393122.jpg LightAmbIntsty\_No | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LightAmbColor\_No | 1020393122.jpg LightAmbColor\_No | 1020393122.jpg LightAmbColor\_No | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LghtAmbDrvMde\_B\_Stat | 1020393122.jpg LghtAmbDrvMde\_B\_Stat | 1020393122.jpg LghtAmbDrvMde\_B\_Stat | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

**Table 5‑19: Output Signal mappings of Function**

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| No logical parameters Realized by this Technology parameter. | 894004615.jpg (AmbDrvMdeColor\_CfgKind) AmbDrvMdeColor\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | -511864460.jpg (ContextAL\_CfgKind) ContextAL\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | -511864460.jpg (HMI\_Comm\_Var\_CfgKind) HMI\_Comm\_Var\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | -511864460.jpg (EM\_Exists\_CfgKind) EM\_Exists\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | 894004615.jpg (byte) Ambient\_Lighting\_ON\_Cfg |  | Choose an item. |  |

**Table 5‑20: Parameter mappings of Function**

###### Interface Requirements

No Interface Requirements identified for Function BCM\_PerformCoreAmbientLightingProcessing

##### Function Requirements

###### Component Specific Requirements

No “Approved” or “Ready for Review” requirements identified for this function.

No removed/modified/added requirements from the logical specification (100% reuse/carry over of the Logical Function requirements – please refer to the latest Functional Specification).

#### Technology Function 1598767408.jpg BCM\_ProcessAmbientLightingOutput

Determines wich LED / group of LED is to be turned ON / OFF.

Determines which behavior (Welcome, Farewell, Ajar, etc) is to be used by a single / group of LEDs.

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Input Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| Ambient\_Status | 1020393122.jpg Ambient\_Status | 1020393122.jpg Ambient\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| WelcomeFarewell\_Status | 1020393122.jpg WelcomeFarewell\_Status | 1020393122.jpg WelcomeFarewell\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| All\_DoorLock\_Status | 1020393122.jpg All\_DoorLock\_Status | 1020393122.jpg All\_DoorLock\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| DF\_DoorLock\_Status | 1020393122.jpg DF\_DoorLock\_Status | 1020393122.jpg DoorLocked  1020393122.jpg DF\_DoorLock\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| PF\_DoorLock\_Status | 1020393122.jpg PF\_DoorLock\_Status | 1020393122.jpg DoorLocked  1020393122.jpg PF\_DoorLock\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| DR\_DoorLock\_Status | 1020393122.jpg DR\_DoorLock\_Status | 1020393122.jpg DR\_DoorLock\_Status  1020393122.jpg DoorLocked | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| PR\_DoorLock\_Status | 1020393122.jpg PR\_DoorLock\_Status | 1020393122.jpg PR\_DoorLock\_Status  1020393122.jpg DoorLocked | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| DF\_Door\_Ajar\_Status | 1020393122.jpg DF\_Door\_Ajar\_Status | 1020393122.jpg DoorAjar  1020393122.jpg DF\_Door\_Ajar\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| DR\_Door\_Ajar\_Status | 1020393122.jpg DR\_Door\_Ajar\_Status | 1020393122.jpg DoorAjar  1020393122.jpg DR\_Door\_Ajar\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| PR\_Door\_Ajar\_Status | 1020393122.jpg PR\_Door\_Ajar\_Status | 1020393122.jpg PR\_Door\_Ajar\_Status  1020393122.jpg DoorAjar | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| PF\_Door\_Ajar\_Status | 1020393122.jpg PF\_Door\_Ajar\_Status | 1020393122.jpg PF\_Door\_Ajar\_Status  1020393122.jpg DoorAjar | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| AmbientColor\_Cfg | 1020393122.jpg AmbientColor\_Cfg | 1020393122.jpg AmbientColor\_Cfg | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| AmbientDim\_Cfg | 1020393122.jpg AmbientDim\_Cfg | 1020393122.jpg AmbientDim\_Cfg | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| ALM\_Power\_Status | 1020393122.jpg ALM\_Power\_Status | 1020393122.jpg ALM\_Power\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Reset | 1020393122.jpg Reset | 1020393122.jpg Reset | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

Table 5‑21: Input Signal mappings of Function

###### Outputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Output Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Publisher Interface** | **Connection**  (*Optional)* |
| AmbientMsg\_Rqst | 1020393122.jpg AmbientMsg\_Rqst | 1020393122.jpg AmbientMsg\_Rqst | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

**Table 5‑22: Output Signal mappings of Function**

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| No logical parameters Realized by this Technology parameter. | 894004615.jpg (Integer) AmbientDelay\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | -511864460.jpg (Lincoln\_Experience\_CfgKind) Lincoln\_Experience\_Cfg |  | Choose an item. |  |
| No logical parameters Realized by this Technology parameter. | -511864460.jpg (DoorLock\_Indication\_CfgKind) DoorLock\_Indication\_Cfg |  | Choose an item. |  |

**Table 5‑23: Parameter mappings of Function**

###### Interface Requirements

No Interface Requirements identified for Function BCM\_ProcessAmbientLightingOutput

##### Function Requirements

###### Component Specific Requirements

No “Approved” or “Ready for Review” requirements identified for this function.

No removed/modified/added requirements from the logical specification (100% reuse/carry over of the Logical Function requirements – please refer to the latest Functional Specification).

#### Technology Function 1598767408.jpg BCM\_PerformLINLedPowerControl

Outputs a command to turn ON/OFF ALM based on several feature inputs.

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Input Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| DiagSession | 1020393122.jpg DiagSession | 1020393122.jpg DiagSession | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| CourtesyDemand\_BSave\_Rqst | 1020393122.jpg CourtesyDemand\_BSave\_Rqst | 1020393122.jpg CourtesyDemand\_BSave\_Rqst | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Local\_OpMode | 1020393122.jpg Local\_OpMode | 1020393122.jpg Local\_OpMode | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Ambient\_Status | 1020393122.jpg Ambient\_Status | 1020393122.jpg Ambient\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| All\_DoorLock\_St atus | 1020393122.jpg All\_DoorLock\_Status | 1020393122.jpg All\_DoorLock\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| WelcomeFarewell\_Status | 1020393122.jpg WelcomeFarewell\_Status | 1020393122.jpg WelcomeFarewell\_Status | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

Table 5‑24: Input Signal mappings of Function

###### Outputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Output Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Publisher Interface** | **Connection**  (*Optional)* |
| ALM\_Conditioned\_Pwr\_Arb | 1020393122.jpg ALM\_Conditioned\_Pwr\_Arb | 1020393122.jpg ALM\_Conditioned\_Pwr\_Arb | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

**Table 5‑25: Output Signal mappings of Function**

###### Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Logical Signal Name** | **Technical Parameter Name** | **Mapping Details** *(Conditional)* | **Method** | **Method Details** |
| No logical parameters Realized by this Technology parameter. | -511864460.jpg (ALMPowerMode\_CfgKind) ALMPowerMode\_Cfg |  | Choose an item. |  |

**Table 5‑26: Parameter mappings of Function**

###### Interface Requirements

No Interface Requirements identified for Function BCM\_PerformLINLedPowerControl

##### Function Requirements

###### Component Specific Requirements

No “Approved” or “Ready for Review” requirements identified for this function.

No removed/modified/added requirements from the logical specification (100% reuse/carry over of the Logical Function requirements – please refer to the latest Functional Specification).

### PCBA

PCBA

#### Technology Function 1598767408.jpg ALCM\_ProvideIllumination

Interprets commands sent from BCM through LIN and drive LEDs.

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Input Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| ALM\_Conditioned\_Pwr\_Ckt | 1020393122.jpg ALM\_Conditioned\_Pwr\_Ckt | 1020393122.jpg ALM\_ConditionedPower | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Ramp | 1020393122.jpg Ramp | 1020393122.jpg Ramp | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Color | 1020393122.jpg Color | 1020393122.jpg Color | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Update\_Color | 1020393122.jpg Update\_Color | 1020393122.jpg Update\_Color | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Intensity | 1020393122.jpg Intensity | 1020393122.jpg Intensity | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Update\_Intensity | 1020393122.jpg Update\_Intensity | 1020393122.jpg Update\_Intensity | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Location\_ID | 1020393122.jpg Location\_ID | 1020393122.jpg ALM\_Location\_ID | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Customer\_Color | 1020393122.jpg Customer\_Color | 1020393122.jpg Customer\_Color | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| Customer\_Intensity | 1020393122.jpg Customer\_Intensity | 1020393122.jpg Customer\_Intensity | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

Table 5‑27: Input Signal mappings of Function

###### Outputs

(No outputs have been defined)

###### Parameters

(No parameters have been defined)

###### Interface Requirements

No Interface Requirements identified for Function ALCM\_ProvideIllumination

##### Function Requirements

###### Component Specific Requirements

No Requirements with Status “Approved” or “Ready for Review” satisfied by this function.

No removed/modified/added requirements from the logical specification (100% reuse/carry over of the Logical Function requirements – please refer to the latest Functional Specification).

### RACM

RACM

#### Technology Function 1598767408.jpg RACM\_ProcessUserFeedback

Updates RACM module with current feature settings comming from BCM module.

##### Function Interfaces

###### Inputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Input Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Subscriber Interface** | **Connection**  (*Optional)* |
| LightAmbColor\_No\_Actl | 1020393122.jpg LightAmbColor\_No\_Actl | 1020393122.jpg LightAmbColor\_No\_Actl | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LightAmbIntsty\_No\_Actl | 1020393122.jpg LightAmbIntsty\_No\_Actl | 1020393122.jpg LightAmbIntsty\_No\_Actl | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

Table 5‑28: Input Signal mappings of Function

###### Outputs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Output Name** | **Technical Signal Name** | **Logical Signal Name** | **Mapping Details** *(Conditional)* | **Publisher Interface** | **Connection**  (*Optional)* |
| LghtAmbIntns\_No\_Rq | 1020393122.jpg LghtAmbIntns\_No\_Rq | 1020393122.jpg LghtAmbIntns\_No\_Rq | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |
| LghtAmbColr\_No\_Rq | 1020393122.jpg LghtAmbColr\_No\_Rq | 1020393122.jpg LghtAmbColr\_No\_Rq | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. | Not supported by Magicdraw generation. |

**Table 5‑29: Output Signal mappings of Function**

###### Parameters

(No parameters have been defined)

###### Interface Requirements

No Interface Requirements identified for Function RACM\_ProcessUserFeedback

##### Function Requirements

###### Component Specific Requirements

No “Approved” or “Ready for Review” requirements identified for this function.

No removed/modified/added requirements from the logical specification (100% reuse/carry over of the Logical Function requirements – please refer to the latest Functional Specification).

### Vehicle

Vehicle abstraction – physical representation of the vehicle. Feature’s architecture allocation across all the vehicle components.

**List of technological functions allocated:**

1937468195.jpg BCM\_PerformAmbientLightingInputProcessing

1937468195.jpg BCM\_PerformLINLedPowerControl

1937468195.jpg BCM\_ProcessAmbientLightOutput

1937468195.jpg RACM\_ProcessUserFeedback

1937468195.jpg BCM\_PerformAmbientProcessing

1937468195.jpg BCM\_PerformWelcomeFarewellFeatureProcessing

1937468195.jpg ALCM\_ProvideIllumination

1937468195.jpg BCM\_PerformALMCircuitOutput

1937468195.jpg BCM\_ProcessAmbientLightingOutput

1937468195.jpg APIM\_ProcessUserInputAndFeedback

1937468195.jpg BCM\_PerformCoreAmbientLightingProcessing

## Requirements on Connections

### Networks

#### “CAN Bus xxx”

No requirements deviated from the standard Netcom speficifacation (please refer to [*VSEM “Multiplexing Specifications” section*](https://www.vsemweb.ford.com/tc/launchapp?-attach=true&-s=226TCSession&-o=xcbJ6OwAx3NrTDAAAAAAAAAAAAA&servername=Production_Server)).

The CAN messages relevant for this feature are listed in the section “[*CAN bus message/APIs*](file:///C:\Program%20Files\Common%20Files\Siemens\TeamcenterVSEM\temp\tc_yyan35_0_1666926750470\%3cBus#_CAN_Bus_)” of the Data Dictionary.

###### Protocol Requirements

No specific requirements on FNOS.

##### Electrical Requirements

No deviation from the SDS CAN.

#### “LIN Bus xxx”

##### Protocol Requirements

**LIN L BUS LDF: **

**LIN H BUS LDF:** **

###### Schedule Table

**Please refer to the LDF attached above.**

##### Electrical Requirements

**Please refer to the LDF attached above.**

### HW I/Os

#### “HW I/O xxx”

No specific protocol is used to send/receive signal information or multiplex/demultiplex signals on the HW circuit.

# Open Concerns

| ID | Concern Description | e-Tracker Reference | Status | Solution |
| --- | --- | --- | --- | --- |
|  | No open concerns |  |  |  |

Table 6‑1: Open Concerns

# Revision History

| Rev.  (revision) | Date | Description | Approved by | Responsible |
| --- | --- | --- | --- | --- |
| FIS0 | 2022-09-22 | V 0.0 2022 Auto generated from Magicdraw model - ready to be archived in VSEM. |  | rcruz92 |

## 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

1020393122.jpg All\_DoorLock\_Status

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg LockKind |

Table: Signal Details of All\_DoorLock\_Status

1020393122.jpg ALM\_Conditioned\_Pwr\_Arb

Name: ALM\_Conditioned\_Pwr\_Arb

Description: Ambient Light Moudule conditioned power supply.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg ALM\_Conditioned\_Pwr\_ArbKind |

Table: Signal Details of ALM\_Conditioned\_Pwr\_Arb

1020393122.jpg ALM\_ConditionedPower

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of ALM\_ConditionedPower

1020393122.jpg ALM\_Location\_ID

Name: ALM\_Location\_ID

Description: Indicates the ALM module NODE ADDRESS placed at various locations.Generally, lighting elements

will be located in the cupholders, center console, footwells, doors, scuffplates.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg ALM\_Location\_IDKind |

Table: Signal Details of ALM\_Location\_ID

1020393122.jpg ALM\_Power\_Status

Name: ALM\_Power\_Status

Description: This dataflow is used to convert the numeric output of ALM\_Conditioned\_Pwr\_Ckt to discrete to send

it over LIN

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg ALM\_Power\_StatusKind |

Table: Signal Details of ALM\_Power\_Status

1020393122.jpg Ambient\_Status

Name: Ambient\_Status

Description: Dataflow indicating the output of the ambient processing

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg Ambient\_StatusKind |

Table: Signal Details of Ambient\_Status

1020393122.jpg AmbientColor\_Cfg

Name: AmbientColor\_Cfg

Description: Currently selected ambient color

DomainElement : 0:15

DomainDescription : Color level for ambient lighting

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of AmbientColor\_Cfg

1020393122.jpg AmbientDim\_Cfg

Name: AmbientDim\_Cfg

Description: Currently selected ambient dimming level

DomainElement : 0:15

DomainDescription : Ambient ligiting dimming level

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of AmbientDim\_Cfg

1020393122.jpg AmbientMsg\_Rqst

Name: AmbientMsg\_Rqst

Description: This array contains the ambient message request for LIN module.

The index 'n' has following domain values:

ALL

FOOTWELLS

DF\_DOOR

PF\_DOOR

DR\_DOOR

PR\_DOOR

DF\_DOOR\_HANDLE

PF\_DOOR\_HANDLE

DR\_DOOR\_HANDLE

PR\_DOOR\_HANDLE

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg LightLocationKind |

Table: Signal Details of AmbientMsg\_Rqst

1020393122.jpg Approach\_LightShow

Name: Approach\_LightShow

Description: Indicates when to start approach light show.

Note: It will take care of the maximum time limit of 25 seconds.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg Approach\_LightShowKind |

Table: Signal Details of Approach\_LightShow

1020393122.jpg Color

Name: Color

Description: Indicates Color need to set for ambient lighting.

