

**Research & Vehicle Technology**

**“Infotainment Systems Product Development”**

**Feature – Rocket Setup Server**

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

Version 1.1

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**FORD CONFIDENTIALF**

**Revision History**

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# Overview

Rocket Setup is a feature that enables customers to select a set of preferences, via a FordPass application, for their recently purchased vehicle before they take ownership. Through Rocket Setup, the vehicle is already setup with the customer’s preferences when they interact with the vehicle for the first time.

The core preferences/settings supported by this feature are:

* Name and Photo/Avatar
* Navigation Home/Work/Favorites
* EV Charge Departure Times
* Radio Presets (ex. FM/AM/Sirius)
* Ambient Lighting
* Apps (Apps Anywhere Phase 1)

This feature has an objective to improve dealership handover process of new vehicles, increase Ford Pass downloads, increase loyalty/satisfaction of customers and decrease customer complains related to navigation settings and mobile phone-vehicle pairing.

Rocket Setup will allow the customer to use a mobile phone, computer, or Ford kiosk in a dealership to select their preferences. The preferences will only be available to a vehicle after a first time purchase (not available to re-sale vehicles), and they will be sent to the vehicle one-time only (this is not a continuous app experience, app preference management, or preference synchronization).

## Terms and Definitions

|  |  |
| --- | --- |
| **Abbreviation** | **Description** |
| CAN | Controller Area Network |
| CCS | Customer Connectivity Setting |
| DID | Data Identifier |
| FCI | Ford Cloud Interface |
| FNV2.0 | Fully Networked Vehicle 2nd Generation |
| FTCP | Ford Telematics Communication Protocol |
| IPPT | IP pass-through |
| POI | Points of interest |
| PPP | Portable Personal Profiles |
| RS | Rocket Setup |
| SDN | Service Delivery Network |
| SOA | Service Oriented Architecture |
| SPSS | Subsystem Part Specific Specification |
| WIR | Wireless Interface Router |

|  |  |
| --- | --- |
| **Term** | **Description** |
| RS Settings | The settings or preferences selected by the user via the RSOffBoardClient to be loaded in-vehicle |
| RS Settings payload | Specifically referring to the FTCP payload containing the RS Settings |
| SyncP | A Ford standard mechanism for secure communication. |
| Final Purchase Flag | The event/flag used to indicate Final Purchase and transfer of ownership from Ford to the customer |

# Architectural Design

## Boundary Diagram

### RKS-BD-REQ-360828/A-RS Boundary Diagram



## RKS-CLD-REQ-354834/A-Rocket Setup Server

The Rocket Setup Server (RSServer) is responsible for the tasks listed below:

* Receive payload from RSOffBoardClient
* Send acknowledgement to RSOffBoardClient
* Push payload to all RSClients using existing interfaces

Please review the implementation guide/ block diagram to locate the Rocket Setup Server class.

## RKS-CLD-REQ-354836/A-Rocket Setup OffBoard Client

The Rocket Setup OffBoardClient (RSOffBoardClient) is responsible for the tasks listed below:

* Receive user input via FordPass
* Compile user preferences into payload
* Send payload to RSServer
* Receive acknowledgement from RSServer

Please review the implementation guide/ block diagram to locate the Rocket Setup OffBoardClient class.

## RKS-CLD-REQ-354835/A-Rocket Setup Client

The Rocket Setup Client (RSClient) is responsible for the tasks listed below:

* Receive and save settings from RSServer

Please review the implementation guide/ block diagram to locate the Rocket Setup Client class.

## Physical Mapping of Classes

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

|  |  |
| --- | --- |
| **Logical Class** | **Physical Module (ECU)** |
| RSServer | SYNC |
| RSOffBoardClient | SDN |
| RSClient | AHU, BCM, HPCM, etc. |

## RSServer Interface

### RKS-IIR-REQ-354840/A-RSServer\_Rx

#### MD-REQ-361425/A-RSCommand

Message Type: FTCP

This message is used to send the RS Settings payload to the RSServer.

**Note:** Refer to the latest “Ford Telematics Communication Protocol Specification” and Protofile for the most up to date FTCP messages/definitions.

|  |  |
| --- | --- |
| **Command** | **Description** |
| RSCommand | Command sent from the RSOffBoardClient to the RSServer including the RS Settings payload. |

#### MD-REQ-361428/A-BLECommand (China Will not have BLE soluotion)

Message Type: FTCP

This message is used to send the BLE auto-pair key the RSServer.

**Note:** Refer to the latest “Ford Telematics Communication Protocol Specification” and Protofile for the most up to date FTCP messages/definitions.

|  |  |
| --- | --- |
| **Command** | **Description** |
| BLECommand | Command sent from the RSOffBoardClient to the RSServer including the BLE auto-pair key. |

#### MD-REQ-027149/A-IgnitionStatus\_St (TcSE ROIN-225464-1)

Message Type: Status

Signal used to indicate ignition state.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Literals** | **Value** | **Description** |
| Type | - | - | Indicates ignition state |
|  | Unknown | 0x0 |  |
|  | Off | 0x1 |  |
|  | Accessory | 0x2 |  |
|  | Run | 0x4 |  |
|  | Start | 0x8 |  |
|  | Invalid | 0xF |  |

#### MD-REQ-028253/A-GearLeverPosition\_St (TcSE ROIN-282103-1)

Message Type: Status

Status used to indicate the current gear selected.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Literals** | **Value** | **Description** |
| Type | - | - | Used to indicate current gear selected. |
|  | Park | 0x0 |  |
|  | Reverse | 0x1 |  |
|  | Neutral | 0x2 |  |
|  | Drive | 0x3 |  |
|  | Sport\_DriveSport | 0x4 |  |
|  | Low | 0x5 |  |
|  | First | 0x6 |  |
|  | Second | 0x7 |  |
|  | Third | 0x8 |  |
|  | Fourth | 0x9 |  |
|  | Fifth | 0xA |  |
|  | Sixth | 0xB |  |
|  | Undefined\_Treat\_as\_Fault | 0xC |  |
|  | Undefined\_Treat\_as\_Fault1 | 0xD |  |
|  | Unknown\_Position | 0xE |  |
|  | Fault | 0xF |  |

#### MD-REQ-014025/A-VehicleSpeed\_St (TcSE ROIN-223023-1)

Message Type: Status

Status used to indicate vehicle speed.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Literals** | **Value** | **Description** |
| Type | - | - | Indicates vehicle speed.  Unit: kph  Resolution:0.01  Offset:0 |
|  | kph | 0x0 to 0xFFFF |  |

#### MD-REQ-086348/A-CarMode\_St

Message Type: Status

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Literals | Value | Description |
| Type | - | - | Defines what car mode state is active. |
|  | Normal | 0x0 |  |
|  | Factory | 0x1 |  |
|  | NotUsed | 0x2 |  |
|  | Transportation | 0x3 |  |

### RKS-IIR-REQ-354841/A-RSServer\_Tx

#### MD-REQ-361426/A-RSCommandResponse

Message Type: FTCP

This message is used to acknowledge the RSOffBoardClient’s command containing the RS Settings payload.

**Note:** Refer to the latest “Ford Telematics Communication Protocol Specification” and Protofile for the most up to date FTCP messages/definitions.

|  |  |
| --- | --- |
| **Command** | **Description** |
| RSCommandResponse | Response sent from the RSServer to the RSOffBoardClient upon receiving the RS Settings payload. |

#### MD-REQ-361429/A-BLECommandResponse (China will not have BLE solution)

Message Type: FTCP

This message is used to acknowledge the RSOffBoardClient’s Command containing the BLE auto-pair key.

**Note:** Refer to the latest “Ford Telematics Communication Protocol Specification” and Protofile for the most up to date FTCP messages/definitions.

|  |  |
| --- | --- |
| **Command** | **Description** |
| BLECommandResponse | Response sent from the RSServer to the RSOffBoardClient upon receiving the BLE auto-pair key. |

#### MD-REQ-361427/A-RSAlert

Message Type: FTCP

This non correlated alert is used to notify the RSOffBoardClient of different success/failure statuses regarding the RS Settings payload.

