



Research & Vehicle Technology
“Infotainment Systems Product Development”

Feature – Rejuvenate

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

Version 1.3

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	STR-887369/B-Physical Mapping of Classes	nmajjiga: added new class descriptions	
	STR-887370/B-Logical Signal Mapping	nmajjiga: added new signal	
	RJV-IIR-REQ-413906/B-RJV Server_Tx	nmajjiga: added new signal	
	MD-REQ-466740/A-RSeatSetSave_Rq	nmajjiga: new signal for save seat position change	
	STR-949988/B-General Requirements	nmajjiga: Added Requirement	
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RJV-REQ-438035/B-Abort Definition	nmajjiga: updated requirement
RJV-REQ-438036/B-Abort - Soft Button	nmajjiga: updated requirement
RJV-REQ-438037/B-Abort - Exit Precondition	nmajjiga: updated with vehicle stationary mode
RJV-REQ-442270/B-Abort - Accept Phone Call/Other high priority Audio requested	nmajjiga: updated requirement
RJV-REQ-470267/A-Abort - Climate System Unavailable For Rejuvenate	nmajjiga: new requirement
RJV-UC-REQ-442271/B-Abort - Accept Phone Call/Other high priority audio requested	nmajjiga: updated use case
RJV-ACT-REQ-441999/B-Abort Rejuvenate	nmajjiga: reference version B of End Rejuvenate
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RJV-REQ-466745/A-Record and Store Data While Rejuvenate Active	nmajjiga: new requirement
RJV-REQ-466746/A-Record and Store Engine ON time and Data Logging Timer	nmajjiga: new requirement
RJV-REQ-466747/A-Record Feature Completed Instances	nmajjiga: new requirement
RJV-REQ-466748/A-Record Feature Preview Instances	nmajjiga: new requirement
RJV-REQ-466749/A-Record Feature Aborted Instances	nmajjiga: new requirement
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STR-949989/B-Requirements	nmajjiga: added requirement for seat movement
RJV-REQ-488657/A-Seat Movement Selection	nmajjiga: new requirement for seat movement
STR-949990/B-Use Cases	nmajjiga: new usecase for seat movement
RJV-UC-REQ-488658/A-Seat Movement Selection	nmajjiga: new usecase for seat movement
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RJV-ACT-REQ-488659/A-Seat Movement Selection	nmajjiga: new activity diagram for seat movement
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RJV-SD-REQ-466689/B-End Rejuvenate_Accepted Phone Call/Other High Priority Audio Request	nmajjiga: removed MSSApplicationServer from diagram
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RJV-UC-REQ-438016/B-Alter Rejuvenate Experience	nmajjiga: updated usecase to add seat movement
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RJV-REQ-438019/C-Preconditions for Rejuvenate Experience	nmajjiga: updated to add door ajar signals requirement
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RJV-REQ-438021/C-Save/Recall Parameters	nmajjiga: updated audio content
RJV-REQ-438022/D-Orchestration Schedule	nmajjiga: updated typo in door lock requirement
RJV-REQ-516560/A-Personalization Settings Default	nmajjiga: new requirement for Personalization Settings Default
STR-887371/C-Functional Definition	nmajjiga: added new functional definition for Audio Interruption While Rejuvenate Active
RJV-REQ-438026/B-Heated Seat Selection	nmajjiga: added clarification
RJV-REQ-438027/B-Cooled Seat Selection	nmajjiga: added clarification
RJV-REQ-438028/B-Digital Scent Selection	nmajjiga: modified to add scent options
RJV-REQ-438030/C-Audio Selection	nmajjiga: modified to add source audio as option
RJV-REQ-438031/B-Do Not Disturb Selection	nmajjiga: updated requirement to align with implementation
RJV-STR-956355/C-Activity Diagrams	nmajjiga: added new activity diagram for Audio Toggle
RJV-ACT-REQ-516797/A-Audio Toggle While Rejuvenate Active	nmajjiga: new activity diagram for Audio Toggle
RJV-ACT-REQ-441931/B-Do Not Disturb Selection	nmajjiga: updated activity diagram to include AudioResourceServer
RJV-STR-956356/C-Sequence Diagrams	nmajjiga: added new sequence diagram for Audio Toggle
RJV-SD-REQ-516798/A-Audio Toggle While Rejuvenate Active	nmajjiga: new sequence diagram for Audio Toggle
RJV-SD-REQ-441933/B-Do Not Disturb Selection	nmajjiga: updated sequence diagram to include AudioResourceServer
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RJV-UC-REQ-438016/C-Alter Rejuvenate Experience	nmajjiga: updated as per revised feature implementation requirements for audio content
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RJV-UC-REQ-438018/B-Abort - Exit Precondition	nmajjiga: updated as per new feature implementation requirements
RJV-UC-REQ-516971/A-Abort - Vehicle Controls other than Climate selected on HMI	nmajjiga: new requirement to abort rejuvenate experience
RJV-ACT-REQ-441999/D-Abort Rejuvenate	nmajjiga: updated to align with End Rejuvenate diagram
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STR-1109416/A-Requirements	nmajjiga: added new requirement as per revised feature implementation requirements for audio content
RJV-REQ-516984/A-Audio Interruption While Rejuvenate Active	nmajjiga: new requirement as per revised feature implementation requirements for audio content
STR-1109417/A-Use Cases	nmajjiga: added new use case as per revised feature implementation requirements for audio content
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RJV-STR-1109420/A-Sequence Diagrams	nmajjiga: added new sequence diagram as per revised feature implementation requirements for audio content
RJV-SD-REQ-516988/A-Audio Interruption While Rejuvenate Active	nmajjiga: new sequence diagram as per revised feature implementation requirements for audio content
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RJV-REQ-466750/B-Record Alterations during Rejuvenate Experience	nmajjiga: updated as per new data analytics requirements
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1 Architectural Design

1.1 Overview

The Rejuvenate feature provides environment for customer to relax and recharge whenever they need by providing immersive sights, sounds, and scents. The feature will also encompass massage seating and orchestrated climate to further the immersion and relaxation. When the customer exits their vehicle, they should do so feeling refreshed and energized – ready to greet the next part of their day with a renewed purpose.

1.2 RJV-CLD-REQ-413904/A-RJV Server

Rejuvenate Server (RJVServer) shall pass commands to Rejuvenate clients to activate required features as per set parameters .

1.3 RJV-CLD-REQ-413905/A-RJV Client1

Rejuvenate Client1 (RJVClient1) shall take commands from RJVServer to set parameters for climate, EM register, heated seats, cooled seats experience as required to provide rejuvenate experience as selected by customer. RJVClient1 also provides RJVServer the status of rejuvenate climate logic and if it is overridden.

1.4 RJV-CLD-REQ-437967/B-RJV Client2

Rejuvenate Client2 (RJVClient2) shall take commands from RJVServer to set parameters for lighting experience as required to provide rejuvenate experience as selected by customer.

Rejuvenate Client2 (RJVClient2) shall also provide doors close/open status.

1.5 RJV-CLD-REQ-437968/A-RJV Client3

Rejuvenate Client3 (RJVClient3) shall take commands from RJVServer to set parameters for seat position as required to provide rejuvenate experience as selected by customer.

1.6 RJV-CLD-REQ-437969/B-RJV Client4

Rejuvenate Client4 (RJVClient4) shall provide doors lock/unlock status through SOA based Enclosure Service.

1.7 RJV-CLD-REQ-437970/A-RJV Client5

Rejuvenate Client5 (RJVClient5) shall take commands from RJVServer to set parameters for steering column movement as required to provide rejuvenate experience as selected by customer.

1.8 RJV-CLD-REQ-437971/A-RJV Client6

Rejuvenate Client6 (RJVClient6) shall take commands from RJVServer to set parameters for seat message operation as required to provide rejuvenate experience as selected by customer.

1.9 DST-CLD-REQ-376671/A-Digital Scent Client

The Digital Scent Client is responsible to provide the user HMI, to store and apply user settings using the Enhanced Memory feature, to receive OTA updates and to store scent data tables, to conditionally transmit selected subsets of scent data tables to the Digital Scent Server, to prioritize scenting requests from scent related features, to transmit scenting commands to the Digital Scent Server, to receive status information from the Digital Scent Server.



1.10 VS-CLD-REQ-025445/B-Ambient Lighting / Vehicle Settings Client (TcSE ROIN-159910-1)

Responsibility : The Ambient Lighting Settings Client makes requests to the external vehicle settings function to change Ambient lighting color or intensity as requested by the user.

1.11 AUMGNTv2-CLD-REQ-410571/A-Audio Resource Server

The Audio Resource Server object acts as the overall audio manager which is responsible for the interfaces between the requesters for the audio system (ie source clients/resource clients).

The Audio Resource Server is the audio prioritizer for audio requests.

The Audio Resource Server is responsible for providing the status of the audio sources to the source clients and status of the infotainment system.

The Audio Resource Server can stream audio to the Audio I/O controller for applicable sources

The Audio Resource Server mutes/unmutes its audio output signal as necessary for source changes.

1.12 MSS-CLD-REQ-410679/A-MSSApplicationServer

The 'MSSApplicationServer' object is responsible to co-ordinate and interface between the Audio Source Client(s), Input Client(s) and 'AudioResourceServer'. The 'MSSApplicationServer' is also responsible for controlling and updating the MSS Zone Manager objects when incoming service requests are received. The 'MSSApplicationServer' also transmits related status information to the Input client(s) (i.e. 'MSSOnboardClient', 'URC Client'). The 'MSSApplicationServer' shall interface with 'Passenger BT Phone Client' to handle the passenger BT phone calling and BT Media streaming. It also requests the 'Audio Resource Server' if the audio resources are needed.

1.13 Physical Mapping of Classes

The table below shows how the logical classes that make up the Rejuvenate feature may be mapped into physical modules.

Logical Class	Physical Module (ECU)
RJVServer	APIM PDC
RJVClient1	RCCM
RJVClient2	BCM
RJVClient3	DSM
RJVClient4	ECG
RJVClient5	PSM
RJVClient6	SCMG
RJVClientX	RJVClient 1 through 6
DigitalScentClient	APIM PDC
AmbientLightingClient	APIM PDC
AudioResourceServer	APIM PDC
AudioSettingsClient	APIM PDC
MSSApplicationServer	APIM PDC

1.14 Logical Signal Mapping

The CAN signals mentioned throughout this document shall refer to the CAN signal's logical name. The logical names shall be mapped to their actual CAN signal names. Please use the table below to perform the mapping.



Logical Name	CAN Signal Name
RActv_St	RjvntActv_D_Stat
RThemSel_St	RjvntThemSel_D_Stat
RPhs_St	RjvntPhs_D_Stat
RSeatHeat_Rq	RjvntSeatHeat_B_Rq
RSeatCool_Rq	RjvntSeatCool_B_Rq
RClimt_St	RjvntClimt_B_Stat
RSeatMassage_Rq	SeatFnDrv_D_Rq
LightAmbColor_No_Rq	LightAmbColor_No_Rq
LightAmbIntsty_No_Rq	LightAmbIntsty_No_Rq
LghtAmbRqSrc_B_Stat	LghtAmbRqSrc_B_Stat
CabinScentMode_St	CabnScentMde_D_Stat
CabinScentIntensity_St	CabnScentIntns_D_Stat
CabinScentChannel_St	CabnScentChnl_D_Stat
RClimtOvrrd_St	RjvntClimtOvrrd_D_Stat
RSeatOvrrd_St	RjvntSeatOvrrd_D_Stat
RClimtOvrdTyp_St	RjvntClimtOvrdTyp_D_Stat
GearPosition_St	TrnRng_D_Rq
Ignition_Status	Ignition_Status
RSeatSetSave_Rq	RjvntSeatSetSavDrv_B_Rq
RSeatMovement_Rq	RjvntSeatMov_B_Rq
DriverDoorStatus	DrStatDrv_B_Actl
PassengerDoorStatus	DrStatPsngr_B_Actl
RearLeftDoorStatus	DrStatRl_B_Actl
RearRightDoorStatus	DrStatRr_B_Actl

1.15 RJV-IIR-REQ-413906/C-RJV Server_Tx

1.15.1 MD-REQ-437972/A-RActv_St

Message Type: Status

This signal shall be sent by the RJVServer to provide feature status

Name	Literals	Value	Description
RActv_St	-	-	Feature status
	Inactive	0x0	
	Active	0x1	
	Not Used	0x2	
	Faulty	0x3	

1.15.2 MD-REQ-437973/A-RThemSel_St

Message Type: Status

This signal shall be sent by the RJVServer to provide theme selected status

Name	Literals	Value	Description
RThemSel_St	-	-	Theme selected status



	Null	0x0	
	Theme1	0x1	
	Theme2	0x2	
	Theme3	0x3	
	Theme4	0x4	
	Theme5	0x5	
	Theme6	0x6	
	Theme7	0x7	
	Theme8	0x8	
	Theme9	0x9	
	Theme10	0xA	
	Theme11	0xB	
	Theme12	0xC	
	Theme13	0xD	
	Theme14	0xE	
	Theme15	0xF	

1.15.3 MD-REQ-437974/B-RPhs_St

Message Type: Status

This signal shall be sent by the RJVServer to provide feature phase status

Name	Literals	Value	Description
RPhs_St	-	-	Feature status
	Inactive	0x0	
	Relax	0x1	
	Invigorate	0x2	
	Exit	0x3	
	Abort	0x4	
	Not used	0x5 – 0x7	

1.15.4 MD-REQ-437975/A-RSeatHeat_Rq

Message Type: Request

This signal shall be sent by the RJVServer to request heated seat On/Off

Name	Literals	Value	Description
RSeatHeat_Rq	-	-	Feature status
	Off	0x0	
	On	0x1	

1.15.5 MD-REQ-437977/A-RSeatCool_Rq

Message Type: Request

This signal shall be sent by the RJVServer to request cooled seat On/Off

Name	Literals	Value	Description
RSeatCool_Rq	-	-	Feature status
	Off	0x0	
	On	0x1	

**1.15.6 MD-REQ-437978/A-RSeatMassage_Rq****Message Type:** Request

This signal shall be sent by the RJVServer to request seat massage On/Off

Logical Signal Name	Literals	Value	Description
RSeatMassage_Rq	Inactive	0x0	
	LowerLumbar	0x1	
	MiddleLumbar	0x2	
	UpperLumbar	0x3	
	LowerBolster	0x4	
	UpperBolster	0x5	
	LumbarMassage	0x6	
	CushionMassage	0x7	

1.15.7 MD-REQ-192189/B-LightAmbColor_No_Rq - Variant 2**Message Type:** Request

The Ambient Lighting Client uses this signal to request the color selection for ambient lighting from the Ambient Lighting Server.

Logical Signal Name	Literals	Value	Description
LightAmbColor_No_Rq – Variant 2	Inactive	0x00	
	Color ID1	0x01	
	Color ID2	0x02	
	Color ID3	0x03	
	Color ID4	0x04	
	Color ID5	0x05	
	Color ID6	0x06	
	Color ID7	0x07	
	Color ID8	0x08	
	Color ID9	0x09	
	Color ID10	0x0A	
	Color ID11	0x0B	
	Color ID12	0x0C	
	Color ID13	0x0D	
	Color ID14	0x0E	
	Color ID15	0x0F	
	Color ID16	0x10	
	Reserved	0x11 to 0xFF	

1.15.8 MD-REQ-192190/B-LightAmbIntsty_No_Rq - Variant 2**Message Type:** Request

This signal requests the selection of intensity for ambient lighting.

Logical Signal Name	Literals	Value	Description
LightAmbIntsty_No_Rq – Variant 2	Inactive / No Data Exits	0x00	
	0% Intensity / Ambient Lighting OFF	0x01	
	1% Intensity	0x02	



	2% Intensity	0x03	
	3% Intensity	0x04	
	cont.	...	
	100% Intensity	0x65	
	Ambient Lighting Turn ON	0x66	

1.15.9 MD-REQ-426848/A-LghtAmbRqSrc_B_Stat

Message Type: Status

Signal from the Phoenix PDC Ambient Lighting Client module indicating if in manual or automatic mode

Logical Signal Name	Literals	Value	Description
LghtAmbRqSrc_B_Stat	Manual	0x0	
	Auto	0x1	

1.15.10 MD-REQ-377212/A-CabinScentMode_St

Message Type: Status

Signal provides the scenting operation status of scent module.