OFF domain value for Color is 0.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of Color

1020393122.jpg CourtesyDelay\_Rqst

Name: CourtesyDelay\_Rqst

Description: Request to illuminate the interior courtesy lights.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg CourtesyDelay\_RqstKind |

Table: Signal Details of CourtesyDelay\_Rqst

1020393122.jpg CourtesyDemand\_BSave\_Rqst

Name: CourtesyDemand\_BSave\_Rqst

Description: Request from Battery Saver to turn off the courtesy lights and the demand lights.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg CourtesyDemand\_BSave\_RqstKind |

Table: Signal Details of CourtesyDemand\_BSave\_Rqst

1020393122.jpg Customer\_Color

Name: Customer\_Color

Description: Indicates Color need to set for ambient lighting.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of Customer\_Color

1020393122.jpg Customer\_Intensity

Name: Customer\_Intensity

Description: Indicates the intesity required to set for ambient lighting.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of Customer\_Intensity

1020393122.jpg DBR\_Reset\_Cmd

Name: DBR\_Reset\_Cmd

Description: Reset command for latching dual battery relay. This opens the latching relay

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg DBR\_Reset\_CmdKind |

Table: Signal Details of DBR\_Reset\_Cmd

1020393122.jpg Delayed\_Accessory\_Cmd

Name: Delayed\_Accessory\_Cmd

Description: Input to load shedding - delayed accesory status

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg Delayed\_Accessory\_CmdKind |

Table: Signal Details of Delayed\_Accessory\_Cmd

1020393122.jpg DF\_Door\_Ajar\_Status

Name: DF\_Door\_Ajar\_Status

Description: Indicates if the driver's front door is ajar.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg AjarKind |

Table: Signal Details of DF\_Door\_Ajar\_Status

1020393122.jpg DF\_DoorLock\_Status

Name: DF\_DoorLock\_Status

Description: Driver Front door lock status

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg DoorLock\_StatusKind |

Table: Signal Details of DF\_DoorLock\_Status

1020393122.jpg DiagSession

Name: DiagSession

Description: Indicates the active session of Diagnostics

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg DiagSessionKind |

Table: Signal Details of DiagSession

1020393122.jpg DispOpr\_CS

Name: DispOpr\_CS

Description: Operation request command for personalization features from Center Stack.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg DispOpr\_CSKind |

Table: Signal Details of DispOpr\_CS

1020393122.jpg DoorAjar

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg AjarKind |

Table: Signal Details of DoorAjar

1020393122.jpg DoorCourtesyLight\_Rqst

Name: DoorCourtesyLight\_Rqst

Description: Request to illuminate the interior courtesy lights.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg DoorCourtesyLight\_RqstKind |

Table: Signal Details of DoorCourtesyLight\_Rqst

1020393122.jpg DoorLocked

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg LockKind |

Table: Signal Details of DoorLocked

1020393122.jpg DR\_Door\_Ajar\_Status

Name: DR\_Door\_Ajar\_Status

Description: Indicates if the driver's rear door is ajar.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg AjarKind |

Table: Signal Details of DR\_Door\_Ajar\_Status

1020393122.jpg DR\_DoorLock\_Status

Name: DR\_DoorLock\_Status

Description: Driver rear door lock status

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg LockKind |

Table: Signal Details of DR\_DoorLock\_Status

1020393122.jpg FET\_Ctrl

Name: FET\_Ctrl

Description: Overrides FET output controller when SHORT. OK allows FET output process to drive the FET.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg FET\_CtrlKind |

Table: Signal Details of FET\_Ctrl

1020393122.jpg Ignition\_Status

Name: Ignition\_Status

Description: The processed value for current Ignition state.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -- |
| Value Range | [ - ] |
| Resolution |  |
| Unit |  |

Table: Signal Details of Ignition\_Status

1020393122.jpg IlluminatedEntry\_Rqst

Name: IlluminatedEntry\_Rqst

Description: Request to illuminate the interior courtesy lights.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg IlluminatedEntry\_RqstKind |

Table: Signal Details of IlluminatedEntry\_Rqst

1020393122.jpg IlluminatedExit\_Rqst

Name: IlluminatedExit\_Rqst

Description: Request to illuminate the interior courtesy lights.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg IlluminatedExit\_RqstKind |

Table: Signal Details of IlluminatedExit\_Rqst

1020393122.jpg Intensity

Name: Intensity

Description: Indicates the intesity required to set for ambient lighting.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of Intensity

1020393122.jpg LG\_Other\_Door\_Ajar\_Status

Name: LG\_Other\_Door\_Ajar\_Status

Description: Indicates whether only LG is open or LG along with some other Door is Ajar.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg LG\_Other\_Door\_Ajar\_StatusKind |

Table: Signal Details of LG\_Other\_Door\_Ajar\_Status

1020393122.jpg LghtAmbColr\_No\_Rq

Ambient Lighting Color Selection Request.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LghtAmbColr\_No\_Rq

1020393122.jpg LghtAmbDrvMde\_B\_Stat

Name: LghtAmbDrvMde\_B\_Stat

Description: CAN signal for Contextual Ambient Lighting MANUAL and AUTOMATIC BCM f eedback.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg LghtAmbDrvMde\_B\_StatKind |

Table: Signal Details of LghtAmbDrvMde\_B\_Stat

1020393122.jpg LghtAmbDrvMde\_D\_Rq

Name: LghtAmbDrvMde\_D\_Rq

Description: CAN signal for setting Contextual Ambient Lighting MANUAL and AUTOMATIC HMI request.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg LghtAmbDrvMde\_D\_RqKind |

Table: Signal Details of LghtAmbDrvMde\_D\_Rq

1020393122.jpg LghtAmbIntns\_No\_Rq

User request to set ambient intensity level.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LghtAmbIntns\_No\_Rq

1020393122.jpg LightAmbColor\_No

Name: LightAmbColor\_No

Description: This number will be derived from CAN inputs from ambient color number depending on whether

Enhanced memory exists.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LightAmbColor\_No

1020393122.jpg LightAmbColor\_No\_Actl

Name: LightAmbColor\_No\_Actl

Description: CAN signal for ambient color level status

DomainElement : 0:15

DomainDescription : ambient color level

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LightAmbColor\_No\_Actl

1020393122.jpg LightAmbColor\_No\_Rq

Name: LightAmbColor\_No\_Rq

Description: CAN signal for setting ambient color level

DomainElement : 0:15

DomainDescription : ambient color level

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LightAmbColor\_No\_Rq

1020393122.jpg LightAmbColor\_Temp

Name: LightAmbColor\_Temp

Description: Ambient color for Lincoln and Ford.

0-ICE\_BLUE; 1- ORANGE; 2-SOFT\_BLUE; 3-RED; 4-GREEN; 5-BLUE; 6-PURPLE; 7-LICOLN\_WHITE; 8-AMBER; 9-TEAL; 10-BURNT\_ORANGE; 11-LINCOLN\_BLUE; 12-LINCOLN\_GREEN; 13-LILAC

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LightAmbColor\_Temp

1020393122.jpg LightAmbIntsty\_No

Name: LightAmbIntsty\_No

Description: This number will be derived from CAN inputs from ambient intensity number depending on whether

Enhanced memory exists

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LightAmbIntsty\_No

1020393122.jpg LightAmbIntsty\_No\_Actl

Name: LightAmbIntsty\_No\_Actl

Description: CAN signal for ambient color level status

DomainElement : 0:100

DomainDescription : ambient dimming level

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LightAmbIntsty\_No\_Actl

1020393122.jpg LightAmbIntsty\_No\_Rq

Name: LightAmbIntsty\_No\_Rq

Description: CAN signal for setting ambient dim level

DomainElement : 0:255

DomainDescription : ambient dimming level

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LightAmbIntsty\_No\_Rq

1020393122.jpg Local\_OpMode

Name: Local\_OpMode

Description: initial value changed Awake -> Sleep(Conti.m)

This Dataflow indicates the current state of the ECU.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg Local\_OpModeKind |

Table: Signal Details of Local\_OpMode

1020393122.jpg LowVoltMode

Name: LowVoltMode

Description: This signal determines if active load will be affected or unaffected by Stop/Start event voltage drop.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg LowVoltModeKind |

Table: Signal Details of LowVoltMode

1020393122.jpg Parklamps\_Command

Name: Parklamps\_Command

Description: Command to control the position/parklamps.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg Parklamps\_CommandKind |

Table: Signal Details of Parklamps\_Command

1020393122.jpg PersIndex\_CS

Name: PersIndex\_CS

Description: Personality index to use with operation from Center Stack.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg PersIndex\_CSKind |

Table: Signal Details of PersIndex\_CS

1020393122.jpg PersNum

Name: PersNum

Description: Indicates which personality is currently selected.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg PersNumKind |

Table: Signal Details of PersNum

1020393122.jpg PF\_Door\_Ajar\_Status

Name: PF\_Door\_Ajar\_Status

Description: Indicates if the passenger's front door is ajar.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg AjarKind |

Table: Signal Details of PF\_Door\_Ajar\_Status

1020393122.jpg PF\_DoorLock\_Status

Name: PF\_DoorLock\_Status

Description: Passenger Front Door lock status.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -- |
| Value Range | [ - ] |
| Resolution |  |
| Unit |  |

Table: Signal Details of PF\_DoorLock\_Status

1020393122.jpg PR\_Door\_Ajar\_Status

Name: PR\_Door\_Ajar\_Status

Description: Indicates if the passenger's rear door is ajar.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg AjarKind |

Table: Signal Details of PR\_Door\_Ajar\_Status

1020393122.jpg PR\_DoorLock\_Status

Name: PR\_DoorLock\_Status

Description: Passanger rear door lock status.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1968729174.jpg LockKind |

Table: Signal Details of PR\_DoorLock\_Status

1020393122.jpg Ramp

Name: Ramp

Description: Indicates ramping is required/not required for ambient lighting.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg RampKind |

Table: Signal Details of Ramp

1020393122.jpg Reset

Name: Reset

Description: Reset based on Tire Index

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg ResetKind |

Table: Signal Details of Reset

1020393122.jpg SelDrvMdeHmi03\_D\_Rq\_ComStat

Name: SelDrvMdeHmi03\_D\_Rq\_ComStat

Description: Communication Status Received over CAN for SelDrvMdeHmi03\_D\_Rq.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg SelDrvMdeHmi03\_D\_Rq\_ComStatKind |

Table: Signal Details of SelDrvMdeHmi03\_D\_Rq\_ComStat

1020393122.jpg SelDrvMdeHmi03\_Rq

Name: SelDrvMdeHmi03\_Rq

Description: CAN signal for the selected drive mode.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of SelDrvMdeHmi03\_Rq

1020393122.jpg Update\_Color

Name: Update\_Color

Description: Indicates whether the color set for ambient lighting needs update or not.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg Update\_ColorKind |

Table: Signal Details of Update\_Color

1020393122.jpg Update\_Intensity

Name: Update\_Intensity

Description: Indicates the intesity for ambient lighting needs to be updated or not.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg Update\_IntensityKind |

Table: Signal Details of Update\_Intensity

1020393122.jpg VBattState

Name: VBattState

Description: Array indicating Current State of a specific Voltage Range.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg VBattStateKind |

Table: Signal Details of VBattState

1020393122.jpg WelcomeFarewell\_Status

Name: WelcomeFarewell\_Status

Description: Indicates welcome or farewell status for ambient lighting.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg WelcomeFarewell\_StatusKind |

Table: Signal Details of WelcomeFarewell\_Status

### Logical Parameters

Please check the latest Functional Group Specification for the logical parameters and the 8.1.4 section ([link](#_Technical_Parameters)) where they are reflected to technical parameters.

### Technical Signals

1020393122.jpg All\_DoorLock\_Status

This dataflow is used to convert the numeric output of ALM\_Conditioned\_Pwr\_Ckt to discrete to send

it over LIN.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg DoorLock\_StatusKind |

Table: Signal Details of All\_DoorLock\_Status

1020393122.jpg ALM\_Conditioned\_Pwr\_Arb

Ambient Light Moudule conditioned power supply.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg ALM\_Conditioned\_Pwr\_ArbKind |

Table: Signal Details of ALM\_Conditioned\_Pwr\_Arb

1020393122.jpg ALM\_Conditioned\_Pwr\_Ckt

Voltage supply to modules from body control module (BCM).

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1990391710.jpg voltage |

Table: Signal Details of ALM\_Conditioned\_Pwr\_Ckt

1020393122.jpg ALM\_Power\_Status

This dataflow is used to convert the numeric output of ALM\_Conditioned\_Pwr\_Ckt to discrete.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg ALM\_Power\_StatusKind |

Table: Signal Details of ALM\_Power\_Status

1020393122.jpg Ambient\_Status

Dataflow indicating the output of the ambient processing.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg Ambient\_StatusKind |

Table: Signal Details of Ambient\_Status

1020393122.jpg AmbientColor\_Cfg

Currently selected ambient color

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of AmbientColor\_Cfg

1020393122.jpg AmbientDim\_Cfg

Currently selected ambient dimming level.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of AmbientDim\_Cfg

1020393122.jpg AmbientMsg\_Rqst

This array contains the ambient message request for LIN module.

The index 'n' has following domain values:

ALL

FOOTWELLS

DF\_DOOR

PF\_DOOR

DR\_DOOR

PR\_DOOR

DF\_DOOR\_HANDLE

PF\_DOOR\_HANDLE

DR\_DOOR\_HANDLE

PR\_DOOR\_HANDLE

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg AmbientMsg\_RqstKind |

Table: Signal Details of AmbientMsg\_Rqst

1020393122.jpg Approach\_LightShow

Indicates when to start approach light show.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg Approach\_LightShowKind |

Table: Signal Details of Approach\_LightShow

1020393122.jpg Color

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg ColorKind |

Table: Signal Details of Color

1020393122.jpg CourtesyDelay\_Rqst

Request to illuminate the interior courtesy lights.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg CourtesyDelay\_RqstKind |

Table: Signal Details of CourtesyDelay\_Rqst

1020393122.jpg CourtesyDemand\_BSave\_Rqst

Request from Battery Saver to turn off the courtesy lights and the demand lights.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg CourtesyDemand\_BSave\_RqstKind |

Table: Signal Details of CourtesyDemand\_BSave\_Rqst

1020393122.jpg CtrStkDsplyOp\_D\_Rq

Operation request command for personalization features from Center Stack.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg DispOpr\_CSKind |

Table: Signal Details of CtrStkDsplyOp\_D\_Rq

1020393122.jpg CtrStkPersIndex\_D\_Actl

Personality index to use with operation from Center Stack.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg PersIndex\_CSKind |

Table: Signal Details of CtrStkPersIndex\_D\_Actl

1020393122.jpg Customer\_Color

Indicates Color need to set for ambient lighting.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg ColorKind |

Table: Signal Details of Customer\_Color

1020393122.jpg Customer\_Intensity

Indicates the intesity required to set for ambient lighting.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -- |
| Value Range | [ - ] |
| Resolution |  |
| Unit |  |

Table: Signal Details of Customer\_Intensity

1020393122.jpg DBR\_Reset\_Cmd

Reset command for latching dual battery relay. This opens the latching relay.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg DBR\_Reset\_CmdKind |

Table: Signal Details of DBR\_Reset\_Cmd

1020393122.jpg Delayed\_Accessory\_Cmd

Input to load shedding - delayed accesory status.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg Delayed\_Accessory\_CmdKind |

Table: Signal Details of Delayed\_Accessory\_Cmd

1020393122.jpg DF\_Door\_Ajar\_Status

Driver front door ajar status.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg AjarKind |

Table: Signal Details of DF\_Door\_Ajar\_Status

1020393122.jpg DF\_DoorLock\_Status

Driver Front door lock status.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg DoorLock\_StatusKind |

Table: Signal Details of DF\_DoorLock\_Status

1020393122.jpg DiagSession

DiagSession.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg DiagSessionKind |

Table: Signal Details of DiagSession

1020393122.jpg DoorCourtesyLight\_Rqst

Request to illuminate the interior courtesy lights.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg DoorCourtesyLight\_RqstKind |

Table: Signal Details of DoorCourtesyLight\_Rqst

1020393122.jpg DR\_Door\_Ajar\_Status

Driver rear door ajar status.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg AjarKind |

Table: Signal Details of DR\_Door\_Ajar\_Status

1020393122.jpg DR\_DoorLock\_Status

Driver rear door lock status.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg DoorLock\_StatusKind |

Table: Signal Details of DR\_DoorLock\_Status

1020393122.jpg FET\_Ctrl

Overrides FET output controller when SHORT. OK allows FET output process to drive the FET.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg FET\_CtrlKind |

Table: Signal Details of FET\_Ctrl

1020393122.jpg Ignition\_Status

Provide vehicle ignition status (OFF/ACC/RUN).

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg IgnitionStatusKind |

Table: Signal Details of Ignition\_Status

1020393122.jpg IlluminatedEntry\_Rqst

Request to illuminate the interior courtesy lights.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg IlluminatedEntry\_RqstKind |

Table: Signal Details of IlluminatedEntry\_Rqst

1020393122.jpg IlluminatedExit\_Rqst

Request to illuminate the interior courtesy lights.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg IlluminatedExit\_RqstKind |

Table: Signal Details of IlluminatedExit\_Rqst

1020393122.jpg Intensity

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of Intensity

1020393122.jpg LG\_Other\_Door\_Ajar\_Status

Indicates whether only LG is open or LG along with some other Door is Ajared.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg LG\_Other\_Door\_Ajar\_StatusKind |

Table: Signal Details of LG\_Other\_Door\_Ajar\_Status

1020393122.jpg LghtAmbColr\_No\_Rq

Ambient Lighting Color Selection Request.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LghtAmbColr\_No\_Rq

1020393122.jpg LghtAmbDrvMde\_B\_Stat

Feedback signal for Contextual Ambient Lighting status to HMI ECUs.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LghtAmbDrvMde\_B\_Stat

1020393122.jpg LghtAmbDrvMde\_D\_Rq

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -- |
| Value Range | [ - ] |
| Resolution |  |
| Unit |  |

Table: Signal Details of LghtAmbDrvMde\_D\_Rq

1020393122.jpg LghtAmbIntns\_No\_Rq

Ambient Lighting Intensity Selection Request.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LghtAmbIntns\_No\_Rq

1020393122.jpg LghtAmbRqSrc\_B\_Stat

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1766847991.jpg LghtAmbRqSrc\_B\_StatKind |

Table: Signal Details of LghtAmbRqSrc\_B\_Stat

1020393122.jpg LightAmbColor\_No

This number will be derived from CAN inputs from ambient color number depending on whether Enhanced memory exists.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LightAmbColor\_No

1020393122.jpg LightAmbColor\_No\_Actl

Ambient Lighting Color Selection Status.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LightAmbColor\_No\_Actl

1020393122.jpg LightAmbColor\_No\_Rq

Ambient Lighting Color Selection Request.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LightAmbColor\_No\_Rq

1020393122.jpg LightAmbColor\_Temp

Ambient color for Lincoln and Ford.