**Note:** Refer to the latest “Ford Telematics Communication Protocol Specification” and Protofile for the most up to date FTCP messages/definitions.

|  |  |
| --- | --- |
| **Command** | **Description** |
| RSAlert | Alert sent from the RSServer to the RSOffBoardClient for various RS Settings payload success/failure statuses. |

#### MD-REQ-361430/A-BLEAlert (China will not have BLE solution)

Message Type: FTCP

This non correlated alert is used to notify the RSOffBoardClient of different success/failure statuses regarding the BLE auto-pair key.

**Note:** Refer to the latest “Ford Telematics Communication Protocol Specification” and Protofile for the most up to date FTCP messages/definitions.

|  |  |
| --- | --- |
| **Command** | **Description** |
| BLEAlert | Alert sent from the RSServer to the RSOffBoardClient for various BLE auto-pair key success/failure statuses. |

# General Requirements

## RKS-REQ-361373/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

## RKS-REQ-361339/B-Security Specification Reference

The RSServer shall comply with the security requirements per “Rocket Setup On-Board Security Specification”

## RKS-REQ-361338/A-Feature Configuration

The RSServer shall have a configurable parameter/DID to allow the Rocket Setup feature to be enabled/disabled.

* When the parameter indicates that Rocket Setup is enabled, all the functionality and signals defined in this SPSS shall be supported.
* When the parameter indicates that Rocket Setup is disabled, none of the functionality defined in this SPSS shall be supported.

## RKS-REQ-362420/B-RS Settings – RSServer Module Swap

If the RSServer detects a new VIN via the VehicleGGCCData message upon an Ignition Cycle (transition from IgnitionStatus = Off to Run), it shall:

* delete the saved RS Settings payload if not yet applied, OR
* delete all internally applied RS Settings (the RS Settings for which the RSServer is the Server)

**Note:** Any RS Settings applied to an RSClient shall not be deleted.

## RKS-REQ-362421/B-RS Settings – Rocket Setup Disabled on RSServer

If the Rocket Setup feature is disabled (per REQ-361338) on the RSServer, the RSServer shall delete the saved RS Settings payload if not yet applied.

## RKS-REQ-364451/A-RS Settings Feature Numbers

The RS Settings are structured as a value pair of ‘Feature Number’ and ‘Data Value’. Each RS Setting is assigned their own Feature Number per the “RocketSetup Parameters Numbering Doc” (@Walter for name).

# Functional Definition

## RKS-FUN-REQ-361370/A-RS Download

### Use Cases

#### RKS-UC-REQ-361470/B-User selects and submits RS Settings on RSOffBoardClient

|  |  |
| --- | --- |
| **Actors** | Mobile App User, RSOffBoardClient |
| **Pre-conditions** | FordPass Account created  VIN added to Garage (manual process) OR Initial Order Complete (auto process) |
| **Scenario Description** | User selects Rocket Setup tile in the mobile app, personalizes settings, and presses submit. |
| **Post-conditions** | RS Settings are sent to RSOffBoardClient. |
| **List of Exception Use Cases** |  |
| **Interfaces** | G-HMI |

#### RKS-UC-REQ-361471/B-RS Settings downloaded to RSServer when awake

|  |  |
| --- | --- |
| **Actors** | Vehicle Purchaser, RSOffBoardClient, RSServer |
| **Pre-conditions** | Powermode conditions are met  RS Settings submitted and consent received  Final Purchase Flag is not set |
| **Scenario Description** | User completes final purchase process and RS Settings payload is sent to RSServer. |
| **Post-conditions** | Final Purchase Flag is set  RS Settings payload is downloaded to the RSServer. |
| **List of Exception Use Cases** | REQ-361473-RS Settings failed to download to RSServer |
| **Interfaces** | FTCP, SoA |

#### RKS-UC-REQ-361473/B-RS Settings payload fails Payload Check(s)

|  |  |
| --- | --- |
| **Actors** | RSOffBoardClient, RSServer |
| **Pre-conditions** | Powermode conditions are met  RS Settings payload submitted |
| **Scenario Description** | User completes final purchase process and RS Settings are sent to RSServer. RS Settings payload is corrupt, or timestamp is old. |
| **Post-conditions** | RS Settings payload fails the payload checks and fails to persist on the RSServer. RSServer requests another download. |
| **List of Exception Use Cases** |  |
| **Interfaces** | FTCP |

### Requirements

#### RKS-REQ-361342/A-RS Settings Download – RSCommand

The RSServer shall receive and save the RS Settings payload contained within the RSCommand from the RSOffBoardClient.

#### RKS-REQ-361343/A-RS Settings Download – SyncP Wrapped

The RSServer shall receive the RS Settings payload SyncP wrapped (secured using SyncP v1) within the RSCommand from the RSOffBoardClient. Refer to “S13a SyncP Functional Specification” for more details.

#### RKS-REQ-361344/B-RS Settings Download – Persistence

The RSServer shall persist the RS Settings payload until:

* The RS Settings have been successfully applied (until the RS Process successfully completes, see REQ-361353), OR
* T\_Persist has been reached

Once the RS Settings have been applied, or if the RS Settings have not been applied within T\_Persist after having received/stored the RS Settings payload, the RS Settings payload shall be deleted.

The only exception to the above is the timestamp. The RSServer shall persist the timestamp permanently for use in the timestamp check (see REQ-361346). The RS Settings payload shall be persisted through ignition cycles, battery disconnects, loss of power, etc.

#### RKS-REQ-361345/A-RS Settings Download – Persistence Timer

The RSServer shall have a timer to monitor how long it shall persist the RS Settings payload. The timer shall be persisted through ignition cycles, battery disconnects, loss of power, etc. The time to persist shall be defined by T\_Persist.

#### RKS-TMR-REQ-361379/B-T\_Persist

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Description** | **Units** | **Range** | **Resolution** | **Default** |
| T\_Persist | The maximum time the RSServer shall persist the RS Settings payload (1 day = 86400 sec)  Note: Use the default value. | sec | 86400-1728000 | 86400 | 864000 |

#### RKS-REQ-361346/B-RS Settings Download – Payload Timestamp

The RS Settings payload contains a timestamp to indicate the freshness of the RS Settings data. The timestamp format shall follow the ISO 8601 standard:

* Format (for reference): YYYY-MM-DDThh:mm:ssTZD
* Example (for reference) 2019-04-09T19:20:30+01:00

#### RKS-REQ-361449/A-RS Settings Download – Timestamp Check

The RSServer shall check the timestamp upon reception of the RSCommand. The check shall confirm whether:

* The timestamp is valid
* The timestamp is newer than that of the last received/saved RS Settings payload

#### RKS-REQ-361347/A-RS Settings Download – Payload Check

The RSServer shall check the RS Settings payload content upon reception of the RSCommand. The check shall confirm whether:

* The payload contents are readable
* The payload contents and parameter values are within the bounds identified in this SPSS
* The payload contents have not been modified in transit (per SyncP header)

#### RKS-REQ-362418/B-RS Settings Download – Failure

The RSServer shall fail and not persist the RS Settings payload from the RSCommand when:

* The RS Settings payload fails the Payload Check, OR
* The RS Settings payload fails the Timestamp Check, OR
* The RocketSetupComplete flag is set “True” when the RSCommand is received

#### RKS-REQ-364357/A-RS Settings Download - Failure Retry

When the RSServer fails to download the RS Settings from the RSCommand due to a failed Timestamp or Payload Check, the RSCommandResponse or RSAlert sent to the RSOffBoardClient shall request a re-download of the RS Settings payload.

This retry shall only occur once.