Name	Literals	Value	Description
	-	-	
	AwakeNotScenting	0x0	
	AwakeScenting	0x1	

1.15.11 MD-REQ-377213/A-CabinScentChannel_St

Message Type: Status

Signal provides the currently selected scent channel (scent cartridge) status in the scent module.

Name	Literals	Value	Description
	-	-	
	Off	0x0	
	Channel_1	0x1	
	Channel_2	0x2	
	Channel_3	0x3	
	Channel_4	0x4	
	Channel_5	0x5	
	Channel_6	0x6	
	Channel_7	0x7	

**1.15.12 MD-REQ-377214/A-CabinScentIntensity_St**

Message Type: Status

Signal provides the current status of scent level intensity in the scent module.

Name	Literals	Value	Description
	-	-	
	NotDetermined	0x0	
	Off	0x1	
	NotUsed_1	0x2	
	Low	0x3	
	NotUsed_2	0x4	
	Medium	0x5	
	NotUsed_3	0x6	
	High	0x7	

1.15.13 MD-REQ-466740/A-RSeatSetSave_Rq

Message Type: Request

Signal requests the selection to save seat settings if changed.

Name	Literals	Value	Description
	-	-	
	No	0x0	
	Yes	0x1	

1.15.14 MD-REQ-488637/A-RSeatMovement_Rq

Message Type: Request

This signal shall be sent by the RJVServer to have seat movement On/Off

Name	Literals	Value	Description
RSeatMovement_Rq	-	-	Feature status
	Off	0x0	
	On	0x1	

1.16 RJV-IIR-REQ-413908/B-RJV Server_Rx**1.16.1 MD-REQ-437980/A-RClimt_St**

Message Type: Status

This is feature climate status signal received by RJVServer

Name	Literals	Value	Description
RClimt_St	-	-	Feature climate status
	Off	0x0	
	On	0x1	

**1.16.2 MD-REQ-437981/A-RClimtOvrrd_St**

Message Type: Status

This is feature climate overridden status signal received by RJVServer

Name	Literals	Value	Description
RClimtOvrrd_St	-	-	Feature climate overridden status
	Active	0x0	
	Overridden	0x1	
	Not used	0x2	
	Faulty	0x3	

1.16.3 MD-REQ-437982/A-RSeatOvrrd_St

Message Type: Status

This is feature seat climate overridden status signal received by RJVServer

Name	Literals	Value	Description
RSeatOvrrd_St	-	-	Feature seat climate overridden status
	Active	0x0	
	Overridden	0x1	
	Not used	0x2	
	Faulty	0x3	

1.16.4 MD-REQ-437983/B-RClimtOvrrd_St

Message Type: Status

This is feature climate overridden type signal received by RJVServer

Name	Literals	Value	Description
RClimtOvrdTyp_St	-	-	Feature climate overridden type
	NoOverrides	0x0	
	Climate Power Off	0x1	
	Blower Changes	0x2	
	Auto Selected	0x3	
	Temperature	0x4	
	Mode Changes	0x5	
	Recirc Changes	0x6	
	Seat Climate	0x7	
	EM Register	0x8	
	Not used	0x9 – 0xE	
	Faulty	0xF	

1.16.5 MD-REQ-403324/A-GearPosition_St

Message Type: Status

This signal is used to indicate the gear position status

Name	Literals	Value	Description
GearPosition_St	-	-	Status of the vehicle Gear Position



	Park	0x0	
	Reverse	0x1	
	Neutral	0x2	
	Drive	0x3	
	Sport_DriveSport_ Mposition	0x4	
	Low	0x5	
	Range1_M1_L1	0x6	
	Range2_M2_L2	0x7	
	Range3_M3_L3	0x8	
	Range4	0x9	
	Range5	0xA	
	Range6	0xB	
	NotUsed_1	0xC	
	NotUsed_2	0xD	
	Unknown_Position	0xE	
	Fault	0xF	

1.16.6 MD-REQ-273750/A-Ignition_Status**Message Type:** Status

Signal sent to the infotainment system indicating the ignition status of the vehicle

Logical Signal Name	Literals	Value	Description
Ignition_Status	Unknown	0x0	
	OFF	0x1	
	Accessory	0x2	
	Run	0x4	
	Start	0x8	
	Invalid	0xF	

1.16.7 MD-REQ-273497/A-DriverDoorStatus**Message Type:** Status

Signal to indicate if the front driver door is closed or ajar.

Logical Signal Name	Literals	Value	Description
DriverDoorStatus	Closed	0x0	
	Ajar	0x1	

1.16.8 MD-REQ-273720/A-PassengerDoorStatus**Message Type:** Status

Signal to indicate if the front passenger door is closed or ajar.

Logical Signal Name	Literals	Value	Description
PassengerDoorStatus	Closed	0x0	
	Ajar	0x1	

**1.16.9 MD-REQ-372987/A-RearLeftDoorStatus****Message Type:** Status

Signal to indicate if the Rear Left Door is closed or ajar.

Logical Signal Name	Literals	Value	Description
RearLeftDoorStatus / DrStatRI_B_Actl	Closed	0x0	
	Ajar	0x1	

1.16.10 MD-REQ-372988/A-RearRightDoorStatus**Message Type:** Status

Signal to indicate if the Rear Right Door is closed or ajar.

Logical Signal Name	Literals	Value	Description
RearRightDoorStatus / DrStatRr_B_Actl	Closed	0x0	
	Ajar	0x1	



2 General Requirements

2.1 RJV-REQ-438019/C-Preconditions for Rejuvenate Experience

For RJVServer to process this feature signals and for HMI to provide Rejuvenate screens following preconditions should be met:

1. Vehicle engine is Active, which is determined by Ignition_Status = 0x4 (Run) or 0x8 (Start) or 0x2 (Acc)
Note: Acc mode applies only for Electric Vehicles
2. Vehicle is in park position, GearPosition_St = 0x0 (Park)
3. All doors closed, RJVClient2 shall indicate to RJVServer doors are closed as per following signals:
DriverDoorStatus = 0x0 (Closed)
PassengerDoorStatus = 0x0 (Closed)
RearLeftDoorStatus = 0x0 (Closed)
RearRightDoorStatus = 0x0 (Closed)
4. Vehicle Stationary Mode is Active/On.

2.2 RJV-REQ-466683/A-Vehicle Stationary Mode

An internal signal shall be set by RJVServer to indicate Vehicle Stationary Mode is Active/On.
Rejuvenate screen on HMI will be available when the Vehicle Stationary Mode is Active/On.
In case if the Vehicle Stationary Mode shall become Inactive/Off the Rejuvenate experience shall be aborted.
Refer HMI specification document (X93_Rejuvenate).

2.3 RJV-REQ-442203/C-Configuration Settings

The RJVServer shall have a configurable parameter to determine whether Rejuvenate feature is supported or not:

- If the parameter indicates the vehicle supports Rejuvenate, then all the functionality and signals defined in this SPSS shall be supported as defined.
- If the parameter indicates the vehicle does not support Rejuvenate, then none of the functionality defined in this SPSS shall be supported.

Fuel type configuration needs to be checked to determine engine running conditions. When Fuel Type parameter in DID DE04 is set to 0x2 (BEV), Engine status shall be set to Active for Ignition Status = 0x2 (Acc) as well.

Refer to Infotainment Diagnostics Specification for config parameter details.

2.4 RJV-REQ-438020/B-HMI requirements for feature

HMI display for this feature is available only when all the preconditions are met.

Further details of how to navigate to the screen, look/naming/placement/accessing of buttons and timing requirements for button presses is covered in HMI specification document (X93_Rejuvenate).

Note: In case of discrepancy in the HMI requirements defined in this spec and HMI specification document the HMI specification document shall take precedence.

2.5 VS-SR-REQ-426847/A-LghtAmbRqSrc_B_Stat signal usage

The Ambient Lighting Client shall not be set "LghtAmbRqSrc_B_Stat = Auto" unless explicitly called out in a feature SPSS spec (ex Rejuvenate SPSS). All other times the Ambient Lighting Client shall have LghtAmbRqSrc_B_Stat set to Manual. Reference the feature SPSS spec for when "Auto" would be set and when "Manual" would be set.

This requirement is only for the Phoenix PDC Module. At the time this spec was written this was not for other modules that might be the Ambient Lighting Client (ex RACM).

2.6 RJV-REQ-438021/C-Save/Recall Parameters

Driver Seat Positions



Upon entering the "Entry Phase" the RJVClient3 shall read and store the current value for each of the below driver seat positions and recall them Upon entering the "Abort Sequence" or "Exit Phase":

- position (forward/back) on track
- position (up/down) on track
- cushion track fore/aft
- cushion track up/down
- cushion track tilt
- cushion extension left
- cushion extension right
- back recline
- back upper pivot
- back lumbar (mechanical or bladders)
- head rest fore/aft
- head rest up/down
- cushion bolster bladders
- back bolster bladders
- calf raise (up-down)

Audio Parameters

Upon entering the "Entry Phase", the RJVServer shall read and store the current audio source (if no audio or theme audio selected as preferred audio) and recall upon entering the "Abort Sequence" or "Exit Phase".

Climate Parameters

Upon entering the "Entry Phase", the RJVClient1 shall read and store the current settings for climate, including but not limited to set temperature, blower mode, blower speed, etc; and recall them upon entering the "Abort Sequence" or "Exit Phase".

EM Register Parameters

Upon entering the "Entry Phase", the RJVClient1 shall read and store the current settings for the EM Registers including but not limited to set position, etc; and recall them upon entering the "Abort Sequence" or "Exit Phase".

Ambient Light Parameters

Upon entering the "Entry Phase", the RJVClient2 shall read and store the current settings for the Ambient lighting system including but not limited to set color, intensity; and recall them upon entering the "Abort Sequence" or "Exit Phase".

2.7 RJV-REQ-438022/D-Orchestration Schedule

RJVServer shall run a schedule of orchestration which triggers all actions to happen at the appropriate time.

The actions include, but are not limited to:

storing/recalling settings, commanding values for settings, dictating when to display/output imagery/audio.

This schedule is represented in "phases" such as: Entry, Relax, Transition, Invigorate, Exit

Entry Phase

After the user has selected to begin the rejuvenate experience, the rejuvenate feature shall be in the "Entry Phase".

The aim is to prepare the cabin of the vehicle for the rejuvenate experience as defined in "Orchestration with Theme Matrix" document.

During this phase following activities happen:

Current values of different parameters are stored. Refer to Save/Recall parameters section (RJV-REQ-438021-Save/Recall Parameters) for details.

The RJVClient4 shall command the doors to be locked.

The RJVClient5 shall command that the steering wheel/column are stowed or pushed away from the user.

The desired audio shall be played.

The RJVServer shall display the desired imagery on the main and secondary screen.

The RJVClient2 shall provide the desired Ambient Light experience.

Transition from Entry Phase to Relax Phase

Rejuvenate feature shall transition from "Entry Phase" to "Relax Phase" once the following actions have been completed:

- the "entry display" image/video has been displayed and allowed to play for its duration
- the "entry lighting" light color and intensity have been output via ambient lighting
- the "entry audio" has been output via the vehicle's audio system and allowed to play for its duration

Relax Phase

Upon entering the "Relax Phase" RJVServer shall transmit signal RPhs_St = 0x1 (Relax).

The aim of the "Relax Phase" is to make the user feel relaxed.



During this phase rejuvenate feature shall perform following schedule program of activities as defined in "Orchestration with Theme Matrix" document for "Relax Phase":

The RJVClient3 shall adjust the Driver Seat Position. The user can adjust seat position via manual controls as well.

The RJVClient1 shall provide the desired seat climate, climate and EM Registers experience.

The RJVClient6 shall provide the desired seat massage experience.

The desired audio shall be played.

The RJVServer shall display the desired imagery on the main and secondary screen.

The RJVServer shall provide the desired Ambient Light experience.

Transition from Relax Phase to Transition Phase

Rejuvenate feature shall switch from "Relax Phase" to "Transition Phase" once the "Relax Phase" has been allowed to run through its scheduled program which has been defined in "Orchestration with Theme Matrix" document.

Transition Phase

The aim of the "Transition Phase" is to alert the user to the upcoming changes which will be part of the "Invigorate Phase".

During this phase rejuvenate feature shall perform following schedule program of activities as defined in "Orchestration with Theme Matrix" document for "Transition Phase":

The RJVClient3 shall adjust the Driver Seat Position.

The RJVClient6 shall make adjustments to the seat massage settings.

The desired audio shall be played.

The RJVServer shall display the desired imagery on the main and secondary screen.

The RJVServer shall provide the desired Ambient Light experience.

Transition from Transition Phase to Invigorate Phase

Rejuvenate feature shall switch from "Transition Phase" to "Invigorate Phase" once the "Transition Phase" has been allowed to run through its scheduled program which has been defined in "Orchestration with Theme Matrix" document.

Invigorate Phase

Upon entering the "Invigorate Phase" RJVServer shall transmit signal RPhs_St = 0x2 (Invigorate).

The aim of this phase is to make the user feel Invigorated.

During this phase rejuvenate feature shall perform following schedule program of activities as defined in "Orchestration with Theme Matrix" document for "Invigorate Phase":

The RJVClient3 shall adjust the Driver Seat Position. The user can adjust seat position via manual controls as well.

The RJVClient1 shall provide the desired seat climate, climate and EM Registers experience.

The RJVClient6 shall provide the desired Seat Massage experience.

The desired audio shall be played.

The RJVServer shall display the desired imagery on the main and secondary screen.

The RJVServer shall provide the desired Ambient Light experience.

Transition from Invigorate Phase to Exit Phase

Rejuvenate feature shall switch from "Invigorate Phase" to "Exit Phase" once the "Invigorate Phase" has been allowed to run through its scheduled program which has been defined in "Orchestration with Theme Matrix" document.

Exit Phase

Upon entering the "Exit Phase" RJVServer shall transmit signals RPhs_St = 0x3 (Exit) and RActv_St = 0x0 (Inactive).

The aim of this phase is to return the cabin of the vehicle to the conditions that it was in before the rejuvenate experience as defined in "Orchestration with Theme Matrix" document.

During this phase following activities happen:

The stored values of different parameters are recalled. Refer to Save/Recall parameters section (RJV-REQ-438021-Save/Recall Parameters) for details

The RJVClient5 shall recall the steering wheel position.

The preview audio shall be played when "Exit Phase" completes until user exits to home screen.

The RJVServer shall display the desired imagery on the main and secondary screen.

The RJVClient2 shall provide the desired Ambient Light experience.

2.8 RJV-REQ-516560/A-Personalization Settings Default

Orchestration shall define the defaults for all the personalization settings in the "Orchestration with Theme Matrix" document. For all the Rejuvenate Personalization settings the default shall be overwritten if changed by the user. The last selection shall be remembered by RJVServer and shall be persisted in the next session of Rejuvenate.



3 Functional Definition

3.1 RJV-FUN-REQ-413910/A-Update Theme

3.1.1 Requirements

3.1.1.1 RJV-REQ-438023/A-Update Theme

Rejuvenate theme content can be modified via OTA. When available and command is sent to vehicle and if vehicle has active cellular data connection the rejuvenate feature shall be able to receive an OTA package that can replace the existing content of a theme with different and/or updated content.

3.1.2 Use Cases

3.1.2.1 RJV-UC-REQ-438005/A-Update Theme

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. The vehicle has a cellular or wifi connection and is ready for OTA.
Scenario Description	OEM will push theme content out to the vehicle.
Post-conditions	The pushed content package will replace the stored content in the appropriate locations. The next time that the user enters the rejuvenate HMI, the theme changes will be reflected.
List of Exception Use Cases	
Interfaces	HMI, CAN

3.2 RJV-FUN-REQ-438064/A-Settings Selection

3.2.1 Requirements

3.2.1.1 RJV-REQ-438024/A-Theme Selection

RJVServer shall allow user to select the theme for rejuvenate experience from available options by pressing "Theme" button on HMI before starting rejuvenate experience.

