Research & Vehicle Technology
"Infotainment Systems Product Development"

Feature – Embedded Modem Reset OnBoardClient v2

Infotainment Subsystem Part Specific Specification (SPSS)

Version 1.4
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FORD CONFIDENTIAL

Revision History

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
	IIR-REQ-275699/B-EmbeddedModemResetOnBoardClientInterface_Tx	MBORREL4: Updated mapping table
	MD-REQ-276513/B-setModemMasterReset	MBORREL4: Updated ErrorCode
	MD-REQ-276993/B-setWifiHotspotReset	MBORREL4: Updated ErrorCode
	IIR-REQ-275700/B-EmbeddedModemResetOnBoardClientInterface_Rx	MBORREL4: Updated mapping table
	MD-REQ-276513/B-setModemMasterReset	MBORREL4: Updated ErrorCode
	MD-REQ-276993/B-setWifiHotspotReset	MBORREL4: Updated ErrorCode
	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	

IIR-REQ-275699/C-EmbeddedModemResetOnBoardClientInterface_Tx	MBORREL4: Removed REQ-276993 (merged into REQ-276513), removed API mapping table
MD-REQ-276513/C-setModemMasterReset	MBORREL4: Updated per platform team implementation (one API for both Master and Wifi feature resets)
IIR-REQ-275700/C-EmbeddedModemResetOnBoardClientInterface_Rx	MBORREL4: Removed REQ-276993 (merged into REQ-276513), removed API mapping table
MD-REQ-276513/C-setModemMasterReset	MBORREL4: Updated per platform team implementation (one API for both Master and Wifi feature resets)
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
	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		
		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

Table of Contents

1 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.

2 Architectural Design

2.1 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

2.2 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

2.3 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

2.4 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

2.5 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

2.6 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.

2.7 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

2.8 EmbeddedModemResetOnBoardClient Interface

2.8.1 IIR-REQ-275699/C-EmbeddedModemResetOnBoardClientInterface_Tx

The EmbeddedModemResetOnBoardClientInterface_Tx represents all the Embedded Modem Reset feature related signals and SoA API's sent by the EmbeddedModemResetOnBoardClient 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
TCUAvailability_St	Type	WifiEnbl_D_Stat

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

2.8.1.1 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	

2.8.1.2 MD-REQ-276513/C-setModemMasterReset

This API is used to request a Master Reset or Feature Reset of the EmbeddedModemResetOnBoardClient. The EmbeddedModemResetOnBoardClient also uses this API for its response.

Method Type	One-Shot (Synch)
QoS Level	Default
Retained	No

R/O	Name	Type	Literals	Value	Description
Request					
R	MasterResetService	Enum	-	-	N/A
			Reset All	0x0	Used to indicate a Master Reset
			Reset WLAN Only	0x1	Used to indicate a WifiHotspot Reset
Response					
R	ResponseStatus	Enum	-	-	Used to indicate the success or failure of the requested Reset
			Success	0x00	
			Wait	0x01	
			Fail-Param Does Not Exist	0x02	
			Fail-Param Read Only	0x03	
			Fail-Param Out Of Range	0x04	

			Fail-Param Size Incorrect	0x05	
			Fail-Unknown Command Type	0x06	
			Fail-TCU Internal Error	0x07	
			Fail-Command Already In Progress	0x08	
			Fail-Comman Not Permitted	0x09	
			Fail-Internal Memory Error	0x0A	
			Fail-Invalid Config Data	0x0B	
			Fail-Part2No Mismatch	0x0C	
			Fail-Invalid Apply Type Combo	0x0D	
			Fail-Access Denied	0x0E	
			Fail-Config Item Mismatch	0x0F	
			Fail-Already In Same State	0x10	
O	ErrorCode	Enum	-	-	To indicate a feature specific error code (see IVI-SOA-FUR-REQ-277456 for full list of errors)
			No Error	0x000	
			Response Time Error	0x001	
			Cancel Time Error	0x002	
			…	…	
				0xFFF	

2.8.2   IIR-REQ-275700/C-EmbeddedModemResetOnBoardClientInterface_Rx

The EmbeddedModemResetOnBoardClientInterface_Rx represents all the Embedded Modem Reset feature related API's received by the EmbeddedModemResetOnBoardClient object.

2.8.2.1   MD-REQ-276513/C-setModemMasterReset

This API is used to request a Master Reset or Feature Reset of the EmbeddedModemResetOnBoardClient. The EmbeddedModemResetOnBoardClient also uses this API for its response.

Method Type	One-Shot (Synch)				
QoS Level	Default				
Retained	No				
R/O	**Name**	**Type**	**Literals**	**Value**	**Description**
Request					
R	MasterResetService	Enum	-	-	N/A
			Reset All	0x0	Used to indicate a Master Reset
			Reset WLAN Only	0x1	Used to indicate a WifiHotspot Reset
Response					
R	ResponseStatus	Enum	-	-	Used to indicate the success or failure of the requested Reset
			Success	0x00	

			Wait	0x01	
			Fail-Param Does Not Exist	0x02	
			Fail-Param Read Only	0x03	
			Fail-Param Out Of Range	0x04	
			Fail-Param Size Incorrect	0x05	
			Fail-Unknown Command Type	0x06	
			Fail-TCU Internal Error	0x07	
			Fail-Command Already In Progress	0x08	
			Fail-Comman Not Permitted	0x09	
			Fail-Internal Memory Error	0x0A	
			Fail-Invalid Config Data	0x0B	
			Fail-Part2No Mismatch	0x0C	
			Fail-Invalid Apply Type Combo	0x0D	
			Fail-Access Denied	0x0E	
			Fail-Config Item Mismatch	0x0F	
			Fail-Already In Same State	0x10	
O	ErrorCode	Enum	-	-	To indicate a feature specific error code (see IVI-SOA-FUR-REQ-277456 for full list of errors)
			No Error	0x000	
			Response Time Error	0x001	
			Cancel Time Error	0x002	
			…	…	
				0xFFF	

3 General Requirements

3.1 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.

