

**Research & Vehicle Technology**

**“Infotainment Systems Product Development”**

**Feature – Embedded Modem Reset InterfaceClient v2**

**Infotainment Subsystem Part Specific Specification (SPSS)**

Version 1.4

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**Version Date: May 9, 2019**

**FORD CONFIDENTIALF**

**Revision History**

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| --- | --- | --- | --- |
| **Date** | **Ver** | **Notes** | |
| **December 14, 2017** | **1.0** | **Initial Release** |  |
|  |  |  |  |
| **March 15, 2018** | **1.1** |  | |
|  | EMRv2-CLD-REQ-275640/B-Embedded Modem Reset Server | | MBORREL4: Updated content to clarify Server role |
|  | EMRv2-CLD-REQ-275641/B-Embedded Modem Reset Key Server | | MBORREL4: Updated content to clarify Server role to Client |
|  | EMR-CLD-REQ-275695/B-Embedded Modem Reset EV Server | | MBORREL4: Updated content to clarify Server role to Client |
|  | EMR-DOC-457437/B-Physical Mapping of Classes | | MBORREL4: Removed Sub-SYNC |
|  | EMR-REQ-275645/B-Embedded Modem Master Reset - Server Request | | MBORREL4: Removed 2nd bullet point, the reset request is initiated by Interface Client and gatewayed via the Server |
|  | EMR-REQ-281278/B-Embedded Modem Master Reset - OnBoardClient Response | | MBORREL4: Changed errorCode to ErrorCode |
|  | EMR-REQ-275652/B-Embedded Modem Master Reset - FTCP Alert | | MBORREL4: Updated to include VSTAT Authorized detail |
|  | EMR-ACT-REQ-275659/B-Embedded Modem Master Reset | | MBORREL4: Updated as reset request is initiated by Interface Client and gatewayed via the Server |
|  | EMR-SD-REQ-275660/B-Embedded Modem Master Reset | | MBORREL4: Updated as reset request is initiated by Interface Client and gatewayed via the Server |
|  | EMR-REQ-275663/B-VIN Removal - Clear User Settings Command/Response | | MBORREL4: Updated to include VSTAT detail |
|  | EMR-REQ-275665/B-VIN Removal - Remove CAK Command/Response | | MBORREL4: Updated Command per FTCP implementation |
|  | EMR-REQ-281490/B-Wifi Hotspot Embedded Modem Reset - OnBoardClient Response | | MBORREL4: Changed errorCode to ErrorCode |
|  | EMR-REQ-275680/B-PaaK Embedded Modem Reset - InterfaceClient Request | | MBORREL4: Updated content as reset request goes to KeyServer, not Server |
|  | EMR-REQ-281570/B-PaaK Embedded Modem Reset - Server Request | | MBORREL4: Removed bullet#1 as reset request is sent from InterfaceClient, not Server |
|  | EMR-REQ-275688/B-PaaK Embedded Modem Reset - FTCP Alert | | MBORREL4: Updated alert to CAKStatusAlert and added detail |
|  | EMR-ACT-REQ-275690/B-PaaK Embedded Modem Reset | | MBORREL4: Updated as reset request is initiated by Interface Client and gatewayed via the Server |
|  | EMR-SD-REQ-275691/B-PaaK Embedded Modem Reset | | MBORREL4: Updated as reset request is initiated by Interface Client and gatewayed via the Server |
|  | EMR-REQ-290255/B-Brand Connect Embedded Modem Reset - InterfaceClient Request | | MBORREL4: Updated to include KeyServer and EVServer |
|  | EMR-REQ-290272/B-Brand Connect Embedded Modem Reset - Server Request | | MBORREL4: Removed bullet #1 as reset request is sent from InterfaceClient, not Server |
|  | EMR-REQ-281278/B-Embedded Modem Master Reset - OnBoardClient Response | | MBORREL4: Changed errorCode to ErrorCode |
|  | EMR-ACT-REQ-290266/B-Brand Connect Embedded Modem Reset | | MBORREL4: Updated as reset request is initiated by Interface Client and gatewayed via the Server |
|  | EMR-SD-REQ-290267/B-Brand Connect Embedded Modem Reset | | MBORREL4: Updated as reset request is initiated by Interface Client and gatewayed via the Server |
|  |  |  |  |
| **September 28, 2018** | **1.2** |  | |
|  | MD-REQ-241972/E-PaakESN\_St | | rpaquet2 - Updated BLEMSyncP definition and removed hardware number and Software part number as they are part of the SyncP package |
|  | STR-457441/B-Requirements | | MBORREL4: Removed REQ-275648 |
|  | EMR-REQ-275645/C-Embedded Modem Master Reset - Server Request | | MBORREL4: Updated API per platform team implementation, added more detail (Clarification only) |
|  | EMR-REQ-281278/C-Embedded Modem Master Reset - OnBoardClient Response | | MBORREL4: Updated API response per platform team implementation |
|  | EMR-REQ-275647/B-Master & Embedded Modem Reset - Request Handling | | MBORREL4: Renamed req. and updated content to remove timer and detail new handling of reset requests |
|  | EMR-REQ-275650/B-Embedded Modem Master Reset - Cleared Data | | MBORREL4: Added more detail (Clarification only) |
|  | EMR-ACT-REQ-275659/C-Embedded Modem Master Reset | | MBORREL4: Updated diagram to reference Plug and Charge SPSS |
|  | EMR-SD-REQ-275660/C-Embedded Modem Master Reset | | MBORREL4: Updated diagram to convey API call as implemented by platform team. Updated diagram to reference Plug and Charge SPSS |
|  | EMR-REQ-275663/C-VIN Removal - Clear User Settings Command/Response | | MBORREL4: Updated API per platform team implementation, added more detail (Clarification only) |
|  | EMR-REQ-275650/B-Embedded Modem Master Reset - Cleared Data | | MBORREL4: Added more detail (Clarification only) |
|  | EMR-ACT-REQ-275667/B-Removal Of VIN From Account | | MBORREL4: Updated diagram to reference Plug and Charge SPSS |
|  | EMR-SD-REQ-275668/B-Removal Of VIN From Account | | MBORREL4: Updated diagram to convey API call as implemented by platform team. Updated diagram to reference Plug and Charge SPSS |
|  | STR-457467/B-Requirements | | MBORREL4: Removed REQ-275648 |
|  | EMR-REQ-281489/B-Wifi Hotspot Embedded Modem Reset - Server Request | | MBORREL4: Update API per platform team implementation |
|  | EMR-REQ-281490/C-Wifi Hotspot Embedded Modem Reset - OnBoardClient Response | | MBORREL4: Update API and API response per platform team implementation |
|  | EMR-REQ-275647/B-Master & Embedded Modem Reset - Request Handling | | MBORREL4: Renamed req. and updated content to remove timer and detail new handling of reset requests |
|  | EMR-SD-REQ-275678/B-Wifi Hotspot Embedded Modem Reset | | MBORREL4: Updated diagram to convey API call as implemented by platform team |
|  | STR-457477/B-Requirements | | MBORREL4: Removed REQ-275648 |
|  | EMR-REQ-275647/B-Master & Embedded Modem Reset - Request Handling | | MBORREL4: Renamed req. and updated content to remove timer and detail new handling of reset requests |
|  | STR-489922/B-Requirements | | MBORREL4: Removed REQ-275648 |
|  | EMR-REQ-290272/C-Brand Connect Embedded Modem Reset - Server Request | | MBORREL4: Updated API per platform team implementation, added more detail (Clarification only) |
|  | EMR-REQ-281278/C-Embedded Modem Master Reset - OnBoardClient Response | | MBORREL4: Updated API response per platform team implementation |
|  | EMR-REQ-275647/B-Master & Embedded Modem Reset - Request Handling | | MBORREL4: Renamed req. and updated content to remove timer and detail new handling of reset requests |
|  | EMR-REQ-290258/B-Brand Connect Embedded Modem Reset - Cleared Data | | MBORREL4: Added more detail (Clarification only) |
|  | EMR-HMI-REQ-290260/B-Brand Connect Embedded Modem Reset - User Input Enable/Disable | | MBORREL4: Removed TCU config precondition (not required as Brand Connect is always available when Reset submenu is shown) |
|  | EMR-ACT-REQ-290266/C-Brand Connect Embedded Modem Reset | | MBORREL4: Updated diagram to reference Plug and Charge SPSS |
|  | EMR-SD-REQ-290267/C-Brand Connect Embedded Modem Reset | | MBORREL4: Updated diagram to convey API call as implemented by platform team. Updated diagram to reference Plug and Charge SPSS |
|  | STR-457488/B-Appendix: Reference Documents | | MBORREL4: Updated References |
|  |  |  |  |
| **October 10, 2018** | **1.3** |  | |
|  | STR-457434/B-Overview | | MBORREL4: Removed the note mentioning potential CCS changes |
|  | MD-REQ-241972/F-PaakESN\_St | | rpaquet2 - Updated the description to clarify operations |
|  | EMR-REQ-275649/B-Embedded Modem Master Reset - Server Operational States | | MBORREL4: Updated state to Provisioned per CCS update |
|  | EMR-REQ-275650/C-Embedded Modem Master Reset - Cleared Data | | MBORREL4: Added InterfaceClient (per CCS update) |
|  | EMR-REQ-275652/C-Embedded Modem Master Reset - FTCP Alert | | MBORREL4: Updated per change in Authorization (per CCS update) |
|  | UCD-REQ-275657/B-Reset Feature | | MBORREL4: Updated diagram per CCS changes |
|  | EMR-ACT-REQ-275659/D-Embedded Modem Master Reset | | MBORREL4: Updated diagram per CCS update |
|  | EMR-SD-REQ-275660/D-Embedded Modem Master Reset | | MBORREL4: Updated diagram per CCS update |
|  | STR-457455/B-Requirements | | MBORREL4: Removed REQ-275664 (now handled by CCS) |
|  | EMR-REQ-275662/B-VIN Removal - Multiple vs Last User | | MBORREL4: Added CCS reference |
|  | EMR-REQ-275663/D-VIN Removal - Clear User Settings Command/Response | | MBORREL4: Updated Authorized state per CCS changes |
|  | EMR-REQ-275650/C-Embedded Modem Master Reset - Cleared Data | | MBORREL4: Added InterfaceClient (per CCS update) |
|  | EMR-UC-REQ-275666/B-Removal Of VIN From Account | | MBORREL4: Changed precondition per CCS |
|  | EMR-ACT-REQ-275667/C-Removal Of VIN From Account | | MBORREL4: Updated diagram per CCS update |
|  | EMR-SD-REQ-275668/C-Removal Of VIN From Account | | MBORREL4: Updated precondition and diagram per CCS update |
|  | EMR-REQ-275684/B-PaaK Embedded Modem Reset - Operational States | | MBORREL4: Updated Provisioned status per CCS changes |
|  | EMR-REQ-275688/C-PaaK Embedded Modem Reset - FTCP Alert | | MBORREL4: Updated to include VSTAT info only when authorized (per CCS changes) |
|  | EMR-REQ-290257/B-Brand Connect Embedded Modem Reset - Server Operational States | | MBORREL4: Updated Provisioned state per CCS change |
|  | EMR-REQ-290258/C-Brand Connect Embedded Modem Reset - Cleared Data | | MBORREL4: Updated to include InterfaceClient per CCS change |
|  | EMR-REQ-290262/B-Brand Connect Embedded Modem Reset - FTCP Alert | | MBORREL4: Updated per change in Authorization (per CCS update) |
|  | EMR-ACT-REQ-290266/D-Brand Connect Embedded Modem Reset | | MBORREL4: Updated diagram per CCS update |
|  | EMR-SD-REQ-290267/D-Brand Connect Embedded Modem Reset | | MBORREL4: Updated diagram per CCS update |
|  |  |  |  |
| **May 9, 2019** | **1.4** |  | |
|  | MD-REQ-241972/G-PaakESN\_St | | rpaquet2 - Update description per feature owner |
|  | STR-457441/C-Requirements | | MBORREL4: Added REQ-338692, REQ-348156-158 |
|  | EMR-REQ-275652/D-Embedded Modem Master Reset - FTCP Alert | | MBORREL4: Updated per CCS redesign change |
|  | EMR-REQ-275653/B-Embedded Modem Master Reset - FTCP Alert Queing | | MBORREL4: Updated per module reboot/debug token change |
|  | EMRv2-REQ-338692/A-Embedded Modem Master Reset - Reset Submenu Configuration | | MBORREL4: New req. |
|  | EMR-REQ-348156/A-Embedded Modem Master Reset - Debug Tokens on EmbeddedModemResetServer | | MBORREL4: New req. for module reboot/debug token change |
|  | EMR-REQ-348157/A-Embedded Modem Master Reset - Debug Tokens on EmbeddedModemResetOnBoardClient | | MBORREL4: New req. for module reboot/debug token change |
|  | EMR-REQ-348158/A-Embedded Modem Master Reset - EmbeddedModemResetServer Module Reboot | | MBORREL4: New req. for module reboot/debug token change |
|  | STR-457442/B-Use Cases | | MBORREL4: Added REQ-348159 |
|  | EMR-UC-REQ-348159/A-Embedded Modem Master Reset with Debug Tokens Present | | MBORREL4: New req. for module reboot/debug token change |
|  | EMR-REQ-275663/E-VIN Removal - Clear User Settings Command/Response | | MBORREL4: Updated per CCS redesign change |
|  | EMR-REQ-275688/D-PaaK Embedded Modem Reset - FTCP Alert | | MBORREL4: Updated per CCS redesign change |
|  | EMR-REQ-290262/C-Brand Connect Embedded Modem Reset - FTCP Alert | | MBORREL4: Updated per CCS redesign change |