Once the theme is selected RJVServer shall transmit signal RThemSel_St = 0x1 through 0xF associated to the selected theme.

For any given theme RJVServer shall set associated Audio, Video, Scent, Ambient lighting/brightness.

3.2.1.2 RJV-REQ-438025/A-Time Selection

RJVServer shall allow user to select the time for rejuvenate experience from available options by pressing "Time" button on HMI before starting rejuvenate experience.

Once rejuvenate experience starts it will run through all the phases for selected time.



3.2.1.3 RJV-REQ-438026/B-Heated Seat Selection

RJVServer shall allow user to select if heated seat is turned On or Off by pressing “Heated Seat” button on HMI before starting rejuvenate experience or alter selection while rejuvenate session is in progress.

RJVServer shall transmit signal:

RSeatHeat_Rq = 0x1 (On) if user toggles “Heated Seat” button to ON

RSeatHeat_Rq = 0x0 (Off) if user toggles “Heated Seat” button to OFF

Upon receiving this signal RJVClient1 shall set the climate parameters accordingly.

If selection is made while rejuvenate session is in progress, RJVClient1 shall make changes as needed and applicable for rest of the experience.

3.2.1.4 RJV-REQ-438027/B-Cooled Seat Selection

RJVServer shall allow user to select if cooled seat is turned On or Off by pressing “Cooled Seat” button on HMI before starting rejuvenate experience or alter selection while rejuvenate session is in progress.

RJVServer shall transmit signal:

RSeatCool_Rq = 0x1 (On) if user toggles “Cooled Seat” button to ON

RSeatCool_Rq = 0x0 (Off) if user toggles “Cooled Seat” button to OFF

Upon receiving this signal RJVClient1 shall set the climate parameters accordingly.

If selection is made while rejuvenate session is in progress, RJVClient1 shall make changes as needed and applicable for rest of the experience.

3.2.1.5 RJV-REQ-438028/B-Digital Scent Selection

RJVServer shall allow user to select any digital scent option or no scent from “Digital Scent” menu in personalization screen before starting rejuvenate experience or alter selection while rejuvenate session is in progress.

RJVServer shall send internal signal to DigitalScentClient:

Rejuvenate Status = 0x1 (Feature Active) if user selects any of the scent options and rejuvenate is active

Rejuvenate Status = 0x0 (Feature Not Active) if user selects No Scent

3.2.1.6 RJV-REQ-438029/A-Seat Massage Selection

RJVServer shall allow user to select if seat massage is turned On or Off by pressing “Seat Massage” button on HMI before starting rejuvenate experience or alter selection while rejuvenate session is in progress.

RJVServer shall transmit signal:

RSeatMassage_Rq = 0x7 (CushionMassage) if user toggles “Seat Massage” button to ON

RSeatMassage_Rq = 0x2 (MiddleLumbar) if user toggles “Seat Massage” button to OFF

Upon receiving this signal RJVClient6 shall set the seat massage parameters accordingly.

If selection is made while rejuvenate session is in progress, RJVClient6 shall make changes as needed for rest of the experience.

3.2.1.7 RJV-REQ-438030/C-Audio Selection

RJVServer shall allow user to select Theme Audio or Source Audio or No Audio from the “Audio” menu in personalization screen before stating rejuvenate experience or alter selection while rejuvenate session is in progress.

RJVServer shall set:

AudioStreaming; If user selected Theme Audio or Source Audio

NoAudioStreaming; If user selected No Audio

If selection is made while rejuvenate session is in progress, the changes shall be made for rest of the experience.

Audio Options are “Grayed Out” when Phone call or other High Priority audio (ex. VR session) is active, and user cannot change audio selection at this time.

3.2.1.8 RJV-REQ-438031/B-Do Not Disturb Selection

RJVServer shall allow user to select if Do Not Disturb is turned On or Off by pressing “Do Not Disturb” button on HMI before starting rejuvenate experience or alter selection while rejuvenate session is in progress.

RJVServer shall send internal signal to AudioResourceServer:

Rejuvenate DND = On If user toggles “Do Not Disturb” button ON

Rejuvenate DND = Off If user toggles “Do Not Disturb” button OFF

Upon receiving this signal AudioResourceServer shall set Do Not Disturb On or Not accordingly.



If selection is made while rejuvenate session is in progress, AudioResourceServer shall make changes as needed for rest of the experience.

3.2.1.9 *RJV-REQ-488657/A-Seat Movement Selection*

RJVServer shall allow user to select if seat movement is turned On or Off by pressing "Seat Movement" button on HMI before starting rejuvenate experience or alter selection while rejuvenate session is in progress.

RJVServer shall transmit signal:

RSeatMovement_Rq = 0x1 (On) if user toggles "Seat Movement" button to ON

RSeatMovement_Rq = 0x0 (Off) if user toggles "Seat Movement" button to OFF

Upon receiving this signal RJVClient3 shall set the seat movement parameters accordingly.

If selection is made while rejuvenate session is in progress, RJVClient3 shall make changes as needed for rest of the experience.

3.2.2 Use Cases

3.2.2.1 *RJV-UC-REQ-438006/A-Theme selection*

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer screen is ON. All doors are closed. Vehicle engine is Active. Vehicle is in park position.
Scenario Description	User selects required theme on HMI.
Post-conditions	When rejuvenate experience starts the selected theme is displayed.
List of Exception Use Cases	
Interfaces	HMI, CAN

3.2.2.2 *RJV-UC-REQ-438007/A-Time selection*

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer screen is ON. All doors are closed. Vehicle engine is active. Vehicle is in park position.
Scenario Description	User selects required time on HMI.
Post-conditions	When rejuvenate experience starts it will be available for selected time.
List of Exception Use Cases	



Interfaces	HMI, CAN
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3.2.2.3 RJV-UC-REQ-438008/A-Heated Seat Selection

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer_screen is ON. All doors are closed. Vehicle engine is active. Vehicle is in park position.
Scenario Description	User makes required selection for heated seat on HMI.
Post-conditions	User experiences rejuvenate as per the heated seat selection.
List of Exception Use Cases	
Interfaces	HMI, CAN

3.2.2.4 RJV-UC-REQ-438009/A-Cooled Seat Selection

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer_screen is ON. All doors are closed. Vehicle engine is active. Vehicle is in park position.
Scenario Description	User makes required selection for cooled seat on HMI.
Post-conditions	User experiences rejuvenate as per the cooled seat selection.
List of Exception Use Cases	
Interfaces	HMI, CAN

3.2.2.5 RJV-UC-REQ-438010/A-Digital Scent Selection

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active.



	RJVServer_screen is ON. All doors are closed. Vehicle engine is active. Vehicle is in park position.
Scenario Description	User makes required selection for scent on HMI.
Post-conditions	User experiences rejuvenate with or without scent as per selection.
List of Exception Use Cases	
Interfaces	HMI, CAN

3.2.2.6 RJV-UC-REQ-438011/A-Seat Massage Selection

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer_screen is ON. All doors are closed. Vehicle engine is active. Vehicle is in park position.
Scenario Description	User makes required selection for seat massage on HMI.
Post-conditions	User experiences rejuvenate as per the seat massage selection.
List of Exception Use Cases	
Interfaces	HMI, CAN

3.2.2.7 RJV-UC-REQ-438012/A-Audio Selection

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer_screen is ON. All doors are closed. Vehicle engine is active. Vehicle is in park position.
Scenario Description	User makes required selection for Audio on HMI.
Post-conditions	User experiences rejuvenate with or without Audio as per selection.



List of Exception Use Cases	
Interfaces	HMI, CAN

3.2.2.8 RJV-UC-REQ-438013/A-Do Not Disturb Selection

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer screen is ON. All doors are closed. Vehicle engine is active. Vehicle is in park position.
Scenario Description	User makes required selection for Do Not Disturb on HMI.
Post-conditions	User experiences rejuvenate as per the Do Not Disturb selection.
List of Exception Use Cases	
Interfaces	HMI, CAN

3.2.2.9 RJV-UC-REQ-488658/A-Seat Movement Selection

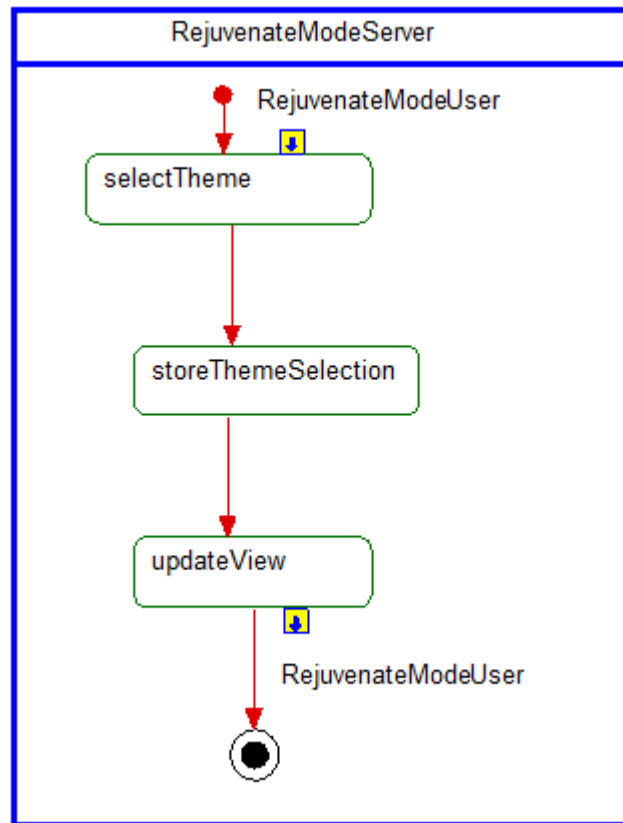
Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer screen is ON. All doors are closed. Vehicle engine is active. Vehicle is in park position.
Scenario Description	User makes required selection for seat movement on HMI.
Post-conditions	User experiences rejuvenate as per the seat movement selection.
List of Exception Use Cases	
Interfaces	HMI, CAN