3.2 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

4   Functional Definition

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

4.1.1   Requirements

4.1.1.1   *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)
    - o   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
    - o   <u>Note:</u> 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

4.1.1.2   *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.

4.1.1.3   *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
    - o   ErrorCode shall be set to any valid code in the event of a failure

4.1.1.4   *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.

4.1.1.5   *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"

4.1.1.6   *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"

4.1.1.7 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.

4.1.1.8 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.

4.1.1.9 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).

4.1.1.10 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.

4.1.1.11 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"

4.1.1.12 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.

4.1.1.13 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

4.1.1.14 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.

4.1.1.15 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.

4.1.1.16 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.

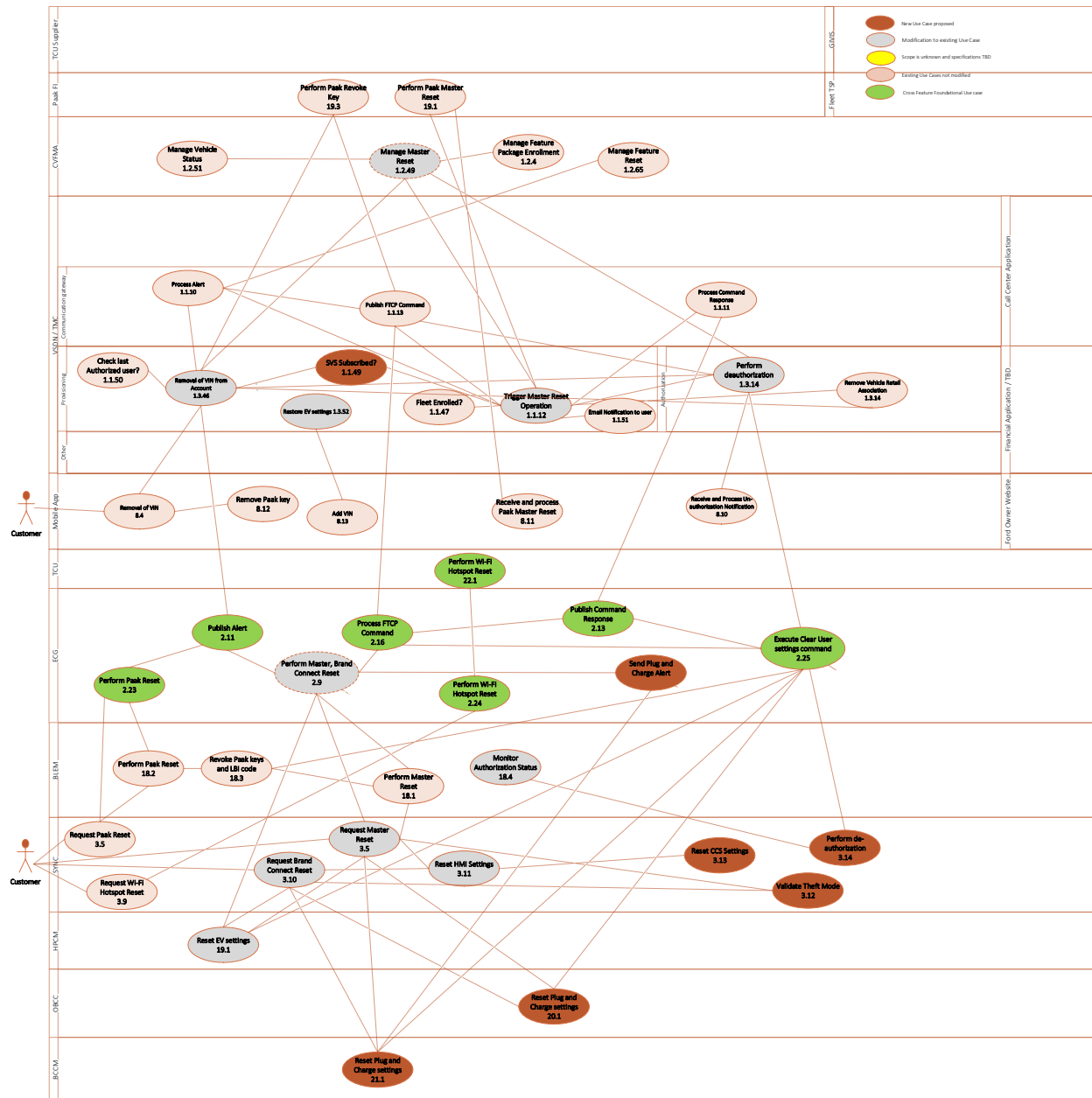After the module reboot is complete, the flag shall be set to "false."

4.1.2 Use Cases

4.1.2.1 UCD-REQ-275657/B-Reset Feature

**Use Case Diagram**

Master Reset, Brand Connect Reset, Feature Feature

4.1.2.2 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

4.1.2.3 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

4.1.3 White Box View

4.1.3.1 EMR-ACT-REQ-275659/D-Embedded Modem Master Reset
Activity Diagram
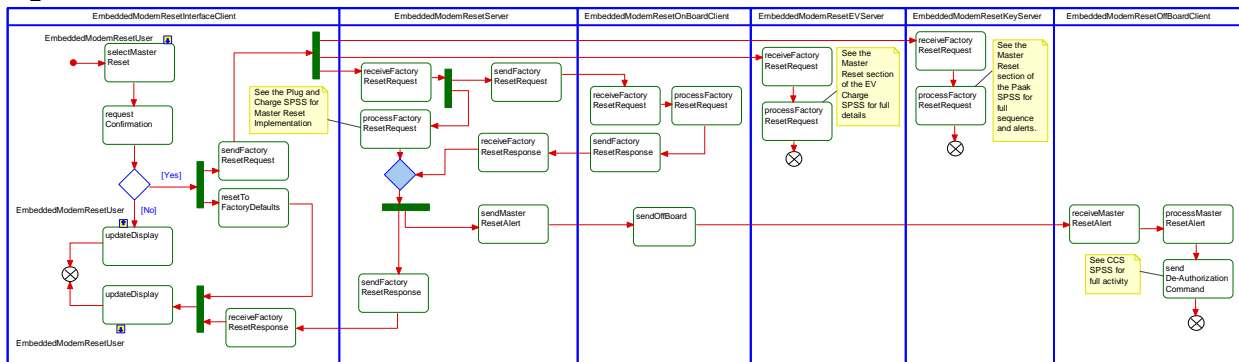
4.1.3.2 EMR-SD-REQ-275660/D-Embedded Modem Master Reset
Constraints
Pre-Condition
HMI display is ON