0-ICE\_BLUE; 1- ORANGE; 2-SOFT\_BLUE; 3-RED; 4-GREEN; 5-BLUE; 6-PURPLE; 7-

LICOLN\_WHITE; 8-AMBER; 9-TEAL; 10-BURNT\_ORANGE; 11-LINCOLN\_BLUE; 12-

LINCOLN\_GREEN; 13-LILAC.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1766847991.jpg LightAmbColor\_TempKind |

Table: Signal Details of LightAmbColor\_Temp

1020393122.jpg LightAmbIntsty\_No

This number will be derived from CAN inputs from ambient intensity number depending on whether

Enhanced memory exists.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LightAmbIntsty\_No

1020393122.jpg LightAmbIntsty\_No\_Actl

Ambient Lighting Intensity Selection Status.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LightAmbIntsty\_No\_Actl

1020393122.jpg LightAmbIntsty\_No\_Rq

Ambient Lighting Intensity Selection Request.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of LightAmbIntsty\_No\_Rq

1020393122.jpg Local\_OpMode

initial value changed Awake -> Sleep(Conti.m)

This Dataflow indicates the current state of the ECU.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1766847991.jpg Local\_OpModeKind |

Table: Signal Details of Local\_OpMode

1020393122.jpg Location\_ID

Indicates the ALM module NODE ADDRESS placed at various locations.Generally, lighting elements

will be located in the cupholders, center console, footwells, doors, scuffplates.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1766847991.jpg Location\_IDKind |

Table: Signal Details of Location\_ID

1020393122.jpg LowVoltMode

This signal determines if active load will be affected or unaffected by Stop/Start event voltage drop.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1766847991.jpg LowVoltModeKind |

Table: Signal Details of LowVoltMode

1020393122.jpg Parklamps\_Command

Command to control the position/parklamps.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1766847991.jpg Parklamps\_CommandKind |

Table: Signal Details of Parklamps\_Command

1020393122.jpg PersNo\_D\_Actl

Personalization profile number feedback to HMI.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1766847991.jpg PersNo\_D\_ActlKind |

Table: Signal Details of PersNo\_D\_Actl

1020393122.jpg PF\_Door\_Ajar\_Status

Passenger Front Door lock status

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg AjarKind |

Table: Signal Details of PF\_Door\_Ajar\_Status

1020393122.jpg PF\_DoorLock\_Status

Passember front door lock status.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg DoorLock\_StatusKind |

Table: Signal Details of PF\_DoorLock\_Status

1020393122.jpg PR\_Door\_Ajar\_Status

Passenger rear door ajar status.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg AjarKind |

Table: Signal Details of PR\_Door\_Ajar\_Status

1020393122.jpg PR\_DoorLock\_Status

Passenger rear door lock status.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg DoorLock\_StatusKind |

Table: Signal Details of PR\_DoorLock\_Status

1020393122.jpg Ramp

Indicates ramping is required/not required for ambient lighting.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1766847991.jpg RampKind |

Table: Signal Details of Ramp

1020393122.jpg Reset

BCM reset.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -1993636139.jpg Boolean |

Table: Signal Details of Reset

1020393122.jpg SelDrvMdeHmi03\_D\_Rq

Drive mode request communication for the SDM interface HMI -Ambient Lighting.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | -391078934.jpg byte |

Table: Signal Details of SelDrvMdeHmi03\_D\_Rq

1020393122.jpg SelDrvMdeHmi03\_D\_Rq\_ComStat

Communication Status Received over CAN for SelDrvMdeHmi03\_D\_Rq.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1766847991.jpg SelDrvMdeHmi03\_D\_Rq\_ComStatKind |

Table: Signal Details of SelDrvMdeHmi03\_D\_Rq\_ComStat

1020393122.jpg Update\_Color

Indicates whether the color set for ambient lighting needs update or not.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1766847991.jpg Update\_ColorKind |

Table: Signal Details of Update\_Color

1020393122.jpg Update\_Intensity

Indicates the intesity for ambient lighting needs to be updated or not.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1766847991.jpg Update\_IntensityKind |

Table: Signal Details of Update\_Intensity

1020393122.jpg VBattState

Array indicating Current State of a specific Voltage Range.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1684781911.jpg VBattStateKind |

Table: Signal Details of VBattState

1020393122.jpg WelcomeFarewell\_Status

Indicates welcome or farewell status for ambient lighting.

|  |  |  |
| --- | --- | --- |
| **ASIL** | |  |
| **Value** | Encoding Name | 1766847991.jpg WelcomeFarewell\_StatusKind |

Table: Signal Details of WelcomeFarewell\_Status

#### GSDB Signals

No new signals to be requested for the GSDB.

#### HW I/Os

-ALM\_Conditioned\_Pwr\_Ckt (power circuit).

*Name: ALM\_Conditioned\_Pwr\_Ckt*

*Description: Depending on Configuration of AmbientLighting\_Cfg, this ckt will either power the Ambient Light*

*module, or power the Single color ambient lighting*

*Type: Numeric*

*Category: HW Output*

*Initial Value: 0*

*DataType: uint8*

*Storage Class: Volatile*

*Structure of Data: Scalar*

*Units: Percent*

*Resolution: 1*

*Min Value: 0*

*Max Value: 100*

#### Diagnostic Interfaces

##### DTCs

###### BCM DTCs

**Functional DTCs**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DTC | DTC Name | Config\_Reqts | Rate (msec) | SelfTest | VBatt Guard | IgnitionStable\_5sec | DTC\_Ctrl | Inc\_Criteria | Inc\_Val | Max Action | Dec\_Criteria | Dec\_Val | Min Action |
| 946500 | (Subnet Node count mismatch for ALM LIN\_H) Ambient Lighting Bus 1 | AmbientLighting\_Cfg <>  DISABLED & (DTCSuppression\_Cfg[DTCSuppression\_Cfg\_Index], bit0 = 1) | 1000 | NULL | n/a | n/a | WATCH | ALMCensusStat = DONE & ExpectedALM\_NodesCount\_Cfg[0] <> Count\_Present(ALM\_LIN\_H\_Stat[]) | 64 | DTCMaxAction() | Else | 2 | DTCMinAction() |
| 946700 | (Subnet Node count mismatch for ALM LIN\_L) Ambient Lighting Bus 3 | AmbientLighting\_Cfg <>  DISABLED & (DTCSuppression\_Cfg[DTCSuppression\_Cfg\_Index], bit0 = 1) | 1000 | NULL | n/a | n/a | WATCH | ALMCensusStat = DONE & ExpectedALM\_NodesCount\_Cfg[2] <> Count\_Present(ALM\_LIN\_L\_Stat[]) | 64 | DTCMaxAction() | Else | 2 | DTCMinAction() |
| 945C15 | Ambient Light Module Conditioned Power Supply Output (Circuit Open or Short to Battery ) | BodyHwareExists(ALM\_Conditioned\_Pwr\_Ckt) & ALMConditionedPwrCkt\_Cfg = USED & AmbientLighting\_Cfg <> SINGLE\_COL & DBRInCar\_Cfg = FALSE & (DTCSuppression\_Cfg[DTCSuppression\_Cfg\_Index], bit0 = 1) | 1000 | NULL | Note 1 | STABLE | WATCH | Note 2 | 33 | DTCMaxAction() | Note 2 | 13 | DTCMinAction() |
| 945C15 | Ambient Light Module Conditioned Power Supply Output (Circuit Open or Short to Battery ) | BodyHwareExists(ALM\_Conditioned\_Pwr\_Ckt) & ALMConditionedPwrCkt\_Cfg = USED & AmbientLighting\_Cfg <> SINGLE\_COL & DBRInCar\_Cfg = FALSE & (DTCSuppression\_Cfg[DTCSuppression\_Cfg\_Index], bit1 = 1) | 200 | TEST | Note 1 | n/a | n/a | Note 2 | 33 | DTCSTest[].MonitorMAX=MAX | Note 2 | 33 | DTCSTest[].MonitorMIN=MIN |
| 945C11 | Ambient Light Module Conditioned Power Supply Output (Circuit Short to Ground) | ActlHwareExists(ALM\_Conditioned\_Pwr\_Ckt) & AmbientLighting\_Cfg <> SINGLE\_COL & DBRInCar\_Cfg = FALSE & (DTCSuppression\_Cfg[DTCSuppression\_Cfg\_Index], bit0 = 1) | 1000 | NULL | n/a | n/a | WATCH | FET\_Ctrl[ALM\_Conditioned\_Pwr\_Ckt] = SHORT | FETMode[ALM\_Conditioned\_Pwr\_Ckt] = NO\_RETRY | 127 | DTCMaxAction() | FET\_Ctrl[ALM\_Conditioned\_Pwr\_Ckt] <> SHORT & FETMode[ALM\_Conditioned\_Pwr\_Ckt] <> NO\_RETRY & FETGood[ALM\_Conditioned\_Pwr\_Ckt] = GOOD | 33 | DTCMinAction() |
| 945C11 | Ambient Light Module Conditioned Power Supply Output (Circuit Short to Ground) | ActlHwareExists(ALM\_Conditioned\_Pwr\_Ckt) & AmbientLighting\_Cfg <> SINGLE\_COL & DBRInCar\_Cfg = FALSE & (DTCSuppression\_Cfg[DTCSuppression\_Cfg\_Index], bit1 = 1) | 200 | TEST | n/a | n/a | n/a | FET\_Ctrl[ALM\_Conditioned\_Pwr\_Ckt] = SHORT | FETMode[ALM\_Conditioned\_Pwr\_Ckt] = NO\_RETRY | 127 | DTCSTest[].MonitorMAX=MAX | FET\_Ctrl[ALM\_Conditioned\_Pwr\_Ckt] <> SHORT & FETMode[ALM\_Conditioned\_Pwr\_Ckt] <> NO\_RETRY & FETGood[ALM\_Conditioned\_Pwr\_Ckt] = GOOD | 33 | DTCSTest[].MonitorMIN=MIN |
| 953C15 | Color Ambient Light Output (Circuit Open or Short to Battery) | BodyHwareExists(ALM\_Conditioned\_Pwr\_Ckt) & ALMConditionedPwrCkt\_Cfg = USED & AmbientLighting\_Cfg = SINGLE\_COL & DBRInCar\_Cfg = FALSE & (DTCSuppression\_Cfg[DTCSuppression\_Cfg\_Index], bit0 = 1) | 1000 | NULL | Note 1 | STABLE | WATCH | Note 2 | 33 | DTCMaxAction() | Note 2 | 13 | DTCMinAction() |
| 953C15 | Color Ambient Light Output (Circuit Open or Short to Battery) | BodyHwareExists(ALM\_Conditioned\_Pwr\_Ckt) & ALMConditionedPwrCkt\_Cfg = USED & AmbientLighting\_Cfg = SINGLE\_COL & DBRInCar\_Cfg = FALSE & (DTCSuppression\_Cfg[DTCSuppression\_Cfg\_Index], bit1 = 1) | 200 | TEST | Note 1 | n/a | n/a | Note 2 | 33 | DTCSTest[].MonitorMAX=MAX | Note 2 | 33 | DTCSTest[].MonitorMIN=MIN |
| 953C11 | Color Ambient Light Output (Circuit Short to Ground) | ActlHwareExists(ALM\_Conditioned\_Pwr\_Ckt) & AmbientLighting\_Cfg = SINGLE\_COL & DBRInCar\_Cfg = FALSE & (DTCSuppression\_Cfg[DTCSuppression\_Cfg\_Index], bit0 = 1) | 1000 | NULL | n/a | n/a | WATCH | FET\_Ctrl[ALM\_Conditioned\_Pwr\_Ckt] = SHORT | FETMode[ALM\_Conditioned\_Pwr\_Ckt] = NO\_RETRY | 127 | DTCMaxAction() | FET\_Ctrl[ALM\_Conditioned\_Pwr\_Ckt] <> SHORT & FETMode[ALM\_Conditioned\_Pwr\_Ckt] <> NO\_RETRY & FETGood[ALM\_Conditioned\_Pwr\_Ckt] = GOOD | 33 | DTCMinAction() |
| 953C11 | Color Ambient Light Output (Circuit Short to Ground) | ActlHwareExists(ALM\_Conditioned\_Pwr\_Ckt) & AmbientLighting\_Cfg = SINGLE\_COL & DBRInCar\_Cfg = FALSE & (DTCSuppression\_Cfg[DTCSuppression\_Cfg\_Index], bit1 = 1) | 200 | TEST | n/a | n/a | n/a | FET\_Ctrl[ALM\_Conditioned\_Pwr\_Ckt] = SHORT | FETMode[ALM\_Conditioned\_Pwr\_Ckt] = NO\_RETRY | 127 | DTCSTest[].MonitorMAX=MAX | FET\_Ctrl[ALM\_Conditioned\_Pwr\_Ckt] <> SHORT & FETMode[ALM\_Conditioned\_Pwr\_Ckt] <> NO\_RETRY & FETGood[ALM\_Conditioned\_Pwr\_Ckt] = GOOD | 33 | DTCSTest[].MonitorMIN=MIN |

*Note 2: Fault detection must use the appropriate value of FETOpenThreshold\_Cfg[FET\_Ctrl\_Index] or FETShortThreshold\_Cfg[FET\_Ctrl\_Index] determine the presence of a fault. Also, only increment or decrement the counter if the specific fault is detectable.*

##### DIDs

###### BCM DIDs

**Functional Feature DIDs List**

| **DID** | **DID Name / Description** | **Config\_Reqts** | **Dataflow** | **Circuit\_Name** |
| --- | --- | --- | --- | --- |
| $41DA | Ambient Light LED Power Status | ALMConditionedPwrCkt\_Cfg = USED & BodyHwareExists(ALM\_Conditioned\_Pwr\_Ckt) & DBRInCar\_Cfg = FALSE & AmbientLighting\_Cfg <> SINGLE\_COL | PIDReadAlmConditioned\_Pwr | ALM\_Conditioned\_Pwr\_Ckt |
| $4226 | Node Count On Ambient Lighting Bus | ALMCensusStat = DONE | Report\_LIN\_node\_Cnt\_DID()  Dataflow affected is LIN\_Node\_Count\_Subnet[]  Refer **Error! Reference source not found.** **Error! Reference source not found.** | n/a |
| $42AE | Color Ambient Light Output Status | ALMConditionedPwrCkt\_Cfg = USED & BodyHwareExists(ALM\_Conditioned\_Pwr\_Ckt) & DBRInCar\_Cfg = FALSE & AmbientLighting\_Cfg = SINGLE\_COL | PIDReadAlmConditioned\_Pwr | ALM\_Conditioned\_Pwr\_Ckt |