If the Timestamp Check fails again (or if both Checks fail):

* The RSServer shall discard the RS Settings payload
* The RSServer shall send an RSCommandResponse or RSAlert to the RSOffBoardClient indicating a failure (no re-download)

If the Payload Check fails again:

* The RSServer shall apply the successful RS Settings in the payload (if any)
  + For the settings that have defaults defined in this SPSS (ex. Profile Name, Photo, etc.), those shall be used if the respective RS Setting failed
  + For the settings that have no defaults defined in this SPSS (ex. Radio Presets, Navigation Locations, etc.), that RS Setting shall be skipped
* The RSServer shall send an RSCommandResponse or RSAlert to the RSOffBoardClient indicating a success

#### RKS-REQ-361348/A-RS Settings Download – RSCommandResponse

The RSServer shall send RSCommandResponse to the RSOffBoardClient after reception of the RSCommand, indicating one of the following:

* The RS Settings payload was successfully received/saved
* The RS Settings payload failed to be received/saved due to:
  + the payload being corrupt/invalid
  + the timestamp being old/invalid

#### RKS-REQ-361349/A-RS Settings Download – RSAlert

The RSServer shall send RSAlert to the RSOffBoardClient to indicate that the RS Settings payload is corrupt/invalid or timestamp is old/invalid, if such determination is made after already having issued the RSCommandResponse. This will trigger a re-download from the RSOffBoardClient.

## RKS-FUN-REQ-361371/A-RS Process

### Use Cases

#### RKS-UC-REQ-361474/B-User accepts and continues RS process on RSServer

|  |  |
| --- | --- |
| **Actors** | Vehicle Occupant, RSOffBoardClient, RSServer |
| **Pre-conditions** | Powermode conditions are met  RS Settings downloaded  User is validated |
| **Scenario Description** | User is presented with RS Welcome screen and presses Accept |
| **Post-conditions** | RSServer continues RS process and leads user to create a Driver Profile. Upon completion, Driver Profile is created and all RS Settings are applied. |
| **List of Exception Use Cases** |  |
| **Interfaces** | G-HMI, FTCP, CAN, SoA |

#### RKS-UC-REQ-361475/B-User accepts and fails to complete RS process on RSServer

|  |  |
| --- | --- |
| **Actors** | Vehicle Occupant, RSServer |
| **Pre-conditions** | Powermode conditions are met  RS Settings downloaded  User is validated |
| **Scenario Description** | User is presented with RS Welcome screen and presses Accept. RSServer continues RS process and leads user to create a Driver Profile. User leaves/aborts the RS process. |
| **Post-conditions** | RSServer aborts RS process and offers a retry at the next ignition cycle. |
| **List of Exception Use Cases** |  |
| **Interfaces** | G-HMI, FTCP |

#### RKS-UC-REQ-361476/B-User denies RS process on RSServer

|  |  |
| --- | --- |
| **Actors** | Vehicle Occupant, RSServer |
| **Pre-conditions** | Powermode conditions are met  RS Settings downloaded  User is validated |
| **Scenario Description** | User is presented with RS Welcome screen and presses Deny |
| **Post-conditions** | RSServer exits the RS process and deletes the RS Settings. No retries are given. |
| **List of Exception Use Cases** |  |
| **Interfaces** | G-HMI, FTCP |

#### RKS-UC-REQ-361477/B-User postpones RS process on RSServer

|  |  |
| --- | --- |
| **Actors** | Vehicle Occupant, RSServer |
| **Pre-conditions** | Powermode conditions are met  RS Settings downloaded  User is validated  Retry counter is not maxed out |
| **Scenario Description** | User is presented with RS Welcome screen and presses Postpone |
| **Post-conditions** | RSServer exits the RS process and offers a retry at next ignition cycle. |
| **List of Exception Use Cases** |  |
| **Interfaces** | G-HMI, FTCP |

#### RKS-UC-REQ-361478/B-User postpones RS process on RSServer (last retry)

|  |  |
| --- | --- |
| **Actors** | Vehicle Occupant, RSServer |
| **Pre-conditions** | Powermode conditions are met  RS Settings downloaded  User is validated  Retry counter is maxed out |
| **Scenario Description** | User is presented with RS Welcome screen and presses Postpone |
| **Post-conditions** | RSServer exits the RS process and deletes RS Settings. No retries are given. |
| **List of Exception Use Cases** |  |
| **Interfaces** | G-HMI, FTCP |

#### RKS-UC-REQ-361479/A-RS & Master Reset – Before RS Settings applied

|  |  |
| --- | --- |
| **Actors** | Vehicle Occupant, RSOffBoardClient, RSServer |
| **Pre-conditions** | Powermode conditions are met  RS Settings downloaded |
| **Scenario Description** | User navigates to Reset menu and presses Master Reset |
| **Post-conditions** | RSServer deletes the RS Settings, reboots, and request another download. |
| **List of Exception Use Cases** |  |
| **Interfaces** | G-HMI, FTCP |

#### RKS-UC-REQ-361480/A-RS & Master Reset – After RS Settings applied

|  |  |
| --- | --- |
| **Actors** | Vehicle Occupant, RSServer |
| **Pre-conditions** | Powermode conditions are met  RS Settings downloaded |
| **Scenario Description** | User navigates to Reset menu and presses Master Reset |
| **Post-conditions** | RSServer deletes all data per Master Reset and reboots. No download is requested. |
| **List of Exception Use Cases** |  |
| **Interfaces** | G-HMI, FTCP |

### Requirements

#### RKS-REQ-361353/A-RS Process

The RSServer shall implement and monitor an “RS Process” which is the in-vehicle procedure (start to finish) required to successfully complete the application of RS Settings. This process shall begin with the offering of the RS Welcome Screen and end with the successful creation of an Enhanced Memory Profile.

#### RKS-REQ-361340/A-Powermode Conditions – RS Settings Application

The RSServer shall allow the RS Settings to be applied only when the following preconditions are met (same preconditions as Enhanced Memory (see ENMEM-REQ-099699):

* IgnitionStatus\_St = Run
* GearPosition = Park
* VehicleSpeed <= Driver Restrictions Threshold

#### RKS-REQ-361350/A-HMI – Display RS Welcome Screen

The RSServer shall display the RS Welcome Screen when the identified user has been validated (by either BLE Auto-pairing or Manual BT pairing).

#### RKS-REQ-361352/A-HMI – RS Welcome Screen Button Selections

The RSServer shall display and allow the user to select one of the below inputs on the RS Welcome Screen (not literal button text):

* Accept
* Deny
* Postpone

#### RKS-REQ-361351/A-Validate Identified User

The RSServer shall validate the identified user (via BLE) by comparing the MUID from the BLE pairing process (see REQ-XXXXXX of the BT Phone SPSS) against the Profile ID provided in the RS Settings payload.

If the identified user cannot be validated, the RSServer shall not show the RS Welcome Screen.

#### RKS-REQ-361354/A-RS Process Abort - Conditions

The RS Process shall utilize the abort conditions of Enhanced Memory (see ENMEM-REQ-116802).

For reference (refer to Enhanced Memory SPSS for the most up to date conditions):

* IgnitionStatus\_St != Run
* GearPosition != Park
* VehicleSpeed > Driver Restrictions threshold
* User initiates an HMI domain change
* Infotainment System Reset

#### RKS-REQ-361355/A-RS Process Abort - Retry Strategy

If the RS Process is aborted any time after the user selects Accept, the RSServer shall continue to save the RS Settings until a subsequent and successful RS Process attempt is made. The retry strategy for an abort shall be the same as that of a Postpone selection made by the user (see REQ-361360).

Note: Upon an abort, any progress made within the Enhanced Memory profile creation process is deleted, a profile will not be created (see ENMEM-REQ-116802).

#### RKS-REQ-361356/A-RS Process - Accept

When Accept is selected on the RSServer, the RSServer shall initiate/use the existing Enhanced Memory profile creation process. The RSServer shall:

* Enable the Enhanced Memory feature if no prior profiles have been created
* Parse the RS Settings payload as needed/required
* Preload the Driver Profile Name with that from the RS Settings
* Preload the Photo/Avatar with that from the RS Settings
* If no DSM is present, automatically select and use the next available PersIndex for the remainder of the profile creation process
* Apply the rest of the RS Settings per REQ-362423
* Send the RSAlert to the RSOffBoardClient indicating that the settings were successful applied

#### RKS-REQ-361357/A-RS Process - Deny

When Deny is selected on the RSServer, the RSServer shall not apply the RS Settings or create a Driver Profile, but shall instead:

* Delete the saved RS Settings
* Send the RSAlert to the RSOffBoardClient indicating a successful user selection of Deny

#### RKS-REQ-361358/A-RS Process - Postpone (under N\_Postpone)

When Postpone is selected on the RSServer and N\_Postpone has not been reached, the RSServer shall:

* Close the RS Welcome Screen
* Increment the Postpone counter

#### RKS-REQ-361359/A-RS Process - Postpone (over N\_Postpone)

When Postpone is selected on the RSServer and N\_Postpone has been reached, the RSServer shall:

* Close the RS Welcome Screen
* Delete the saved RS Settings
* Send the RSAlert to the RSOffBoardClient indicating a failure due to no response from the user

#### RKS-REQ-361360/A-RS Process – Postpone Retry

The RSServer shall display the RS Welcome Screen to the user at every Ignition Cycle (transition from IgnitionStatus = Off to Run) as long as N\_Postpone has not been reached.