Scenarios

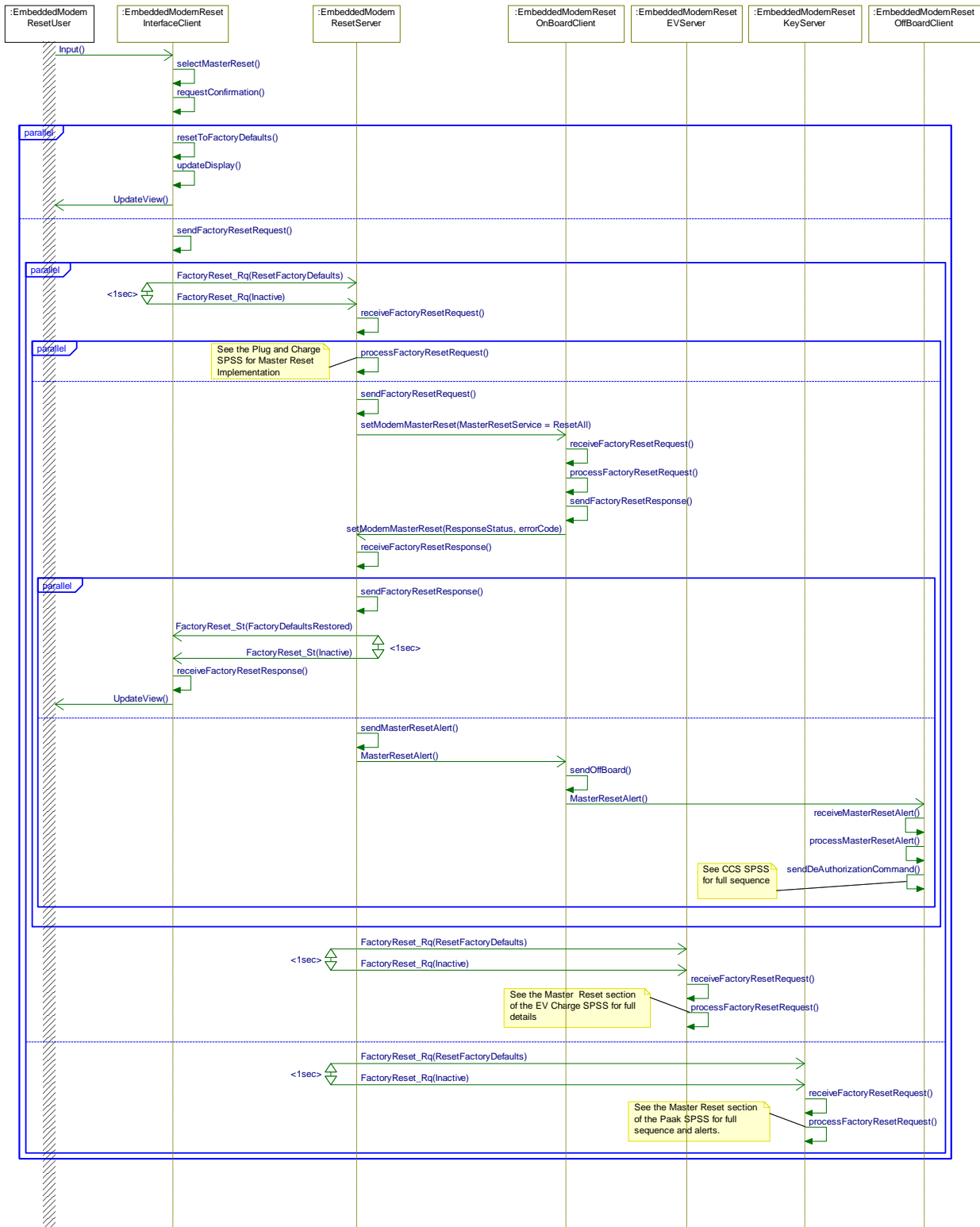### Normal Usage
The user selects <Master Reset> via HMI

Post-Condition
All applicable settings are restored to the factory defaults

Sequence Diagram

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

4.2.1 Requirements

4.2.1.1 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:
   a. 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::
   a. ClearUserSettingsCommand (see REQ-275663)
   b. AuthorizationStatusChangeCommand (see CCS SPSS)
   c. PaaK Revoke process (based on de-auth state change, see BLEM PaaK SPSS)

*Please refer to sequence diagram REQ-275668.

4.2.1.2 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
  - o 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
  - o 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
  - o This response shall include VSTAT information only when the vehicle is authorized (See CCS SPSS for authorization information).

4.2.1.3 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.

4.2.1.4 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.

4.2.1.5 *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.