**Development and General DIDs List**

| **DID** | **DID Name / Description** | **Config\_Reqts** | **Dataflow** | **DID Type** |
| --- | --- | --- | --- | --- |
| $EE75 | ALM Light Engine Present Status Bus H | n/a | Byte 1, Bit 0 - Light Engine 01 Status: ALM\_LIN\_H\_Stat[1]  Byte 1, Bit 1 - Light Engine 02 Status : ALM\_LIN\_H\_Stat[2]  Byte 1, Bit 2 - Light Engine 03 Status : ALM\_LIN\_H\_Stat[3]  Byte 1, Bit 3 - Light Engine 04 Status : ALM\_LIN\_H\_Stat[4]  Byte 1, Bit 4 - Light Engine 05 Status : ALM\_LIN\_H\_Stat[5]  Byte 1, Bit 5 - Light Engine 06 Status : ALM\_LIN\_H\_Stat[6]  Byte 1, Bit 6 - Light Engine 07 Status : ALM\_LIN\_H\_Stat[7]  Byte 1, Bit 7 - Light Engine 08 Status : ALM\_LIN\_H\_Stat[8]  Byte 2, Bit 0 - Light Engine 09 Status : ALM\_LIN\_H\_Stat[9]  Byte 2, Bit 1 - Light Engine 10 Status : ALM\_LIN\_H\_Stat[10]  Byte 2, Bit 2 - Light Engine 11 Status : ALM\_LIN\_H\_Stat[11]  Byte 2, Bit 3 - Light Engine 12 Status : ALM\_LIN\_H\_Stat[12]  Byte 2, Bit 4 - Light Engine 13 Status : ALM\_LIN\_H\_Stat[13] | Bit Mapped |
| $EE76 | ALM Light Engine Present Status Bus L | n/a | Byte 1, Bit 0 - Light Engine 01 Status ALM\_LIN\_L\_Stat[1]  Byte 1, Bit 1 - Light Engine 02 Status ALM\_LIN\_L\_Stat[2]  Byte 1, Bit 2 - Light Engine 03 Status ALM\_LIN\_L\_Stat[3]  Byte 1, Bit 3 - Light Engine 04 Status ALM\_LIN\_L\_Stat[4]  Byte 1, Bit 4 - Light Engine 05 Status ALM\_LIN\_L\_Stat[5]  Byte 1, Bit 5 - Light Engine 06 Status ALM\_LIN\_L\_Stat[6]  Byte 1, Bit 6 - Light Engine 07 Status ALM\_LIN\_L\_Stat[7]  Byte 1, Bit 7 - Light Engine 08 Status ALM\_LIN\_L\_Stat[8]  Byte 2, Bit 0 - Light Engine 09 Status ALM\_LIN\_L\_Stat[9]  Byte 2, Bit 1 - Light Engine 10 Status ALM\_LIN\_L\_Stat[10]  Byte 2, Bit 2 - Light Engine 11 Status ALM\_LIN\_L\_Stat[11]  Byte 2, Bit 3 - Light Engine 12 Status ALM\_LIN\_L\_Stat[12]  Byte 2, Bit 4 - Light Engine 13 Status ALM\_LIN\_L\_Stat[13] | Bit Mapped |
| $EE9D | ALM Bus H Light Engine Fault Status | ALMCensusStat = DONE | Byte 1, Bit 0 - Light Engine 01 Fault Status : ALM\_LIN\_H\_Fault[1]  Byte 1, Bit 1 - Light Engine 02 Fault Status : ALM\_LIN\_H\_Fault[2]  Byte 1, Bit 2 - Light Engine 03 Fault Status : ALM\_LIN\_H\_Fault[3]  Byte 1, Bit 3 - Light Engine 04 Fault Status : ALM\_LIN\_H\_Fault[4]  Byte 1, Bit 4 - Light Engine 05 Fault Status : ALM\_LIN\_H\_Fault[5]  Byte 1, Bit 5 - Light Engine 06 Fault Status : ALM\_LIN\_H\_Fault[6]  Byte 1, Bit 6 - Light Engine 07 Fault Status : ALM\_LIN\_H\_Fault[7]  Byte 1, Bit 7 - Light Engine 08 Fault Status : ALM\_LIN\_H\_Fault[8]  Byte 2, Bit 0 - Light Engine 09 Fault Status : ALM\_LIN\_H\_Fault[9]  Byte 2, Bit 1 - Light Engine 10 Fault Status : ALM\_LIN\_H\_Fault[10]  Byte 2, Bit 2 - Light Engine 11 Fault Status : ALM\_LIN\_H\_Fault[11]  Byte 2, Bit 3 - Light Engine 12 Fault Status : ALM\_LIN\_H\_Fault[12]  Byte 2, Bit 4 - Light Engine 13 Fault Status : ALM\_LIN\_H\_Fault[13] | Bit Mapped |
| $EE9E | ALM Bus L Light Engine Fault Status | ALMCensusStat = DONE | Byte 1, Bit 0 - Light Engine 01 Fault Status : ALM\_LIN\_L\_Fault[1]  Byte 1, Bit 1 - Light Engine 02 Fault Status : ALM\_LIN\_L\_Fault[2]  Byte 1, Bit 2 - Light Engine 03 Fault Status : ALM\_LIN\_L\_Fault[3]  Byte 1, Bit 3 - Light Engine 04 Fault Status : ALM\_LIN\_L\_Fault[4]  Byte 1, Bit 4 - Light Engine 05 Fault Status : ALM\_LIN\_L\_Fault[5]  Byte 1, Bit 5 - Light Engine 06 Fault Status : ALM\_LIN\_L\_Fault[6]  Byte 1, Bit 6 - Light Engine 07 Fault Status : ALM\_LIN\_L\_Fault[7]  Byte 1, Bit 7 - Light Engine 08 Fault Status : ALM\_LIN\_L\_Fault[8]  Byte 2, Bit 0 - Light Engine 09 Fault Status : ALM\_LIN\_L\_Fault[9]  Byte 2, Bit 1 - Light Engine 10 Fault Status : ALM\_LIN\_L\_Fault[10]  Byte 2, Bit 2 - Light Engine 11 Fault Status : ALM\_LIN\_L\_Fault[11]  Byte 2, Bit 3 - Light Engine 12 Fault Status : ALM\_LIN\_L\_Fault[12]  Byte 2, Bit 4 - Light Engine 13 Fault Status : ALM\_LIN\_L\_Fault[13] | Bit Mapped |
| $EE9F | ALM Bus H Light Engine Node Location IDs | ALMCensusStat = DONE | Byte 1 - Light Engine 01 Location ID : ALM\_LIN\_H\_LocID[1]  Byte 2 - Light Engine 02 Location ID : ALM\_LIN\_H\_LocID[2]  Byte 3 - Light Engine 03 Location ID : ALM\_LIN\_H\_LocID[3]  Byte 4 - Light Engine 04 Location ID : ALM\_LIN\_H\_LocID[4]  Byte 5 - Light Engine 05 Location ID : ALM\_LIN\_H\_LocID[5]  Byte 6 - Light Engine 06 Location ID : ALM\_LIN\_H\_LocID[6]  Byte 7 - Light Engine 07 Location ID : ALM\_LIN\_H\_LocID[7]  Byte 8 - Light Engine 08 Location ID : ALM\_LIN\_H\_LocID[8]  Byte 9 - Light Engine 09 Location ID : ALM\_LIN\_H\_LocID[9]  Byte 10 - Light Engine 10 Location ID : ALM\_LIN\_H\_LocID[10]  Byte 11 - Light Engine 11 Location ID : ALM\_LIN\_H\_LocID[11]  Byte 12 - Light Engine 12 Location ID : ALM\_LIN\_H\_LocID[12]  Byte 13 - Light Engine 13 Location ID : ALM\_LIN\_H\_LocID[13] | Bit Mapped |
| $EEA0 | ALM Bus L Light Engine Node  Location IDs | ALMCensusStat = DONE | Byte 1 - Light Engine 01 Location ID : ALM\_LIN\_L\_LocID[1]  Byte 2 - Light Engine 02 Location ID : ALM\_LIN\_L\_LocID[2]  Byte 3 - Light Engine 03 Location ID : ALM\_LIN\_L\_LocID[3]  Byte 4 - Light Engine 04 Location ID : ALM\_LIN\_L\_LocID[4]  Byte 5 - Light Engine 05 Location ID : ALM\_LIN\_L\_LocID[5]  Byte 6 - Light Engine 06 Location ID : ALM\_LIN\_L\_LocID[6]  Byte 7 - Light Engine 07 Location ID : ALM\_LIN\_L\_LocID[7]  Byte 8 - Light Engine 08 Location ID : ALM\_LIN\_L\_LocID[8]  Byte 9 - Light Engine 09 Location ID : ALM\_LIN\_L\_LocID[9]  Byte 10 - Light Engine 10 Location ID : ALM\_LIN\_L\_LocID[10]  Byte 11 - Light Engine 11 Location ID : ALM\_LIN\_L\_LocID[11]  Byte 12 - Light Engine 12 Location ID : ALM\_LIN\_L\_LocID[12]  Byte 13 - Light Engine 13 Location ID : ALM\_LIN\_L\_LocID[13] | Bit Mapped |
| $EEA1 | ALM Bus H Light Engine Node Status Response | ALMCensusStat = DONE | Byte 1 - Light Engine 01 Status Response : ALM\_LIN\_H\_StatResp[1]  Byte 2 - Light Engine 02 Status Response : ALM\_LIN\_H\_StatResp[2]  Byte 3 - Light Engine 03 Status Response : ALM\_LIN\_H\_StatResp[3]  Byte 4 - Light Engine 04 Status Response : ALM\_LIN\_H\_StatResp[4]  Byte 5 - Light Engine 05 Status Response : ALM\_LIN\_H\_StatResp[5]  Byte 6 - Light Engine 06 Status Response : ALM\_LIN\_H\_StatResp[6]  Byte 7 - Light Engine 07 Status Response : ALM\_LIN\_H\_StatResp[7]  Byte 8 - Light Engine 08 Status Response : ALM\_LIN\_H\_StatResp[8]  Byte 9 - Light Engine 09 Status Response : ALM\_LIN\_H\_StatResp[9]  Byte 10 - Light Engine 10 Status Response : ALM\_LIN\_H\_StatResp[10]  Byte 11 - Light Engine 11 Status Response : ALM\_LIN\_H\_StatResp[11]  Byte 12 - Light Engine 12 Status Response : ALM\_LIN\_H\_StatResp[12]  Byte 13 - Light Engine 13 Status Response : ALM\_LIN\_H\_StatResp[13] | Bit Mapped |
| $EEA2 | ALM Bus L Light Engine Node Status Response | ALMCensusStat = DONE | Byte 1 - Light Engine 01 Status Response : ALM\_LIN\_L\_StatResp[1]  Byte 2 - Light Engine 02 Status Response : ALM\_LIN\_L\_StatResp[2]  Byte 3 - Light Engine 03 Status Response : ALM\_LIN\_L\_StatResp[3]  Byte 4 - Light Engine 04 Status Response : ALM\_LIN\_L\_StatResp[4]  Byte 5 - Light Engine 05 Status Response : ALM\_LIN\_L\_StatResp[5]  Byte 6 - Light Engine 06 Status Response : ALM\_LIN\_L\_StatResp[6]  Byte 7 - Light Engine 07 Status Response : ALM\_LIN\_L\_StatResp[7]  Byte 8 - Light Engine 08 Status Response : ALM\_LIN\_L\_StatResp[8]  Byte 9 - Light Engine 09 Status Response : ALM\_LIN\_L\_StatResp[9]  Byte 10 - Light Engine 10 Status Response : ALM\_LIN\_L\_StatResp[10]  Byte 11 - Light Engine 11 Status Response : ALM\_LIN\_L\_StatResp[11]  Byte 12 - Light Engine 12 Status Response : ALM\_LIN\_L\_StatResp[12]  Byte 13 - Light Engine 13 Status Response : ALM\_LIN\_L\_StatResp[13] | Bit Mapped |

### Technical Parameters

170752247.jpg AjarColor\_Cfg

Ajar color level when vehicle door is ajar for ambient lighting.

Type: Numeric

Category: ECU Internal

Initial Value: 1

DataType: uint8

Storage Class: Non-Volatile -- Factory Set Method 2 Estimated NVRAM Write 1

Config Param is: Application Dependent

Structure of Data: Scalar

Units: None

Resolution: 1

Min Value: 0

Max Value: 15

170752247.jpg ALM\_CommUp\_Time\_Cfg

Configuration parameter specifying the time requried for ambient light node to wake up.

Type: Numeric

Category: ECU Internal

Initial Value: 120

DataType: uint8

Storage Class: Non-Volatile -- Factory Set Method 3

Config Param is: Core Strategy Dependent (BCM Software Team)

Structure of Data: Scalar

Units: Milliseconds

Resolution: 1

Min Value: 0

Max Value: 200

170752247.jpg ALMPowerMode\_Cfg

The method 2 signal will decide one of two approaches, One approach is to keep ALM conditioned

power dependent on headlamp status, other approach is to keep ALM conditioned power independent

of headlamp status, while making it independent of headlamp status it is controlled on the basis of BCM.

Type: Discrete

Category: ECU Internal

Initial Value: HEADLAMP\_CONTROLLED

DataType: uint8

Storage Class: Non-Volatile -- Factory Set Method 2

Estimated NVRAM Write 1

Config Param is: Application Dependent

Structure of Data: Scalar

BCM\_IO\_ACTIVE

HEADLAMP\_CONTROLLED

170752247.jpg AmbDrvMdeColor\_Cfg

This configuration parameter will define the color table lookup for the drive mode colors.

The color defined in each entry is a HMI color index value in the range 1 to 7.

The color index 0 will present a fault that will result in the contextual ambient to operate in Manual

behavior.

Type: Numeric

Category: ECU Internal

Initial Value: {1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1,1}

DataType: uint8

Storage Class: Non-Volatile -- Factory Set Method 3

Config Param is: Application Dependent

Structure of Data: 1D array

Index1D: SelDrvMdeHmi03\_Index

Units: Counts

Resolution: 1

Min Value: 0

Max Value: 7

170752247.jpg Ambient\_Lighting\_ON\_Cfg

Method 3 configuration to decide reserved value of ambient lighting intensity,received over CAN, which

will say that Ambient Lighting should be turned ON to its previous intensity. It's value should not be

changed unless the SYNC module changes this value for this purpose.

Initial Value: 0x66

Units: N/A

Resolution: 1

Min Value: 0x00

Max Value: 0xFF

170752247.jpg AmbientDelay\_Cfg

Configuration Parameter which indicates the minimum time delay before entering to the ambient state

from welcome state, to avoid the ambient light turning OFF due to momentary low voltage during crank

when battery voltage is very low.

Type: Numeric

Category: ECU Internal

Initial Value: 500

DataType: uint16

Storage Class: Non-Volatile -- Factory Set Method 2

Estimated NVRAM Write 1

Config Param is: Application Dependent

Structure of Data: Scalar

Units: Milliseconds

Resolution: 1

Min Value: 0

Max Value: 2500

170752247.jpg AmbientLighting\_Cfg

Configuration used to enable/disable the ambient and welcome & farewell behavior.

Type: Discrete

Category: ECU Internal

Initial Value: WF\_AND\_AMB

DataType: uint8

Storage Class: Non-Volatile -- Factory Set Method 2

Estimated NVRAM Write 1

Config Param is: Application Dependent

Structure of Data: Scalar

AMB\_ONLY Only Ambient is enabled

DISABLED Both Ambient and Welcome/farewell is disabled

SINGLE\_COL Single Color Ambient Lighting feature is enabled

WF\_AND\_AMB Both Welcome/farewell and Ambient is enabled

WF\_ONLY Only Welcome/farewell is enabled

170752247.jpg ContextAL\_Cfg

This configuration parameter will define if the Contextual Ambient Lighting is enabled or disabled.

Type: Discrete

Category: ECU Internal

Initial Value: DISABLE

DataType: uint8

Storage Class: Non-Volatile -- Factory Set Method 2

Estimated NVRAM Write 1

Config Param is: Application Dependent

Structure of Data: Scalar

DISABLE Disabled contextual ambient lighting

ENABLE Enabled contextual ambient lighting

170752247.jpg DBRInCar\_Cfg

"Master Switch" EOL Config to be set True if CCP2-relay is present and to be used.

Type: Discrete

Category: ECU Internal

Initial Value: FALSE

DataType: uint8

Storage Class: Non-Volatile -- Factory Set Method 2

Estimated NVRAM Write 1

Config Param is: Application Dependent

Structure of Data: Scalar

FALSE

TRUE

170752247.jpg DoorLock\_Indication\_Cfg

Leave at initial value of NULL. This is for Ambient Lighting to indicate lock status via illumination of

the interior door pull handle. This feature is no longer supported. It is replaced by the trim panel lock

indicator LED feature (Section 2.2.18).

Type: Discrete

Category: ECU Internal

Initial Value: NULL

DataType: uint8

Storage Class: Non-Volatile -- Factory Set Method 2 Estimated NVRAM Write 1

Config Param is: Core Strategy Dependent (BCM Software Team)

Structure of Data: Scalar

COMMON Indicates vehicle lock status on all doors

INDIVIDUAL Indicates individual door lock status

NULL No indication of vehicle door lock status

170752247.jpg EM\_Exists\_Cfg

The method 2 configuration parameter to decide whether Enhanced Memory configuration exists for

Ambient Lighting,

If this is NOT\_PRESENT then no personalization of ambient lighting will be provided.

Type: Discrete

Category: ECU Internal

Initial Value: PRESENT

DataType: uint8

Storage Class: Non-Volatile -- Factory Set Method 2

Estimated NVRAM Write 10000

Config Param is: Application Dependent

Structure of Data: Scalar

NOT\_PRESENT

PRESENT

170752247.jpg EntryColor\_Cfg

Entry color level for ambient lighting.

Type: Numeric

Category: ECU Internal

Initial Value: 1

DataType: uint8

Storage Class: Non-Volatile -- Factory Set Method 2

Estimated NVRAM Write 1

Config Param is: Application Dependent

Structure of Data: Scalar

Units: None

Resolution: 1

Min Value: 0

Max Value: 15

170752247.jpg EntryInt\_Cfg

Entry level intensity for ambient lighting.

Type: Numeric

Category: ECU Internal

Initial Value: 15

DataType: uint8

Storage Class: Non-Volatile -- Factory Set Method 2 Estimated NVRAM Write 1

Config Param is: Application Dependent

Structure of Data: Scalar

Units: None

Resolution: 1

Min Value: 0

Max Value: 15

170752247.jpg HMI\_Comm\_Var\_Cfg

This configuration parameter will select the Communication variant used in HMI to BCM Ambient

Lighting Interface. Variant1 is the original carryover protocol.

Variant2 was added to support enhanced memory and supported for contextual ambient lighting; this

configuration can also be used to support standard ambient lighting.

The module providing the customer interface (currently SYNC) and the BCM must use the same variant

settings for proper operation of any of Ambient Lighting features.

Type: Discrete

Category: ECU Internal

Initial Value: VARIANT1

Storage Class: Non-Volatile -- Factory Set Method 2

Estimated NVRAM Write 1

Config Param is: Application Dependent

Structure of Data: Scalar

VARIANT1 Variant1 HMI communication

VARIANT2 Variant2 HMI communication

170752247.jpg Lincoln\_Experience\_Cfg

The configuration parameter is to differentiate the Welcome/Farewell Lighting (Interior and Exterior)

behaviour between Lincoln Experience vehicles and Non Lincoln vehicles.