If N\_Postpone has been reached, the RSServer shall not display the RS Welcome Screen.

#### RKS-REQ-361361/A-RS Process – Postpone Counter

The RSServer shall have a counter to monitor the number of postpone retries the user has completed. The counter shall be persisted through ignition cycles, battery disconnects, loss of power, etc. The number of retries offered shall be defined by N\_Postpone.

#### RKS-REQ-361398/A-N\_Postpone

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name** | **Description** | **Units** | **Range** | **Resolution** | **Default** |
| N\_Postpone | Maximum number of postpone retries offered to the user.  Note: Use the default value. |  | 0-30 | 1 | 20 |

#### RKS-REQ-362419/A-RS Process – Rocket Setup Complete Flag

When the RS Process is complete, the RS Settings have been applied, and an Enhanced Memory Driver Profile has been created, the RSServer shall set a completion flag true, RocketSetupComplete = True. This flag shall be set to False by default until the above has occurred. The RSServer shall persist the flag permanently (through ignition cycles, battery disconnects, loss of power, Master Resets, Brand Connect Resets, ClearUserSettingsCommands, software updates, etc.)

When the RocketSetupComplete flag is set to True, any subsequent RS Settings payloads and RSCommand’s containing new RS Settings received by the RSServer shall be ignored and not applied. Only one profile shall be successfully applied for the life of the vehicle. << or per each SYNC unit?

#### RKS-REQ-361362/A-Master Reset before RS Process Success

If a Master Reset occurs before the RSServer has successfully completed the RS Process, the RSServer shall:

* Delete the RS Settings payload
* Reset all counters and timers specific to this feature (ex. N\_Postpone, T\_Persist)
* Send the RSAlert to the RSOffBoardClient indicating a failure due to Master Reset, and that a re-download is required

**Note**: The RSOffBoardClient will determine whether a re-download is to be performed or not (this is based on a timer it maintains and initiates when the purchase event occurs).

#### RKS-REQ-361363/A-Master Reset after RS Process Success

If a Master Reset occurs any time after the RSServer has successfully completed the RS Process, the RSServer shall:

* Delete the RS Settings payload if it has not yet already been deleted
* Reset all counters and timers specific to this feature (ex. N\_Postpone, T\_Persist)

## RKS-FUN-REQ-361374/A-Applying RS Settings

### Use Cases

#### RKS-UC-REQ-362592/A-RSServer applies RS Settings

|  |  |
| --- | --- |
| **Actors** | RSServer, RSClient |
| **Pre-conditions** | Powermode conditions are met  RS Settings downloaded  User Accepted RS Welcome screen  RS Process in progress |
| **Scenario Description** | RSServer begins to apply RS Settings within the Enhanced Memory Driver Profile creation process. RSServer steps through each of the RS Settings, requesting to save each either internally or from the applicable RSClient(s). |
| **Post-conditions** | RSServer and RSClient(s) save the requested RS Setting. |
| **List of Exception Use Cases** |  |
| **Interfaces** | G-HMI, CAN, SoA |

### Requirements

#### RKS-REQ-362423/A-RS Settings – Time to Apply the RS Settings

During the RS Process, the RSServer shall only apply the RS Settings after the following has occurred (events from Enhanced Memory):

1. The Copy Operation has been issued (per ENMEM-REQ-198923-Copy Request)
2. All profile data required by Enhanced Memory has been saved (per ENMEM-REQ-198920-Execute Copy Operation)
3. A Recall of the new driver profile has been requested (per ENMEM-REQ-198918B-Recall New Driver Profile After Copy)
4. All profile data for the recalled profile has been loaded (per ENMEM-REQ-099673-Driver Profile Settings Recall)

**Note**: Once the recall is complete, the RS Settings will be applied to the active profile. The newly created profile must be active before applying the RS Settings; otherwise, the RS Settings will be applied to the previously active profile. The RS Settings will then be saved to the active profile when the RSServer and RSClients persist their settings per Enhanced Memory.

#### Profile Name

##### RKS-REQ-361364/A-RS Settings – Profile Name

The RSServer shall receive one Profile Name from the RS Settings payload.

##### RKS-REQ-362424/B-RS Settings – Profile Name Format

The RSServer shall receive the Profile Name in String format and it shall consist of no more than 20 characters.

|  |  |  |  |
| --- | --- | --- | --- |
| **RS Setting** | **RS Setting Payload – Packet Format** | | **Range**  **(in-vehicle)** |
| **Feature Number (FeatNum)** | **Data Value (DatVal)** |
| Profile Name | 0x0024 | String | 0-20 chars |

##### RKS-REQ-362425/B-RS Settings – Profile Name Usage

During the RS Process, the RSServer shall use/preload 0x0024:”DataValue” in:

* the RS Welcome Screen greeting
* the Enhanced Memory Driver Profile Name entry screen

##### RKS-REQ-362426/A-RS Settings – Profile Name Edit

The RSServer shall allow the user to edit the Profile Name in the Enhanced Memory Driver Profile Name entry screen (as per normal Enhanced Memory procedure). If the user decides to change the Profile Name, the new name shall be used for the remainder of the RS Process.

##### RKS-REQ-362427/A-RS Settings – Failure to Apply Profile Name

If the RSServer cannot save or use the requested Profile Name for whatever reason (parameters invalid, parameters corrupt, etc.), the RSServer shall use “Guest” as a default Profile Name.

#### Profile Photo

##### RKS-REQ-361365/A-RS Settings – Profile Photo

The RSServer shall receive one Profile Photo from the RS Settings payload as well as a URL from which a larger photo/image may be accessed (URL not currently used).

##### RKS-REQ-362428/B-RS Settings – Profile Photo Format

The RSServer shall receive the Profile Photo in Bytes and shall be no larger than 80 KB.

* The photo format may be of the following types: Jpeg
* The photo may be encoded using the following encoding type: Base 64

|  |  |  |  |
| --- | --- | --- | --- |
| **RS Setting** | **RS Setting Payload – Packet Format** | | **Range**  **(in-vehicle)** |
| **Feature Number (FeatNum)** | **Data Value (DatVal)** |
| Profile Photo | 0x0025 | Bytes | 80kb |
| Profile Photo URL | 0x0026 | TBD | TBD |

##### RKS-REQ-362429/B-RS Settings – Profile Photo Usage

During the RS Process, the RSServer shall use/preload the 0x0025:”DataValue” in:

* the RS Welcome Screen greeting
* the Enhanced Memory Driver Profile Photo entry screen

##### RKS-REQ-362430/A-RS Settings – Profile Photo Edit

The RSServer shall allow the user to edit the Profile Photo in the Enhanced Memory Driver Profile Photo entry screen. If the user decides to change the Profile Photo, the new photo shall be used for the remainder of the RS Process.

##### RKS-REQ-362431/B-RS Settings – Failure to Apply Profile Photo

If the RSServer cannot save or use the requested Profile Photo for whatever reason (parameters invalid, parameters corrupt, etc.), the RSServer shall use the “Profile Name Initials” avatar as the default Profile Photo.

#### Navigation Favorites

##### RKS-REQ-361366/A-RS Settings – Navigation Favorites

The RSServer shall receive one Home Favorite, one Work Favorite, and up to ten additional Favorites from the RS Settings payload.