4.2.2 Use Cases

4.2.2.1 *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

4.2.3 White Box View

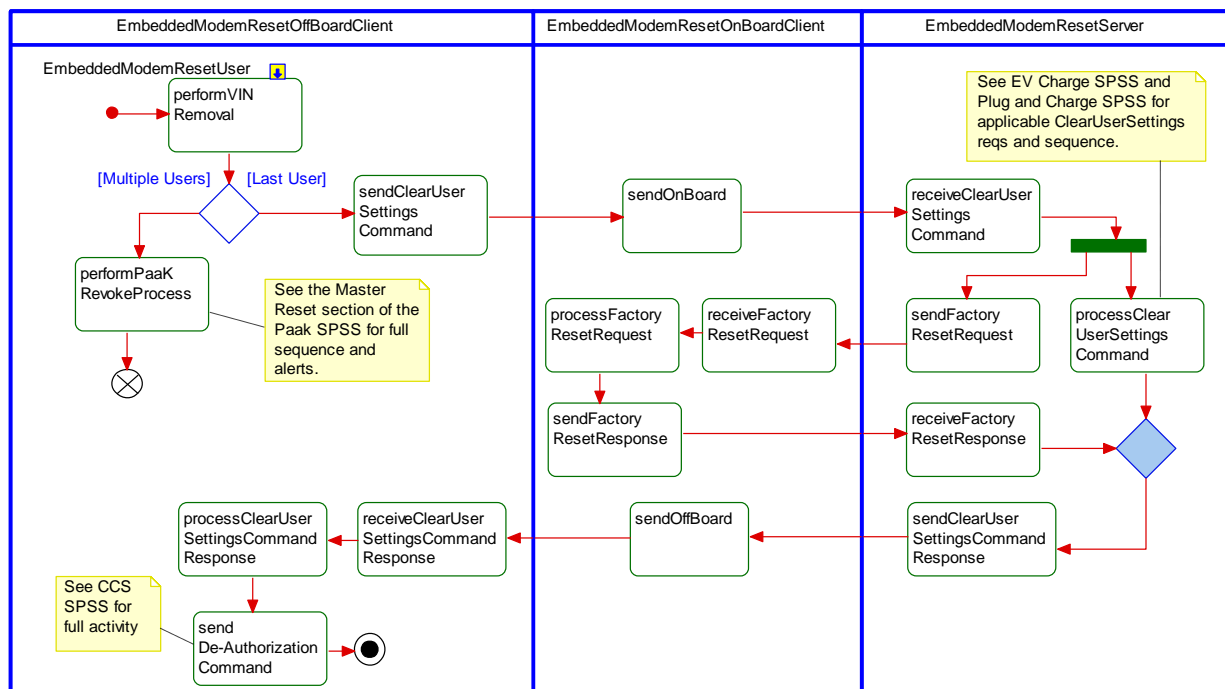### 4.2.3.1 *EMR-ACT-REQ-275667/C-Removal Of VIN From Account*
Activity Diagram

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

Constraints

Pre-Condition
HMI display is ON
EmbeddedModemResetServer is Provisioned

Scenarios

Normal Usage
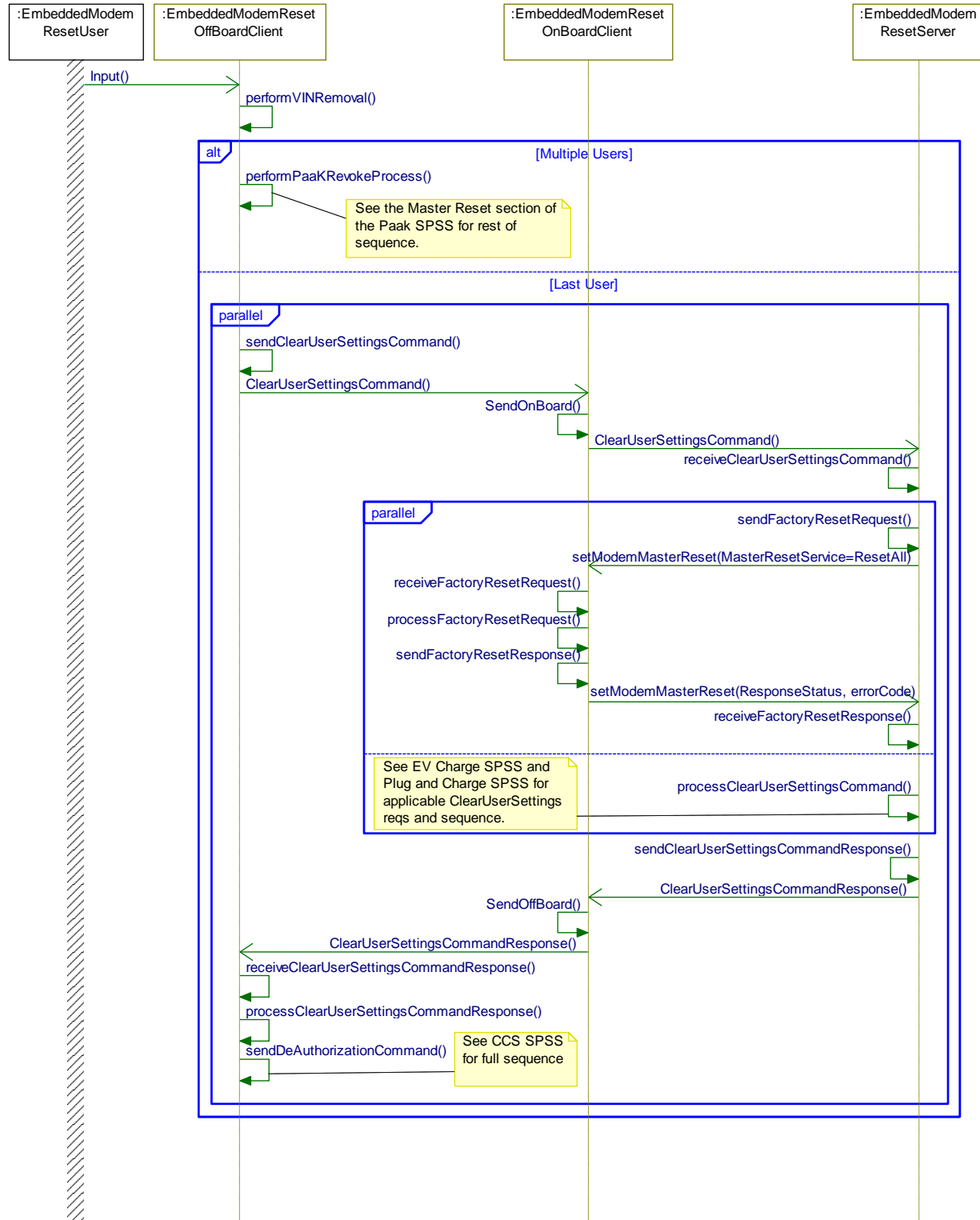The user removed VIN from account via Mobile App

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

:EmbeddedModem
ResetUser

:EmbeddedModemReset
OffBoardClient

:EmbeddedModemReset
OnBoardClient

:EmbeddedModem
ResetServer

Input()

performVINRemoval()

alt

[Multiple Users]

performPaaKRevokeProcess()

See the Master Reset section of the Paak SPSS for rest of sequence.