When Lincoln\_Experience\_Cfg is set to LINCOLN\_EXPERIENCE1 then method 2 configuration

parameters LR\_Stop\_Pos\_Lamp\_Ckt\_Usage\_Cfg and RR\_Stop\_Pos\_Lamp\_Ckt\_Usage\_Cfg shall be

always set to STOP\_TURN, similarly method 3 configuration parameter

Freq\_Cfg[Freq\_Sel\_Cfg][Park\_Lamps\_Body\_Ckt] shall be always set to DC.

Type: Discrete

Category: ECU Internal

Initial Value: NULL

DataType: uint8

Storage Class: Non-Volatile -- Factory Set Method 2 Estimated NVRAM Write 1

Config Param is: Application Dependent

Structure of Data: Scalar

LINCOLN\_EXPERIENCE1 Lincoln Experience Behaviour1

NULL Non Lincoln Vehicle

170752247.jpg Run\_Active\_Count\_Max\_Cfg

The dataflow decides the max range of a count which is used in Static Sequential by Light Engines.

Type: Numeric

Category: ECU Internal

Initial Value: 255

DataType: uint8

Storage Class: Constant

Structure of Data: Scalar

Units: Counts

Resolution: 1

Min Value: 0

Max Value: 255

170752247.jpg Run\_Active\_Count\_Min\_Cfg

The dataflow decides the starting range of a count which is used for Static Sequential in Lighting Engines.

Type: Numeric

Category: ECU Internal

Initial Value: 0

DataType: uint8

Storage Class: Constant

Structure of Data: Scalar

Units: Counts

Resolution: 1

Min Value: 0

Max Value: 50

170752247.jpg Stat\_Seq\_Time\_Cfg

This method 2 data decides the increment frequency of counter,The counter is transmitted over LIN.

Type: Numeric

Category: ECU Internal

Initial Value: 100

DataType: uint8

Storage Class: Non-Volatile -- Factory Set Method 2 Estimated NVRAM Write 1

Config Param is: Application Dependent

Structure of Data: Scalar

Units: Milliseconds

Resolution: 1

Min Value: 0

Max Value: 250

170752247.jpg Stat\_Seq\_Wait\_Time\_Cfg

The dataflow is used to decide the rate at which the value of signal Run\_Active\_Count is written in

protected RAM once the value of is stabilized to either min or max.

Type: Numeric

Category: ECU Internal

Initial Value: 5000

DataType: uint16

Storage Class: Constant

Structure of Data: Scalar

Units: Milliseconds

Resolution: 1

Min Value: 100

Max Value: 7000

### Mappings

870533429.jpg ALM\_Power\_Status - ALM\_Power\_Status

870533429.jpg LightAmbColor\_Temp - LightAmbColor\_Temp

870533429.jpg LghtAmbColr\_No\_Rq - LghtAmbColr\_No\_Rq

870533429.jpg LghtAmbDrvMde\_B\_Stat - LghtAmbDrvMde\_B\_Stat

870533429.jpg PR\_DoorLock\_Status - PR\_DoorLock\_Status

870533429.jpg IlluminatedExit\_Rqst - IlluminatedExit\_Rqst

870533429.jpg Ambient\_Status - Ambient\_Status

870533429.jpg PF\_DoorLock\_Status - PF\_DoorLock\_Status

870533429.jpg Local\_OpMode - Local\_OpMode

870533429.jpg AmbientColor\_Cfg - AmbientColor\_Cfg

870533429.jpg PR\_Door\_Ajar\_Status - PR\_Door\_Ajar\_Status

870533429.jpg LghtAmbIntns\_No\_Rq - LghtAmbIntns\_No\_Rq

870533429.jpg ALM\_ConditionedPower - ALM\_Conditioned\_Pwr\_Ckt

870533429.jpg DispOpr\_CS - CtrStkDsplyOp\_D\_Rq

870533429.jpg DF\_DoorLock\_Status - DF\_DoorLock\_Status

870533429.jpg LghtAmbDrvMde\_D\_Rq - LghtAmbDrvMde\_D\_Rq

870533429.jpg Update\_Intensity - Update\_Intensity

870533429.jpg ALM\_Conditioned\_Pwr\_Arb - ALM\_Conditioned\_Pwr\_Arb

870533429.jpg SelDrvMdeHmi03\_Rq - SelDrvMdeHmi03\_D\_Rq

870533429.jpg DBR\_Reset\_Cmd - DBR\_Reset\_Cmd

870533429.jpg PersIndex\_CS - CtrStkPersIndex\_D\_Actl

870533429.jpg Customer\_Color - Customer\_Color

870533429.jpg DoorAjar - PF\_Door\_Ajar\_Status

870533429.jpg DoorAjar - DR\_Door\_Ajar\_Status

870533429.jpg DoorAjar - PR\_Door\_Ajar\_Status

870533429.jpg DoorAjar - DF\_Door\_Ajar\_Status

870533429.jpg PF\_Door\_Ajar\_Status - PF\_Door\_Ajar\_Status

870533429.jpg AmbientDim\_Cfg - AmbientDim\_Cfg

870533429.jpg WelcomeFarewell\_Status - WelcomeFarewell\_Status

870533429.jpg Delayed\_Accessory\_Cmd - Delayed\_Accessory\_Cmd

870533429.jpg DR\_Door\_Ajar\_Status - DR\_Door\_Ajar\_Status

870533429.jpg PersNum - PersNo\_D\_Actl

870533429.jpg Update\_Color - Update\_Color

870533429.jpg LightAmbColor\_No - LightAmbColor\_No

870533429.jpg LowVoltMode - LowVoltMode

870533429.jpg LightAmbIntsty\_No\_Rq - LightAmbIntsty\_No\_Rq

870533429.jpg AmbientMsg\_Rqst - AmbientMsg\_Rqst

870533429.jpg CourtesyDemand\_BSave\_Rqst - CourtesyDemand\_BSave\_Rqst

870533429.jpg DoorCourtesyLight\_Rqst - DoorCourtesyLight\_Rqst

870533429.jpg DF\_Door\_Ajar\_Status - DF\_Door\_Ajar\_Status

870533429.jpg LightAmbColor\_No\_Actl - LightAmbColor\_No\_Actl

870533429.jpg VBattState - VBattState

870533429.jpg Color - Color

870533429.jpg DoorLocked - DR\_DoorLock\_Status

870533429.jpg DoorLocked - DF\_DoorLock\_Status

870533429.jpg DoorLocked - PR\_DoorLock\_Status

870533429.jpg DoorLocked - PF\_DoorLock\_Status

870533429.jpg Approach\_LightShow - Approach\_LightShow

870533429.jpg DiagSession - DiagSession

870533429.jpg LightAmbIntsty\_No - LightAmbIntsty\_No

870533429.jpg Parklamps\_Command - Parklamps\_Command

870533429.jpg DR\_DoorLock\_Status - DR\_DoorLock\_Status

870533429.jpg ALM\_Location\_ID - Location\_ID

870533429.jpg Reset - Reset

870533429.jpg Intensity - Intensity

870533429.jpg LG\_Other\_Door\_Ajar\_Status - LG\_Other\_Door\_Ajar\_Status

870533429.jpg LightAmbColor\_No\_Rq - LightAmbColor\_No\_Rq

870533429.jpg CourtesyDelay\_Rqst - CourtesyDelay\_Rqst

870533429.jpg All\_DoorLock\_Status - All\_DoorLock\_Status

870533429.jpg SelDrvMdeHmi03\_D\_Rq\_ComStat - SelDrvMdeHmi03\_D\_Rq\_ComStat

870533429.jpg FET\_Ctrl - FET\_Ctrl

870533429.jpg IlluminatedEntry\_Rqst - IlluminatedEntry\_Rqst

870533429.jpg Ramp - Ramp

870533429.jpg Customer\_Intensity - Customer\_Intensity

870533429.jpg LightAmbIntsty\_No\_Actl - LightAmbIntsty\_No\_Actl

870533429.jpg Ignition\_Status - Ignition\_Status

### Technical Interfaces

*Not supported by MagicDraw report generation.*

#### AIS Interfaces

##### Publisher Interfaces

##### Subscriber Interfaces

#### AUTOSAR Ports

*Not supported by MagicDraw report generation.*

### Messages/APIs

#### CAN Bus “<Bus Name>”

**1.FNV3**

**FD1 CAN:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Msg Id** | **Description** | **Detailed Meaning** | **State Encoded** | **Transmitters** | **Signal Receivers** | **Send Type** |
| 0x215 | APIM\_Send\_Signals\_2\_FD1 |  |  | GWM | ABS BCM ECM ECM\_DIESEL ECM\_HEV GENERIC IPMA\_ADAS\_FD1 PCM PCM\_HEV SOBDMC\_HPCM VECTOR\_\_XXX | NoMsgSend Type |
|  | LghtAmbDrvMde\_D\_Rq |  |  | GWM | BCM | No Send Type |
|  |  | Null | 0x0 |  |  |  |
|  |  | Manual | 0x1 |  |  |  |
|  |  | Automatic | 0x2 |  |  |  |
|  |  | NotUsed | 0x3 |  |  |  |
|  |  |  |  |  |  |  |
| 0x2A5 | Rear\_Climate\_Data3\_FD1 |  |  | GWM | BCM VECTOR\_\_XXX | NoMsgSend Type |
|  | LghtAmbColr\_No\_Rq |  |  | GWM | BCM | No Send Type |
|  |  |  |  |  |  |  |
|  | LghtAmbIntns\_No\_Rq |  |  | GWM | BCM | No Send Type |
|  |  |  |  |  |  |  |
| 0x3BA | Body\_Info\_10 |  |  | BCM | ABS BCMD\_IPDB GENERIC GWM HCM\_FD1 IPMA\_ADAS\_FD1 ODMCA PCM PCM\_HEV RCM\_FD1 TCM\_DSL | Event Periodic |
|  | LghtAmbDrvMde\_B\_Stat |  |  | BCM | GWM | OnChange |
|  |  | Manual | 0x0 |  |  |  |
|  |  | Automatic | 0x1 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3DA | Personality\_APIM\_Data3\_FD1 |  |  | GWM | BCM VDM VECTOR\_\_XXX | NoMsgSend Type |
|  | LightAmbColor\_No\_Rq |  |  | GWM | BCM | No Send Type |
|  |  |  |  |  |  |  |
|  | LightAmbIntsty\_No\_Rq |  |  | GWM | BCM | No Send Type |
|  |  | Off | 0x0 |  |  |  |
|  |  |  |  |  |  |  |
|  | LghtAmbRqSrc\_B\_Stat |  |  | GWM | BCM | No Send Type |
|  |  | Manual | 0x0 |  |  |  |
|  |  | Automatic | 0x1 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3E2 | Personality\_APIM\_Data\_FD1 |  |  | GWM | ABS BCM ECM\_HEV GENERIC HCM\_FD1 IPMA\_ADAS\_FD1 PCM SOBDMC\_HPCM VDM | NoMsgSend Type |
|  | CtrStkPersIndex\_D\_Actl |  |  | GWM | ABS BCM ECM\_HEV HCM\_FD1 IPMA\_ADAS\_FD1 SOBDMC\_HPCM VDM | No Send Type |
|  |  | PERS\_1 | 0x0 |  |  |  |
|  |  | PERS\_2 | 0x1 |  |  |  |
|  |  | PERS\_3 | 0x2 |  |  |  |
|  |  | PERS\_4 | 0x3 |  |  |  |
|  |  | Vehicle | 0x4 |  |  |  |
|  |  | Unused\_1 | 0x5 |  |  |  |
|  |  | Unused\_2 | 0x6 |  |  |  |
|  |  | Unused\_3 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
|  | CtrStkDsplyOp\_D\_Rq |  |  | GWM | ABS BCM ECM\_HEV HCM\_FD1 IPMA\_ADAS\_FD1 PCM SOBDMC\_HPCM VDM | No Send Type |
|  |  | Null | 0x0 |  |  |  |
|  |  | Query | 0x1 |  |  |  |
|  |  | Set | 0x2 |  |  |  |
|  |  | Upload | 0x3 |  |  |  |
|  |  | Restore | 0x4 |  |  |  |
|  |  | Copy | 0x5 |  |  |  |
|  |  | Unused\_1 | 0x6 |  |  |  |
|  |  | Unused\_2 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3E3 | Personality\_BCM\_Data |  |  | BCM | GWM | Event Periodic |
|  | LightAmbColor\_No\_Actl |  |  | BCM | GWM | OnChange |
|  |  |  |  |  |  |  |
|  | LightAmbIntsty\_No\_Actl |  |  | BCM | GWM | OnChange |
|  |  | Off | 0x0 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3EB | Personality\_BCM2\_Data |  |  | BCM | ABS ECM\_HEV GWM HCM\_FD1 IPMA\_ADAS\_FD1 SOBDMC\_HPCM VDM | Event Periodic |
|  | PersNo\_D\_Actl |  |  | BCM | ABS ECM\_HEV GWM HCM\_FD1 IPMA\_ADAS\_FD1 SOBDMC\_HPCM VDM | OnChange |
|  |  | PERS\_1 | 0x0 |  |  |  |
|  |  | PERS\_2 | 0x1 |  |  |  |
|  |  | PERS\_3 | 0x2 |  |  |  |
|  |  | PERS\_4 | 0x3 |  |  |  |
|  |  | Vehicle | 0x4 |  |  |  |
|  |  | NotDetermined | 0x5 |  |  |  |
|  |  | Unused\_2 | 0x6 |  |  |  |
|  |  | Unused\_3 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
| 0x420 | SelectDriveModeData |  |  | ABS | AWD\_DLCM BCM ECM ECM\_DIESEL ECM\_HEV GWM IPMA\_ADAS\_FD1 PCM PCM\_HEV SOBDMC\_HPCM TCCM | Event Periodic |
|  | SelDrvMdeHmi03\_D\_Rq |  |  | ABS | BCM GWM | OnChange |
|  |  | SelDrvMde01 | 0x0 |  |  |  |
|  |  | SelDrvMde02 | 0x1 |  |  |  |
|  |  | SelDrvMde03 | 0x2 |  |  |  |
|  |  | SelDrvMde04 | 0x3 |  |  |  |
|  |  | SelDrvMde05 | 0x4 |  |  |  |
|  |  | SelDrvMde06 | 0x5 |  |  |  |
|  |  | SelDrvMde07 | 0x6 |  |  |  |
|  |  | SelDrvMde08 | 0x7 |  |  |  |
|  |  | SelDrvMde09 | 0x8 |  |  |  |
|  |  | SelDrvMde10 | 0x9 |  |  |  |
|  |  | SelDrvMde11 | 0xA |  |  |  |
|  |  | SelDrvMde12 | 0xB |  |  |  |
|  |  | SelDrvMde13 | 0xC |  |  |  |
|  |  | SelDrvMde14 | 0xD |  |  |  |
|  |  | SelDrvMde15 | 0xE |  |  |  |
|  |  | SelDrvMde16 | 0xF |  |  |  |
|  |  | SelDrvMde17 | 0x10 |  |  |  |
|  |  | SelDrvMde18 | 0x11 |  |  |  |
|  |  | SelDrvMde19 | 0x12 |  |  |  |
|  |  | SelDrvMde20 | 0x13 |  |  |  |
|  |  | SelDrvMde21 | 0x14 |  |  |  |
|  |  | SelDrvMde22 | 0x15 |  |  |  |
|  |  | SelDrvMde23 | 0x16 |  |  |  |
|  |  | SelDrvMde24 | 0x17 |  |  |  |
|  |  | SelDrvMde25 | 0x18 |  |  |  |
|  |  | SelDrvMde26 | 0x19 |  |  |  |
|  |  | SelDrvMde27 | 0x1A |  |  |  |
|  |  | SelDrvMde28 | 0x1B |  |  |  |
|  |  | SelDrvMde29 | 0x1C |  |  |  |
|  |  | SelDrvMde30 | 0x1D |  |  |  |
|  |  | SelDrvMde31 | 0x1E |  |  |  |
|  |  | Faulty | 0x1F |  |  |  |
|  |  |  |  |  |  |  |