##### RKS-REQ-362432/B-RS Settings – Navigation Favorites Parameters/Format

The RSServer shall receive the Navigation Favorites as a collection of required and optional data parameters, formatted as indicated below, with their relative max values.

|  |  |  |  |
| --- | --- | --- | --- |
| **RS Setting** | **RS Setting Payload – Packet Format** | | **Range**  **(in-vehicle)** |
| **Feature Number (FeatNum)** | **Data Value (DatVal)** |
| Home - POI Address | 0x0345 | String | 0-255 chars |
| Home - Location Name | 0x0346 | String | 0-200 chars |
| Home - Phone Number | 0x0347 | String | 0-20 chars |
| Home - Address Line1 | 0x0348 | String | 0-200 chars |
| Home - Address Line2 | 0x0349 | String | 0-200 chars |
| Home - City | 0x034A | String | 0-50 chars |
| Home - Subcity | 0x034B | String | 0-50 chars |
| Home - State/Province | 0x034C | String | 0-100 chars |
| Home - Door Number | 0x034D | String | 0-50 chars |
| Home - Street Name | 0x034E | String | 0-100 chars |
| Home - Cross Street Name | 0x034F | String | 0-100 chars |
| Home - Zip Code/Postal Code | 0x0350 | String | 0-10 chars |
| Home - Country | 0x0351 | String | 0-50 chars |
| Home - Latitude | 0x0352 | Double | 8 bytes |
| Home - Longitude | 0x0353 | Double | 8 bytes |
| **>> The set above is repeated for each additional favorite** | | | |
| Work | 0x0354 - 0x0362 | - | - |
| Favorite 1 | 0x0363 - 0x0371 | - | - |
| Favorite 2 | 0x0372 - 0x0380 | - | - |
| Favorite 3 | 0x0381 - 0x038F | - | - |
| Favorite 4 | 0x0390 - 0x039E | - | - |
| Favorite 5 | 0x039F - 0x03AD | - | - |
| Favorite 6 | 0x03AE - 0x03BC | - | - |
| Favorite 7 | 0x03BD - 0x03CB | - | - |
| Favorite 8 | 0x03CC - 0x03DA | - | - |
| Favorite 9 | 0x03DB - 0x03E9 | - | - |
| Favorite 10 | 0x03EA - 0x03F8 | - | - |

##### RKS-REQ-362433/B-RS Settings – Required Navigation Favorite Parameters

The RS Settings payload includes both optional and required parameters for Navigation Favorites. The minimal parameters required by the RSServer (in order to save a Navigation Favorite) shall be: (waiting on feedback from supplier)

|  |  |  |
| --- | --- | --- |
| **Favorite #** | **RS Setting** | **Required/Optional** |
| Work, Home, Favorite 1-10 | POI Address | TBD |
| Location Name | Required |
| Phone Number | Required |
| Address Line1 | TBD |
| Address Line2 | TBD |
| City | Required |
| Subcity | Required |
| State/Province | Required |
| Door Number | Required |
| Street Name | Required |
| Cross Street Name | Required |
| Zip Code/Postal Code | Required |
| Country | Required |
| Latitude | Required |
| Longitude | Required |

##### RKS-REQ-362434/A-RS Settings – Applying the Navigation Favorites

The RSServer shall request the Nav Application to save each favorite provided in the RS Settings payload using (put API here). The API needs to include the parameters being sent, the PersIndex to save to, and a response confirming successful receipt. SYNC should then repeat for all favorites in the payload.

##### RKS-REQ-362435/A-RS Settings – Failure to Apply Navigation Favorites

If the Nav Application cannot save the requested Navigation Favorite for whatever reason (parameters invalid, parameters corrupt, address cannot be found, etc.), the Nav Application shall not perform a retry and shall skip the requested Navigation Favorite.

##### RKS-REQ-362436/A-RS Settings – Multiple Addresses Found for a Navigation Favorite

If the Nav Application finds multiple addresses for the requested Navigation Favorite, the Nav Application shall skip the requested Navigation Favorite. (TBD)

##### RKS-REQ-362437/A-RS Settings – Nav Application Welcome Screen

If the Nav Application has a Welcome Screen or any such user interface that asks the user for any of the Navigation Parameters offered by the RocketSetup feature, the following shall be performed:

* If the RS Settings have been applied, the Nav Application shall remove/configure off their Welcome Screen.
* If the RS Settings have not been applied, the Nav Application shall offer their Welcome Screen and user entry per normal operation.

#### Radio Presets

##### RKS-REQ-361367/A-RS Settings – Radio Presets

The RSServer shall receive up to ten Radio Presets from the RS Settings payload.

##### RKS-REQ-362446/B-RS Settings – Radio Presets Parameters/Format

The RSServer shall receive the Radio Presets as a collection of optional and required data parameters, formatted as indicated below, with their relative possible values.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **RS Setting** | **RS Setting Payload – Packet Format** | | | **Range**  **(in-vehicle)** |
| **Feature Number (FeatNum)** | | **Data Value**  **(DatVal)** |
| Preset 1 – Frequency | 0x021D | | uint (500000 -108100000) | (500000-1600000) and (88100000-108100000) |
| Preset 1 – Band Type | 0x021E | | 0x1, 0x5, 0x7, 0x9 | 0x1-0xC (1-FM1, 5-AM, 7-DAB, 9-SAT1) |
| Preset 1 – HDNumber | 0x021F | | 0x1-0x7 | 0x1-0x7 (1-MC1, 2-MC2, 3-MC3, etc.) |
| Preset 1 – SID | 0x0220 | | 0x0001 – 0xFFFF | 0x0001 – 0xFFFF |
| Preset 1 – GUID | 0x0221 | | String | 32 chars |
| Preset 1 – Station Name | 0x0222 | | String | 16 chars |
| Preset 1 – PI Code | 0x0223 | | 0x0001 – 0xFFFF | 0x0001 – 0xFFFF |
| **>> The set above is repeated for each additional preset** | | | | |
| Preset 2 | | 0x0224 - 0x022A | - | - |
| Preset 3 | | 0x022B - 0x0231 | - | - |
| Preset 4 | | 0x0232 - 0x0238 | - | - |
| Preset 5 | | 0x0239 - 0x023F | - | - |
| Preset 6 | | 0x0240- 0x0246 | - | - |
| Preset 7 | | 0x0247 - 0x024D | - | - |
| Preset 8 | | 0x024E - 0x0254 | - | - |
| Preset 9 | | 0x0255 - 0x025B | - | - |
| Preset 10 | | 0x025C - 0x0262 | - | - |

##### RKS-REQ-362447/A-RS Settings - Required NA AM/FM Radio Preset Parameters

The RS Settings payload includes both optional and required parameters for Radio Presets. The minimal parameters required by the RSServer (in order to save a North American AM/FM Radio Preset) shall be:

|  |  |  |
| --- | --- | --- |
| **Radio Preset #** | **Parameter** | **Required/Optional** |
| Radio Preset 1-10 | Preset Position | Required |
| Frequency | Required |
| Band Type | Required |
| HDNumber | Optional |
| SID | N/A |
| GUID | N/A |
| Station Name | N/A |
| PI Code | N/A |

##### RKS-REQ-362448/A-RS Settings - Required NA SDARS Radio Preset Parameters

The RS Settings payload includes both optional and required parameters for Radio Presets. The minimal parameters required by the RSServer (in order to save a North American SDARS Radio Preset) shall be:

|  |  |  |
| --- | --- | --- |
| **Radio Preset #** | **Parameter** | **Required/Optional** |
| Radio Preset 1-10 | Preset Position | Required |
| Frequency | N/A |
| Band Type | Required |
| HDNumber | N/A |
| SID | Required |
| GUID | Required (IP Channels) |
| Station Name | N/A |
| PI Code | N/A |

##### RKS-REQ-362449/A-RS Settings - Required EU FM/DAB Radio Preset Parameters

The RS Settings payload includes both optional and required parameters for Radio Presets. The minimal parameters required by the RSServer (in order to save a European DAB/FM Radio Preset) shall be:

|  |  |  |
| --- | --- | --- |
| **Radio Preset #** | **Parameter** | **Required/Optional** |
| Radio Preset 1-10 | Preset Position | Required |
| Frequency | Required (FM only) |
| Band Type | Required |
| HDNumber | N/A |
| SID | Required (DAB only) |
| GUID | N/A |
| Station Name | Required |
| PI Code | Required (FM only) |

##### RKS-REQ-362450/A-RS Settings – Muting while Applying Radio Presets

When the RSServer is required to apply the Radio Presets, it shall mute the Media audio by using the SYNC\_Alerts message and setting Attn\_Info\_Audio = “Attenuation\_6” (full mute). Follow the attenuation strategy as defined in ALERT-FUN-REQ-014794-Audio Attenuation/Muting Strategy. For the attenuation for this feature, follow the Screen Interruption Table entry for Enhanced Memory and only allow interrupt events as required (see H22a\_SYNC\_4\_Screen\_Interruption\_Table).