[Last User]

parallel

sendClearUserSettingsCommand()

ClearUserSettingsCommand()

SendOnBoard()

ClearUserSettingsCommand()

receiveClearUserSettingsCommand()

parallel

sendFactoryResetRequest()

setModemMasterReset(MasterResetService=ResetAll)

receiveFactoryResetRequest()

processFactoryResetRequest()

sendFactoryResetResponse()

setModemMasterReset(ResponseStatus, errorCode)

receiveFactoryResetResponse()

See EV Charge SPSS and Plug and Charge SPSS for applicable ClearUserSettings reqs and sequence.

processClearUserSettingsCommand()

sendClearUserSettingsCommandResponse()

ClearUserSettingsCommandResponse()

SendOffBoard()

ClearUserSettingsCommandResponse()

receiveClearUserSettingsCommandResponse()

processClearUserSettingsCommandResponse()

sendDeAuthorizationCommand()

See CCS SPSS for full sequence

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

4.3.1 Requirements

4.3.1.1 *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.

4.3.1.2 *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.

4.3.1.3 *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

4.3.1.4 *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.

4.3.1.5 *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.

4.3.1.6 *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"

4.3.1.7 *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.

4.3.1.8   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.

4.3.1.9   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.)

4.3.1.10   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"

4.3.2   Use Cases

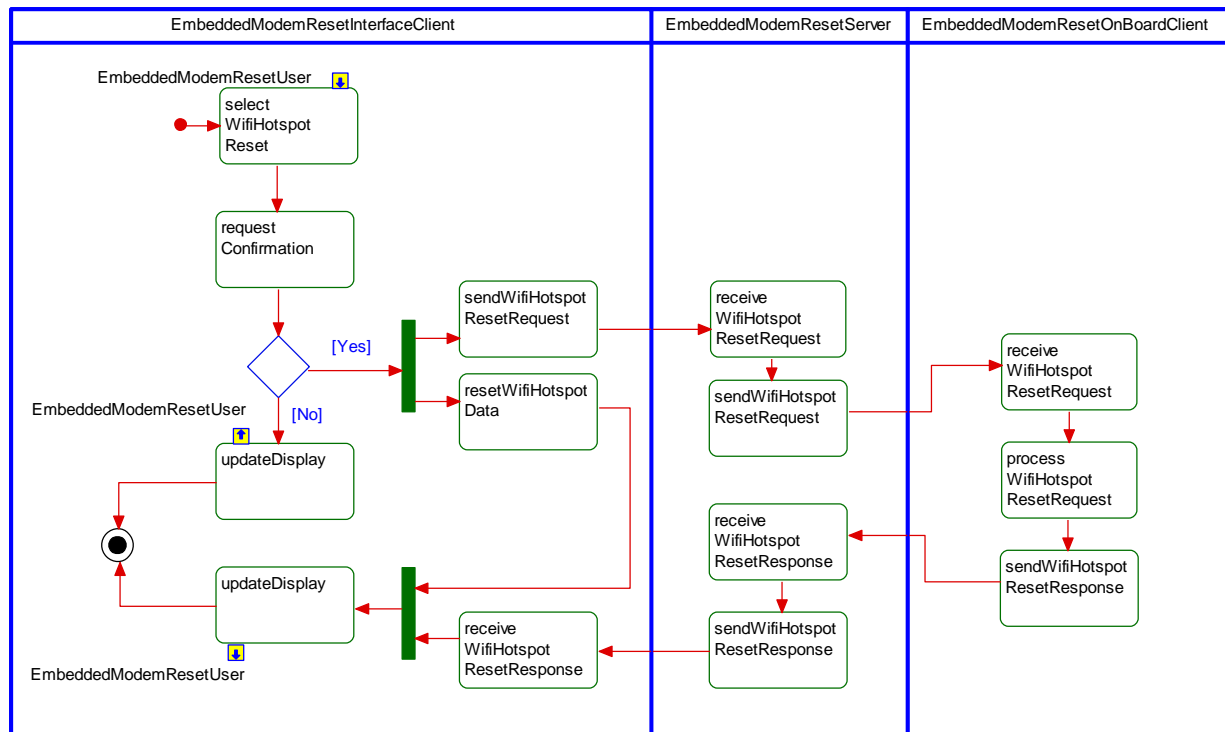### *4.3.2.1   EMR-UC-REQ-275676/A-WifiHotspot Embedded Modem Reset*