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# Overview

This specification captures all existing Master Reset functionality as it pertains to the Embedded Modem and its features for the FNV2 architecture. It includes additional requirements, usecases, and diagrams to completely detail the expected behavior when a Master Reset is performed by either the HMI system or the NGSDN.

This specification also provides new functionality that allows a user to perform a reset for a select number of Embedded Modem features.

# Architectural Design

## EMRv2-CLD-REQ-275640/B-Embedded Modem Reset Server

The Embedded Modem Reset Server is responsible for the tasks listed below:

* Receive reset requests from Embedded Modem Reset InterfaceClient
* Receive FTCP commands from Embedded Modem Reset OffBoardClient
* Perform Embedded Modem Reset feature functionality to eliminate all applicable user data and/or restore factory defaults.
* Call all Master Reset and Embedded Modem Reset APIs from all applicable Clients/Servers.
* Transmit Embedded Modem Reset response/status back to the Embedded Modem Reset InterfaceClient
* Transmit Embedded Modem Reset FTCP command responses back to the Embedded Modem Reset OffBoardClient.

Please review the implementation guide/ block diagram to locate the Embedded Modem Reset Server class

## EMR-CLD-REQ-275702/A-Embedded Modem Reset InterfaceClient

The Embedded Modem Reset InterfaceClient is responsible for the tasks listed below.

* Receiving user input and confirmation of a Master Reset request
* Receiving user input and confirmation of an Embedded Modem Reset request
* Transmit Master Reset request to the Embedded Modem Reset Server, as well as any Infotainment Master Reset Servers/Clients requiring it
* Transmit Embedded Modem Reset request to the Embedded Modem Reset Server
* Displaying information regarding reset success, failure, and ongoing status.

Please review the implementation guide/ block diagram to locate the Embedded Modem Reset InterfaceClient class

## EMRv2-CLD-REQ-275696/A-Embedded Modem Reset OnBoardClient

The Embedded Modem Reset OnBoardClient is responsible for the tasks listed below:

* Receive reset request API from Embedded Modem Reset Server
* Receive FTCP commands from Embedded Modem Reset Server
* Perform Embedded Modem Reset feature functionality to eliminate all applicable user data and/or restore factory defaults.
* Transmit Embedded Modem Reset response API back to the Embedded Modem Reset Server.

Please review the implementation guide/ block diagram to locate the Embedded Modem Reset OnBoardClient class

## EMR-CLD-REQ-246272/A-Embedded Modem Reset OffBoardClient

The Embedded Modem Reset OffBoardClient is responsible for the tasks listed below.