* TBD muted mixable prompts to avoid issues? If so, also reference ALERT-FUN-REQ-014780-Mixable Prompts. – We’ll need to test on AHU/DSP to make sure sending only the attenuation request is enough.

##### RKS-REQ-362451/A-RS Settings – UnMuting after Applying Radio Presets

When the RSServer has finished applying all of the Radio Presets, it shall unmute the Media audio by using the SYNC\_Alerts message and setting Attn\_Info\_Audio = “No Attenuation of Audio.” Follow the attenuation strategy as defined in ALERT-FUN-REQ-014794-Audio Attenuation/Muting Strategy.

##### RKS-REQ-362452/A-RS Settings – Applying Radio Presets by Band Type

When the RSServer is required to apply the Radio Presets, it shall do so by applying each Radio Preset based on its Band Type, regardless of Preset Position (but still maintaining Preset Position). The RSServer shall apply the Radio Presets by Band Type in the following order:

* AM (analog)
* AM (multicast/HD)
* FM (analog)
* FM (multicast/HD)
* SDARS / DAB
* SDARS (IP Channels)

**Note**: This is done to reduce the number of band/source changes, expediting the process.

##### RKS-REQ-362453/B-RS Settings – Applying NA AM/FM Radio Presets

The RSServer shall utilize the existing AM/FM Radio Preset interfaces per AMFM-IIR-REQ-023795-AMFM Slave CAN Request and AMFM-IIR-REQ-023797-AMFM Slave CAN Status.

If the Radio Preset being requested is an AM or FM station (indicated by Band Type = “0x5 - AM” or “0x1 - FM1”) for a vehicle in North America, the RSServer shall:

1. Direct Tune to the Radio Preset frequency by setting and sending the below signals to the RSClient (see AMFM-SD-REQ-023838-Direct Station Selection):
   1. SetCurrentStat.Rq: Operation = “0x1 - Set Current Frequency”
   2. SetCurrentStat.Rq: Frequency = “Offset”
      1. See “Offset” under SetCurrentStat.Rq in AMFM-IIR-REQ-023797-AMFM Slave CAN Status (RSServer must calculate and use Offset, using the provided “Preset# - Frequency”:“DataValue”)
   3. SetCurrentStat.Rq: PICode = “Preset# - PI Code”:“DataValue”
      1. ex. For Preset1-PI Code, the value pair is 0x0223: “DataValue”
   4. SetCurrentStat.Rq: MCChannel = “Preset# - HDNumber”:“DataValue” (if applicable)
      1. ex. For Preset1-HDNumber, the value pair is 0x021F:“DataValue”
   5. **Note:** if the active band type is different than the one being requested, a SetCurrTUBand.Rq = “Preset# - Band Type”:“DataValue” shall be issued (per above ref. diagram)
2. Wait for the RSClient to respond with the below, indicating the Radio Preset frequency has been tuned to:
   1. CurrentTUBand.St = Band Type
   2. DirectTune.St = “0x2 - Valid Station”
   3. CurrentFreq.St = Offset
      1. See “Offset” under CurrentFreq.St in AMFM-IIR-REQ-023797-AMFM Slave CAN Status
   4. CurrentHDMulticast.St = HDNumber (if applicable)
   5. CurrentPICode.St = PI Code
3. Request a Store Preset operation by settings and sending the below signals to the RSClient (see AMFM-SD-REQ-023861-Store Preset):
   1. StorePreset2.Rq = Preset Position
4. Wait for the RSClient to respond with the below, indicating the Radio Preset has been successfully stored:
   1. StorePreset.St = Preset Position
   2. CurrentPreset2.St = Preset Position
5. Repeat steps 1-4 for all AM or FM Radio Presets provided in the RS Settings payload

Reference requirements:

AMFM-IIR-REQ-023795-AMFM Slave CAN Request

AMFM-IIR-REQ-023797-AMFM Slave CAN Status

AMFM-SD-REQ-023838-Direct Station Selection

AMFM-SD-REQ-023861-Store Preset

##### RKS-REQ-362454/B-RS Settings – Applying NA SDARS Radio Presets

The RSServer shall utilize the existing SDARS Radio Preset interfaces per AMFM-IIR-REQ-023795-AMFM Slave CAN Request, AMFM-IIR-REQ-023797-AMFM Slave CAN Status, SDARS-IIR-REQ-195704-SDARSClient\_Tx and SDARS-IIR-REQ-210911-SDARSRemoteServer\_Rx.

If the Radio Preset being requested is an SDARS station (indicated by Band Type = “0x9 - SAT1”) for a vehicle in North America, the RSServer shall:

1. Direct Tune to the “Preset# - SID”:“DataValue” or “Preset# - GUID”:“DataValue” (see SDARSv2-SD-REQ-195749-Direct Channel Selection).
   1. For SDARSv2, the RSServer tunes internally, therefore, the RSServer shall internally tune to the SID or GUID provided.
   2. **Note:** if the active band type is different than the one being requested, a SetCurrTUBand.Rq = “Preset# - Band Type”:“DataValue” shall be issued (per above ref. diagram)
2. The Store Preset operation shall not be issued until the RSServer has updated the below signals after tuning to the SID/GUID (per SDARS-FUR-REQ-196124-Presets):
   1. ServiceID2.St
   2. CurrentChanNum2.St
   3. ChannelName.St
3. Request a Store Preset operation by settings and sending the below signals to the RSClient (see SDARSv2-SD-REQ-195723-Store SDARS Preset):
   1. StorePreset2.Rq = Preset Position
4. Wait for the RSClient to respond with the below, indicating the Radio Preset has been successfully stored:
   1. StorePreset.St = Preset Position
   2. CurrentPreset2.St = Preset Position
5. Repeat steps 1-4 for all SDARS Radio Presets provided in the RS Settings payload

Reference requirements:

AMFM-IIR-REQ-023795-AMFM Slave CAN Request

AMFM-IIR-REQ-023797-AMFM Slave CAN Status

SDARS-IIR-REQ-195704-SDARSClient\_Tx

SDARS-IIR-REQ-210911-SDARSRemoteServer\_Rx

SDARSv2-FUN-REQ-195747-Direct Tune

SDARSv2-SD-REQ-195749-Direct Channel Selection

SDARS-FUR-REQ-196124-Presets

SDARSv2-SD-REQ-195723-Store SDARS Preset

SDARSv2-FUN-REQ-195721-Store Preset

##### RKS-REQ-362455/B-RS Settings – Applying EU FM/DAB Radio Presets

The RSServer shall utilize the existing FM/DAB Radio Preset interfaces per AMFM-IIR-REQ-023795-AMFM Slave CAN Request, AMFM-IIR-REQ-023797-AMFM Slave CAN Status, TU-IIR-REQ-299207-TunerClient-TunerServer, TU-IIR-REQ-299209-TunerServer-TunerClient.