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

4.3.3   White Box View

4.3.3.1   EMR-ACT-REQ-275677/A-Wifi Hotspot Embedded Modem Reset
Activity Diagram

4.3.3.2   EMR-SD-REQ-275678/B-Wifi Hotspot Embedded Modem Reset
Constraints
> **Pre-Condition**
> HMI display is ON

Scenarios
> **Normal Usage**
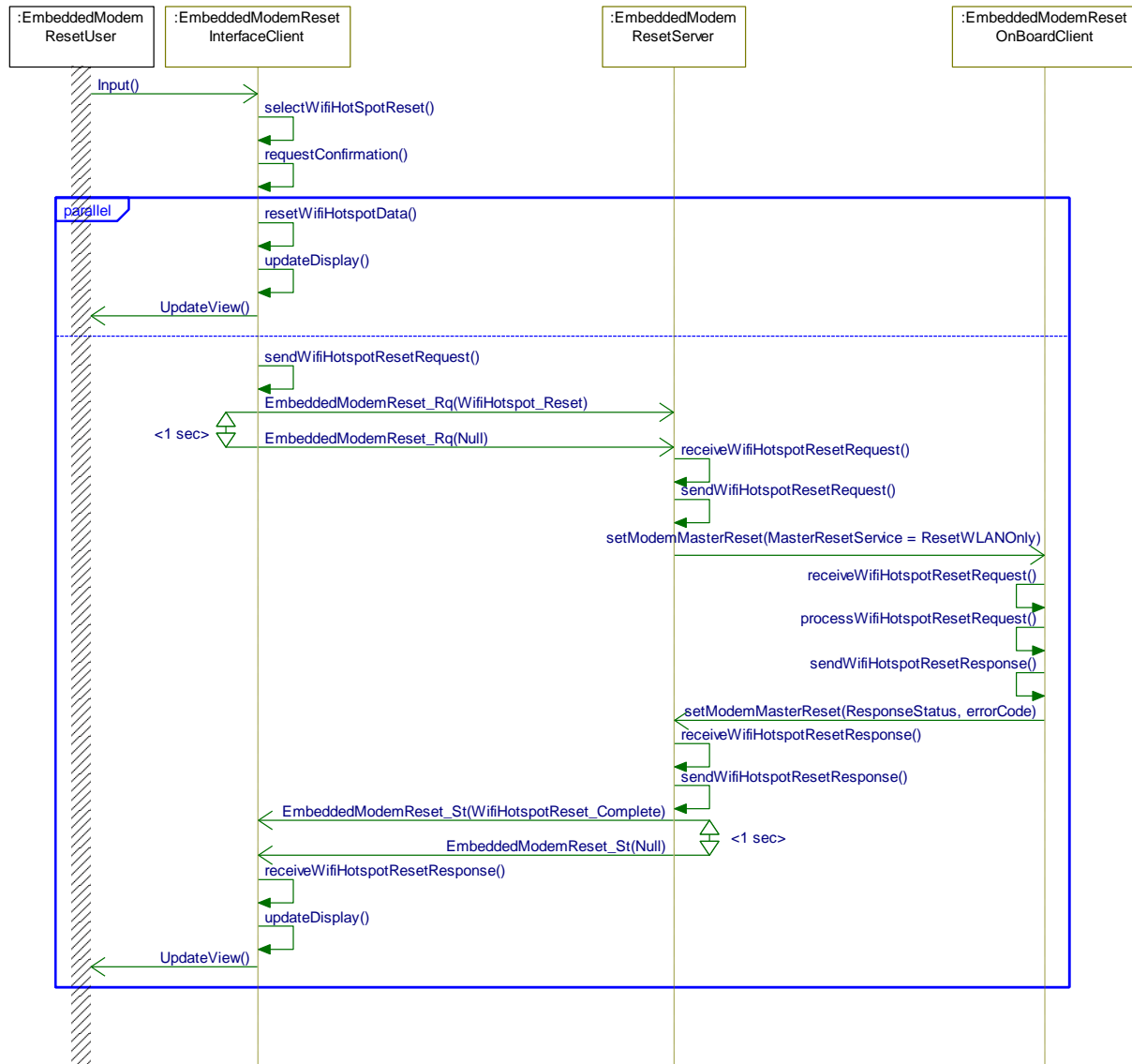> The user selects <Wifi Hotspot Reset> via HMI
>
> **Post-Condition**
> All applicable Wifi Hotspot settings are restored to the factory defaults or last stored values

Sequence Diagram

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

4.4.1 Requirements

4.4.1.1 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.

4.4.1.2 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)

4.4.1.3 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.

4.4.1.4 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.

4.4.1.5 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.

4.4.1.6 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.

4.4.1.7   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

4.4.1.8   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"

4.4.1.9   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.

4.4.1.10   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.

4.4.1.11   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.

4.4.1.12   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).

4.4.2   Use Cases

4.4.2.1   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

4.4.3   White Box View

4.4.3.1   EMR-ACT-REQ-275690/B-PaaK Embedded Modem Reset
Activity Diagram
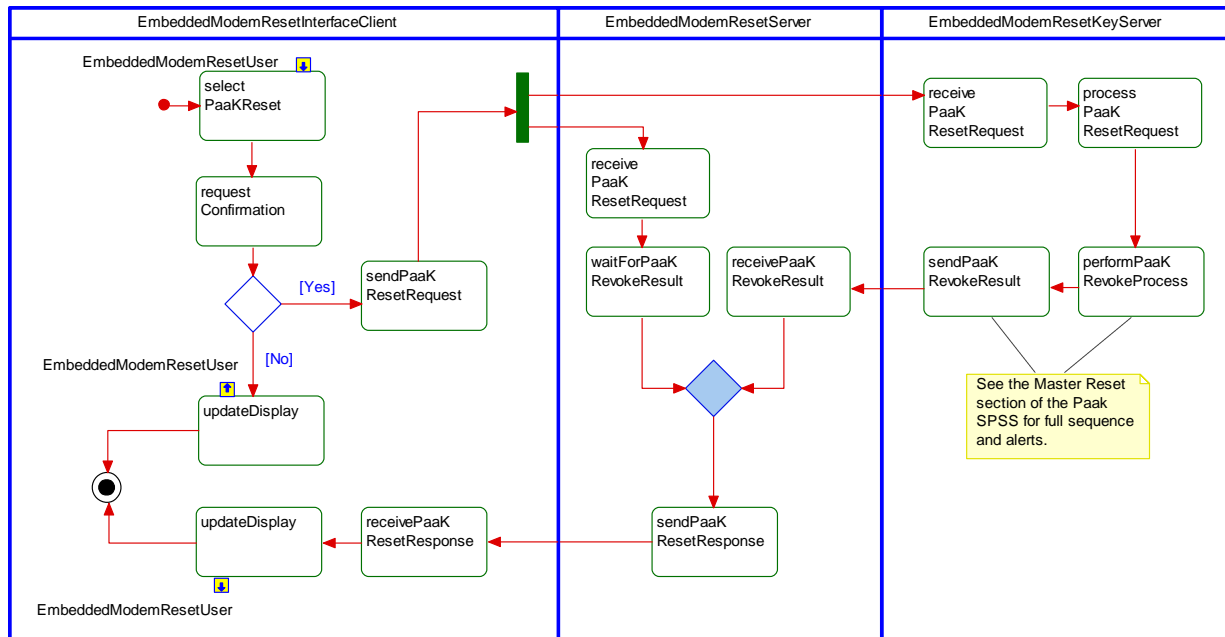
4.4.3.2   EMR-SD-REQ-275691/B-PaaK Embedded Modem Reset
Constraints
    Pre-Condition
    HMI display is ON