3.2.3 White Box Views

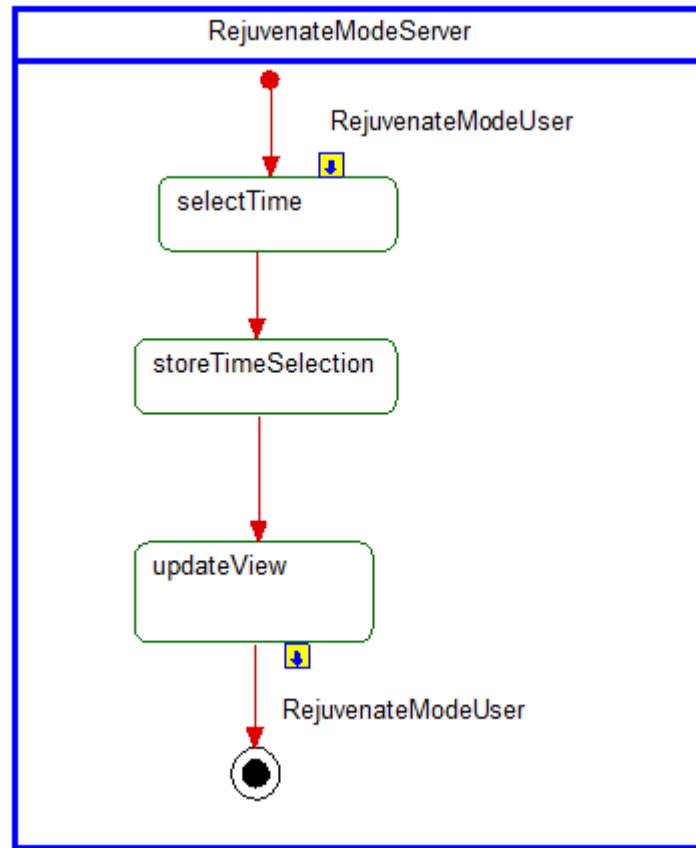
3.2.3.1 Activity Diagrams

3.2.3.1.1 RJV-ACT-REQ-441918/A-Theme Selection

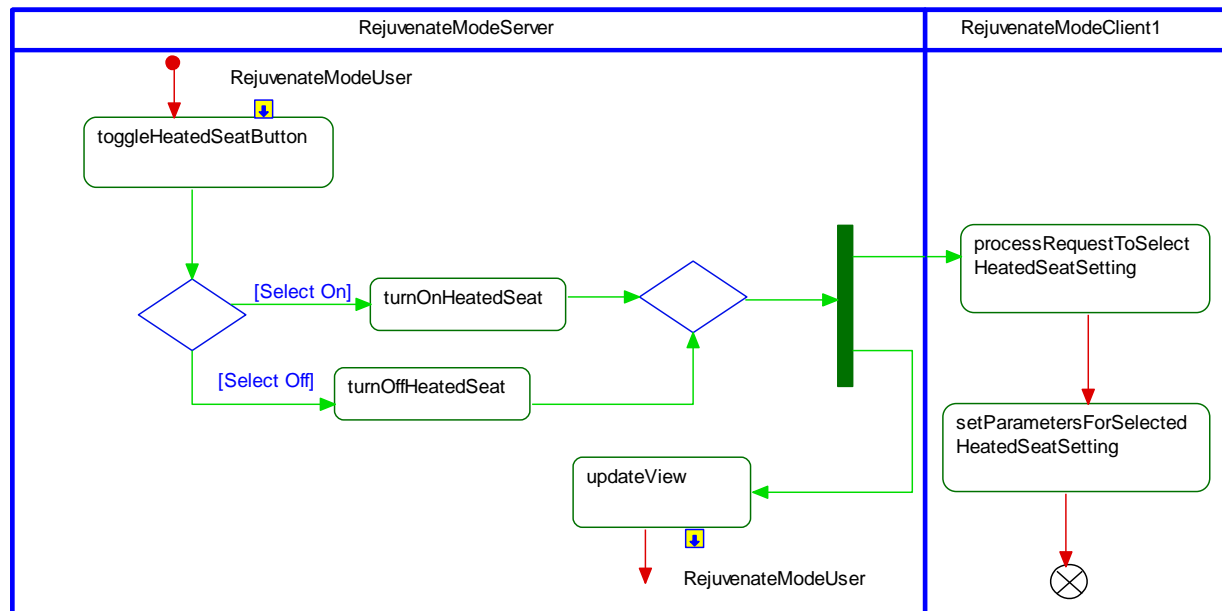




3.2.3.1.2 RJV-ACT-REQ-441921/A-Time Selection

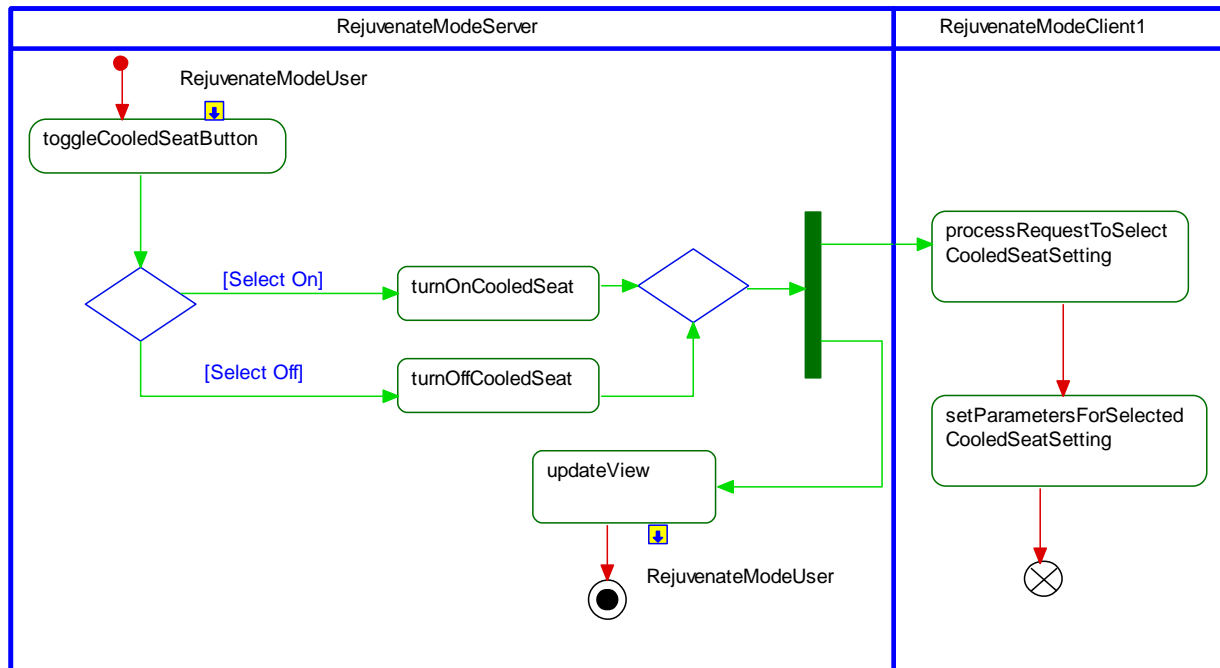


3.2.3.1.3 RJV-ACT-REQ-441923/A-Heated Seat Selection

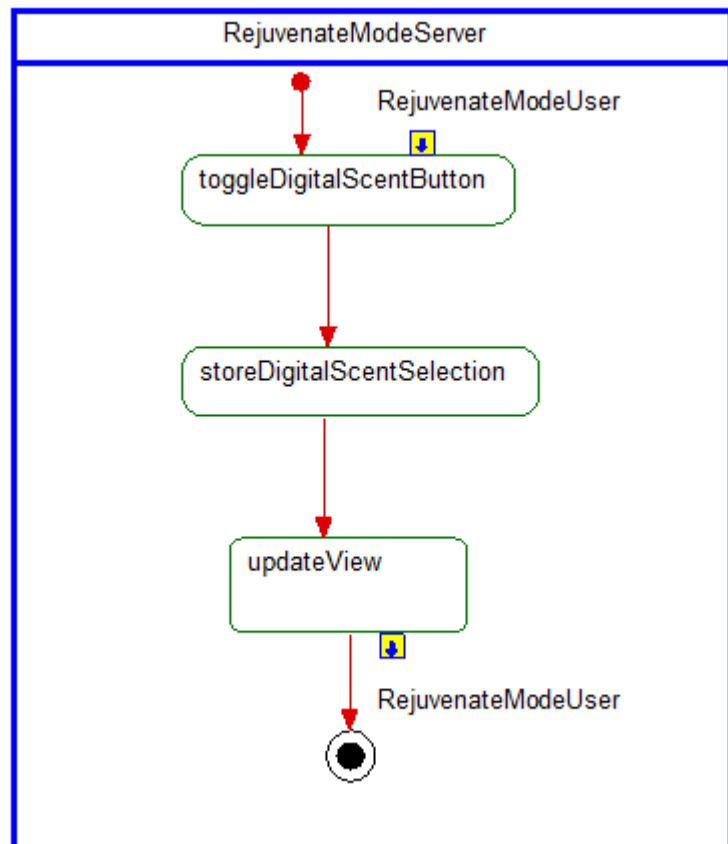




3.2.3.1.4 RJV-ACT-REQ-441925/A-Cooled Seat Selection

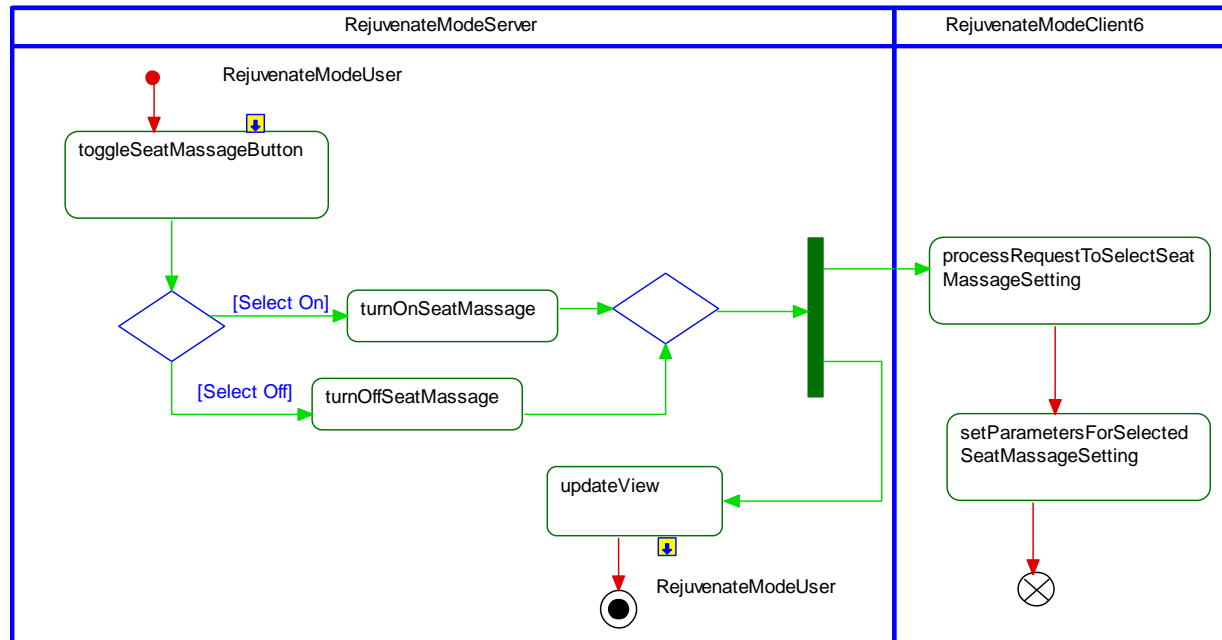


3.2.3.1.5 RJV-ACT-REQ-441927/A-Digital Scent Selection

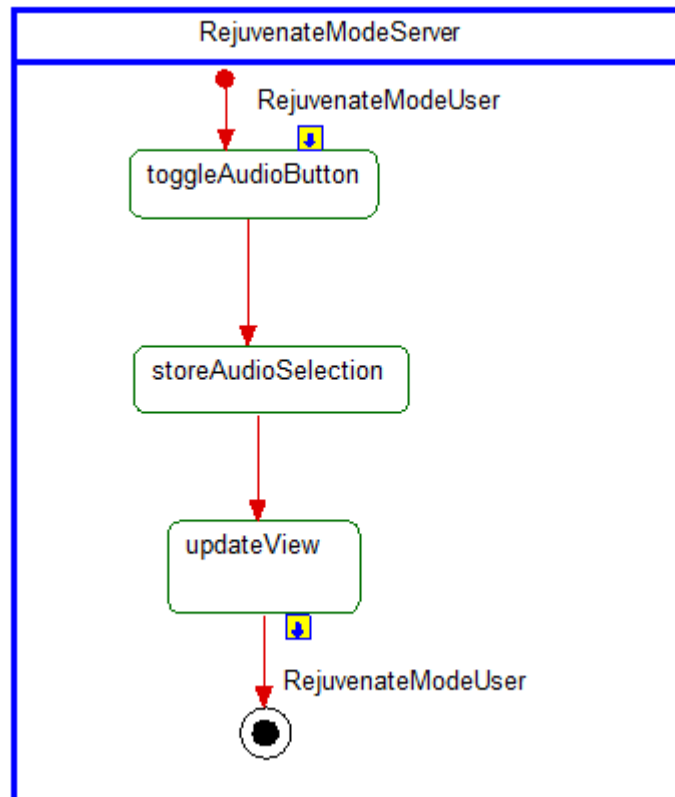




3.2.3.1.6 RJV-ACT-REQ-441929/A-Seat Massage Selection

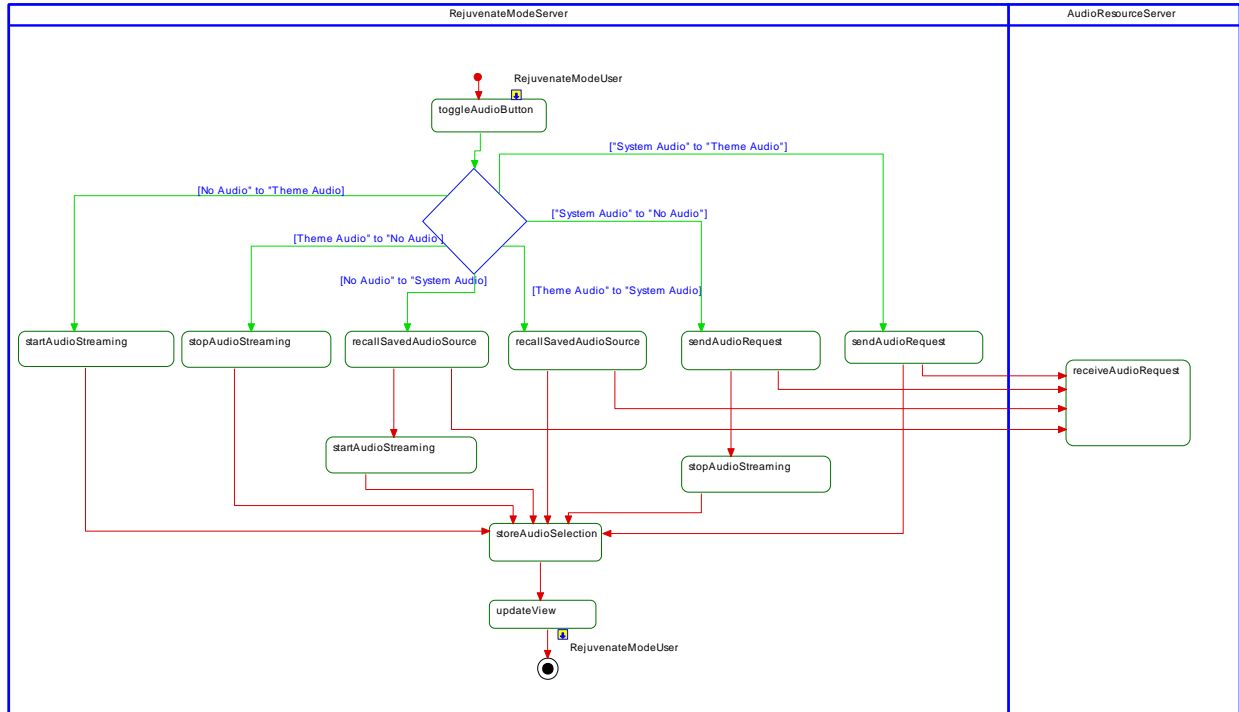


3.2.3.1.7 RJV-ACT-REQ-441837/A-Audio Selection

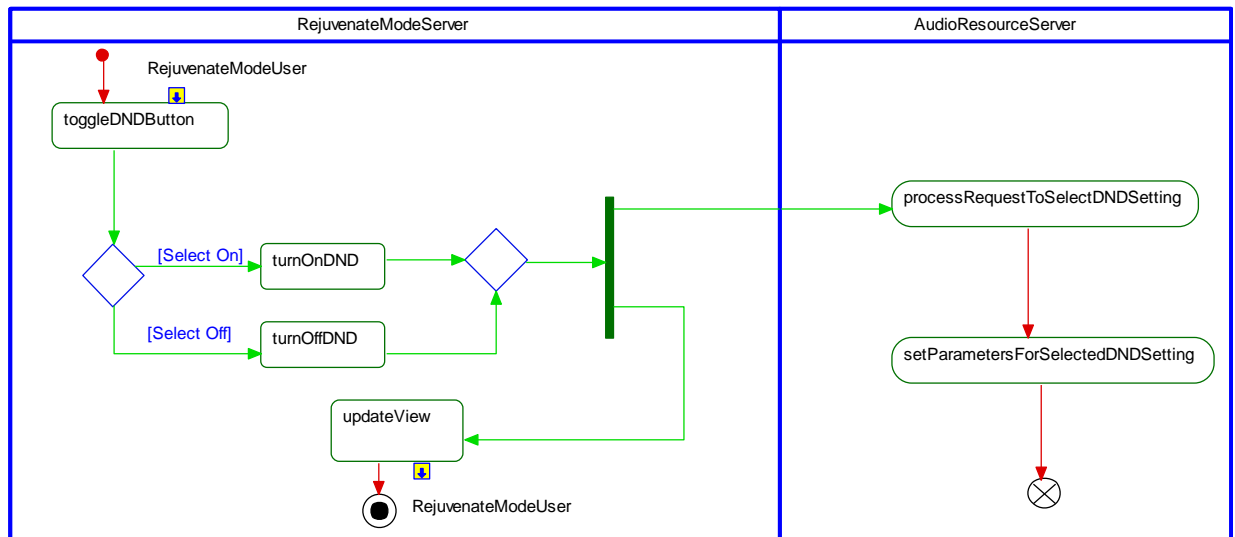




3.2.3.1.8 RJV-ACT-REQ-516797/A-Audio Toggle While Rejuvenate Active

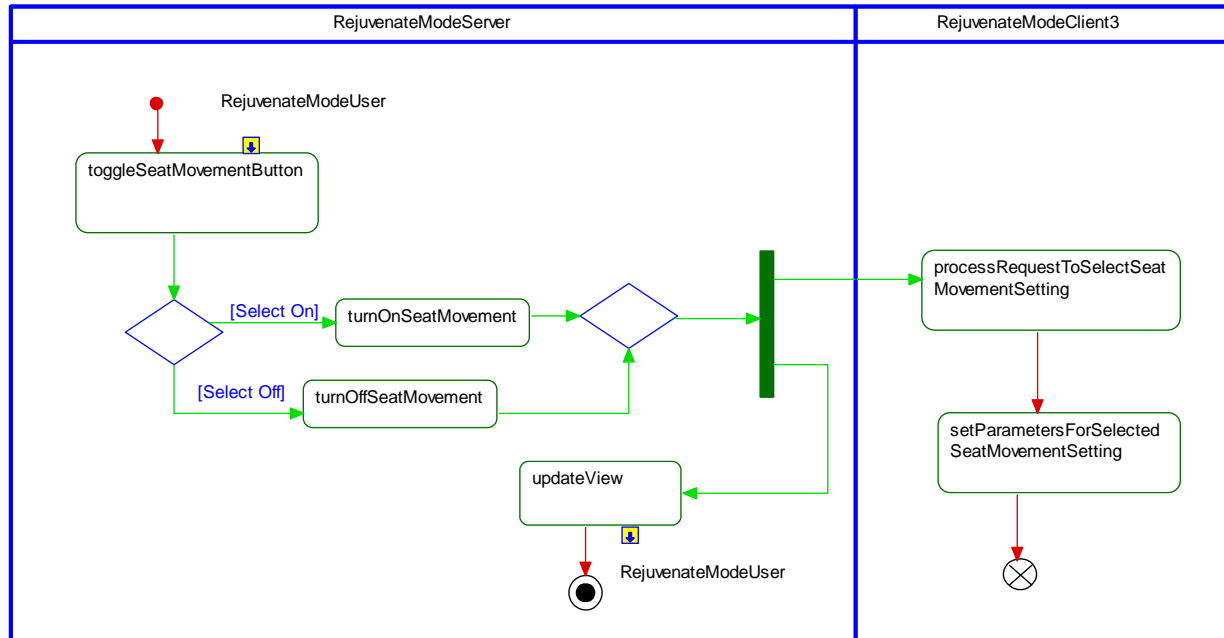


3.2.3.1.9 RJV-ACT-REQ-441931/B-Do Not Disturb Selection



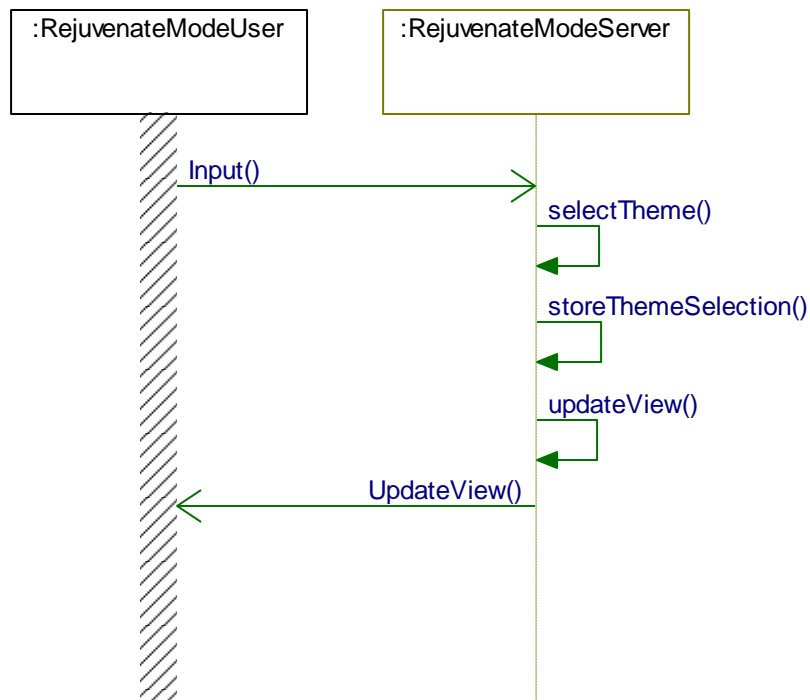


3.2.3.1.10 RJV-ACT-REQ-488659/A-Seat Movement Selection



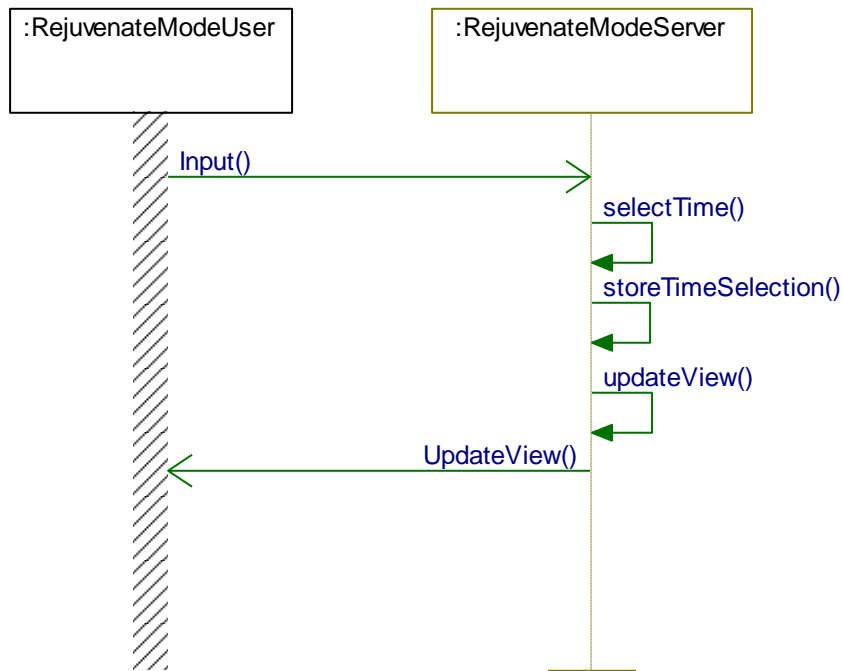
3.2.3.2 Sequence Diagrams

3.2.3.2.1 RJV-SD-REQ-441920/A-Theme Selection



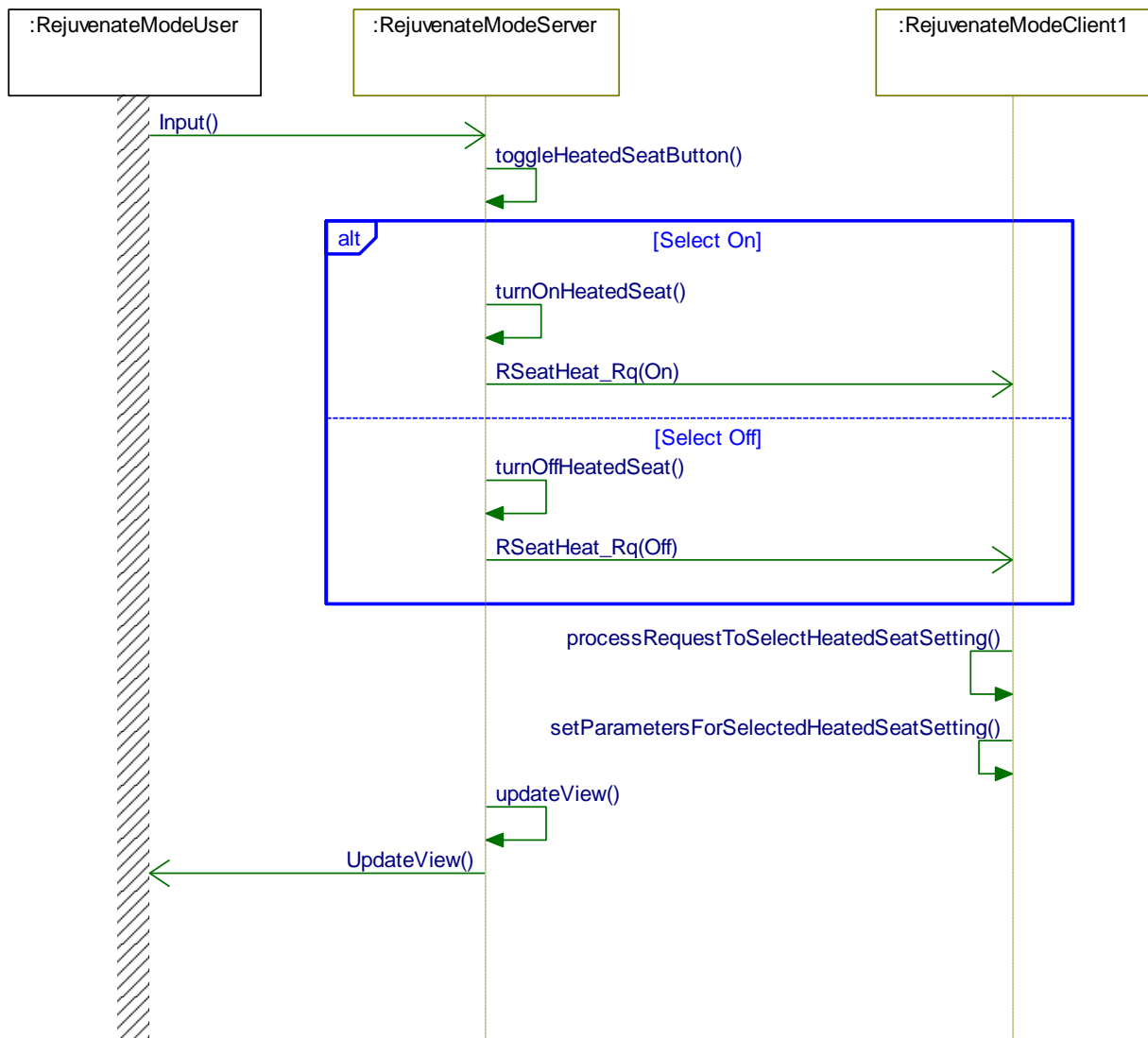


3.2.3.2.2 RJV-SD-REQ-441922/A-Time Selection



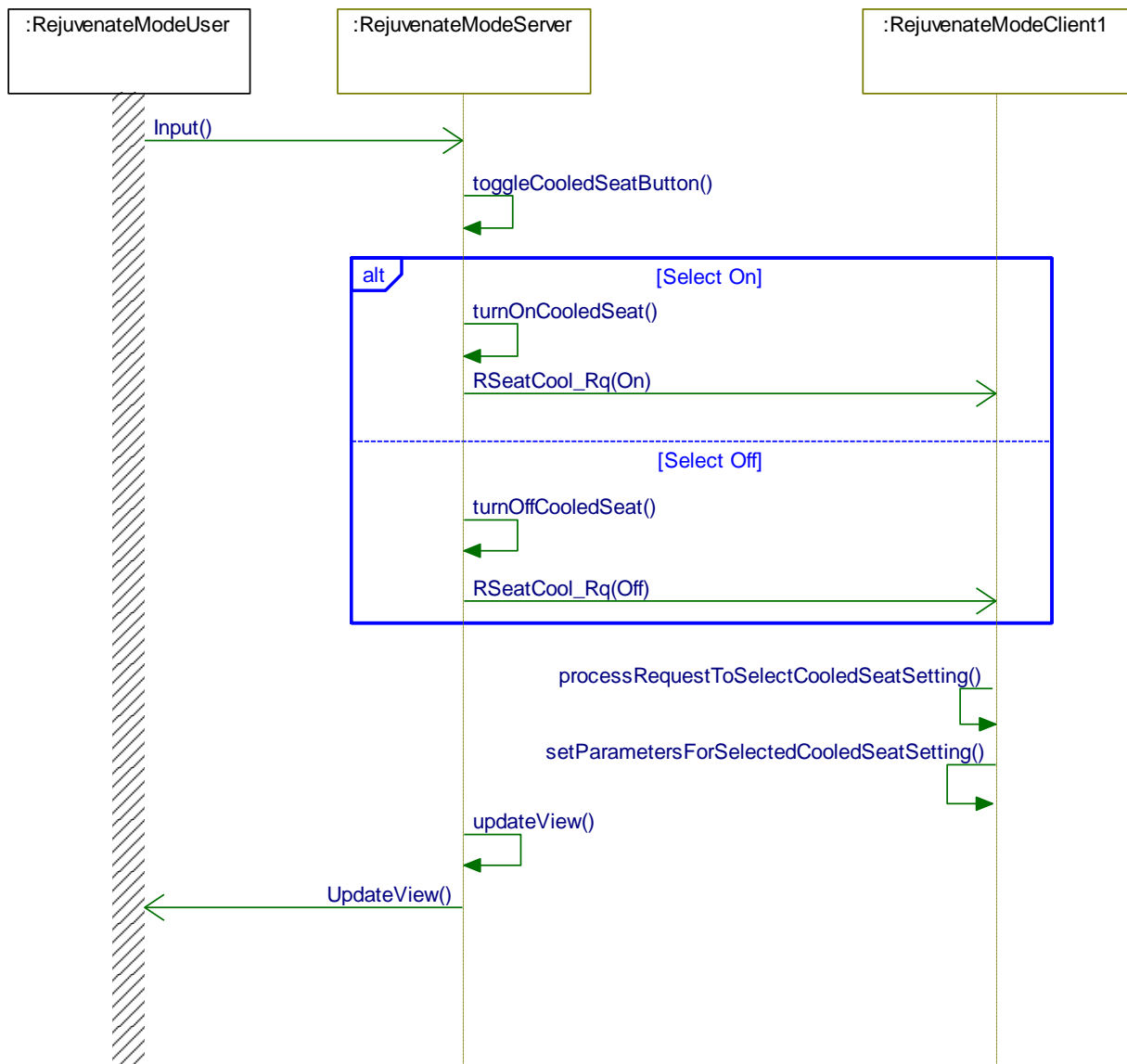


3.2.3.2.3 RJV-SD-REQ-441924/A-Heated Seat Selection



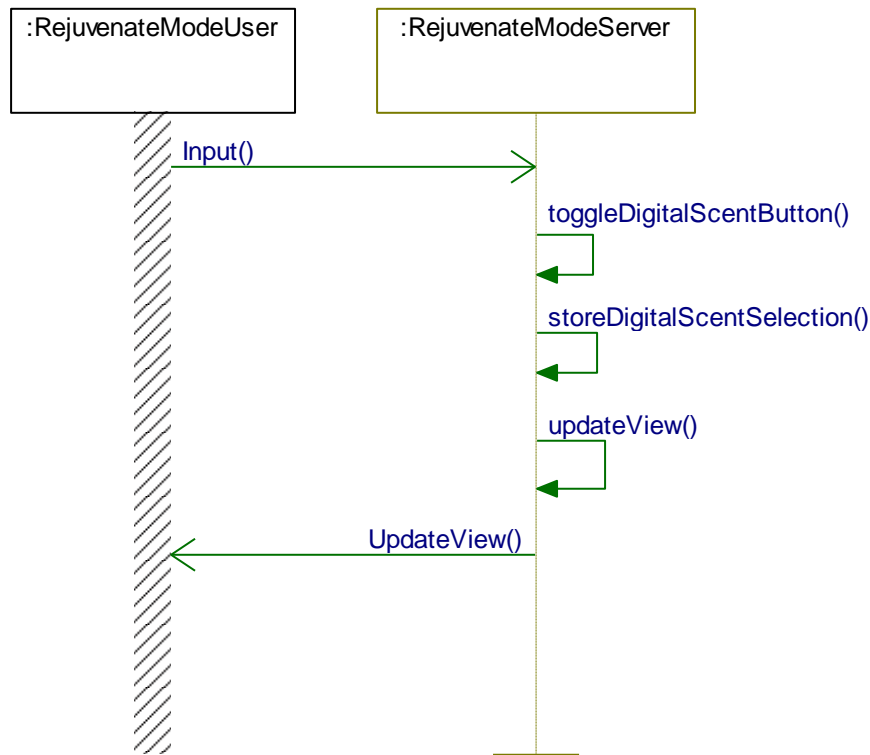


3.2.3.2.4 RJV-SD-REQ-441926/A-Cooled Seat Selection





3.2.3.2.5 RJV-SD-REQ-441928/A-Digital Scent Selection



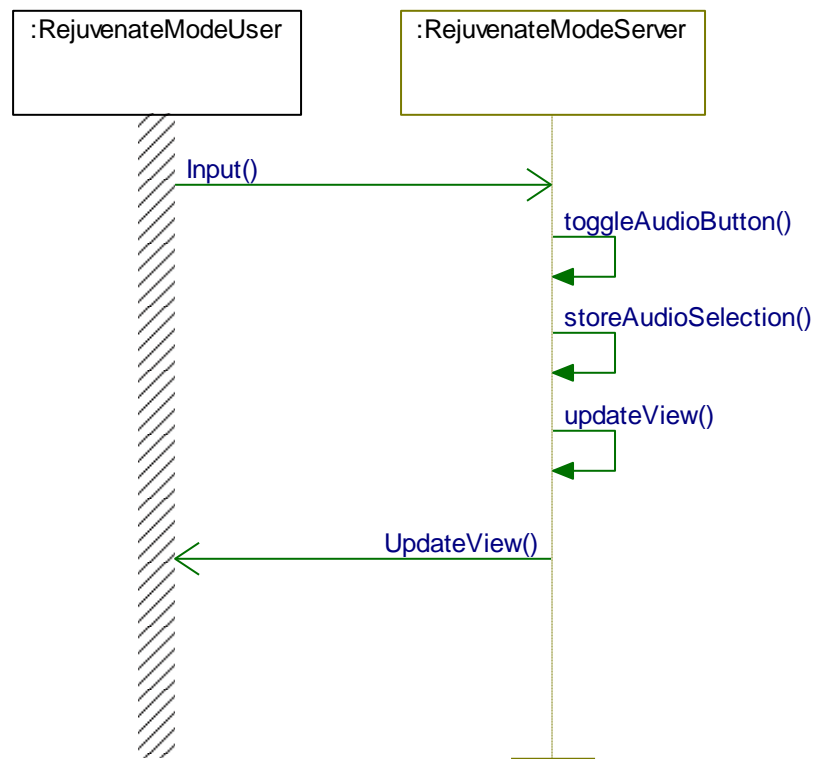


3.2.3.2.6 RJV-SD-REQ-441930/B-Seat Massage Selection



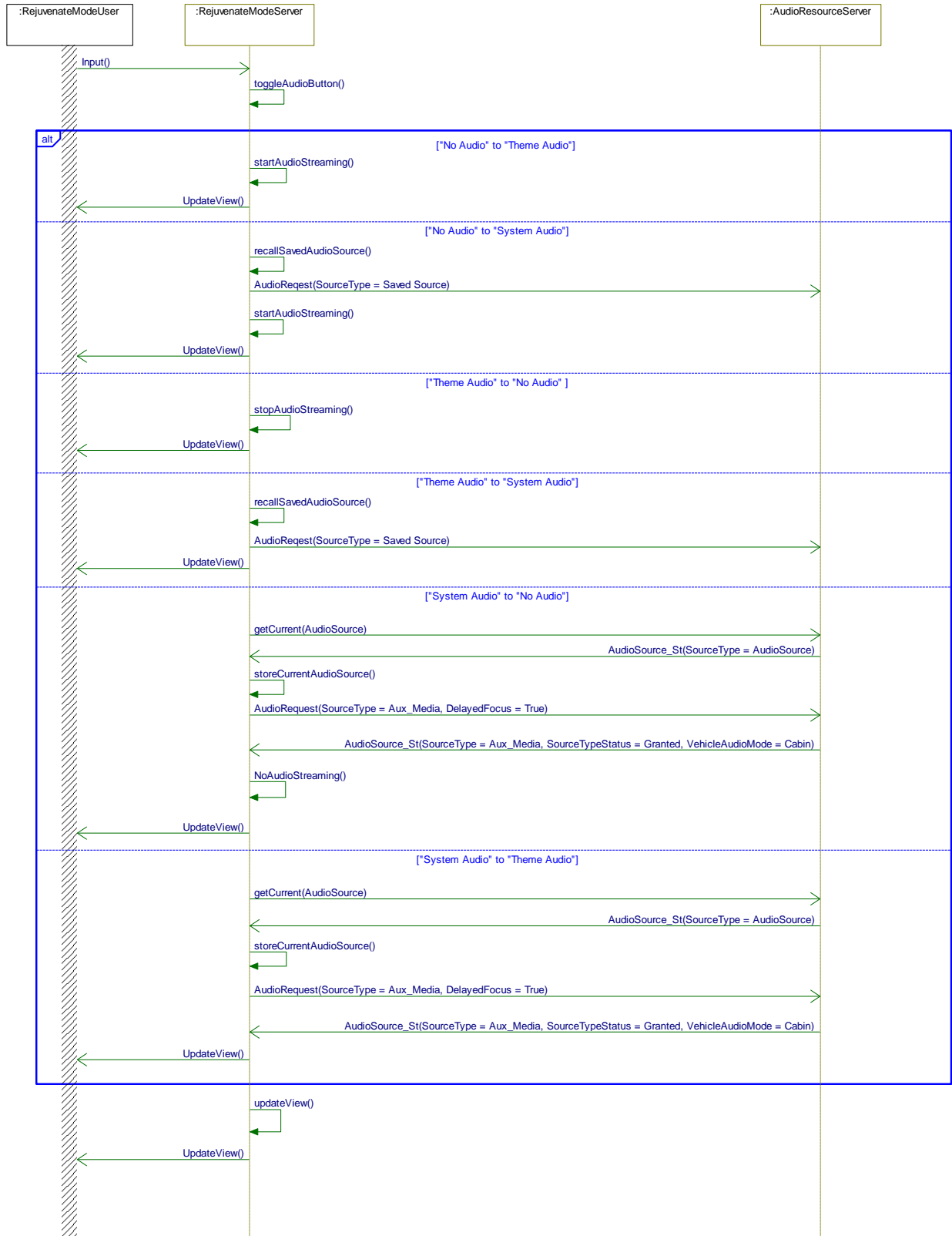


3.2.3.2.7 RJV-SD-REQ-441838/A-Audio Selection



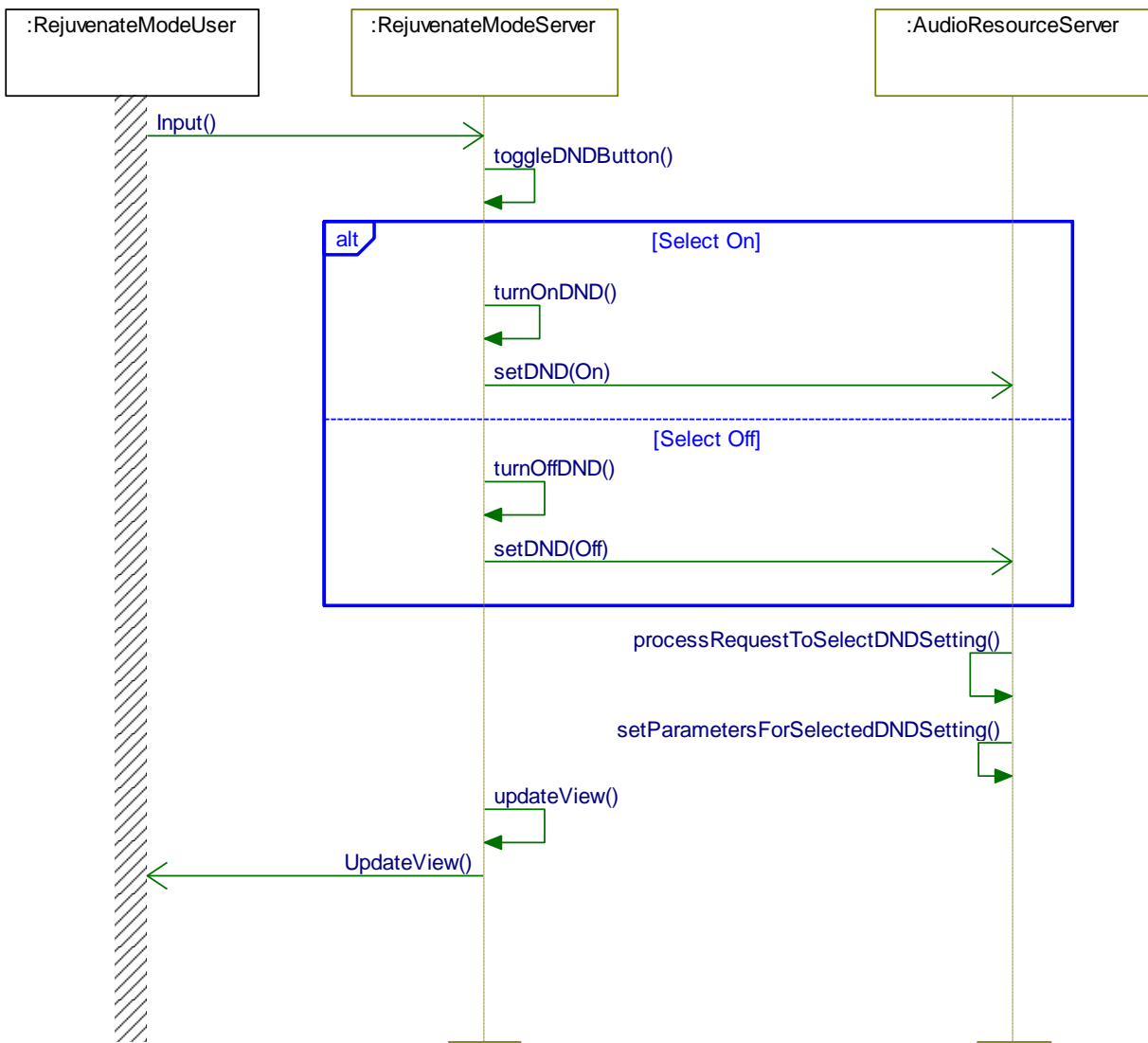


3.2.3.2.8 RJV-SD-REQ-516798/A-Audio Toggle While Rejuvenate Active



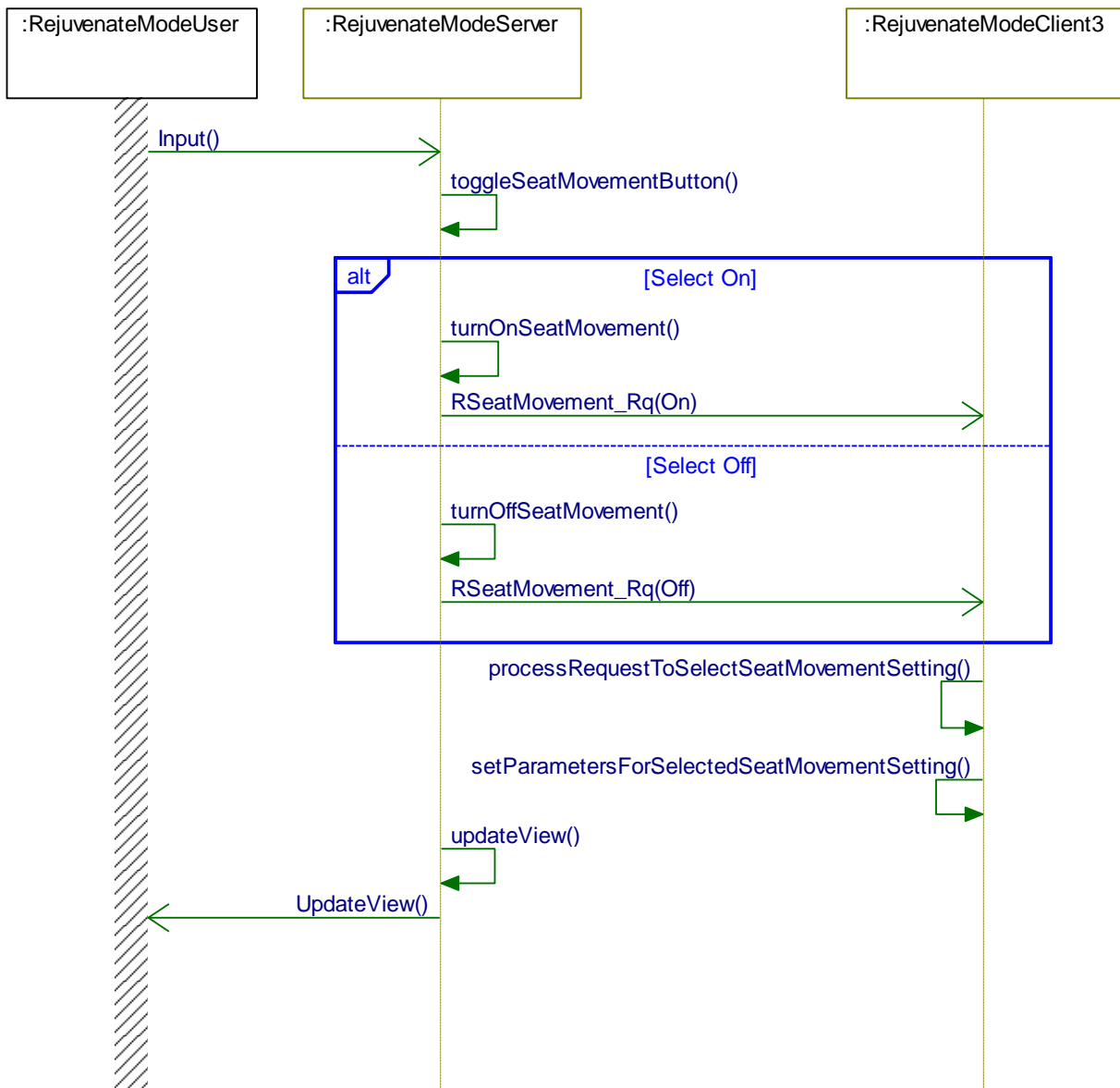


3.2.3.2.9 RJV-SD-REQ-441933/B-Do Not Disturb Selection





3.2.3.2.10 RJV-SD-REQ-488660/A-Seat Movement Selection