If the Radio Preset being requested is an FM station (indicated by “Preset# - Band Type”: “0x1 - FM1”) for a vehicle in Europe, the RSServer shall:

1. Direct Tune to the FM Radio Preset by setting and sending the below signals to the RSClient (see TU-SD-REQ-268244-Select Station From Station List Via Voice Command):
   1. SelectStation\_Rq:RequestSelector = “0x1 - PI-Code”
   2. SelectStation\_Rq:PI-Code = “Preset# - PI Code”:“DataValue”
      1. ex. For Preset1-PI Code, the value pair is 0x0223: “DataValue”
   3. **Note:** if the active band type is different than the one being requested, a SetCurrTUBand.Rq = “Preset# - Band Type”:“DataValue” shall be issued
2. Wait for the RSClient to respond with the below, indicating the FM Radio Preset frequency has been tuned to:
   1. SelectStation\_Rsp:ResponseCode = “0x2 - Accepted”
3. Request a Store Preset operation by settings and sending the below signals to the RSClient (see AMFM-SD-REQ-023861-Store Preset, DAB-SD-REQ-024405-Store Preset):
   1. StorePreset2.Rq = Preset Position
4. Wait for the RSClient to respond with the below, indicating the Radio Preset has been successfully stored:
   1. StorePreset.St = Preset Position
   2. CurrentPreset2.St = Preset Position
5. Repeat steps 1-4 for all FM Radio Presets provided in the RS Settings payload

If the Radio Preset being requested is a DAB station (indicated by “Preset# - Band Type”:“0x7 - DAB1”) for a vehicle in Europe, the RSServer shall:

1. Direct Tune to the DAB Radio Preset by setting and sending the below signals to the RSClient (see TU-SD-REQ-268244-Select Station From Station List Via Voice Command):
   1. SelectStation\_Rq:RequestSelector = “0x2 - SCIDI\_SID\_EEC”
   2. SelectStation\_Rq:SCID = ???
   3. SelectStation\_Rq:SID = “Preset# - SID”:“DataValue”
   4. SelectStation\_Rq:EEC = ???
   5. **Note:** if the active band type is different than the one being requested, a SetCurrTUBand.Rq = “Preset# - Band Type”:“DataValue” shall be issued
2. Wait for the RSClient to respond with the below, indicating the DAB Radio Preset has been tuned to:
   1. SelectStation\_Rsp:ResponseCode = “0x2 - Accepted”
3. Request a Store Preset operation by settings and sending the below signals to the RSClient (see AMFM-SD-REQ-023861-Store Preset, DAB-SD-REQ-024405-Store Preset):
   1. StorePreset2.Rq = Preset Position
4. Wait for the RSClient to respond with the below, indicating the Radio Preset has been successfully stored:
   1. StorePreset.St = Preset Position
   2. CurrentPreset2.St = Preset Position
5. Repeat steps 1-4 for all DAB Radio Presets provided in the RS Settings payload

**Alternate (TBD):**

If the Radio Preset being requested is an FM or DAB station (indicated by “Preset# - Band Type”: “0x1 - FM1” or “0x7 - DAB1”) for a vehicle in Europe, the RSServer shall:

1. Use the “Select a station from the station list via voice command” process to request the provided Station Name (see TU-SD-REQ-268244-Select Station From Station List Via Voice Command).
   1. **Note:** if the active band type is different than the one being requested, a SetCurrTUBand.Rq = “Preset# - Band Type”:“DataValue” shall be issued
2. Wait for the RSClient to respond with the below, indicating the DAB Radio Preset has been tuned to:
   1. SelectStation\_Rsp:ResponseCode = “0x2 - Accepted”
3. Request a Store Preset operation by settings and sending the below signals to the RSClient (see AMFM-SD-REQ-023861-Store Preset, DAB-SD-REQ-024405-Store Preset):
   1. StorePreset2.Rq = Preset Position
4. Wait for the RSClient to respond with the below, indicating the Radio Preset has been successfully stored:
   1. StorePreset.St = Preset Position
   2. CurrentPreset2.St = Preset Position
5. Repeat steps 1-4 for all DAB Radio Presets provided in the RS Settings payload

Reference requirements:

AMFM-IIR-REQ-023795-AMFM Slave CAN Request

AMFM-IIR-REQ-023797-AMFM Slave CAN Status

TU-IIR-REQ-299207-TunerClient-TunerServer

TU-IIR-REQ-299209-TunerServer-TunerClient

DAB-FUN-REQ-024402-Store DAB Preset

AMFM-SD-REQ-023861-Store Preset

DAB-SD-REQ-024405-Store Preset

TU-SD-REQ-268244-Select Station From Station List Via Voice Command

##### RKS-REQ-362456/A-RS Settings – Failure to Tune to a Radio Preset

If the RSServer cannot tune to the requested Radio Preset, the RSServer shall:

* For AM/FM HD channels in North America
  + Tune to the analog frequency and store it instead (repeat same process in REQ-362453 but with CurrentHDMulticast.St = “0x0 - 0”)
* For SDARS channels in North America
  + Skip the preset
* For FM/DAB in Europe
  + Store the frequency, regardless of active station

##### RKS-REQ-362457/A-RS Settings – Failure to Apply a Radio Preset

After sending StorePreset2.Rq, if the RSServer receives StorePreset.St set to any value other than the requested preset number, the RSServer shall not perform a retry and shall skip that Radio Preset.

#### Departure Times

##### RKS-REQ-361368/A-RS Settings – Departure Times

The RSServer shall receive up to fourteen Departure Times from the RS Settings payload.

##### RKS-REQ-362438/B-RS Settings – Departure Times Parameters/Format

The RSServer shall receive the Departure Times as a collection of required data parameters, formatted as indicated below, with their relative possible values.

|  |  |  |  |
| --- | --- | --- | --- |
| **RS Setting** | **RS Setting Payload – Packet Format** | | **Range**  **(in-vehicle)** |
| **Feature Number (FeatNum)** | **Data Value (DatVal)** |
| Global Departure Time | 0x0D10 | 0x1, 0x2 | 0x0-0x2 (0-Null, 1-Off, 2-On) |
| Element ID 1 – Hour | 0x0D11 | 0x00-0x17 | 0x00-0x17 (dec: 0-23) |
| Element ID 1 - Minutes | 0x0D12 | 0x0-0xB | 0x0-0xB (dec: 0-55)  (in increments of 5) |
| Element ID 1 - Precondition Setting | 0x0D13 | 0x0-0x3 | 0x0-0x3 (0-Off, 1-Low, 2-Med, 3-High) |
| **>> The set above (Hour/Min/Precondition only) is repeated for each additional Element ID** | | | | |
| Element ID 2 | 0x0D14 - 0x0D16 | - | - |
| Element ID 3 | 0x0D17 - 0x0D19 | - | - |
| Element ID 4 | 0x0D1A - 0x0D1C | - | - |
| Element ID 5 | 0x0D1D - 0x0D1F | - | - |
| Element ID 6 | 0x0D20 - 0x0D22 | - | - |
| Element ID 7 | 0x0D23 - 0x0D25 | - | - |
| Element ID 8 | 0x0D26 - 0x0D28 | - | - |
| Element ID 9 | 0x0D29 - 0x0D2B | - | - |
| Element ID 10 | 0x0D2C - 0x0D2E | - | - |
| Element ID 11 | 0x0D2F - 0x0D31 | - | - |
| Element ID 12 | 0x0D32 - 0x0D34 | - | - |
| Element ID 13 | 0x0D35 - 0x0D37 | - | - |
| Element ID 14 | 0x0D38 - 0x0D3A | - | - |

##### RKS-REQ-362439/B-RS Settings – Applying the Departure Times

The RSServer shall utilize the existing EV Charge Programming interfaces per EVCS-IIR-REQ-250960-APIM Saving of Departure Times.