**HS3 CAN:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Msg Id** | **Description** | **Detailed Meaning** | **State Encoded** | **Transmitters** | **Signal Receivers** | **Send Type** |
| 0x215 | APIM\_Send\_Signals\_2 |  |  | APIM APIM\_CDC APIM\_CIM APIM\_CISM | GWM TRM\_ITRM | Event Periodic |
|  | LghtAmbDrvMde\_D\_Rq |  |  | APIM APIM\_CDC APIM\_CIM APIM\_CISM | GWM | OnChange |
|  |  | Null | 0x0 |  |  |  |
|  |  | Manual | 0x1 |  |  |  |
|  |  | Automatic | 0x2 |  |  |  |
|  |  | NotUsed | 0x3 |  |  |  |
|  |  |  |  |  |  |  |
| 0x2A5 | Rear\_Climate\_Data3 |  |  | RACM\_RCIM | GWM | Event Periodic |
|  | LghtAmbColr\_No\_Rq |  |  | RACM\_RCIM | GWM | OnChange |
|  |  |  |  |  |  |  |
|  | LghtAmbIntns\_No\_Rq |  |  | RACM\_RCIM | GWM | OnChange |
|  |  |  |  |  |  |  |
| 0x3BA | Body\_Info\_10\_HS3 |  |  | GWM | APIM APIM\_CDC APIM\_CIM APIM\_CISM GENERIC IPC RACM\_RCIM TRM\_ITRM VECTOR\_\_XXX | NoMsgSend Type |
|  | LghtAmbDrvMde\_B\_Stat |  |  | GWM | APIM APIM\_CDC APIM\_CIM APIM\_CISM | No Send Type |
|  |  | Manual | 0x0 |  |  |  |
|  |  | Automatic | 0x1 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3DA | Personality\_APIM\_Data3 |  |  | APIM APIM\_CDC APIM\_CIM APIM\_CISM | GWM RACM\_RCIM | Event Periodic |
|  | LightAmbColor\_No\_Rq |  |  | APIM APIM\_CDC APIM\_CIM APIM\_CISM | GWM | OnChange |
|  |  |  |  |  |  |  |
|  | LightAmbIntsty\_No\_Rq |  |  | APIM APIM\_CDC APIM\_CIM APIM\_CISM | GWM | OnChange |
|  |  | Off | 0x0 |  |  |  |
|  |  |  |  |  |  |  |
|  | LghtAmbRqSrc\_B\_Stat |  |  | APIM APIM\_CDC APIM\_CIM APIM\_CISM | GWM RACM\_RCIM | OnChange |
|  |  | Manual | 0x0 |  |  |  |
|  |  | Automatic | 0x1 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3E2 | Personality\_APIM\_Data |  |  | APIM APIM\_CDC APIM\_CIM APIM\_CISM | ACM DSP GWM IPC | Event Periodic |
|  | CtrStkPersIndex\_D\_Actl |  |  | APIM APIM\_CDC APIM\_CIM APIM\_CISM | ACM DSP GWM IPC | OnChange |
|  |  | PERS\_1 | 0x0 |  |  |  |
|  |  | PERS\_2 | 0x1 |  |  |  |
|  |  | PERS\_3 | 0x2 |  |  |  |
|  |  | PERS\_4 | 0x3 |  |  |  |
|  |  | Vehicle | 0x4 |  |  |  |
|  |  | Unused\_1 | 0x5 |  |  |  |
|  |  | Unused\_2 | 0x6 |  |  |  |
|  |  | Unused\_3 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
|  | CtrStkDsplyOp\_D\_Rq |  |  | APIM APIM\_CDC APIM\_CIM APIM\_CISM | ACM DSP GWM IPC | OnChange |
|  |  | Null | 0x0 |  |  |  |
|  |  | Query | 0x1 |  |  |  |
|  |  | Set | 0x2 |  |  |  |
|  |  | Upload | 0x3 |  |  |  |
|  |  | Restore | 0x4 |  |  |  |
|  |  | Copy | 0x5 |  |  |  |
|  |  | Unused\_1 | 0x6 |  |  |  |
|  |  | Unused\_2 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3E3 | Personality\_BCM\_Data\_HS3 |  |  | GWM | APIM APIM\_CDC APIM\_CIM APIM\_CISM IPC | NoMsgSend Type |
|  | LightAmbColor\_No\_Actl |  |  | GWM | APIM APIM\_CDC APIM\_CIM APIM\_CISM | No Send Type |
|  |  |  |  |  |  |  |
|  | LightAmbIntsty\_No\_Actl |  |  | GWM | APIM APIM\_CDC APIM\_CIM APIM\_CISM | No Send Type |
|  |  | Off | 0x0 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3EC | Personality\_BCM2\_Data\_HS3 |  |  | GWM | ACM APIM APIM\_CDC APIM\_CIM APIM\_CISM DSP HUD\_ADV IPC VECTOR\_\_XXX | NoMsgSend Type |
|  | PersNo\_D\_Actl |  |  | GWM | ACM APIM APIM\_CDC APIM\_CIM APIM\_CISM DSP IPC | No Send Type |
|  |  | PERS\_1 | 0x0 |  |  |  |
|  |  | PERS\_2 | 0x1 |  |  |  |
|  |  | PERS\_3 | 0x2 |  |  |  |
|  |  | PERS\_4 | 0x3 |  |  |  |
|  |  | Vehicle | 0x4 |  |  |  |
|  |  | NotDetermined | 0x5 |  |  |  |
|  |  | Unused\_2 | 0x6 |  |  |  |
|  |  | Unused\_3 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
| 0x420 | SelectDriveModeData\_HS3 |  |  | GWM | ACM APIM APIM\_CDC APIM\_CIM APIM\_CISM GENERIC HUD\_ADV IPC VECTOR\_\_XXX | NoMsgSend Type |
|  | SelDrvMdeHmi03\_D\_Rq |  |  | GWM | VECTOR\_\_XXX | No Send Type |
|  |  | SelDrvMde01 | 0x0 |  |  |  |
|  |  | SelDrvMde02 | 0x1 |  |  |  |
|  |  | SelDrvMde03 | 0x2 |  |  |  |
|  |  | SelDrvMde04 | 0x3 |  |  |  |
|  |  | SelDrvMde05 | 0x4 |  |  |  |
|  |  | SelDrvMde06 | 0x5 |  |  |  |
|  |  | SelDrvMde07 | 0x6 |  |  |  |
|  |  | SelDrvMde08 | 0x7 |  |  |  |
|  |  | SelDrvMde09 | 0x8 |  |  |  |
|  |  | SelDrvMde10 | 0x9 |  |  |  |
|  |  | SelDrvMde11 | 0xA |  |  |  |
|  |  | SelDrvMde12 | 0xB |  |  |  |
|  |  | SelDrvMde13 | 0xC |  |  |  |
|  |  | SelDrvMde14 | 0xD |  |  |  |
|  |  | SelDrvMde15 | 0xE |  |  |  |
|  |  | SelDrvMde16 | 0xF |  |  |  |
|  |  | SelDrvMde17 | 0x10 |  |  |  |
|  |  | SelDrvMde18 | 0x11 |  |  |  |
|  |  | SelDrvMde19 | 0x12 |  |  |  |
|  |  | SelDrvMde20 | 0x13 |  |  |  |
|  |  | SelDrvMde21 | 0x14 |  |  |  |
|  |  | SelDrvMde22 | 0x15 |  |  |  |
|  |  | SelDrvMde23 | 0x16 |  |  |  |
|  |  | SelDrvMde24 | 0x17 |  |  |  |
|  |  | SelDrvMde25 | 0x18 |  |  |  |
|  |  | SelDrvMde26 | 0x19 |  |  |  |
|  |  | SelDrvMde27 | 0x1A |  |  |  |
|  |  | SelDrvMde28 | 0x1B |  |  |  |
|  |  | SelDrvMde29 | 0x1C |  |  |  |
|  |  | SelDrvMde30 | 0x1D |  |  |  |
|  |  | SelDrvMde31 | 0x1E |  |  |  |
|  |  | Faulty | 0x1F |  |  |  |
|  |  |  |  |  |  |  |

**2.FNV2**

**HS1 CAN:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Msg Id** | **Description** | **Detailed Meaning** | **State Encoded** | **Transmitters** | **Signal Receivers** | **Send Type** |
| 0x215 | APIM\_Send\_Signals\_2\_HS1 |  |  | GWM | BCM GENERIC VECTOR\_\_XXX | NoMsgSend Type |
|  | LghtAmbDrvMde\_D\_Rq |  |  | GWM | BCM | No Send Type |
|  |  | Null | 0x0 |  |  |  |
|  |  | Manual | 0x1 |  |  |  |
|  |  | Automatic | 0x2 |  |  |  |
|  |  | NotUsed | 0x3 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3BA | Body\_Info\_10 |  |  | BCM | GWM | Event Periodic |
|  | LghtAmbDrvMde\_B\_Stat |  |  | BCM | GWM | OnChange |
|  |  | Manual | 0x0 |  |  |  |
|  |  | Automatic | 0x1 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3DA | Personality\_APIM\_Data3\_HS1 |  |  | GWM | BCM GENERIC PACM | NoMsgSend Type |
|  | LightAmbColor\_No\_Rq |  |  | GWM | BCM | No Send Type |
|  |  |  |  |  |  |  |
|  | LightAmbIntsty\_No\_Rq |  |  | GWM | BCM | No Send Type |
|  |  | Off | 0x0 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3E2 | Personality\_APIM\_Data\_HS1 |  |  | GWM | BCM GENERIC | NoMsgSend Type |
|  | CtrStkPersIndex\_D\_Actl |  |  | GWM | BCM | No Send Type |
|  |  | PERS\_1 | 0x0 |  |  |  |
|  |  | PERS\_2 | 0x1 |  |  |  |
|  |  | PERS\_3 | 0x2 |  |  |  |
|  |  | PERS\_4 | 0x3 |  |  |  |
|  |  | Vehicle | 0x4 |  |  |  |
|  |  | Unused\_1 | 0x5 |  |  |  |
|  |  | Unused\_2 | 0x6 |  |  |  |
|  |  | Unused\_3 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
|  | CtrStkDsplyOp\_D\_Rq |  |  | GWM | BCM | No Send Type |
|  |  | Null | 0x0 |  |  |  |
|  |  | Query | 0x1 |  |  |  |
|  |  | Set | 0x2 |  |  |  |
|  |  | Upload | 0x3 |  |  |  |
|  |  | Restore | 0x4 |  |  |  |
|  |  | Copy | 0x5 |  |  |  |
|  |  | Unused\_1 | 0x6 |  |  |  |
|  |  | Unused\_2 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3E3 | Personality\_BCM\_Data |  |  | BCM | GWM | Event Periodic |
|  | LightAmbColor\_No\_Actl |  |  | BCM | GWM | OnChange |
|  |  |  |  |  |  |  |
|  | LightAmbIntsty\_No\_Actl |  |  | BCM | GWM | OnChange |
|  |  | Off | 0x0 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3EB | Personality\_BCM2\_Data |  |  | BCM | GWM | Event Periodic |
|  | PersNo\_D\_Actl |  |  | BCM | GWM | OnChange |
|  |  | PERS\_1 | 0x0 |  |  |  |
|  |  | PERS\_2 | 0x1 |  |  |  |
|  |  | PERS\_3 | 0x2 |  |  |  |
|  |  | PERS\_4 | 0x3 |  |  |  |
|  |  | Vehicle | 0x4 |  |  |  |
|  |  | NotDetermined | 0x5 |  |  |  |
|  |  | Unused\_2 | 0x6 |  |  |  |
|  |  | Unused\_3 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
| 0x41A | GatewayData8\_HS1 |  |  | GWM | BCM GENERIC VECTOR\_\_XXX | Event Periodic |
|  | SelDrvMdeHmi03\_D\_Rq |  |  | GWM | BCM | OnChange |
|  |  | SelDrvMde01 | 0x0 |  |  |  |
|  |  | SelDrvMde02 | 0x1 |  |  |  |
|  |  | SelDrvMde03 | 0x2 |  |  |  |
|  |  | SelDrvMde04 | 0x3 |  |  |  |
|  |  | SelDrvMde05 | 0x4 |  |  |  |
|  |  | SelDrvMde06 | 0x5 |  |  |  |
|  |  | SelDrvMde07 | 0x6 |  |  |  |
|  |  | SelDrvMde08 | 0x7 |  |  |  |
|  |  | SelDrvMde09 | 0x8 |  |  |  |
|  |  | SelDrvMde10 | 0x9 |  |  |  |
|  |  | SelDrvMde11 | 0xA |  |  |  |
|  |  | SelDrvMde12 | 0xB |  |  |  |
|  |  | SelDrvMde13 | 0xC |  |  |  |
|  |  | SelDrvMde14 | 0xD |  |  |  |
|  |  | SelDrvMde15 | 0xE |  |  |  |
|  |  | SelDrvMde16 | 0xF |  |  |  |
|  |  | SelDrvMde17 | 0x10 |  |  |  |
|  |  | SelDrvMde18 | 0x11 |  |  |  |
|  |  | SelDrvMde19 | 0x12 |  |  |  |
|  |  | SelDrvMde20 | 0x13 |  |  |  |
|  |  | SelDrvMde21 | 0x14 |  |  |  |
|  |  | SelDrvMde22 | 0x15 |  |  |  |
|  |  | SelDrvMde23 | 0x16 |  |  |  |
|  |  | SelDrvMde24 | 0x17 |  |  |  |
|  |  | SelDrvMde25 | 0x18 |  |  |  |
|  |  | SelDrvMde26 | 0x19 |  |  |  |
|  |  | SelDrvMde27 | 0x1A |  |  |  |
|  |  | SelDrvMde28 | 0x1B |  |  |  |
|  |  | SelDrvMde29 | 0x1C |  |  |  |
|  |  | SelDrvMde30 | 0x1D |  |  |  |
|  |  | SelDrvMde31 | 0x1E |  |  |  |
|  |  | Faulty | 0x1F |  |  |  |
|  |  |  |  |  |  |  |

**HS3 CAN:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Msg Id** | **Description** | **Detailed Meaning** | **State Encoded** | **Transmitters** | **Signal Receivers** | **Send Type** |
| 0x215 | APIM\_Send\_Signals\_2 |  |  | APIM APIM\_CIM APIM\_CISM | GWM TRM\_ITRM | Event Periodic |
|  | LghtAmbDrvMde\_D\_Rq |  |  | APIM APIM\_CIM APIM\_CISM | GWM | OnChange |
|  |  | Null | 0x0 |  |  |  |
|  |  | Manual | 0x1 |  |  |  |
|  |  | Automatic | 0x2 |  |  |  |
|  |  | NotUsed | 0x3 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3BA | Body\_Info\_10\_HS3 |  |  | GWM | APIM APIM\_CIM APIM\_CISM GENERIC GWM IPC RACM\_RCIM | NoMsgSend Type |
|  | LghtAmbDrvMde\_B\_Stat |  |  | GWM | APIM APIM\_CIM APIM\_CISM | No Send Type |
|  |  | Manual | 0x0 |  |  |  |
|  |  | Automatic | 0x1 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3DA | Personality\_APIM\_Data3 |  |  | APIM APIM\_CIM APIM\_CISM | GWM | Event Periodic |
|  | LightAmbColor\_No\_Rq |  |  | APIM APIM\_CIM APIM\_CISM | GWM | OnChange |
|  |  |  |  |  |  |  |
|  | LightAmbIntsty\_No\_Rq |  |  | APIM APIM\_CIM APIM\_CISM | GWM | OnChange |
|  |  | Off | 0x0 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3E2 | Personality\_APIM\_Data |  |  | APIM APIM\_CIM APIM\_CISM | ACM DSP GWM IPC | Event Periodic |
|  | CtrStkPersIndex\_D\_Actl |  |  | APIM APIM\_CIM APIM\_CISM | ACM DSP GWM IPC | OnChange |
|  |  | PERS\_1 | 0x0 |  |  |  |
|  |  | PERS\_2 | 0x1 |  |  |  |
|  |  | PERS\_3 | 0x2 |  |  |  |
|  |  | PERS\_4 | 0x3 |  |  |  |
|  |  | Vehicle | 0x4 |  |  |  |
|  |  | Unused\_1 | 0x5 |  |  |  |
|  |  | Unused\_2 | 0x6 |  |  |  |
|  |  | Unused\_3 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
|  | CtrStkDsplyOp\_D\_Rq |  |  | APIM APIM\_CIM APIM\_CISM | ACM DSP GWM IPC | OnChange |
|  |  | Null | 0x0 |  |  |  |
|  |  | Query | 0x1 |  |  |  |
|  |  | Set | 0x2 |  |  |  |
|  |  | Upload | 0x3 |  |  |  |
|  |  | Restore | 0x4 |  |  |  |
|  |  | Copy | 0x5 |  |  |  |
|  |  | Unused\_1 | 0x6 |  |  |  |
|  |  | Unused\_2 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3E3 | Personality\_BCM\_Data\_HS3 |  |  | GWM | APIM APIM\_CIM APIM\_CISM IPC | NoMsgSend Type |
|  | LightAmbColor\_No\_Actl |  |  | GWM | APIM APIM\_CIM APIM\_CISM | No Send Type |
|  |  |  |  |  |  |  |
|  | LightAmbIntsty\_No\_Actl |  |  | GWM | APIM APIM\_CIM APIM\_CISM | No Send Type |
|  |  | Off | 0x0 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3EC | Personality\_BCM2\_Data\_HS3 |  |  | GWM | ACM APIM APIM\_CIM APIM\_CISM DSP GENERIC HUD\_ADV IPC | NoMsgSend Type |
|  | PersNo\_D\_Actl |  |  | GWM | ACM APIM APIM\_CIM APIM\_CISM DSP IPC | No Send Type |
|  |  | PERS\_1 | 0x0 |  |  |  |
|  |  | PERS\_2 | 0x1 |  |  |  |
|  |  | PERS\_3 | 0x2 |  |  |  |
|  |  | PERS\_4 | 0x3 |  |  |  |
|  |  | Vehicle | 0x4 |  |  |  |
|  |  | NotDetermined | 0x5 |  |  |  |
|  |  | Unused\_2 | 0x6 |  |  |  |
|  |  | Unused\_3 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
| 0x420 | SelectDriveModeData\_HS3 |  |  | GWM | ACM APIM APIM\_CIM APIM\_CISM DACMC GENERIC HUD\_ADV IPC | NoMsgSend Type |
|  | SelDrvMdeHmi03\_D\_Rq |  |  | GWM | GENERIC | No Send Type |
|  |  | SelDrvMde01 | 0x0 |  |  |  |
|  |  | SelDrvMde02 | 0x1 |  |  |  |
|  |  | SelDrvMde03 | 0x2 |  |  |  |
|  |  | SelDrvMde04 | 0x3 |  |  |  |
|  |  | SelDrvMde05 | 0x4 |  |  |  |
|  |  | SelDrvMde06 | 0x5 |  |  |  |
|  |  | SelDrvMde07 | 0x6 |  |  |  |
|  |  | SelDrvMde08 | 0x7 |  |  |  |
|  |  | SelDrvMde09 | 0x8 |  |  |  |
|  |  | SelDrvMde10 | 0x9 |  |  |  |
|  |  | SelDrvMde11 | 0xA |  |  |  |
|  |  | SelDrvMde12 | 0xB |  |  |  |
|  |  | SelDrvMde13 | 0xC |  |  |  |
|  |  | SelDrvMde14 | 0xD |  |  |  |
|  |  | SelDrvMde15 | 0xE |  |  |  |
|  |  | SelDrvMde16 | 0xF |  |  |  |
|  |  | SelDrvMde17 | 0x10 |  |  |  |
|  |  | SelDrvMde18 | 0x11 |  |  |  |
|  |  | SelDrvMde19 | 0x12 |  |  |  |
|  |  | SelDrvMde20 | 0x13 |  |  |  |
|  |  | SelDrvMde21 | 0x14 |  |  |  |
|  |  | SelDrvMde22 | 0x15 |  |  |  |
|  |  | SelDrvMde23 | 0x16 |  |  |  |
|  |  | SelDrvMde24 | 0x17 |  |  |  |
|  |  | SelDrvMde25 | 0x18 |  |  |  |
|  |  | SelDrvMde26 | 0x19 |  |  |  |
|  |  | SelDrvMde27 | 0x1A |  |  |  |
|  |  | SelDrvMde28 | 0x1B |  |  |  |
|  |  | SelDrvMde29 | 0x1C |  |  |  |
|  |  | SelDrvMde30 | 0x1D |  |  |  |
|  |  | SelDrvMde31 | 0x1E |  |  |  |
|  |  | Faulty | 0x1F |  |  |  |
|  |  |  |  |  |  |  |