* Transmit FTCP commands to Embedded Modem Reset Server
* Perform Embedded Modem Reset feature functionality to eliminate all applicable user data and/or restore factory defaults.
* Receive Embedded Modem Reset FTCP command responses from the Embedded Modem Reset Server.

Please review the implementation guide/ block diagram to locate the Embedded Modem Reset OffBoardClient class

## EMRv2-CLD-REQ-275641/B-Embedded Modem Reset Key Server

The Embedded Modem Reset Key Server is responsible for the tasks listed below:

* Receive reset request from Embedded Modem Reset Interface Client
* Perform Embedded Modem Reset feature functionality to revoke all created keys, eliminate all applicable user data, and/or restore factory defaults.
* Transmit Revoked Key status back to the Embedded Modem Reset Server.

Please review the implementation guide/ block diagram to locate the Embedded Modem Reset Key Server class

## EMR-CLD-REQ-275695/B-Embedded Modem Reset EV Server

The Embedded Modem Reset EVServer is responsible for the tasks listed below:

* Receive reset request from Embedded Modem Reset Interface Client
* Perform Embedded Modem Reset feature functionality to eliminate all applicable user data and/or restore factory defaults.

Please review the implementation guide/ block diagram to locate the Embedded Modem Reset EVServer class.

## Physical Mapping of Classes

The table below shows an example of how the logical classes that make up the Embedded Modem Reset feature can be mapped into physical modules. This mapping is an FNV2 example only and does not necessarily carryover to other carlines or vehicle architectures.

|  |  |
| --- | --- |
| **Logical Class** | **Physical Module (ECU)** |
| EmbeddedModemResetServer | ECG |
| EmbeddedModemResetInterfaceClient | SYNC |
| EmbeddedModemResetOnBoadClient | TCU |
| EmbeddedModemResetOffBoadClient | NGSDN |
| EmbeddedModemResetKeyServer | BLEM |
| EmbeddedModemResetEVServer | HPCM |

## EmbeddedModemResetInterfaceClient Interface

### IIR-REQ-275697/A-EmbeddedModemResetInterfaceClientInterface\_Tx

The EmbeddedModemResetInterfaceClientInterface\_Tx represents all the Embedded Modem Reset feature related signals sent by the EmbeddedModemResetInterfaceClient object. The below table represents the mapping of the logical signal names (as described in this specification) to the global GSDB signal names.

|  |  |  |
| --- | --- | --- |
| **Logical Signal Name** | **Parameter Name** | **GSDB Signal Name** |
| FactoryReset\_Rq | Type | FactoryReset\_Rq |
| EmbeddedModemReset\_Rq | Type | ModemReset\_D\_Rq |

Note:  GSDB signal names are reference only.  The Global Signal Database (GSDB) is the master for all signals. If there is a conflict, bring to the module D&R’s attention.

#### MD-REQ-213361/C-FactoryReset\_Rq

**Message Type**: Request

Signal sent by the Master Reset Client to initiate a Master Reset

|  |  |  |  |
| --- | --- | --- | --- |
| **Logical Signal Name** | **Literals** | **Value** | **Description** |
| FactoryReset\_Rq | Inactive | 0x0 |  |
| ResetFactoryDefaults | 0x1 |  |

#### MD-REQ-246273/C-EmbeddedModemReset\_Rq

Message Type: Request

This signal is used to perform a factory reset for the specified Embedded Modem feature.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Literals** | **Value** | **Description** |
| Type | - | - | Embedded Modem feature to be reset to factory defaults. |
|  | Null | 0x0 |  |
|  | WifiHotspot\_Reset | 0x1 |  |
|  | PaaK\_Reset | 0x2 |  |
|  | OnlineTraffic\_Reset | 0x3 |  |
|  | CCS\_Reset | 0x4 |  |
|  | BrandConnect\_Reset1 | 0x5 |  |
|  | BrandConnect\_Reset2 | 0x6 |  |
|  | Reserved | 0x7 – 0xF |  |

### IIR-REQ-275698/A-EmbeddedModemResetInterfaceClientInterface\_Rx

The EmbeddedModemResetInterfaceClientInterface\_Rx represents all the Embedded Modem Reset feature related signals received by the EmbeddedModemResetInterfaceClient object. The below table represents the mapping of the logical signal names (as described in this specification) to the global GSDB signal names.

|  |  |  |
| --- | --- | --- |
| **Logical Signal Name** | **Parameter Name** | **GSDB Signal Name** |
| FactoryReset\_St | Type | FactoryReset\_ St |
| EmbeddedModemReset\_ St | Type | ModemReset\_D\_Stat |
| TCUAvailability\_St | Type | WifiEnbl\_D\_Stat |
| PaakESN\_St | ProvDID | See TP SPSS |

Note:  GSDB signal names are reference only.  The Global Signal Database (GSDB) is the master for all signals. If there is a conflict, bring to the module D&R’s attention.

#### MD-REQ-222036/B-FactoryReset.St

**Message Type**: Status

Signal sent by the Master Reset Server indicating that the master reset default settings were restored for a master reset event

|  |  |  |  |
| --- | --- | --- | --- |
| **Logical Signal Name** | **Literals** | **Value** | **Description** |
| FactoryReset.St | Inactive | 0x0 |  |
| FactoryDefaultsRestored | 0x1 |  |
| Reserved | 0x2 |  |
| Reserved | 0x3 |  |

#### MD-REQ-246274/B-EmbeddedModemReset\_St

Message Type: Status

This signal is used to indicate the status of the factory reset performed for the specified Embedded Modem feature.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Literals** | **Value** | **Description** |
| Type | - | - | Embedded Modem feature factory reset status. |
|  | Null | 0x0 |  |
|  | Reset\_NotComplete | 0x1 |  |
|  | PaaKReset\_Complete | 0x2 |  |
|  | OnlineTrafficReset\_Complete | 0x3 |  |
|  | CCSReset\_Complete | 0x4 |  |
|  | WifiHotspotReset\_Complete | 0x5 |  |
|  | Reserved | 0x6-0xF |  |

#### MD-REQ-179305/B-TCUAvailability\_St

Message Type: Status

This signal is used to inform the WifiHotSpotOnBoardClient the current state of the Wi-Fi Hotspot feature

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Literals** | **Value** | **Description** |
| Type | - | - | Wi-Fi feature readiness status |
|  | Null | 0x0 |  |
|  | Disable | 0x1 |  |
|  | Enable | 0x2 |  |

#### MD-REQ-241972/G-PaakESN\_St

Message Type: Status

This signal is used to indicate the provisioning state of the ProvOnBoardClient4 (BLEMProvDID) and ECU Metadata the peripheral ECU’s shown in the table below. It is a periodic TP message that provides the ProvServer with the information listed in the PaakESN\_St Parameters Table shown below

|  |  |  |
| --- | --- | --- |
| **Peripheral ECU** | **Transport Protocol Message** | **FTCP Logic** |
| BLEM | PaakESN\_ST | BLEMProvisioningAlert |

This signal is used to indicate the Provision State, ESN and BPEK (One way hashed).

BLEMProvDID (Actual name in GMRDB “Bluetooth Low Energy Module (BLEM) Provisioning Status”)

The table below denotes the data that is required in the PaakESN\_St TP message for the ProvOnBoardClient4. The payload of the message shall the follow the message structure defined in TP Protocol spec and in the SYncPS13a and S13b spec.

If OnBoarClient4 (BLEM) does not transitioned to 0X53 after receiving “PaakSerial\_D\_rq=0x53”, ProvServer shall try 2 more time (total-3 times) to send “PaakSerial\_D\_rq”

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Literals** | **Value** | **Description** |
| BLEMProvDID | - | - | Describes the current state Provisioning |
|  | FactoryMode | 0x50 | BLEM is not Configured |
|  | Unprovisioned | 0x51 | BLEM Configured, TargetID not Transfer/ BLEM Self-Test not complete |
|  | BLEMProvAlertACK | 0x52 | BLEM is waiting for Provisioning Alert Ack from PaakOnBoardClient |
|  | ReadyForKeyDelivery | 0x53 | BLEM is Provisioned and ready for Key Delivery |
|  | KeyDelivered | 0x54 | Key(s) are delivered to BLEM |
|  |  |  |  |
| BLEMSyncPPacket | - | - | BLEM SyncP Signed (BLEM ESN). BLEM ESN will be in the header of SyncP Signed message. SyncP Payload information found in PaaK-REQ-281398-Provisioning SyncP Payload. Max. 1000 bytes. |

# General Requirements

## EMR-REQ-275655/A-Master & Embedded Modem Reset - Inactive/Null

The request and status signals used for Embedded Modem Reset shall revert to their respective “Inactive” or “Null” encodings 1 second after being sent (refer to all sequence diagrams).