Scenarios
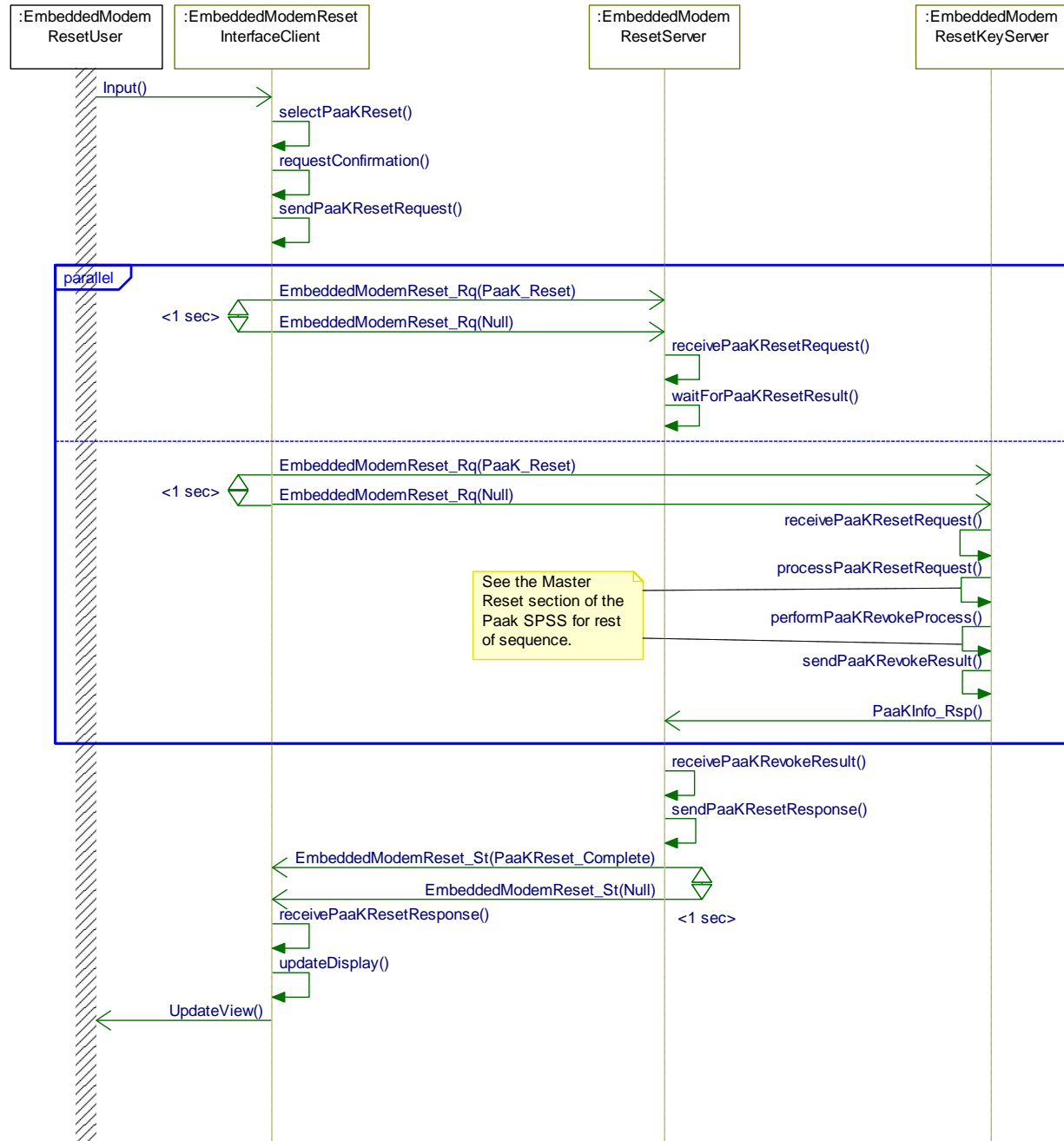   **Normal Usage**
    The user selects <Phone-As-A-Key Reset> via HMI

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

Sequence Diagram

Participants:
- :EmbeddedModem ResetUser
- :EmbeddedModemReset InterfaceClient
- :EmbeddedModem ResetServer
- :EmbeddedModem ResetKeyServer

Input()
selectPaaKReset()
requestConfirmation()
sendPaaKResetRequest()

parallel

EmbeddedModemReset_Rq(PaaK_Reset)
<1 sec> EmbeddedModemReset_Rq(Null)
receivePaaKResetRequest()
waitForPaaKResetResult()

EmbeddedModemReset_Rq(PaaK_Reset)
<1 sec> EmbeddedModemReset_Rq(Null)
receivePaaKResetRequest()
processPaaKResetRequest()

See the Master Reset section of the Paak SPSS for rest of sequence.

performPaaKRevokeProcess()
sendPaaKRevokeResult()
PaaKInfo_Rsp()

receivePaaKRevokeResult()
sendPaaKResetResponse()

EmbeddedModemReset_St(PaaKReset_Complete)
EmbeddedModemReset_St(Null)
<1 sec>
receivePaaKResetResponse()
updateDisplay()
UpdateView()

4.5 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.

4.5.1   Requirements

4.5.1.1   *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"
    - o When the user perfoms a Brand Connect Reset and the EmbeddedModemResetInterfaceClient is not configured for a HEV, BEV, or PHEV, OR
    - o 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"
    - o 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.

4.5.1.2   *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)
    - o 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
    - o 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.

4.5.1.3   *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.

4.5.1.4   *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
    - o ErrorCode shall be set to any valid code in the event of a failure

4.5.1.5   *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.

4.5.1.6 *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"

4.5.1.7 *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"

4.5.1.8 *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.

4.5.1.9 *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.

4.5.1.10 *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.