If the RSServer receives 0x0D10:“0x1 - Off”, the RSServer shall:

1. Request the Global Departure Times be turned Off (if ChrgGoTAllOn\_B\_Stat = “(0x1 - Go Times On)”) via:
   1. OnbChrgGoTOn\_D\_Rq = “0x0 - Go Times Off”
   2. OnbChrgGoTUpdate\_B\_Rq = “0x1 - Request”
2. Wait for the RSClient to respond with the below, indicating the Global Departure Times has been turned Off:
   1. ChrgGoTAllOn\_B\_Stat = “(0x0 - Go Times Off)” <<Needed? TBD
3. Not request any Departure Times, and shall continue to the next RS Setting type in the priority list (per REQ-362422)

If the RSServer receives 0x0D10:“0x2 - On”, the RSServer shall:

1. Request the Global Departure Times be turned On (if ChrgGoTAllOn\_B\_Stat = “(0x0 - Go Times Off)”) via:
   1. OnbChrgGoTOn\_D\_Rq = “0x1 - Go Times On”
   2. OnbChrgGoTUpdate\_B\_Rq = “0x1 - Request”
2. Wait for the RSClient to respond with the below, indicating the Global Departure Times has been turned On:
   1. ChrgGoTAllOn\_B\_Stat = “(0x1 - Go Times On)”
3. Request the RSClient save the Departure Times Schedule (collection of all of the provided Departure Times) by setting and sending the following signals:
4. OnbChrgGoTUpdate\_B\_Rq = “0x1 - Request”
   * 1. Hold this signal value until all ElementID’s have been requested
5. OnbChrgGoTElement\_D\_Rq = ElementID
6. OnbChrgGoTHr\_T\_Rq = “Element ID # - Hour”:“DataValue”
7. ex. For Element ID 1, the value pair would be 0x0D11:“DataValue”
8. OnbChrgGoTMnte\_D\_Rq = “Element ID # - Minutes”:“DataValue”
   1. ex. For Element ID 1, the value pair would be 0x0D12:“DataValue”
9. OnbChrgGoTPrcond\_D\_Rq = “Element ID # - Precondition Setting”:“DataValue”
10. ex. For Element ID 1, the value pair would be 0x0D13:“DataValue”
11. Repeat sending the signals in b, c, d, e for every ElementID provided in the RS Settings payload.
12. OnbChrgGoTUpdate\_B\_Rq = “0x0 - No Request”
13. Set this signal value after all ElementID’s have been requested
14. Wait for the RSClient to respond with the below set of signals (repeated for each ElementID), indicating the Departure Times have been saved: <<Needed? TBD
15. ChrgGoTElement\_D\_Stat = ElementID
16. ChrgGoTHr\_T\_Stat = Hour
17. ChrgGoTMnte\_D\_Stat = Minutes
18. ChrgGoTPrcond\_D\_Stat = Precondition Setting

**Note**: The Departure Times are requested by the RSServer as a set of ElementID’s or a “Schedule.” The RSServer must request each ElementID, with the accompanying parameters, using the above signals repeated for each ElementID. During this entire transmission, the Update flag must be sent to “Request” and set back to “No Request” when complete. The RSClient will respond after the Update flag has been cleared with the status of each ElementID, again repeated using the same set of status signals above.

Reference requirements:

EVCS-IIR-REQ-250960-APIM Saving of Departure Times

EVCS-REQ-263405-Communication - Onboard Update Flag - Charge Settings Update

EVCS-REQ-263401-Communication - Onboard Update Flag - No Update

EVCS-FUN-REQ-281551-Charge Schedule

##### RKS-REQ-362440/A-RS Settings – Failure to Apply Departure Times

If the RSServer cannot save the requested Departure Times for whatever reason (failure from OnBoardChargeSchedulerServer, etc.), the RSServer shall not perform a retry and shall skip the requested Departure Time. This is if we check the status signals, **still TBD.**

#### Ambient Lighting

##### RKS-REQ-361369/A-RS Settings – Ambient Lighting

The RSServer shall receive one Ambient Lighting Setting from the RS Settings payload.

##### RKS-REQ-362441/B-RS Settings – Ambient Lighting Parameters/Format

The RSServer shall receive the Ambient Lighting Settings as a collection of required data parameters, formatted as indicated below, with their relative possible values.

|  |  |  |  |
| --- | --- | --- | --- |
| **RS Setting** | **RS Setting Payload – Packet Format** | | **Range**  **(in-vehicle)** |
| **Feature Number (FeatNum)** | **Data Value**  **(DatVal)** |
| Ambient Color Code | 0x0601 | 0x00-0x06 | 0x00-0xFF |
| Ambient Auto Lighting | 0x0603 | 0x1, 0x2 | 0x0-0x2 (0-Null, 1-Manual, 2-Auto) |
| Ambient Intensity | 0x0602 | 0x01-0x65 | 0x00-0x66 (dec: 0-100, 0x0=Off) |

##### RKS-REQ-362442/B-RS Settings – Applying the Ambient Lighting Setting

The RSServer shall utilize the existing Ambient Lighting Settings interfaces per VSv2-FUN-REQ-192195-Ambient Lighting - Variant 2 and VS-FUN-REQ-339729-Drive Mode Auto/Manual Ambient Lighting setting.

If the RSServer receives 0x0603:“0x2 - Automatic”, the RSServer shall request the Ambient Auto Lighting be set to Automatic via LghtAmbDrvMde\_D\_Rq = “0x2 - Automatic”. The RSServer shall not request an Ambient Lighting Color or Intensity, and shall continue to the next RS Setting type in the priority list (per REQ-362422)

If the RSServer receives 0x0603:“0x01 - Manual”, the RSServer shall request the Ambient Auto Lighting be set to Manual via LghtAmbDrvMde\_D\_Rq = “0x01 - Manual”. The RSServer shall then request the RSClient to save the Ambient Lighting Color or Intensity by setting and sending the following signals:

1. LightAmbColor\_No\_Rq = 0x0601:“DataValue”
2. LightAmbIntsty\_No\_Rq = 0x0602:“DataValue”

Reference requirements:

VSv2-FUN-REQ-192195-Ambient Lighting - Variant 2

VS-FUN-REQ-339729-Drive Mode Auto/Manual Ambient Lighting setting.

MD-REQ-339730-LghtAmbDrvMde\_D\_Rq

MD-REQ-192189-LightAmbColor\_No\_Rq - Variant 2

MD-REQ-192190-LightAmbIntsty\_No\_Rq - Variant 2

##### RKS-REQ-362443/A-RS Settings – Failure to Apply Ambient Lighting Settings

If the RSServer cannot save the requested Ambient Lighting Settings for whatever reason (failure from AmbientLightingServer, AmbientLightingDriveModeServer, etc.), the RSServer shall not perform a retry and shall skip the Ambient Lighting Settings. This is if we check the status signals, **still TBD**.

##### RKS-REQ-362444/A-RS Settings – Invalid Ambient Lighting Color Code

If the RSServer receives an Ambient Color Code in the RS Settings payload that is not available in the vehicle, the RSServer shall use “ColorID1 (0x01)” as a default.

##### RKS-REQ-362445/A-RS Settings – Invalid Ambient Lighting Intensity

If the RSServer receives an Ambient Lighting Intensity in the RS Settings payload that is invalid or equal to 0x0, while also receiving a valid Ambient Color Code, the RSServer shall use an intensity value of “0x33 – 50% Intensity” as a default.

#### Other China Unique Changes

|  |  |
| --- | --- |
| Feature Name |  |
| 个人账号 |  |
| 昵称 |  |
| 照片 |  |
| 个人账号同步 |  |
| 日常行车时间 |  |
| 同步百度地图常用地址(home / office) |  |
| 充电桩分布 |  |
| 同步百度地图导航设置 |  |
| 家庭成员 |  |
| 驾驶模式 |  |
| 氛围灯 |  |
| 网易云音乐账号同步 |  |
| QQ音乐账号同步 |  |
| 酷狗音乐账号同步 |  |
| 电台调频账号同步 |  |
| 喜马拉雅FM账号同步 |  |
| 百度支付账号同步 |  |
| 支付宝账号同步 |  |
| 美团支付账号同步 |  |
| 爱奇艺账号同步 |  |
| 抖音账号同步 |  |
| Preferred Charge Time |  |

# Appendix: Reference Documents

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| --- | --- |
| Reference # | Document Title |
| 1 | Vehicle Settings APIM SPSS |
| 2 | AM\_FM\_HD Tuner APIM SPSS |
| 3 | DAB APIM SPSS |
| 4 | Satellite Radio v2 APIM SPSS |
| 5 | Ev Charge Programming APIM SPSS |
| 6 | Ford Telematics Communication Protocol Specification |
| 7 | FNV2-FCI Protocol SPSS |
| 8 | Rocket Setup On-Board Security Specification |
| 9 | ISO 8601 - <https://www.iso.org/iso-8601-date-and-time-format.html> |
| 10 |  |
| 11 |  |
| 12 |  |
| 13 |  |
| 14 |  |
| 15 |  |
| 16 |  |
| 17 |  |