3.3 RJV-FUN-REQ-438067/A-Start Rejuvenate Experience

3.3.1 Requirements

3.3.1.1 RJV-REQ-438032/D-Start Rejuvenate Experience

If preconditions are met RJVServer shall allow user to start rejuvenate experience by pressing “Start experience” button on HMI.

User can make selections or keep default value for the following settings before pressing “Start Experience” button:

Theme
Time
Heated seat
Cooled seat
Digital scent
Seat massage
Audio



Do Not Disturb
Seat movement

Once user enters Rejuvenate Home screen RJVServer shall:

If Theme Audio or No Audio is the preferred Audio Selection: Request current Audio Source from AudioResourceServer to store as pre-rejuvenate parameter and send internal signal to AudioResourceServer and MSSApplicationServer (if MSS feature supported) to set Audio Source type to Rejuvenate Audio and to set the vehicleAudioMode to Cabin.

If System Audio is the preferred Audio Selection: Request to set the vehicleAudioMode to Cabin.

If Phone call or other High Priority audio (ex. VR session) is active then audio options are "Grayed Out" and the last selected audio is applicable. At this point if Theme Audio or System Audio is the preference then audio shall not play until the active phone call or other High Priority audio (ex. VR session) becomes inactive.

If user prefers not to start Rejuvenate experience and exits Rejuvenate Home screen it shall follow the sequence of Exit Rejuvenate for Audio alone (refer RJV-FUN-REQ-438068-End Rejuvenate Experience).

After user presses "start experience" on HMI, RJVServer shall send SOA request to RJVClient4 that vehicle shall be locked (refer "Enclosure Service Specification" for message details).

After user presses "start experience" on HMI, RJVServer shall transmit signal RActv_St = 0x1 (Active).

Upon receiving RActv_St = 0x1 (Active), RJVClient1 shall transmit signal RClimt_St = 0x1 (On) to indicate that climate strategy can initiate.