Note: The receiving server or client shall act on the initial request/status signal, and not the subsequent “Inactive” or “Null” encodings.

## EMR-REQ-290481/A-FTCP Specification References

The following FTCP specifications define the FTCP alerts/commands mentioned in this SPSS, as well as the protocol used to transmit them via the EmbeddedModemResetServer:

* Ford Telematics Communication Protocol Specification
* FNV2-FCI Protocol SPSS

# Functional Definition

## EMRv2-FUN-REQ-275644/A-Master Reset initiated from EmbeddedModemInterfaceClient

### Requirements

#### EMR-REQ-275645/C-Embedded Modem Master Reset - Server Request

Upon receiving FactoryReset.Rq = “(0x1) ResetFactoryDefaults” from the EmbeddedModemResetInterfaceClient, the EmbeddedModemResetServer shall:

* Perform the Embedded Modem Master Reset for any applicable internal features/functions (see REQ-275650)
  + This means internally notifying other applications/services in the EmbeddedModemResetServer that a reset is to be performed. Each application/service is resposible for clearing their own data
  + Note: The same application/service data is cleared for the Embedded Modem Master Reset, Brand Connect Reset, and VIN Removal
* Call the API, setModemMasterReset(MasterResetService = 0x0 - ResetAll), from the EmbeddedModemResetOnBoardClient

#### EMR-REQ-275646/A-Embedded Modem Master Reset - Server Response

Upon completion of the Embedded Modem Master Reset, and reception of a successful setModemMasterReset API response, the EmbeddedModemResetServer shall send FactoryReset.St = “(0x1) FactoryDefaultsRestored” to the EmbeddedModemResetInterfaceClient.

#### EMR-REQ-281278/C-Embedded Modem Master Reset - OnBoardClient Response

Upon completion of the Embedded Modem Master Reset, the EmbeddedModemResetOnBoardClient shall send the setModemMasterReset API response to the EmbeddedModemResetServer indicating:

* ResponseStatus = 0x00 Success, if the reset succedded
* ResponseStatus = 0x01 – 0x10 Fail, if the reset failed
  + ErrorCode shall be set to any valid code in the event of a failure

#### EMR-REQ-275647/B-Master & Embedded Modem Reset - Request Handling

Upon receiving a Master Reset or Feature Reset request (via either FactoryReset.Rq or EmbeddedModemReset\_Rq), the EmbeddedModemResetServer shall:

* Process the request if one is not already in process
* Execute only one reset at any given time
* Ignore the request if an EmbeddedModemInterfaceClient initiated reset request is already being processed
* Queue the request if an EmbeddedModemOffBoardClient initiated reset request is already being processed. The EmbeddedModemResetServer shall process the request only after the ongoing reset has completed.

Upon receiving a ClearUserSettingsCommand (per VIN Removal), the EmbeddedModemResetServer shall:

* Process the request if one is not already in process
* Queue the request if an existing reset request is already in process. The EmbeddedModemResetServer shall process the request only after the ongoing reset has completed.

The EmbeddedModemResetServer shall persist all queued reset requests through module restarts, power on/off, ignition cycles, etc.

#### EMR-REQ-275649/B-Embedded Modem Master Reset - Server Operational States

The Embedded Modem Master Reset shall only be performed by the EmbeddedModemResetServer if the EmbeddedModemResetServer is in any of the following states:

* “Provisioned”

#### EMR-REQ-276995/A-Embedded Modem Master Reset - OnBoardClient Operational States

The Embedded Modem Master Reset shall only be performed by the EmbeddedModemResetOnBoardClient if the EmbeddedModemResetOnBoardClient is in any of the following states:

* “Provisioned”

#### EMR-REQ-275650/C-Embedded Modem Master Reset - Cleared Data

The feature data to be cleared by the EmbeddedModemResetServer, EmbeddedModemResetInterfaceClient, or EmbeddedModemResetOnBoardClient upon an Embedded Modem Master Reset (per REQ-275645) or a VIN Removal (per REQ-275663, REQ-275664, REQ-275665) may contain settings pertaining to:

* ECG Common Functions
* Embedded Modem Common Functions
* Control My Car
* Vehicle Health Report
* Wifi Hotspot
* In Vehicle Software Update
* Online Traffic
* Connectivity Customer Settings
* PaaK
* EV Charge Programming
* DVD
* Plug and Charge

\*\***Note**: Please refer to each relevant feature SPSS for details/requirements regarding the specific content/data to be cleared upon a reset.

#### EMR-REQ-275651/A-Embedded Modem Master Reset - Software Retention

The feature data to be cleared shall operate only the Method-2, Method-3, and GMRDB based configurations. There shall not be any changes to the EmbeddedModemResetServer or EmbeddedModemResetOnBoardClient software.

#### EMR-REQ-275652/D-Embedded Modem Master Reset - FTCP Alert

Upon completing the Embedded Modem Master Reset, the EmbeddedModemResetServer shall send a MasterResetAlert to the EmbeddedModemResetOffBoardClient indicating that a “Master Reset” was performed.

This alert shall be sent by the EmbeddedModemResetServer whether the vehicle is authorized or not (See CCS SPSS for authorization information).

This alert shall include VSTAT information only when the vehicle is authorized (See CCS SPSS for authorization information).

#### EMR-REQ-275653/B-Embedded Modem Master Reset - FTCP Alert Queing

The EmbeddedModemResetServer shall queue the MasterResetAlert (to be sent per REQ-275652) in case of a connectivity issue with the EmbeddedModemResetOffBoardClient, or in case the EmbeddedModemResetOnBoardClient is undergoing a module reboot. The EmbeddedModemResetServer shall queue the MasterResetAlert through ignition cycles.

#### EMR-REQ-275654/A-Master & Embedded Modem Reset - Completion Time

The EmbeddedModemResetServer and EmbeddedModemResetOnBoardClient shall remove all PII and application specific data within 45 seconds.

If this process fails to complete within the above time for any of the Embedded Modem Feature Resets, the EmbeddedModemResetServer shall respond to the EmbeddedModemResetInterfaceClient with EmbeddedModemReset\_St = “(0x1) Reset\_NotComplete”

#### EMR-REQ-275656/A-Embedded Modem Master Reset - Buffered AVD Data

The EmbeddedModemResetServer shall remove any buffered AVD data upon an Embedded Modem Master Reset (per REQ-275645) or a VIN Removal (per REQ-275663, REQ-275664, REQ-275665). Please refer to DVD SPSS for more details on buffered data.

#### EMRv2-REQ-338692/A-Embedded Modem Master Reset - Reset Submenu Configuration

The EmbeddedModemResetInterfaceClient shall have a configurable DID to determine whether the Embedded Modem Reset Submenu shall be displayed. The Submenu shall only be shown for Bundle 4 EmbeddedModemResetServer’s and onward.

TCU Reset DID:

* When the MFAL code is set to IEPAL, IEPAC, or IEPAL, the TCU Reset DID shall be set to Disabled / Inactive / etc. and the Submenu shall not be shown
* When the MFAL code is set to IEPAN or IEPAM, the TCU Reset DID shall be set to Enabled / Active / etc. and the Submenu shall be shown

#### EMR-REQ-348156/A-Embedded Modem Master Reset - Debug Tokens on EmbeddedModemResetServer

The EmbeddedModemResetServer shall delete/remove all debug tokens upon an Embedded Modem Master Reset initiated from the EmbeddedModemResetInterfaceClient.

When debug tokens are present, the EmbeddedModemResetServer module shall perform a reboot according to REQ-348158 after having completed the Embedded Modem Master Reset.