**FD1 CAN:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Msg Id** | **Description** | **Detailed Meaning** | **State Encoded** | **Transmitters** | **Signal Receivers** | **Send Type** |
| 0x215 | APIM\_Send\_Signals\_2\_FD1 |  |  | GWM | ABS\_ESC ECM ECM\_DIESEL ECM\_HEV ECM\_HEVDSL GENERIC IPMA\_ADAS PCM PCM\_HEV PSCM SOBDMC\_HPCM | NoMsgSend Type |
|  | LghtAmbDrvMde\_D\_Rq |  |  | GWM | GENERIC | No Send Type |
|  |  | Null | 0x0 |  |  |  |
|  |  | Manual | 0x1 |  |  |  |
|  |  | Automatic | 0x2 |  |  |  |
|  |  | NotUsed | 0x3 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3BA | Body\_Info\_10\_FD1 |  |  | GWM | ABS\_ESC GENERIC HCM IPMA\_ADAS PCM PCM\_HEV SIMA\_DLCS TCM\_DSL VECTOR\_\_XXX | NoMsgSend Type |
|  | LghtAmbDrvMde\_B\_Stat |  |  | GWM | GENERIC | No Send Type |
|  |  | Manual | 0x0 |  |  |  |
|  |  | Automatic | 0x1 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3DA | Personality\_APIM\_Data3\_FD1 |  |  | GWM | GENERIC VDM | NoMsgSend Type |
|  | LightAmbColor\_No\_Rq |  |  | GWM | GENERIC | No Send Type |
|  |  |  |  |  |  |  |
|  | LightAmbIntsty\_No\_Rq |  |  | GWM | GENERIC | No Send Type |
|  |  | Off | 0x0 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3E2 | Personality\_APIM\_Data\_FD1 |  |  | GWM | ABS\_ESC ECM\_HEV GENERIC HCM IPMA\_ADAS PCM SOBDMC\_HPCM VDM | NoMsgSend Type |
|  | CtrStkPersIndex\_D\_Actl |  |  | GWM | ABS\_ESC ECM\_HEV HCM IPMA\_ADAS SOBDMC\_HPCM VDM | No Send Type |
|  |  | PERS\_1 | 0x0 |  |  |  |
|  |  | PERS\_2 | 0x1 |  |  |  |
|  |  | PERS\_3 | 0x2 |  |  |  |
|  |  | PERS\_4 | 0x3 |  |  |  |
|  |  | Vehicle | 0x4 |  |  |  |
|  |  | Unused\_1 | 0x5 |  |  |  |
|  |  | Unused\_2 | 0x6 |  |  |  |
|  |  | Unused\_3 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
|  | CtrStkDsplyOp\_D\_Rq |  |  | GWM | ABS\_ESC ECM\_HEV HCM IPMA\_ADAS PCM SOBDMC\_HPCM VDM | No Send Type |
|  |  | Null | 0x0 |  |  |  |
|  |  | Query | 0x1 |  |  |  |
|  |  | Set | 0x2 |  |  |  |
|  |  | Upload | 0x3 |  |  |  |
|  |  | Restore | 0x4 |  |  |  |
|  |  | Copy | 0x5 |  |  |  |
|  |  | Unused\_1 | 0x6 |  |  |  |
|  |  | Unused\_2 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
| 0x3EB | Personality\_BCM2\_Data\_FD1 |  |  | GWM | ABS\_ESC ECM\_HEV GENERIC HCM IPMA\_ADAS SOBDMC\_HPCM VDM | NoMsgSend Type |
|  | PersNo\_D\_Actl |  |  | GWM | ABS\_ESC ECM\_HEV HCM IPMA\_ADAS SOBDMC\_HPCM VDM | No Send Type |
|  |  | PERS\_1 | 0x0 |  |  |  |
|  |  | PERS\_2 | 0x1 |  |  |  |
|  |  | PERS\_3 | 0x2 |  |  |  |
|  |  | PERS\_4 | 0x3 |  |  |  |
|  |  | Vehicle | 0x4 |  |  |  |
|  |  | NotDetermined | 0x5 |  |  |  |
|  |  | Unused\_2 | 0x6 |  |  |  |
|  |  | Unused\_3 | 0x7 |  |  |  |
|  |  |  |  |  |  |  |
| 0x420 | SelectDriveModeData |  |  | ABS\_ESC | AWD\_DLCM ECM ECM\_DIESEL ECM\_HEV ECM\_HEVDSL GWM IPMA\_ADAS PCM PCM\_HEV SOBDMC\_HPCM TCCM | Event Periodic |
|  | SelDrvMdeHmi03\_D\_Rq |  |  | ABS\_ESC | GWM | OnChange |
|  |  | SelDrvMde01 | 0x0 |  |  |  |
|  |  | SelDrvMde02 | 0x1 |  |  |  |
|  |  | SelDrvMde03 | 0x2 |  |  |  |
|  |  | SelDrvMde04 | 0x3 |  |  |  |
|  |  | SelDrvMde05 | 0x4 |  |  |  |
|  |  | SelDrvMde06 | 0x5 |  |  |  |
|  |  | SelDrvMde07 | 0x6 |  |  |  |
|  |  | SelDrvMde08 | 0x7 |  |  |  |
|  |  | SelDrvMde09 | 0x8 |  |  |  |
|  |  | SelDrvMde10 | 0x9 |  |  |  |
|  |  | SelDrvMde11 | 0xA |  |  |  |
|  |  | SelDrvMde12 | 0xB |  |  |  |
|  |  | SelDrvMde13 | 0xC |  |  |  |
|  |  | SelDrvMde14 | 0xD |  |  |  |
|  |  | SelDrvMde15 | 0xE |  |  |  |
|  |  | SelDrvMde16 | 0xF |  |  |  |
|  |  | SelDrvMde17 | 0x10 |  |  |  |
|  |  | SelDrvMde18 | 0x11 |  |  |  |
|  |  | SelDrvMde19 | 0x12 |  |  |  |
|  |  | SelDrvMde20 | 0x13 |  |  |  |
|  |  | SelDrvMde21 | 0x14 |  |  |  |
|  |  | SelDrvMde22 | 0x15 |  |  |  |
|  |  | SelDrvMde23 | 0x16 |  |  |  |
|  |  | SelDrvMde24 | 0x17 |  |  |  |
|  |  | SelDrvMde25 | 0x18 |  |  |  |
|  |  | SelDrvMde26 | 0x19 |  |  |  |
|  |  | SelDrvMde27 | 0x1A |  |  |  |
|  |  | SelDrvMde28 | 0x1B |  |  |  |
|  |  | SelDrvMde29 | 0x1C |  |  |  |
|  |  | SelDrvMde30 | 0x1D |  |  |  |
|  |  | SelDrvMde31 | 0x1E |  |  |  |
|  |  | Faulty | 0x1F |  |  |  |
|  |  |  |  |  |  |  |

#### LIN Bus “<Bus Name>”

Please refer to the LDF attached on [5.3.1.2](file:///C:\Program%20Files\Common%20Files\Siemens\TeamcenterVSEM\temp\tc_yyan35_0_1666926750470\LIN_Bus_xxx#_) for further details.

**LIN\_H:**

Frames {

BCM\_H\_P00 : 0x00, BCM, 3 {

Location\_ID, 0;

Ramp, 8;

Color, 10;

Update\_Color, 14;

Intensity, 16;

Update\_Intensity, 22;

}

BCM\_H\_P04 : 0x37, BCM, 8 {

Customer\_Color, 0;

Customer\_Intensity, 4;

Ignition\_Status, 8;

DF\_Door\_Ajar\_Status, 12;

PF\_Door\_Ajar\_Status, 13;

DR\_Door\_Ajar\_Status, 14;

PR\_Door\_Ajar\_Status, 15;

LG\_Ajar\_Status, 16;

IllumEntry\_LockOccurred, 17;

Day\_Night\_Status, 19;

Approach\_LightShow, 21;

ALM\_WelcomeFarewell\_State, 22;

ALM\_WelcomeFarewell\_Substate, 24;

Run\_Active\_Count, 32;

Static\_Seq\_Cfg, 40;

Headlight\_Status, 41;

ALM\_Conditioned\_Pwr\_Ckt, 44;

AmbientLighting\_Cfg, 45;

Park\_Status, 48;

Veh\_Speed\_Avail, 49;

NotConfigured\_Cmd, 50;

Alarm\_Lights\_Courtesy\_Cmd, 52;

Crash\_Courtesy\_Rqst, 54;

SilentMode\_Status, 55;

Veh\_Speed, 56;

}

**LIN\_L:**

Frames {

BCM\_L\_P00 : 0x00, BCM, 3 {

Location\_ID, 0;

Ramp, 8;

Color, 10;

Update\_Color, 14;

Intensity, 16;

Update\_Intensity, 22;

}

BCM\_L\_P04 : 0x37, BCM, 8 {

Customer\_Color, 0;

Customer\_Intensity, 4;

Ignition\_Status, 8;

DF\_Door\_Ajar\_Status, 12;

PF\_Door\_Ajar\_Status, 13;

DR\_Door\_Ajar\_Status, 14;

PR\_Door\_Ajar\_Status, 15;

LG\_Ajar\_Status, 16;

IllumEntry\_LockOccurred, 17;

Day\_Night\_Status, 19;

Approach\_LightShow, 21;

ALM\_WelcomeFarewell\_State, 22;

ALM\_WelcomeFarewell\_Substate, 24;

Run\_Active\_Count, 32;

Static\_Seq\_Cfg, 40;

Headlight\_Status, 41;

ALM\_Conditioned\_Pwr\_Ckt, 44;

AmbientLighting\_Cfg, 45;

Park\_Status, 48;

Veh\_Speed\_Avail, 49;

NotConfigured\_Cmd, 50;

Alarm\_Lights\_Courtesy\_Cmd, 52;

Crash\_Courtesy\_Rqst, 54;

SilentMode\_Status, 55;

Veh\_Speed, 56;

}

#### AUTOSAR Interfaces

*Not supported by MagicDraw report generation.*

#### SOA Service Contracts

*Not supported by MagicDraw report generation.*

### Encoding Types

#### Logical Encoding Types

-1968729174.jpg AjarKind

Indicates individual door ajar status.

CLOSED Door is closed

AJAR Door is ajar

|  |  |
| --- | --- |
| Value Range | [CLOSED, AJAR, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg ALM\_Conditioned\_Pwr\_ArbKind

Ambient Lighting Module conditioned power supply.

ACTIVE

INACTIVE

|  |  |
| --- | --- |
| Value Range | [INACTIVE, ACTIVE, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg ALM\_Location\_IDKind

Indicates light location.

ALL All ambient lights

CUPHOLDERS\_ALL Cupholders location

DF\_DOOR Front Door location

DF\_DOOR\_HANDLE Front Door handle location

DF\_DOOR\_LIGHTBAR Front driver door Light bar

DR\_DOOR Rear Door location

DR\_DOOR\_HANDLE Rear Door handle location

DR\_DOOR\_LIGHTBAR Rear driver door Light bar

FOOTWELLS Footwell location

IDLE Address out of specified nodes

PF\_DOOR Front pessanger door location

PF\_DOOR\_HANDLE Front pessanger door handle location

PF\_DOOR\_LIGHTBAR Front pessanger door Light bar

PR\_DOOR Rear pessanger door location

PR\_DOOR\_HANDLE Rear pessanger door handle location

PR\_DOOR\_LIGHTBAR Rear pessanger door Light bar

STORAGEBIN\_LIGHTBAR Storage bin Light bar

|  |  |
| --- | --- |
| Value Range | [ALL, CUPHOLDERS\_ALL, DF\_DOOR, DF\_DOOR\_HANDLE, DF\_DOOR\_LIGHTBAR, DR\_DOOR, DR\_DOOR\_HANDLE, DR\_DOOR\_LIGHTBAR, FOOTWELLS, IDLE, PF\_DOOR, PF\_DOOR\_HANDLE, PF\_DOOR\_LIGHTBAR, PR\_DOOR, PR\_DOOR\_HANDLE, PR\_DOOR\_LIGHTBAR, STORAGEBIN\_LIGHTBAR, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg ALM\_Power\_StatusKind

Converts numeric output of ALM\_Conditioned\_Pwr\_Ckt to discrete to send it over LIN.

ACTIVE ALM\_Conditioned\_Pwr\_Ckt is greater than zero

INACTIVE ALM\_Conditioned\_Pwr\_Ckt is equal to zero

|  |  |
| --- | --- |
| Value Range | [INACTIVE, ACTIVE, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg Ambient\_StatusKind

Indicates Ambient Lighting status .

AMBIENT Ambient Lighting is running

OFF Ambient Lighting is not running

|  |  |
| --- | --- |
| Value Range | [OFF, AMBIENT, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg Approach\_LightShowKind

Indicates when to start approach light show.

SHOW\_OFF Approach Light Show should be OFF

SHOW\_ON Approach Light Show should be ON

|  |  |
| --- | --- |
| Value Range | [SHOW\_OFF, SHOW\_ON, ] |
| Resolution |  |
| Units |  |

-391078934.jpg byte

|  |  |
| --- | --- |
| Value Range | [ ] |
| Resolution |  |
| Units |  |

-1968729174.jpg CourtesyDelay\_RqstKind

|  |  |
| --- | --- |
| Value Range | [OFF, ON, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg CourtesyDemand\_BSave\_RqstKind

Indicates request from Battery Saver to turn OFF courtesy / demand lights

NO\_EFFECT Normal operation

OFF Turn off

|  |  |
| --- | --- |
| Value Range | [NO\_EFFECT, OFF, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg DBR\_Reset\_CmdKind

Reset command for latching dual battery relay (opens latching relay).

OFF

ON

|  |  |
| --- | --- |
| Value Range | [OFF, ON, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg Delayed\_Accessory\_CmdKind

Input to load shedding - delayed accessory status.

OFF the delayed accessory power is unavailable

ON the delayed accessory power is available

|  |  |
| --- | --- |
| Value Range | [OFF, ON, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg DiagSessionKind

Indicates active diagnostic session.

DEFAULT

EXTEND

PROGRAM

UNKNOWN

|  |  |
| --- | --- |
| Value Range | [DEFAULT, EXTEND, PROGRAM, UNKNOWN, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg DispOpr\_CSKind

Request from Center Stack for personalization.

COPY Copies the active configuration for all features for requested personality

NULL No command requested

QUERY Query and return value for requested feature and personality

RESTORE Restore initial default value from FeatLst\_to\_SPDJB\_Map[.] array to requested personality

SET Set feature to requested value for requested personality

UPLOAD Copy setting to user profile indicated, but do not make active.

|  |  |
| --- | --- |
| Value Range | [COPY, NULL, RESTORE, SET, UPLOAD, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg DoorCourtesyLight\_RqstKind

Request to illuminate interior with courtesy lights.