Upon receiving RClimt_St = 0x1 (On), RJVServer shall transmit signals:

LghtAmbRqSrc_B_Stat = 0x1 (Auto)

Rejuvenate Status = 0x1 (Feature Active) internal signal to DigitalScentClient if digital scent was requested to be turned On

Rejuvenate Status = 0x0 (Feature Not Active) internal signal to DigitalScentClient if digital scent was requested to be turned Off

"AudioStreaming" if Theme Audio or System Audio selected

"NoAudioStreaming" if No Audio Selected

After 10 seconds of receiving RClimt_St = 0x1 (On), RJVServer shall transmit signal:

RSeatMessage_Rq = 0x7 (CushionMessage) if user selected "Seat Massage" ON

RSeatMessage_Rq = 0x2 (MiddleLumbar) if user selected "Seat Massage" OFF

Incase if RJVClient1 transmits RClimat_St = 0x0 (Off) when RActv_St = 0x1 (Active) after "start experience" button pressed, the rejuvenate experience shall not begin and "Unable to launch Rejuvenate at this time, please try again" message is displayed on HMI.

Incase if RJVClient1 transmits RClimat_St = 0x0 (Off) while rejuvenate experience is on it shall abort the experience.

At the beginning of rejuvenate experience (Entry Phase) vehicle parameters are saved as defined in Save/Recall Parameters section (RJV-REQ-43802-Save/Recall Parameters).

Once Rejuvenate is active and Digital Scent settings is ON with any scent selection following signals will be used to control the Digital Scent feature:

CabinScentMode_St

CabinScentIntensity_St

CabinScentChannel_St

See "Orchestration with Theme Matrix" document for details.

Once Rejuvenate is active following signals will be used for Ambient Lighting:

LightAmbIntsty_No_Rq

LightAmbColor_No_Rq



See "Orchestration with Theme Matrix" document for details.

For Rejuvenate Audio following signals shall be used:

AudioStatus_St(SourceType = Aux_Media, Status = Granted, VehicleAudioMode = Cabin)

AudioStreaming/NoAudioStreaming depending on Audio Selected/Not Selected.