#### EMR-REQ-348157/A-Embedded Modem Master Reset - Debug Tokens on EmbeddedModemResetOnBoardClient

The EmbeddedModemResetOnBoardClient shall delete/remove all debug tokens upon an Embedded Modem Master Reset initiated from the EmbeddedModemResetInterfaceClient.

When debug tokens are present, the EmbeddedModemResetOnBoardClient module shall immediately perform a reboot after having completed the Embedded Modem Master Reset.

#### EMR-REQ-348158/A-Embedded Modem Master Reset - EmbeddedModemResetServer Module Reboot

The EmbeddedModemResetServer shall maintain a flag to indicate when a module reboot is required. When an Embedded Modem Master Reset is initiated from the EmbeddedModemResetInterfaceClient, the flag shall be set accordingly:

* If debug tokens are present and were cleared successfully, set flag “true”
* If debug tokens are not present OR the debug tokens failed to clear, set flag “false”
  + If this determination cannot be made within the completion time specified in REQ-275654, set flag “false”

When the flag is set to “true” the EmbeddedModemResetServer shall perform a module reboot the next time the IgnitionStatus = Off (i.e. the next time the user turns off the vehicle).

When the flag is set to “false” the EmbeddedModemResetServer shall not perform a module reboot, but shall continue with the Master Reset process as specified in this SPSS.

After the module reboot is complete, the flag shall be set to “false.”

### Use Cases

#### UCD-REQ-275657/B-Reset Feature

Use Case Diagram



#### EMR-UC-REQ-275658/A-Embedded Modem Master Reset

|  |  |
| --- | --- |
| **Actors** | Vehicle occupant |
| **Pre-conditions** | HMI display is ON |
| **Scenario Description** | The user selects <Master Reset> via HMI. |
| **Post-conditions** | All applicable settings are restored to the factory defaults (refer to a particular feature SPSS for the applicable settings/default values and/or feature specific requirements). |
| **List of Exception Use Cases** | N/A |
| **Interfaces** | G-HMI |

#### EMR-UC-REQ-348159/A-Embedded Modem Master Reset with Debug Tokens Present

|  |  |
| --- | --- |
| **Actors** | Vehicle occupant |
| **Pre-conditions** | HMI display is ON  Debug Tokens are present on EmbeddedModemResetServer and EmbeddedModemResetOnBoardClient |
| **Scenario Description** | The user selects <Master Reset> via HMI. |
| **Post-conditions** | * All applicable settings are restored to the factory defaults (refer to a particular feature SPSS for the applicable settings/default values and/or feature specific requirements). * EmbeddedModemResetOnBoardClient completes reset and performs a module reboot * EmbeddedModemResetServer completes reset and sets flag “true” in order to perform a module reboot at the next key-off |
| **List of Exception Use Cases** | N/A |
| **Interfaces** | G-HMI |

### White Box View

#### EMR-ACT-REQ-275659/D-Embedded Modem Master Reset

Activity Diagram



#### EMR-SD-REQ-275660/D-Embedded Modem Master Reset

Constraints

Pre-Condition

HMI display is ON

Scenarios

Normal Usage

The user selects <Master Reset> via HMI

Post-Condition

All applicable settings are restored to the factory defaults

Sequence Diagram



## EMRv2-FUN-REQ-275661/A-VIN Removal from EmbeddedModemOffBoardClient

### Requirements

#### EMR-REQ-275662/B-VIN Removal - Multiple vs Last User

When a VIN removal is performed, different actions shall be taken depending on whether the VIN removed is also registered on other user accounts, or is no longer on any user account:

1. **Multiple Users:** When the VIN removed is still registered to other user accounts, the following shall occur:
   1. PaaK Revoke process (see REQ-275665)
2. **Last User:** When the VIN removed is no longer registered to any user accounts, the following shall occur::
   1. ClearUserSettingsCommand (see REQ-275663)
   2. AuthorizationStatusChangeCommand (see CCS SPSS)
   3. PaaK Revoke process (based on de-auth state change, see BLEM PaaK SPSS)

\*Please refer to sequence diagram REQ-275668.

#### EMR-REQ-275663/E-VIN Removal - Clear User Settings Command/Response

Upon a VIN Removal, the EmbeddedModemResetServer shall receive a ClearUserSettingsCommand from the EmbeddedModemResetOffBoardClient.

When received, the EmbeddedModemResetServer shall:

* Clear all internal user settings
  + This means internally notifying other applications/services in the EmbeddedModemResetServer that a reset is to be performed. Each application/service is resposible for clearing their own data
  + Note: The same application/service data is cleared for the VIN Removal, Embedded Modem Master Reset, and Brand Connect Reset
* Call the API, setModemMasterReset(MasterResetService = 0x0 - ResetAll) from the EmbeddedModemResetOnBoardClient
* Send a ClearUserSettingsCommandResponse to the EmbeddedModemResetOffBoardClient upon completion with a status update
  + This response shall include VSTAT information only when the vehicle is authorized (See CCS SPSS for authorization information).

#### EMR-REQ-275665/B-VIN Removal - Remove CAK Command/Response

Upon a VIN Removal, the EmbeddedModemResetServer shall receive a RemoveCAKCommand from the EmbeddedModemResetOffBoardClient.

When received, the EmbeddedModemResetServer shall begin the “Revoke Key” process (see PaaK SPSS) and send a RemoveCAKCommandResponse to the EmbeddedModemResetOffBoardClient upon completion with a status update.

#### EMR-REQ-275650/C-Embedded Modem Master Reset - Cleared Data

The feature data to be cleared by the EmbeddedModemResetServer, EmbeddedModemResetInterfaceClient, or EmbeddedModemResetOnBoardClient upon an Embedded Modem Master Reset (per REQ-275645) or a VIN Removal (per REQ-275663, REQ-275664, REQ-275665) may contain settings pertaining to:

* ECG Common Functions
* Embedded Modem Common Functions
* Control My Car
* Vehicle Health Report
* Wifi Hotspot
* In Vehicle Software Update
* Online Traffic
* Connectivity Customer Settings
* PaaK
* EV Charge Programming
* DVD
* Plug and Charge

\*\***Note**: Please refer to each relevant feature SPSS for details/requirements regarding the specific content/data to be cleared upon a reset.

#### EMR-REQ-275656/A-Embedded Modem Master Reset - Buffered AVD Data

The EmbeddedModemResetServer shall remove any buffered AVD data upon an Embedded Modem Master Reset (per REQ-275645) or a VIN Removal (per REQ-275663, REQ-275664, REQ-275665). Please refer to DVD SPSS for more details on buffered data.

### Use Cases

#### EMR-UC-REQ-275666/B-Removal Of VIN From Account

|  |  |
| --- | --- |
| **Actors** | Vehicle occupant |
| **Pre-conditions** | HMI display is ON  EmbeddedModemResetServer is Provisioned |
| **Scenario Description** | The user removed VIN from account via Mobile App. |
| **Post-conditions** | CVFMA receives request to trigger Master Reset operation.  Reset of customer settings, connectivity settings, feature specific settings, feature/subscription unenrollment (if applicable) and EmbeddedModemResetServer de-authorization (if applicable) |
| **List of Exception Use Cases** | N/A |
| **Interfaces** | G-HMI |

### White Box View

#### EMR-ACT-REQ-275667/C-Removal Of VIN From Account

Activity Diagram



#### EMR-SD-REQ-275668/C-Removal Of VIN From Account

Constraints

Pre-Condition

HMI display is ON

EmbeddedModemResetServer is Provisioned

Scenarios

Normal Usage

The user removed VIN from account via Mobile App

Post-Condition

CVFMA receives request to trigger Master Reset operation.

Reset of customer settings, connectivity settings, feature specific settings, feature/subscription unenrollment (if applicable) and EmbeddedModemResetServer

de-authorization (if applicable)

Sequence Diagram



## EMRv2-FUN-REQ-275669/A-Wifi Hotspot - Embedded Modem Reset

### Requirements

#### EMR-REQ-275670/A-Wifi Hotspot Embedded Modem Reset - InterfaceClient Request

The EmbeddedModemResetInterfaceClient shall send EmbeddedModemReset\_Rq = “(0x1) WifiHotspot\_Reset” to the EmbeddedModemResetServer when requested by the user.