OFF Turn off the courtesy lights

ON Turn on the courtesy lights

|  |  |
| --- | --- |
| Value Range | [OFF, ON, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg DoorLock\_StatusKind

|  |  |
| --- | --- |
| Value Range | [0x0-LOCK, 0x1-NULL, 0x2-UNLOCK, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg FET\_CtrlKind

Indicates FET output.

OK NORM allows FET output process to drive the FET

SHORT Overrides FET output controller

|  |  |
| --- | --- |
| Value Range | [OK, SHORT, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg IlluminatedEntry\_RqstKind

Request to illuminate interior with courtesy lights.

OFF Turn off the courtesy lights

ON Turn on the courtesy lights

|  |  |
| --- | --- |
| Value Range | [OFF, ON, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg IlluminatedExit\_RqstKind

Request to illuminate the interior courtesy lights.

OFF Turn off the courtesy lights

ON Turn on the courtesy lights

|  |  |
| --- | --- |
| Value Range | [OFF, ON, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg LG\_Other\_Door\_Ajar\_StatusKind

Indicates whether only LG is open or LG along with some other door is Ajar.

CLOSED Lift gate and all doors closed

LG\_AJAR Lift gate is ajar and all doors closed

OTHER\_AJAR At least one door open and lift gate is either open or closed

|  |  |
| --- | --- |
| Value Range | [CLOSED, LG\_AJAR, OTHER\_AJAR, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg LghtAmbDrvMde\_B\_StatKind

Feedback signal to update HMI.

AUTOMATIC Auto Ambient Lighting

MANUAL Auto Ambient Lighting

|  |  |
| --- | --- |
| Value Range | [MANUAL, AUTOMATIC, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg LghtAmbDrvMde\_D\_RqKind

Sets CAL request from HMI is Manual or Automatic.

AUTOMATIC Auto Ambient Lighting ON

MANUAL Auto Ambient Lighting OFF

NULL No Change

|  |  |
| --- | --- |
| Value Range | [NULL, MANUAL, AUTOMATIC, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg LightLocationKind

|  |  |
| --- | --- |
| Value Range | [AJAR, AMBIENT, DF\_DOOR, NULL, OFF, RAMP\_OFF, WELCOME, WELCOME\_LE, ] |
| Resolution |  |
| Units |  |

1684781911.jpg Local\_OpModeKind

Indicates ECU current state.

CAN\_SLEEP Can sleep

LO\_MHZ Microcontroller in a low frequency clock mode

PERIPS\_ACTIVE Peripherals active

SLEEP Microprocessor and network is asleep (low power mode). Some of

the features are still active

|  |  |
| --- | --- |
| Value Range | [0x0-AWAKE, 0x1-CAN\_SLEEP, 0x2-LOW\_MHZ, 0x3-PERIPS\_ACTIVE, 0x4-SLEEP, ] |
| Resolution |  |
| Units |  |

-1968729174.jpg LockKind

Indicates individual door lock status.

LOCK Door is locked

NULL No feedback from door Latch

UNLOCK Door is unlocked

|  |  |
| --- | --- |
| Value Range | [LOCK, NULL, UNLOCK, ] |
| Resolution |  |
| Units |  |

1684781911.jpg LowVoltModeKind

Determines if active load will be affected or unaffected by Stop / Start event voltage drop.

NORM The active load will be affected by Stop/Start event voltage drop.

SUPPRESS The active load will be unaffected by Stop/Start event voltage drop.

|  |  |
| --- | --- |
| Value Range | [NORM, SUPRESS, ] |
| Resolution |  |
| Units |  |

1684781911.jpg Parklamps\_CommandKind

Park lamps command.

OFF turn off all position/parklamps

ON turn on all position/parklamps

|  |  |
| --- | --- |
| Value Range | [OFF, ON, ] |
| Resolution |  |
| Units |  |

1684781911.jpg PersIndex\_CSKind

Personality index to use sent from Center Statck.

PERS\_1 Personality 1

PERS\_2 Personality 2

PERS\_3 Personality 3

PERS\_4 Personality 4

VEHICLE Vehicle level

|  |  |
| --- | --- |
| Value Range | [PERS\_1, PERS\_2, PERS\_3, PERS\_4, VEHICLE, ] |
| Resolution |  |
| Units |  |

1684781911.jpg PersNumKind

Indicates which personality number is currently selected.

PERS\_1 Reporting user 1 settings

PERS\_2 Reporting user 1 settings

PERS\_3 Reporting user 1 settings

PERS\_4 Reporting user 1 settings

VEHICLE Reporting vehicle level settings

|  |  |
| --- | --- |
| Value Range | [PERS\_1, PERS\_2, PERS\_3, PERS\_4, VEHICLE, ] |
| Resolution |  |
| Units |  |

1684781911.jpg RampKind

Request for ramping behavior.

NO Ramping is not required

YES Ramping is required

|  |  |
| --- | --- |
| Value Range | [NO, YES, ] |
| Resolution |  |
| Units |  |

1684781911.jpg ResetKind

|  |  |
| --- | --- |
| Value Range | [FALSE, TRUE, ] |
| Resolution |  |
| Units |  |

1684781911.jpg SelDrvMdeHmi03\_D\_Rq\_ComStatKind

Indicates if CAN signal SelDrvMdeHmi03\_D\_Rq is received.

MISSING Signal not received

PRESENT Signal received

|  |  |
| --- | --- |
| Value Range | [MISSING, PRESENT, ] |
| Resolution |  |
| Units |  |

1684781911.jpg Update\_ColorKind

Indicates whether color set of Ambient Lighting needs update.

NO Do not update color

YES Update color

|  |  |
| --- | --- |
| Value Range | [NO, YES, ] |
| Resolution |  |
| Units |  |

1684781911.jpg Update\_IntensityKind

Indicates whether intensity of Ambient Lighting needs update.

NO Do not udate Intensity

YES Update Intensity

|  |  |
| --- | --- |
| Value Range | [NO, YES, ] |
| Resolution |  |
| Units |  |

1684781911.jpg VBattStateKind

|  |  |
| --- | --- |
| Value Range | [0x0-HI\_V, 0x1-LO\_V, 0x2-NORM\_V, 0x3-OVER\_V, 0x4-UNDER\_V, ] |
| Resolution |  |
| Units |  |

1684781911.jpg WelcomeFarewell\_StatusKind

Indicates Welcome Farewell status calculated by Ambient Lighting.

OFF welcome/farewell status is off

WELCOME1 welcome/farewell status is welcome

WELCOME1\_EXIT welcome/farewell status during exit

WELCOME2 welcome/farewell status is farewell

WELCOME3 welcome/farewell status during pproach

|  |  |
| --- | --- |
| Value Range | [OFF, WELCOME1, WELCOME1\_EXIT, WELCOME2, WELCOME3, WELCOME\_LE, ] |
| Resolution |  |
| Units |  |

#### Technology Encoding Types

valuetype

1684781911.jpg DoorLock\_StatusKind

|  |  |
| --- | --- |
| Value Range | 0x0-LOCK  0x1-NULL  0x2-UNLOCK |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg IgnitionStatusKind

|  |  |
| --- | --- |
| Value Range | 0x0-UNKNOWN  0x1-OFF  0x2-ACCESSORY  0x4-RUN  0x8-START  0x15-INVALID |
| Resolution |  |
| Units |  |

valuetype

1766847991.jpg Update\_IntensityKind

|  |  |
| --- | --- |
| Value Range | 0x0-NO  0x1YES |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg Delayed\_Accessory\_CmdKind

|  |  |
| --- | --- |
| Value Range | 0x0-OFF  0x1-ON |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg CourtesyDelay\_RqstKind

|  |  |
| --- | --- |
| Value Range | 0x0-OFF  0x1-ON |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg LG\_Other\_Door\_Ajar\_StatusKind

|  |  |
| --- | --- |
| Value Range | 0x0-CLOSED  0x1-LG\_AJAR  0x2-OTHER\_AJAR |
| Resolution |  |
| Units |  |

valuetype

1766847991.jpg Local\_OpModeKind

|  |  |
| --- | --- |
| Value Range | 0x0-AWAKE  0x1-CAN\_SLEEP  0x2-PERIPS\_ACTIVE  0x3-SLEEP |
| Resolution |  |
| Units |  |

valuetype

1766847991.jpg WelcomeFarewell\_StatusKind

|  |  |
| --- | --- |
| Value Range | 0x0-OFF  0x1-WELCOME1  0x2-WELCOME1\_EXIT  0x3-WELCOME2  0x4-WELCOME3 |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg ALM\_Conditioned\_Pwr\_ArbKind

|  |  |
| --- | --- |
| Value Range | 0x0-INACTIVE  0x1-ACTIVE |
| Resolution |  |
| Units |  |

valuetype

1766847991.jpg PersNo\_D\_ActlKind

|  |  |
| --- | --- |
| Value Range | 0x0-PERS\_1  0x1-PERS\_2  0x2-PERS\_3  0x3-PERS\_4  0x4-VEHICLE |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg VBattStateKind

|  |  |
| --- | --- |
| Value Range | 0x0-HI\_V  0x1-LO\_V  0x2-NORM\_V  0x3-OVER\_V  0x4-UNDER\_V |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg DoorCourtesyLight\_RqstKind

|  |  |
| --- | --- |
| Value Range | 0x0-OFF  0x1-ON |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg AmbientMsg\_RqstKind

|  |  |
| --- | --- |
| Value Range | 0x0-AJAR  0x1-AMBIENT  0x2-NULL  0x3-OFF  0x4-RAMP\_OFF  0x5-WELCOME  0x6-WELCOME\_LE |
| Resolution |  |
| Units |  |

primitivetype

-1993636139.jpg Boolean

Boolean is an instance of PrimitiveType. In the metamodel, Boolean defines an enumeration that denotes a logical condition.

Its enumeration literals are:

• true - The Boolean condition is satisfied.

• false - The Boolean condition is not satisfied.

It is used for Boolean attribute and Boolean expressions in the metamodel, such as OCL expression.

|  |  |
| --- | --- |
| Value Range |  |
| Resolution |  |
| Units |  |

valuetype

-1990391710.jpg voltage

|  |  |
| --- | --- |
| Value Range |  |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg FET\_CtrlKind

|  |  |
| --- | --- |
| Value Range | 0x0-OK  0x1-SHORT |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg ALM\_Power\_StatusKind

|  |  |
| --- | --- |
| Value Range | 0x0-INACTIVE  0x1-ACTIVE |
| Resolution |  |
| Units |  |

datatype

-391078934.jpg byte

|  |  |
| --- | --- |
| Value Range |  |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg IlluminatedExit\_RqstKind

|  |  |
| --- | --- |
| Value Range | 0x0-OFF  0x1-ON |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg Approach\_LightShowKind

|  |  |
| --- | --- |
| Value Range | 0x0-SHOW\_OFF  0x1-SHOW\_ON |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg DispOpr\_CSKind

|  |  |
| --- | --- |
| Value Range | 0x0-COPY  0x1-NULL  0x2-RESTORE  0x3-SET  0x4-UPLOAD |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg DBR\_Reset\_CmdKind

|  |  |
| --- | --- |
| Value Range | 0x0-OFF  0x1-ON |
| Resolution |  |
| Units |  |

valuetype

1766847991.jpg Location\_IDKind

|  |  |
| --- | --- |
| Value Range | 0x00-All  0x10-Cupholder\_All  0x11-Cupholder\_Loc1  0x12-Cupholder\_Loc2  0x13-Cupholder\_Loc3  0x14-Cupholder\_Loc4  0x20-Footwells\_All  0x21-LeftFrontFooltWells  0x22-RightFrontFootWells  0x23-LeftRearFoolWells  0x24-RightRearFootWells  0x30-StorageBinTrinketTray\_All  0x31-StorageBinTrinketTray\_StorageBin  0x32-StorageBinTrinketTray\_TrinketTray  0x33-PassThrough  0x40-Doors\_All  0x50-LeftFrontDoor\_All  0x51-LeftFrontDoor\_ReleaseHandle  0x52-LeftFrontDoor\_MapPocket  0x53-LeftFrontDoor\_Loc3  0x54-LeftFrontDoor\_Loc4  0x60-RightFrontDoor\_All  0x61-RightFrontDoor\_ReleaseHandle  0x62-RightFrontDoor\_MapPocket  0x63-RightFrontDoor\_Loc3  0x64-RightFrontDoor\_Loc4  0x70-LeftRearDoor\_All  0x71-LeftRearDoor\_ReleaseHandle  0x72-LeftRearDoor\_MapPocket  0x73-LeftRearDoor\_Loc3  0x74-LeftRearDoor\_Loc4  0x80-RightRearDoor\_All  0x81-RightRearDoor\_ReleaseHandle  0x82-RightRearDoor\_MapPocket  0x83-RightRearDoor\_Loc3  0x84-RightRearDoor\_Loc4  0x90-OverHead\_All  0x91-OverHead\_Loc1  0x92-OverHead\_Loc2  0x93-OverHead\_Loc3  0x94-OverHead\_Loc4  0x95-OverHead\_Loc5  0x96-OverHead\_Loc6  0x97-OverHead\_Loc7  0x98-OverHead\_Loc8  0x99-OverHead\_Loc9  0xA0-Scuff\_All  0xA1-Scuff\_Loc1  0xA2-Scuff\_Loc2  0xA3-Scuff\_Loc3  0xA4-Scuff\_Loc4  0xA5-Scuff\_Loc5  0xB0-IPLightBar\_All  0xB1-IPLightBar\_Loc1  0xB2-IPLightBar\_Loc2  0xB3-IPLightBar\_Loc3  0xB4-IPLightBar\_Loc4  0xC0-Spare\_Loc2\_All  0xD0-Spare\_Loc3\_All  0xE0-Spare\_Loc4\_All  0xF0-Spare\_Loc5\_All |
| Resolution |  |
| Units |  |

valuetype

1766847991.jpg Update\_ColorKind

|  |  |
| --- | --- |
| Value Range | 0x0-NO  0x0-YES |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg IlluminatedEntry\_RqstKind

|  |  |
| --- | --- |
| Value Range | 0x0-OFF  0x1-ON |
| Resolution |  |
| Units |  |

valuetype

1766847991.jpg LightAmbColor\_TempKind

|  |  |
| --- | --- |
| Value Range | 0x0-ICE\_BLUE  0x1-ORANGE  0x2-SOFT\_BLUE  0x3-RED  0x4-GREEN  0x5-BLUE  0x6-PURPLE  0x7-LINCOLN\_WHITE  0x8-AMBER  0x9-TEAL  0xA-BURNT\_ORANGE  0xB-LINCOLN\_BLUE  0xC-LINCOLN\_GREEN  0xD-LILAC |
| Resolution |  |
| Units |  |

valuetype

1766847991.jpg Parklamps\_CommandKind

|  |  |
| --- | --- |
| Value Range | 0x0-OFF  0x1-ON |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg Ambient\_StatusKind

|  |  |
| --- | --- |
| Value Range | 0x0-OFF  0x1-AMBIENT |
| Resolution |  |
| Units |  |

valuetype

1766847991.jpg LghtAmbRqSrc\_B\_StatKind

|  |  |
| --- | --- |
| Value Range | PRESENT  MISSING |
| Resolution |  |
| Units |  |

valuetype

1766847991.jpg RampKind

|  |  |
| --- | --- |
| Value Range | 0x0-NO  0x1-YES |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg CourtesyDemand\_BSave\_RqstKind

|  |  |
| --- | --- |
| Value Range | 0x0-NO\_EFFECT  0x1-OFF |
| Resolution |  |
| Units |  |

valuetype

1766847991.jpg LowVoltModeKind

|  |  |
| --- | --- |
| Value Range | 0x0-NORM  0x1-SUPPRESS |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg ColorKind

|  |  |
| --- | --- |
| Value Range | 0x0-color 0  0x1-color 1  0x2-color 2  0x3-color 3  0x4-color 4  0x5-color 5  0x6-color 6  0x7-color 7  0x8-color 8  0x9-color 9  0xA-color 10  0xB-color 11  0xC-color 12  0xD-color 13  0xE-color 14  0xF-color 15 |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg PersIndex\_CSKind

|  |  |
| --- | --- |
| Value Range | 0x0-PERS\_1  0x1-PERS\_2  0x2-PERS\_3  0x3-PERS\_4  0x4-VEHICLE |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg AjarKind

|  |  |
| --- | --- |
| Value Range | 0x0-CLOSED  0x1-AJAR |
| Resolution |  |
| Units |  |

valuetype

1684781911.jpg DiagSessionKind

|  |  |
| --- | --- |
| Value Range | 0x0-DEFAULT  0x1-EXTEND  0x2-PROGRAM  0x3-NKNOWN |
| Resolution |  |
| Units |  |

valuetype

1766847991.jpg SelDrvMdeHmi03\_D\_Rq\_ComStatKind

|  |  |
| --- | --- |
| Value Range | 0x0-MISSING  0x1-PRESENT |
| Resolution |  |
| Units |  |

Document ends here.