3.3.2 Use Cases

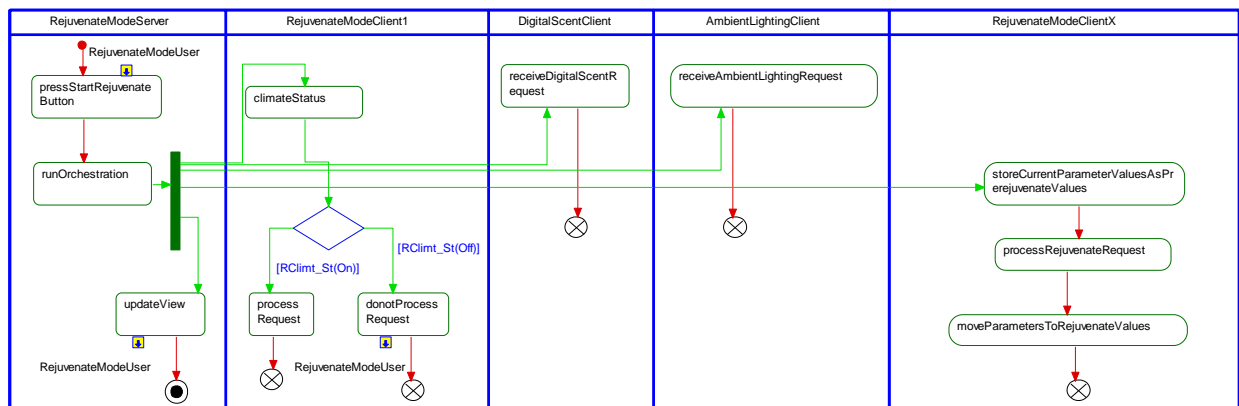
3.3.2.1 RJV-UC-REQ-438014/A-Start Rejuvenate Experience

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer screen is ON. All doors are closed. Vehicle engine is active. Vehicle is in park position.
Scenario Description	User presses "Start Experience" soft button on the HMI.
Post-conditions	Rejuvenate feature locks doors. Rejuvenate experience begins.
List of Exception Use Cases	
Interfaces	HMI, CAN

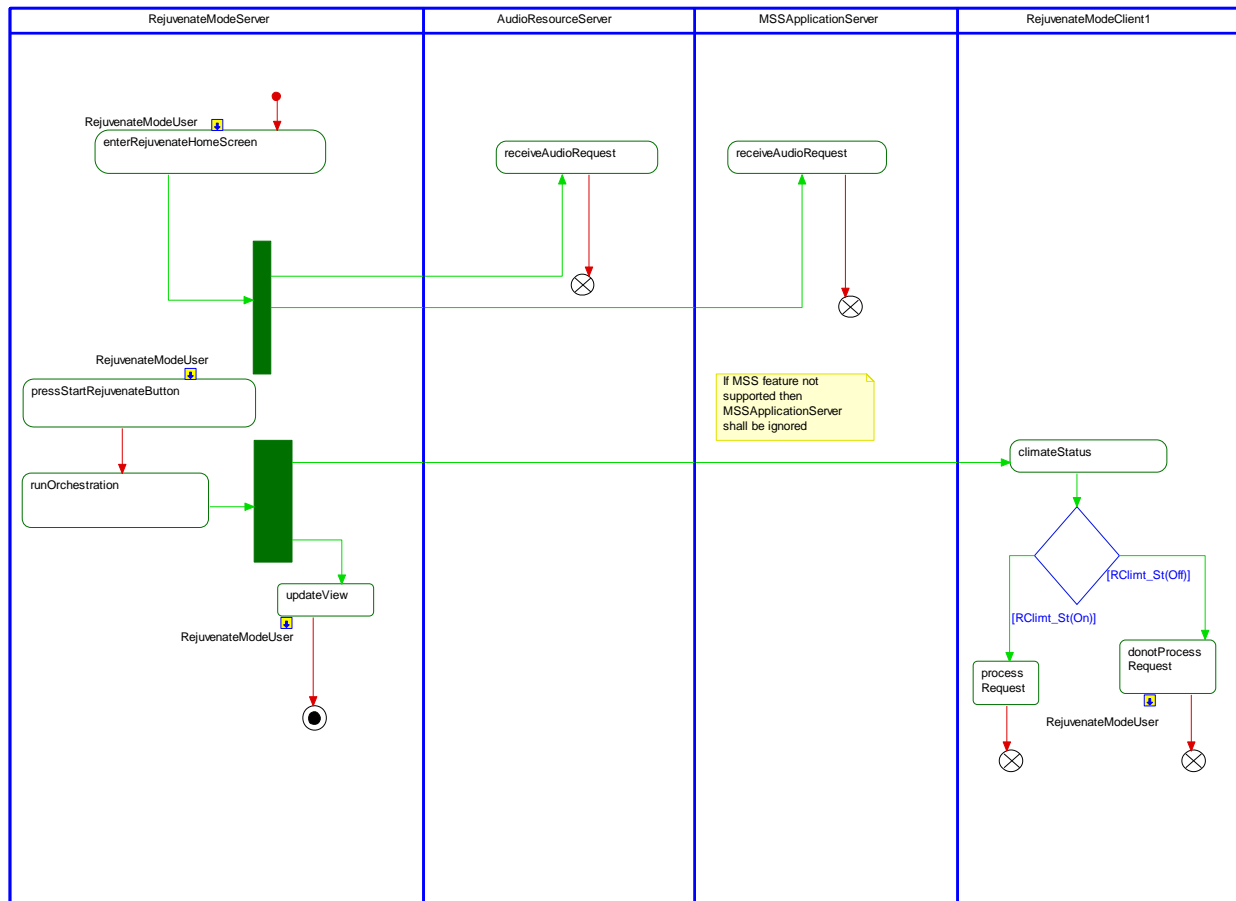
3.3.3 White Box Views

3.3.3.1 Activity Diagrams

3.3.3.1.1 RJV-ACT-REQ-441934/B-Start Rejuvenate



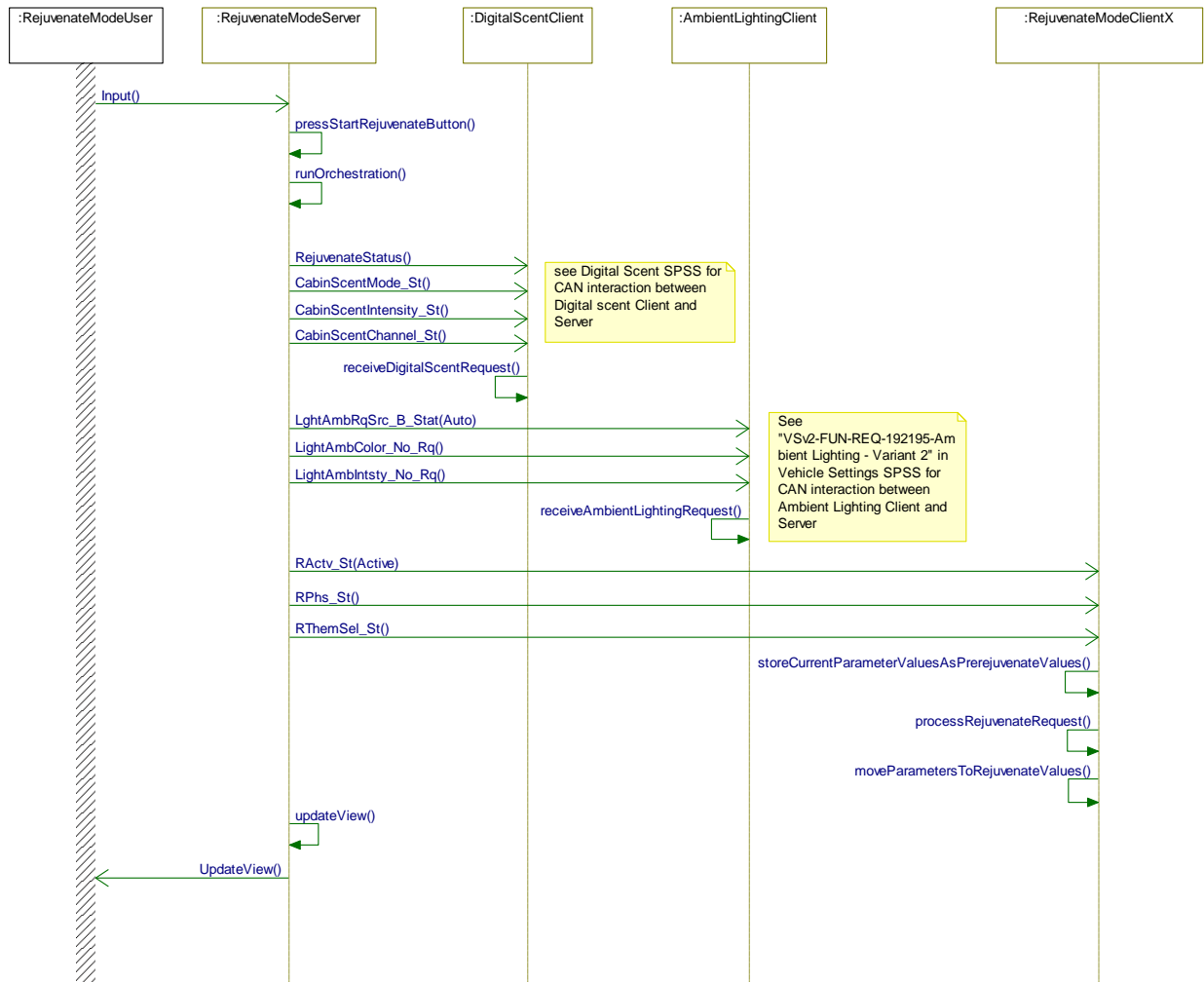
3.3.3.1.2 RJV-ACT-REQ-466685/C-Start Rejuvenate_Audio Sequence





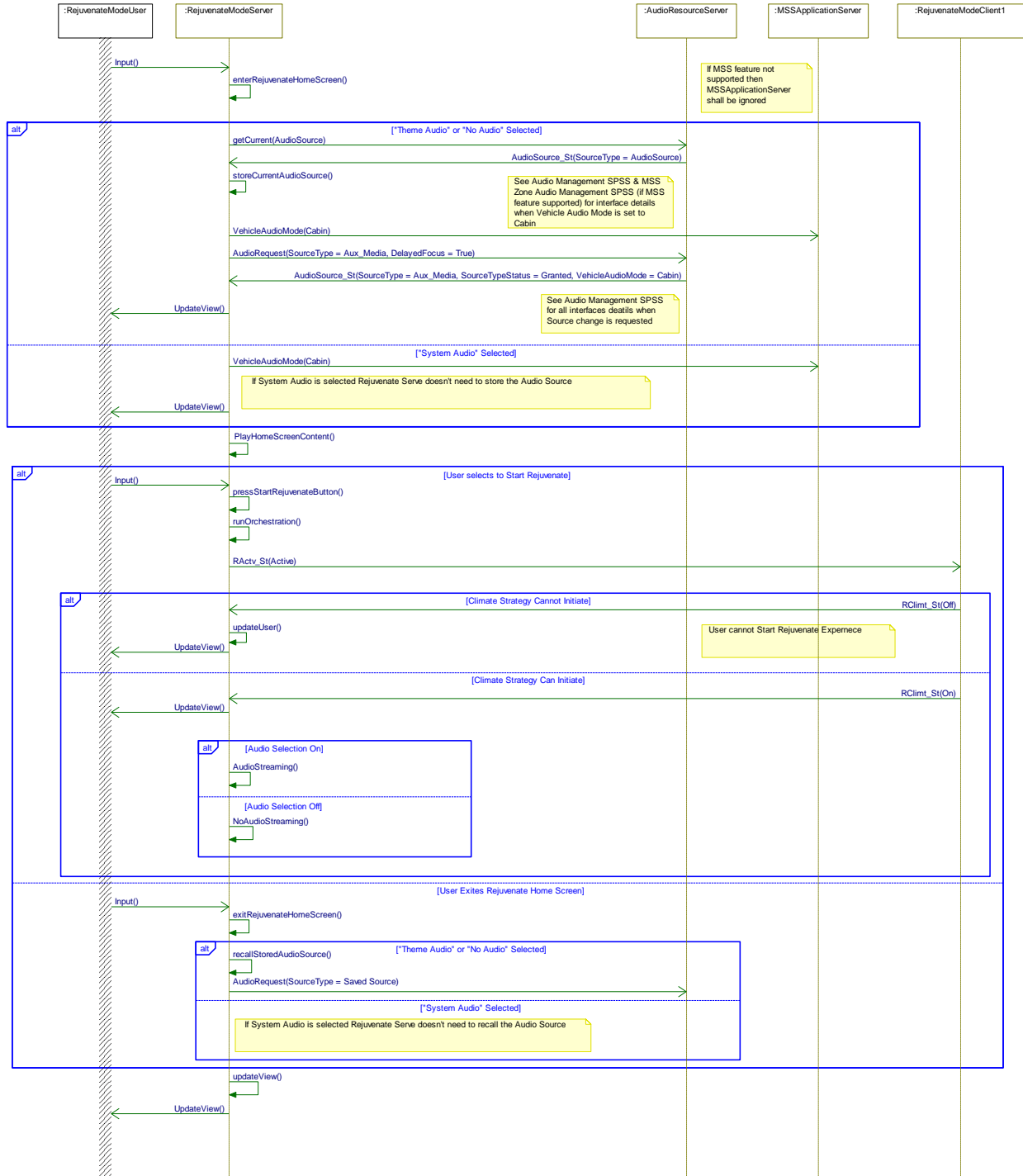
3.3.3.2 Sequence Diagrams

3.3.3.2.1 RJV-SD-REQ-441935/C-Start Rejuvenate





3.3.3.2.2 RJV-SD-REQ-466688/C-Start Rejuvenate_Audio Sequence



3.4 RJV-FUN-REQ-438068/A-End Rejuvenate Experience

3.4.1 Requirements

3.4.1.1 RJV-REQ-438033/D-End Rejuvenate Experience

After rejuvenate time expires the rejuvenate experience shall be ended. RJVServer shall send signals:

RActiv_St = 0x0 (In-Active)

LghtAmbRqSrc_B_Stat = 0x0 (Manual)



Rejuvenate Status = 0x0 (Feature Not Active) internal signal to DigitalScentClient

When Rejuvenate ends HMI shall go back to Rejuvenate Home screen and preview audio/video shall play.

When user exits Rejuvenate Home screen:

RJVServer shall send internal signal to AudioResourceServer to restore Audio Source type to pre-rejuvenate value (In case of Theme Audio or No Audio Option).

Once the rejuvenate experience ends, the cabin of the vehicle except audio/video shall go to the conditions that it was in before the rejuvenate experience, audio/video shall go back to pre-rejuvenate condition only when user exits Rejuvenate Home screen. Refer section Save/Recall Parameters for details (RJV-REQ-438021-Save/Recall Parameters).