#### EMR-REQ-281489/B-Wifi Hotspot Embedded Modem Reset - Server Request

Upon reception of EmbeddedModemReset\_Rq = “(0x1) WifiHotspot\_Reset” from the EmbeddedModemResetInterfaceClient, the EmbeddedModemResetServer shall call the API, setModemMasterReset(MasterResetService = 0x1 - ResetWLANOnly), from the EmbeddedModemResetOnBoardClient.

#### EMR-REQ-281490/C-Wifi Hotspot Embedded Modem Reset - OnBoardClient Response

Upon completion of the Wifi Hotspot Feature Reset, the EmbeddedModemResetOnBoardClient shall send the setModemMasterReset API response to the EmbeddedModemResetServer indicating:

* ResponseStatus = 0x00 Success, if the reset succedded
* ResponseStatus = 0x01 – 0x10 Fail, if the reset failed
  + ErrorCode shall be set to any valid code in the event of a failure

#### EMR-REQ-275671/A-Wifi Hotspot Embedded Modem Reset - Server Response

Upon successful completion of the Wifi Hotspot Feature Reset, the EmbeddedModemResetServer shall send EmbeddedModemReset\_St = “(0x5) WifiHotspotReset\_Complete” to the EmbeddedModemResetInterfaceClient.

Upon a failed Wifi Hotspot Feature Reset, the EmbeddedModemResetServer shall send EmbeddedModemReset\_St = “(0x1) Reset\_NotComplete” to the EmbeddedModemResetInterfaceClient.

This transmission of the EmbeddedModemReset\_St to the EmbeddedModemResetInterfaceClient shall not be delayed or dependent on the transmission of any FTCP alert to the EmbeddedModemResetOffBoardClient.

#### EMR-REQ-275647/B-Master & Embedded Modem Reset - Request Handling

Upon receiving a Master Reset or Feature Reset request (via either FactoryReset.Rq or EmbeddedModemReset\_Rq), the EmbeddedModemResetServer shall:

* Process the request if one is not already in process
* Execute only one reset at any given time
* Ignore the request if an EmbeddedModemInterfaceClient initiated reset request is already being processed
* Queue the request if an EmbeddedModemOffBoardClient initiated reset request is already being processed. The EmbeddedModemResetServer shall process the request only after the ongoing reset has completed.

Upon receiving a ClearUserSettingsCommand (per VIN Removal), the EmbeddedModemResetServer shall:

* Process the request if one is not already in process
* Queue the request if an existing reset request is already in process. The EmbeddedModemResetServer shall process the request only after the ongoing reset has completed.

The EmbeddedModemResetServer shall persist all queued reset requests through module restarts, power on/off, ignition cycles, etc.

#### EMR-REQ-275672/A-Wifi Hotspot Embedded Modem Reset - Operational States

The Wifi Hotspot Feature Reset shall only be permitted if the EmbeddedModemResetOnBoardClient is in any of the following states:

* “Provisioned”

#### EMR-REQ-275673/A-Wifi Hotspot Embedded Modem Reset - Cleared Data

The feature data to be cleared by the EmbeddedModemResetOnBoardClient upon a Wifi Hotspot Feature Reset (per REQ-275670) shall include all relevant Wifi Hotspot data as defined in the Wifi Hotspot SPSS (see WFHSv2-REQ-283559-Wi-Fi Hotspot reset settings)

\*\*Please refer to each feature SPSS for details on the specific settings.

#### EMR-HMI-REQ-275674/A-Wifi Hotspot Embedded Modem Reset - User Input

The EmbeddedModemResetInterfaceClient shall provide a user interface (button/graphic) to perform the Wifi Hotspot Feature Reset.

#### EMR-HMI-REQ-275675/A-Wifi Hotspot Embedded Modem Reset - User Input Enable/Disable

The EmbeddedModemResetInterfaceClient shall enable/disable (show/hide, grey-out, etc.) the Wifi Hotspot Feature Reset user interface (button/graphic) based on the following:

* When TCUAvailability\_St = (0x2) Enable, the above shall be enabled
* When TCUAvailability\_St != (0x2) Enable, the above shall be disabled (greyed-out, hidden, etc.)
  + If TCUAvailability\_St is unavailable or missing on the bus, the above shall be disabled (greyed-out, hidden, etc.)

#### EMR-REQ-275654/A-Master & Embedded Modem Reset - Completion Time

The EmbeddedModemResetServer and EmbeddedModemResetOnBoardClient shall remove all PII and application specific data within 45 seconds.

If this process fails to complete within the above time for any of the Embedded Modem Feature Resets, the EmbeddedModemResetServer shall respond to the EmbeddedModemResetInterfaceClient with EmbeddedModemReset\_St = “(0x1) Reset\_NotComplete”

### Use Cases

#### EMR-UC-REQ-275676/A-WifiHotspot Embedded Modem Reset

|  |  |
| --- | --- |
| **Actors** | Vehicle occupant |
| **Pre-conditions** | HMI display is ON |
| **Scenario Description** | The user selects <Wifi Hotspot Reset> via HMI. |
| **Post-conditions** | All applicable Wifi Hotspot settings are restored to the factory defaults or last stored values (refer to the Wifi Hotspot SPSS for applicable settings). |
| **List of Exception Use Cases** | N/A |
| **Interfaces** | G-HMI |

### White Box View

#### EMR-ACT-REQ-275677/A-Wifi Hotspot Embedded Modem Reset

Activity Diagram



#### EMR-SD-REQ-275678/B-Wifi Hotspot Embedded Modem Reset

Constraints

Pre-Condition

HMI display is ON

Scenarios

Normal Usage

The user selects <Wifi Hotspot Reset> via HMI

Post-Condition

All applicable Wifi Hotspot settings are restored to the factory defaults or last stored values

Sequence Diagram



## EMRv2-FUN-REQ-275679/A-Phone-As-A-Key - Embedded Modem Reset

### Requirements

#### EMR-REQ-275680/B-PaaK Embedded Modem Reset - InterfaceClient Request

The EmbeddedModemResetInterfaceClient shall send EmbeddedModemReset\_Rq = “(0x2) PaaK\_Reset” to the EmbeddedModemResetKeyServer when requested by the user.

#### EMR-REQ-281570/B-PaaK Embedded Modem Reset - Server Request

Upon reception of EmbeddedModemReset\_Rq = (0x2) PaaK\_Reset” from the EmbeddedModemResetInterfaceClient, the EmbeddedModemResetServer shall:

* Begin monitoring the response from the EmbeddedModemResetKeyServer to determine success/fail (per REQ- 275682)

#### EMR-REQ-281571/A-PaaK Embedded Modem Reset - KeyServer Response

The EmbeddedModemResetKeyServer shall perform the PaaK Reset and respond with PaaKInfo\_Rsp (indicating the resulting Opcode and KeyProgress) within T\_RevokeRspWait after receiving a PaaK Reset request.

#### EMR-REQ-275681/A-PaaK Embedded Modem Reset - Server Response

Upon successful completion of a PaaK Reset (see REQ-275682), the EmbeddedModemResetServer shall send EmbeddedModemReset\_St = “(0x2) PaaKReset\_Complete” to the EmbeddedModemResetInterfaceClient.

Upon a failed PaaK Reset (see REQ-275682), the EmbeddedModemResetServer shall send EmbeddedModemReset\_St = “(0x1) Reset\_NotComplete” to the EmbeddedModemResetInterfaceClient.

This transmission of the EmbeddedModemReset\_St to the EmbeddedModemResetInterfaceClient shall not be delayed or dependent on the transmission of any FTCP alert to the EmbeddedModemResetOffBoardClient.

#### EMR-REQ-275647/B-Master & Embedded Modem Reset - Request Handling

Upon receiving a Master Reset or Feature Reset request (via either FactoryReset.Rq or EmbeddedModemReset\_Rq), the EmbeddedModemResetServer shall:

* Process the request if one is not already in process
* Execute only one reset at any given time
* Ignore the request if an EmbeddedModemInterfaceClient initiated reset request is already being processed
* Queue the request if an EmbeddedModemOffBoardClient initiated reset request is already being processed. The EmbeddedModemResetServer shall process the request only after the ongoing reset has completed.