4.5.1.11 *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.

4.5.1.12 *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).

4.5.1.13 *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.

4.5.1.14 *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"

4.5.1.15 *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.

4.5.2   Use Cases

4.5.2.1   **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

4.5.2.2   **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

4.5.3   White Box View

4.5.3.1   EMR-ACT-REQ-290266/D-Brand Connect Embedded Modem Reset
Activity Diagram
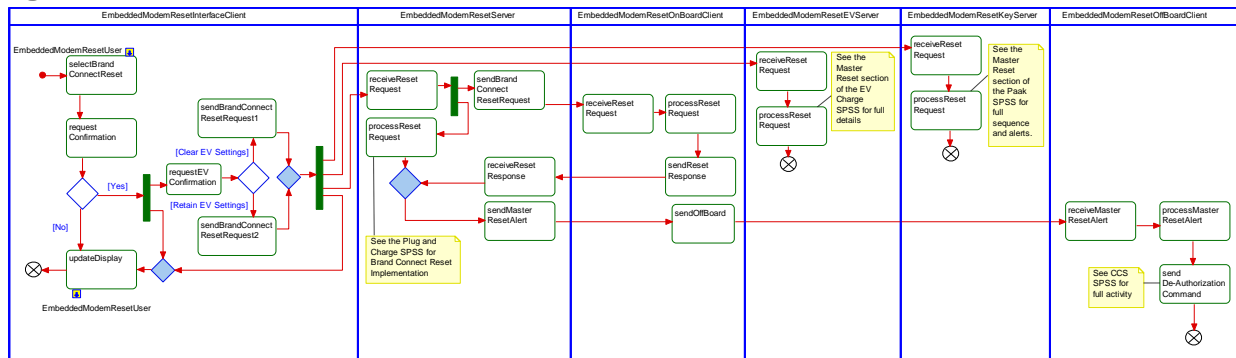
4.5.3.2   EMR-SD-REQ-290267/D-Brand Connect Embedded Modem Reset
Constraints
Pre-Condition
HMI display is ON

Scenarios
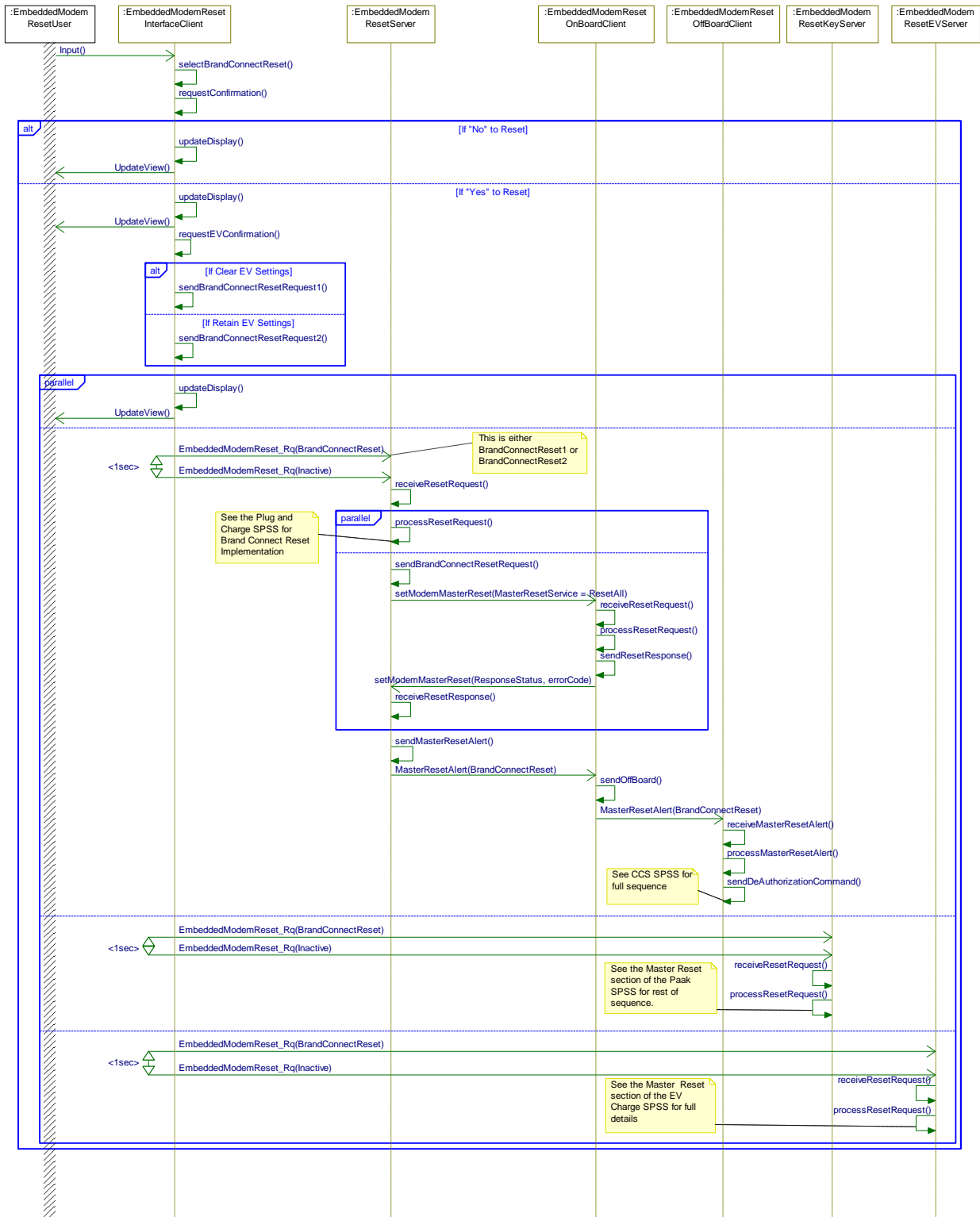### **Normal Usage**
The user selects <Brand Connect Reset> via HMI

Post-Condition
All applicable settings are restored to the factory defaults

Sequence Diagram

5   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	