Upon receiving a ClearUserSettingsCommand (per VIN Removal), the EmbeddedModemResetServer shall:

* Process the request if one is not already in process
* Queue the request if an existing reset request is already in process. The EmbeddedModemResetServer shall process the request only after the ongoing reset has completed.

The EmbeddedModemResetServer shall persist all queued reset requests through module restarts, power on/off, ignition cycles, etc.

#### EMR-REQ-275682/A-PaaK Embedded Modem Reset - Determine Reset Fail/Success

For a PaaK Reset to be deemed successful, the EmbeddedModemResetKeyServer must successfully revoke all PaaK’s and report this to the EmbeddedModemResetServer. In order to determine and properly notify the EmbeddedModemInterfaceClient, the EmbeddedModemResetServer shall monitor PaaKInfo\_Rsp for up to T\_RevokeRspWait after receiving a PaaK Reset request.

If PaaKInfo\_Rsp is received with:

* Opcode = “Revoke All Keys (0x4)” and
* KeyProgress = “Success (0x1)”

then the EmbeddedModemResetServer shall send a “success” response to the EmbeddedModemResetInterfaceClient as detailed in REQ-275681.

If PaaKInfo\_Rsp is received with any other Opcode or KeyProgress values, then the EmbeddedModemResetServer shall send a “failed” response to the EmbeddedModemResetInterfaceClient as detailed in REQ-275681.

If a PaaKInfo\_Rsp is not received within T\_RevokeRspWait (with a CES of any “Final Result”), then the EmbeddedModemResetServer shall send a “failed” response to the EmbeddedModemResetInterfaceClient as detailed in REQ-275681.

Note: The signal above is a TP Signal, please refer to the ECG Transport Protocol SPSS for more information.

#### EMR-TMR-REQ-275683/A-T\_RevokeRspWait

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Description** | **Units** | **Range** | **Resolution** | **Default** |
| T\_RevokeRspWait | The maximum amount of time the EmbeddedModemResetServer shall wait for PaaKInfo\_Rsp before reporting “failed” to the EmbeddedModemInterfaceClient.  Note: Use default value. | sec | 55-75 | 5 | 65 |

#### EMR-REQ-275684/B-PaaK Embedded Modem Reset - Operational States

The PaaK Feature Reset shall only be permitted if the EmbeddedModemResetServer is in any of the following states:

* “Provisioned”

#### EMR-REQ-275685/A-PaaK Embedded Modem Reset - Cleared Data

The feature data to be cleared by the EmbeddedModemResetKeyServer upon a PaaK Feature Reset (per REQ-281570) shall include all relevant PaaK data as defined in the PaaK SPSS (see PaaK-REQ-234407-Master Reset).

\*\*Please refer to each feature SPSS for details on the specific settings.

#### EMR-HMI-REQ-275686/A-PaaK Embedded Modem Reset - User Input

The EmbeddedModemResetInterfaceClient shall provide a user interface (button/graphic) to perform the PaaK Feature Reset.

#### EMR-HMI-REQ-275687/A-PaaK Embedded Modem Reset - User Input Enable/Disable

The EmbeddedModemResetInterfaceClient shall enable/disable (make active/inactive, grey-out) the PaaK Feature Reset user interface (button/graphic) based on the following:

* When PaakESN\_St/BLEMProvDID = “(0x53) ReadyForKeyDelivery”, OR

PaakESN\_St/BLEMProvDID = “(0x54) KeyDelivered” the above shall be enabled

* When PaakESN\_St/BLEMProvDID != “(0x53) ReadyForKeyDelivery”, OR

PaakESN\_St/BLEMProvDID != “(0x54) KeyDelivered” the above shall be disabled (greyed-out, hidden, etc.)

Note: The signal above is a TP Signal, please refer to the APIM Transport Protocol SPSS for more information.

#### EMR-REQ-275688/D-PaaK Embedded Modem Reset - FTCP Alert

Upon completing the PaaK Feature Reset and successful confirmation of a PaaK Revoke operation (see PaaK SPSS), the EmbeddedModemResetServer shall send a CAKStatusAlert to the EmbeddedModemResetOffBoardClient indicating the change (revoke, and reason for revoke).

This alert shall include VSTAT information only when the vehicle is authorized (See CCS SPSS for authorization information).

### Use Cases

#### EMR-UC-REQ-275689/A-PaaK Embedded Modem Reset

|  |  |
| --- | --- |
| **Actors** | Vehicle occupant |
| **Pre-conditions** | HMI display is ON |
| **Scenario Description** | The user selects <Phone-As-A-Key Reset> via HMI. |
| **Post-conditions** | All applicable Phone-As-A-Key settings are restored to the factory defaults (refer to the PaaK SPSS for applicable settings). |
| **List of Exception Use Cases** | N/A |
| **Interfaces** | G-HMI |

### White Box View

#### EMR-ACT-REQ-275690/B-PaaK Embedded Modem Reset

Activity Diagram



#### EMR-SD-REQ-275691/B-PaaK Embedded Modem Reset

Constraints

Pre-Condition

HMI display is ON

Scenarios

Normal Usage

The user selects <Phone-As-A-Key Reset> via HMI

Post-Condition

All applicable Phone-As-A-Key settings are restored to the factory defaults

Sequence Diagram



## EMR-FUN-REQ-290254/A-Brand Connect - Embedded Modem Reset

This feature reset allows the user to reset all settings for the supported Embedded Modem Features without affecting the settings of any other clients or servers (ex. SYNC, AHU, DSP, etc.). The name “Brand Connect” refers to the “{Brand} Connect” dynamic label text detailed in H31a, which changes dynamically based on Ford or Lincoln configurations.

### Requirements

#### EMR-REQ-290255/B-Brand Connect Embedded Modem Reset - InterfaceClient Request

The EmbeddedModemResetInterfaceClient shall send EmbeddedModemReset\_Rq to the EmbeddedModemResetServer, EmbeddedModemResetKeyServer, and EmbeddedModemResetEVServer with the below values, under the following cases:

* EmbeddedModemReset\_Rq = “(0x5) BrandConnect\_Reset1”
  + When the user perfoms a Brand Connect Reset and the EmbeddedModemResetInterfaceClient is not configured for a HEV, BEV, or PHEV, OR
  + When the user confirms they wish to clear all EV Charge Settings with their Brand Connect Reset (when configured for HEV, BEV, or PHEV)
* EmbeddedModemReset\_Rq = “(0x6) BrandConnect\_Reset2”
  + When the user confirms they wish to retain all EV Charge Settings with their Brand Connect Reset (when configured for HEV, BEV, or PHEV)

***Note:*** Please see rule [H72a.R352] or [H72c.R352] for the relevant Hybrid vehicle type configurations.

#### EMR-REQ-290272/C-Brand Connect Embedded Modem Reset - Server Request

Upon reception of EmbeddedModemReset\_Rq from the EmbeddedModemResetInterfaceClient, the EmbeddedModemResetServer shall:

* Perform the Brand Connect Reset for any applicable internal features/functions (see REQ-290258)
  + This means internally notifying other applications/services in the EmbeddedModemResetServer that a reset is to be performed. Each application/service is responsible for clearing their own data
  + Note: The same application/service data is cleared for the Brand Connect Reset, Embedded Modem Master Reset, and VIN Removal
* Call the API, setModemMasterReset(MasterResetService = 0x0 - ResetAll) from the EmbeddedModemResetOnBoardClient.

#### EMR-REQ-290256/A-Brand Connect Embedded Modem Reset - Response

No response is required upon completion of the Brand Connect Embedded Modem Reset from the EmbeddedModemResetServer, EmbeddedModemResetKeyServer, or EmbeddedModemResetEVServer.

#### EMR-REQ-281278/C-Embedded Modem Master Reset - OnBoardClient Response

Upon completion of the Embedded Modem Master Reset, the EmbeddedModemResetOnBoardClient shall send the setModemMasterReset API response to the EmbeddedModemResetServer indicating:

* ResponseStatus = 0x00 Success, if the reset succedded
* ResponseStatus = 0x01 – 0x10 Fail, if the reset failed
  + ErrorCode shall be set to any valid code in the event of a failure

#### EMR-REQ-275647/B-Master & Embedded Modem Reset - Request Handling

Upon receiving a Master Reset or Feature Reset request (via either FactoryReset.Rq or EmbeddedModemReset\_Rq), the EmbeddedModemResetServer shall:

* Process the request if one is not already in process
* Execute only one reset at any given time
* Ignore the request if an EmbeddedModemInterfaceClient initiated reset request is already being processed
* Queue the request if an EmbeddedModemOffBoardClient initiated reset request is already being processed. The EmbeddedModemResetServer shall process the request only after the ongoing reset has completed.

Upon receiving a ClearUserSettingsCommand (per VIN Removal), the EmbeddedModemResetServer shall:

* Process the request if one is not already in process
* Queue the request if an existing reset request is already in process. The EmbeddedModemResetServer shall process the request only after the ongoing reset has completed.

The EmbeddedModemResetServer shall persist all queued reset requests through module restarts, power on/off, ignition cycles, etc.

#### EMR-REQ-290257/B-Brand Connect Embedded Modem Reset - Server Operational States

The Brand Connect Embedded Modem Reset shall only be performed by the EmbeddedModemResetServer if the EmbeddedModemResetServer is in any of the following states:

* “Provisioned”

#### EMR-REQ-290480/A-Brand Connect Embedded Modem Reset - OnBoardClient Operational States

The Brand Connect Embedded Modem Reset shall only be performed by the EmbeddedModemResetOnBoardClient if the EmbeddedModemResetOnBoardClient is in any of the following states:

* “Provisioned”

#### EMR-REQ-290258/C-Brand Connect Embedded Modem Reset - Cleared Data

The feature data to be cleared by the EmbeddedModemResetServer, EmbeddedModemResetInterfaceClient, EmbeddedModemResetOnBoardClient, EmbeddedModemResetKeyServer, and EmbeddedModemResetEVServer upon a Brand Connect Embedded Modem Reset (per REQ-278412) may contain settings pertaining to:

* ECG Common Functions
* Embedded Modem Common Functions
* Control My Car
* Vehicle Health Report
* Wifi Hotspot
* In Vehicle Software Update
* Online Traffic
* Connectivity Customer Settings
* PaaK
* EV Charge Programming
* DVD
* Plug and Charge

\*\***Note**: Please refer to each relevant feature SPSS for details/requirements regarding the specific content/data to be cleared upon a reset.

#### EMR-HMI-REQ-290259/A-Brand Connect Embedded Modem Reset - User Input

The EmbeddedModemResetInterfaceClient shall provide a user interface (button/graphic) to perform the Brand Connect Feature Reset. It shall also provide a means to differentiate between the two types of Brand Connect Feature Resets detailed in REQ-290255.

#### EMR-HMI-REQ-290260/B-Brand Connect Embedded Modem Reset - User Input Enable/Disable

The Brand Connect Feature Reset user interface (button/graphic/popup) used to differentiate between the two Brand Connect Feature Resets (REQ-290255) shall be offered/shown based on:

* HEV, BEV, and PHEV configs. on EmbeddedModemResetInterfaceClient
  + When configured for HEV, BEV, or PHEV, the user interface shall be offered/shown
  + When not configured for HEV, BEV, or PHEV, the user interface shall not be offered/shown
* Please see rule [H72a.R352] or [H72c.R352] for the relevant Hybrid vehicle type configurations.

#### EMR-REQ-290261/A-Brand Connect Embedded Modem Reset - Software Retention

The feature data to be cleared shall operate only the Method-2, Method-3, and GMRDB based configurations. There shall not be any changes to the EmbeddedModemResetServer, EmbeddedModemResetOnBoardClient, EmbeddedModemResetKeyServer, or EmbeddedModemResetEVServer software.

#### EMR-REQ-290262/C-Brand Connect Embedded Modem Reset - FTCP Alert

Upon completing the Brand Connect Embedded Modem Reset, the EmbeddedModemResetServer shall send a MasterResetAlert to the EmbeddedModemResetOffBoardClient indicating that a “Brand Connect Reset” was performed.

This alert shall be sent by the EmbeddedModemResetServer whether the vehicle is authorized or not (See CCS SPSS for authorization information).

This alert shall include VSTAT information only when the vehicle is authorized (See CCS SPSS for authorization information).

#### EMR-REQ-290263/A-Brand Connect Embedded Modem Reset - FTCP Alert Queing

The EmbeddedModemResetServer shall queue the MasterResetAlert (to be sent per REQ-290262) in case of a connectivity issue with the EmbeddedModemResetOffBoardClient.

#### EMR-REQ-275654/A-Master & Embedded Modem Reset - Completion Time

The EmbeddedModemResetServer and EmbeddedModemResetOnBoardClient shall remove all PII and application specific data within 45 seconds.

If this process fails to complete within the above time for any of the Embedded Modem Feature Resets, the EmbeddedModemResetServer shall respond to the EmbeddedModemResetInterfaceClient with EmbeddedModemReset\_St = “(0x1) Reset\_NotComplete”

#### EMR-REQ-275656/A-Embedded Modem Master Reset - Buffered AVD Data

The EmbeddedModemResetServer shall remove any buffered AVD data upon an Embedded Modem Master Reset (per REQ-275645) or a VIN Removal (per REQ-275663, REQ-275664, REQ-275665). Please refer to DVD SPSS for more details on buffered data.

### Use Cases

#### EMR-UC-REQ-290264/A-Brand Connect Embedded Modem Reset & Clear EV Settings

|  |  |
| --- | --- |
| **Actors** | Vehicle occupant |
| **Pre-conditions** | HMI display is ON |
| **Scenario Description** | The user selects <Brand Connect Reset> via HMI and confirms they would like to remove all EV Charge Settings. |
| **Post-conditions** | All applicable Brand Connect settings are restored to the factory defaults (refer to the TCU Common Embedded Modem SPSS, Wifi Hotspot SPSS, CCS SPSS, PaaK SPSS, Online Traffic SPSS, EV SPSS for applicable settings/default values or more feature specific requirements).  EmbeddedModemResetEVServer is disconnected from the EmbeddedModemResetOffboardClient. |
| **List of Exception Use Cases** | N/A |
| **Interfaces** | G-HMI |

#### EMR-UC-REQ-290265/A-Brand Connect Embedded Modem Reset & Retain EV Settings

|  |  |
| --- | --- |
| **Actors** | Vehicle occupant |
| **Pre-conditions** | HMI display is ON |
| **Scenario Description** | The user selects <Brand Connect Reset> via HMI and confirms they would not like to remove all EV Charge Settings. |
| **Post-conditions** | All applicable Brand Connect settings are restored to the factory defaults (refer to the TCU Common Embedded Modem SPSS, Wifi Hotspot SPSS, CCS SPSS, PaaK SPSS, Online Traffic SPSS for applicable settings/default values or more feature specific requirements).  EmbeddedModemResetEVServer is disconnected from the EmbeddedModemResetOffboardClient.  All EV Charge Settings are retained. |
| **List of Exception Use Cases** | N/A |
| **Interfaces** | G-HMI |

### White Box View

#### EMR-ACT-REQ-290266/D-Brand Connect Embedded Modem Reset

Activity Diagram



#### EMR-SD-REQ-290267/D-Brand Connect Embedded Modem Reset

Constraints

Pre-Condition

HMI display is ON

Scenarios

Normal Usage

The user selects <Brand Connect Reset> via HMI

Post-Condition

All applicable settings are restored to the factory defaults

Sequence Diagram



# Appendix: Reference Documents

|  |  |
| --- | --- |
| Reference # | Document Title |
| 1 | EV Charge Programming SPSS |
| 2 | Embedded Modem Common Functions SPSS |
| 3 | ECG Common Functions SPSS |
| 4 | Control My Car Client v2 TCU SPSS |
| 5 | Vehicle Health Report TCU SPSS |
| 6 | WiFi Hotspot Server v2 SPSS |
| 7 | TCU In Vehicle Software Update SPSS |
| 8 | Online Traffic TCU SPSS |
| 9 | CCOI (CCS) Server SPSS |
| 10 | PaaK SPSS |
| 11 | APIM Transport Protocol SPSS |
| 12 | ECG Transport Protocol SPSS |
| 13 | Dynamic Vehicle Data Client SPSS |
| 14 | Plug and Charge SPSS |
| 15 |  |