3.4.2 Use Cases

3.4.2.1 RJV-UC-REQ-438015/B-End Rejuvenate Experience

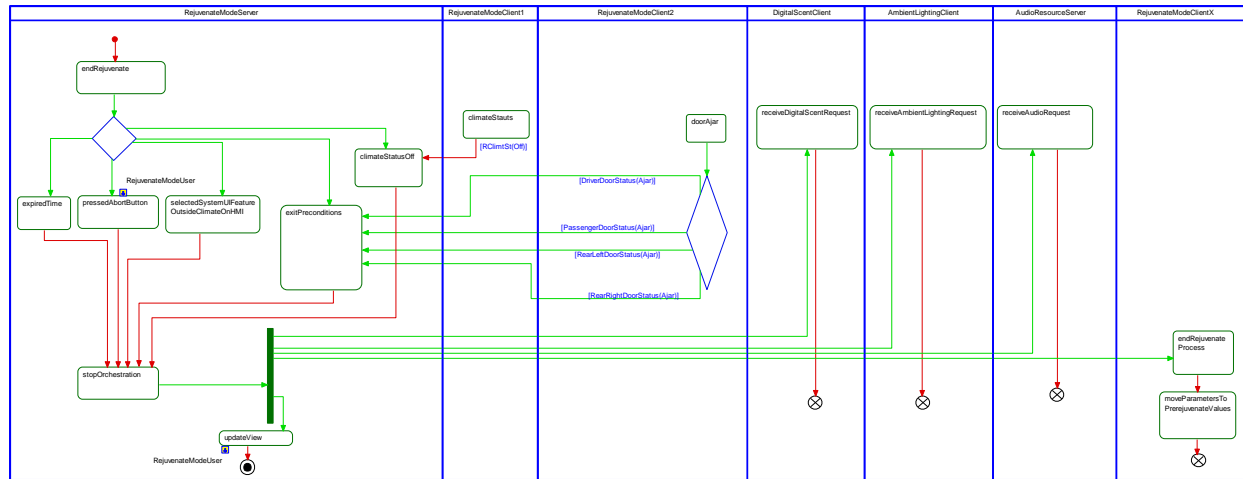
Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer_screen is ON. Rejuvenate experience is ON.
Scenario Description	The time selected for rejuvenate experience elapsed and all the phases of orchestration is complete as selected.
Post-conditions	The cabin of the vehicle except audio/video shall go to the conditions that it was in before the rejuvenate experience. The audio/video shall go back to pre-rejuvenate condition after user exits Rejuvenate Home screen.
List of Exception Use Cases	
Interfaces	HMI, CAN



3.4.3 White Box Views

3.4.3.1 Activity Diagrams

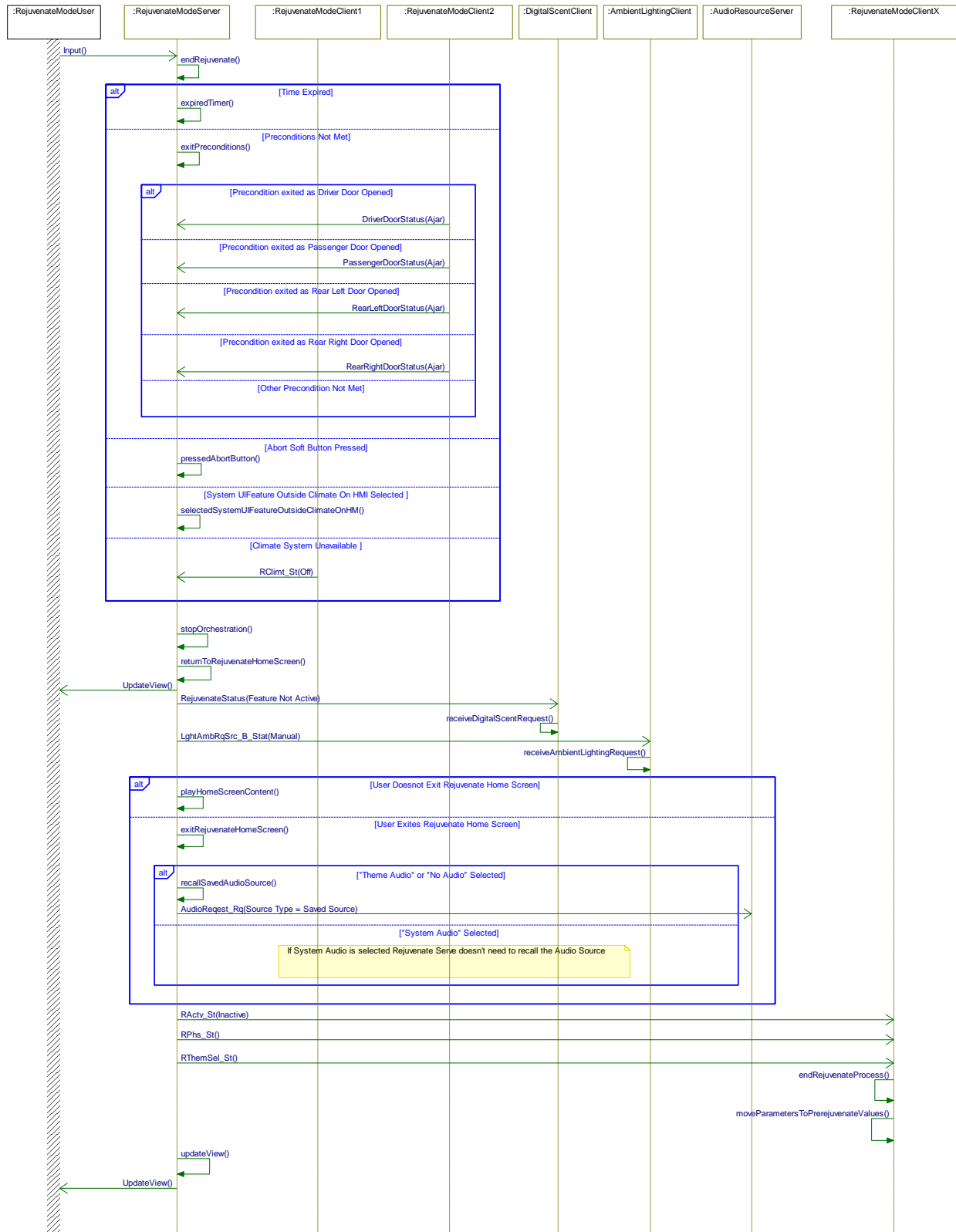
3.4.3.1.1 RJV-ACT-REQ-441936/D-End Rejuvenate





3.4.3.2 Sequence Diagrams

3.4.3.2.1 RJV-SD-REQ-441937/D-End Rejuvenate





3.5 RJV-FUN-REQ-438069/A-Alter Rejuvenate Experience

3.5.1 Requirements

3.5.1.1 RJV-REQ-438034/C-Alter Rejuvenate Experience

While rejuvenate experience is underway RJVServer shall allow user to alter any of the following settings:

Heated seats

Cooled seats

Digital scent

Seat massage

Audio

Do Not Disturb

Seat movement

Upon changing the setting the experience will alter and remain at new selection for remainder of the time.

Note: Audio options are “Grayed Out” and cannot be altered while Phone call or other High Priority audio (ex. VR session) is active.

3.5.1.2 RJV-REQ-466742/A-Save Altered Seat Position

While Rejuvenate experience is underway user can change the seat position manually.

At end of the relax phase and at end of the invigorate phase there will be message pop-up for user to save the seat settings so that it will be remembered as desired position for next time during that phase.

If user selects to save the changes, RJVServer shall transmit signal RSeatSetSave_Rq = 0x1 (Yes) to RJVClient3. RJVClient3 shall then save the seat settings.

If user selects to not to save the changes, RJVServer shall transmit signal RSeatSetSave_Rq = 0x0 (No) to RJVClient3. RJVClient3 shall not save the seat settings.

3.5.2 Use Cases

3.5.2.1 RJV-UC-REQ-438016/C-Alter Rejuvenate Experience

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer screen is ON. Rejuvenate experience is ON.
Scenario Description	The user selects to alter one of the rejuvenate settings (heated seats on/off, cooled seats on/off, seat massage on/off, digital scent, audio, do not disturb On/Off, seat movement On/Off) on the HMI screen.
Post-conditions	The changed settings/features will be reflected throughout the rest of the experience. The changed setting/feature preferences will be remembered upon next entry into the Rejuvenate HMI.



List of Exception Use Cases	
Interfaces	HMI, CAN

3.5.2.2 RJV-UC-REQ-466744/A-Save Altered Seat Position

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer screen is ON. Rejuvenate experience is ON.
Scenario Description	The user changes the seat settings. At end of the relax phase and at end of the invigorate phase RJVServer shall display options to save the seat settings. User can select to save the changes or discard the changes.
Post-conditions	If user selects to save the changes that will be reflected next time experience is On.
List of Exception Use Cases	
Interfaces	HMI, CAN

3.6 RJV-FUN-REQ-438070/B-Abort Experience

3.6.1 Requirements

3.6.1.1 RJV-REQ-438035/D-Abort Definition

When rejuvenate experience is aborted either by pressing soft button or exiting pre-condition or any system UI feature outside climate selected on HMI (ex. App menu or Home screen) or if climate system becomes unavailable for rejuvenate, the expectation is to return the cabin of the vehicle to the conditions that it was in before the Rejuvenate Experience as quickly as possible. Refer section Save/Recall Parameters (RJV-REQ-438021-Save/Recall Parameters) for details.

The main activities of the "Abort Sequence" are:

1. To turn off associated audio/video/lighting associated with the Rejuvenate experience.
2. To recall the settings/parameters for all items which were stored at the beginning of the experience.

Upon detecting that rejuvenate shall be aborted RJVServer shall transmit signals:

RPhs_St = 0x4 (Abort), if aborted by pressing soft button

RActv_St = 0x0 (In-Active)

LghtAmbRqSrc_B_Stat = 0x0 (Manual)

Rejuvenate Status = 0x0 (Feature Not Active), internal signal to DigitalScentClient

When Rejuvenate aborts HMI shall go back to Rejuvenate preview screen.

After Rejuvenate is aborted, preview audio/video shall play until user has not exited out of Rejuvenate Home screen.



3.6.1.2 RJV-REQ-438036/B-Abort - Soft Button

When user presses "Abort" button on HMI during any time of rejuvenate experience. RJVServer shall send RPhs_St = 0x4 (Abort) and abort the sequence.

3.6.1.3 RJV-REQ-438037/D-Abort - Exit Precondition

When any of the following events occur:

1. GearPosition_St \neq 0x0 (Park); vehicle gear out of park.
2. Vehicle engine \neq Active; engine turned off (Refer RJV-REQ-438019-Preconditions for Rejuvenate Experience for vehicle engine = Active condition).
3. Doors open; RJVClient2 shall indicate to RJVServer one or more doors are open as per following signals:
DriverDoorStatus = 0x1 (Ajar)
PassengerDoorStatus = 0x1 (Ajar)
RearLeftDoorStatus = 0x1 (Ajar)
RearRightDoorStatus = 0x1 (Ajar)
4. Vehicle Stationary Mode is Inactive/Off; RJVServer internal signal Vehicle Stationary Mode changes from Active/On to Inactive/Off

The rejuvenate experience shall abort immediately.

3.6.1.4 RJV-REQ-516970/A-Abort - Vehicle Controls other than Climate selected on HMI

If user selects any vehicle controls setting other than climate, it shall exit the rejuvenate screen and shall abort the rejuvenate experience. RJVServer shall send RPhs_St = 0x4 (Abort) and abort the sequence.

3.6.1.5 RJV-REQ-470267/A-Abort - Climate System Unavailable For Rejuvenate

If for any reason Climate system cannot support rejuvenate and RJVClient1 transmits signal RClimt_St = 0x0 (Off), it shall abort the rejuvenate experience. RJVServer shall send RPhs_St = 0x4 (Abort) and abort the sequence.

3.6.2 Use Cases

3.6.2.1 RJV-UC-REQ-438017/A-Abort - Soft Button

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer_screen is ON. Rejuvenate experience is ON.
Scenario Description	User presses "End Experience" soft button on the HMI.
Post-conditions	Rejuvenate experience has been ended prematurely. The user is returned to the same conditions (seat settings, light settings, etc) as they were in, before the experience.
List of Exception Use Cases	
Interfaces	HMI, CAN

**3.6.2.2 RJV-UC-REQ-438018/B-Abort - Exit Precondition**

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer_screen is ON. Rejuvenate experience is ON.
Scenario Description	User does one or more of the following due to which vehicle doesn't meet preconditions for rejuvenate experience: Opens doors Puts vehicle gear out of park Turns engine off Exits vehicle stationary mode
Post-conditions	Rejuvenate experience has been ended prematurely. The user is returned to the same conditions (seat settings, light settings, etc) as they were in, before the experience.
List of Exception Use Cases	
Interfaces	HMI, CAN

3.6.2.3 RJV-UC-REQ-516971/A-Abort - Vehicle Controls other than Climate selected on HMI

Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer_screen is ON. Rejuvenate experience is ON.
Scenario Description	User selects any vehicle controls setting other than climate.
Post-conditions	Rejuvenate experience has been ended prematurely. The user is returned to the same conditions (seat settings, light settings, etc) as they were in, before the experience.
List of Exception Use Cases	
Interfaces	HMI, CAN

3.6.3 White Box Views**3.6.3.1 Activity Diagrams****3.6.3.1.1 RJV-ACT-REQ-441999/D-Abort Rejuvenate**Refer End Rejuvenate Activity Diagram (**RJV-ACT-REQ-441936-End Rejuvenate**)



3.6.3.2 Sequence Diagrams

3.6.3.2.1 RJV-SD-REQ-442000/D-Abort Rejuvenate

Refer End Rejuvenate Sequence Diagram (RJV-SD-REQ-441937-End Rejuvenate)

3.7 RJV-FUN-REQ-517009/A-Audio Interruption While Rejuvenate Active

3.7.1 Requirements

3.7.1.1 RJV-REQ-516984/A-Audio Interruption While Rejuvenate Active

While Rejuvenate experience is active if user accepts Phone Call or if any other high priority (ex. VR session) audio is requested, it shall overwrite the Rejuvenate Audio. The Rejuvenate experience except Audio shall continue as is.

When this audio interruption ends the following paths are possible:

1. Rejuvenate is still Active: In this case the Rejuvenate Audio shall resume to play as per Orchestration.
2. Active Rejuvenate session is Ended/Aborted but Rejuvenate Home screen not exited: In this case the Rejuvenate Audio shall play for the Preview Mode.
3. Active Rejuvenate session is Ended/Aborted and Rejuvenate Home screen is exited: In this case the Pre-Rejuvenate source shall be recalled after the active Phone Call / High Priority Audio session ends.

3.7.2 Use Cases

3.7.2.1 RJV-UC-REQ-516986/A-Audio Interruption While Rejuvenate Active

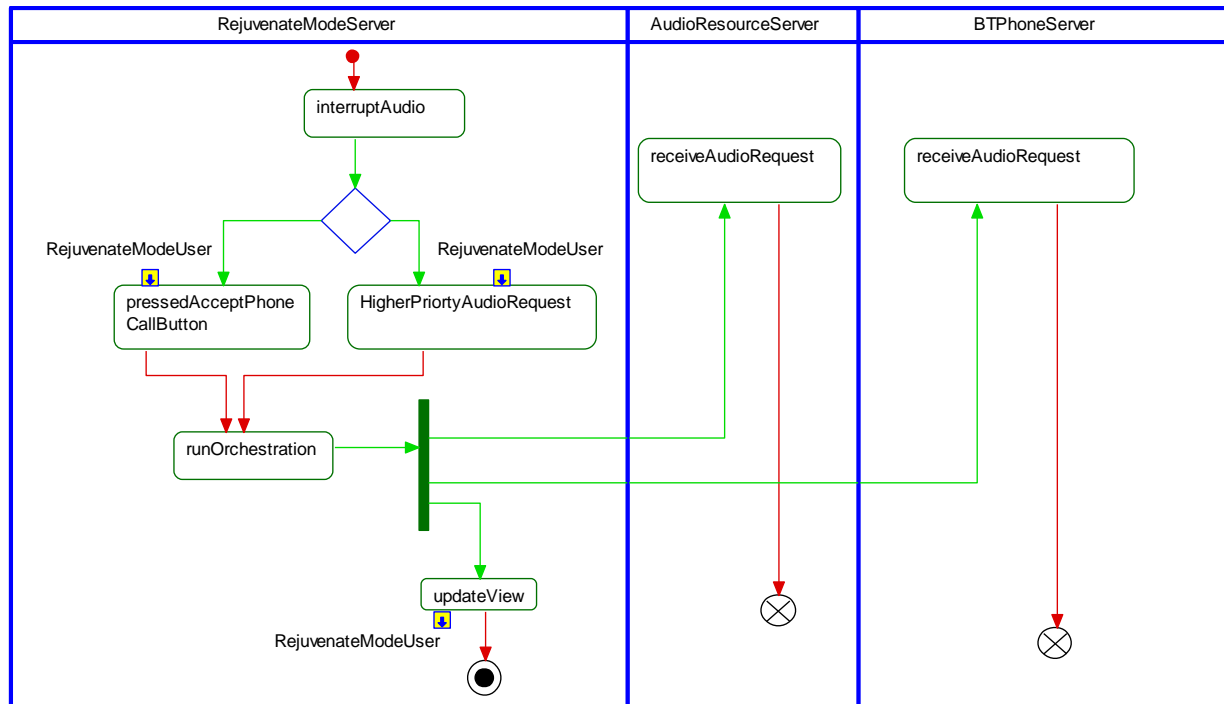
Actors	User, RJVServer
Pre-conditions	Infotainment system is powered ON. RJVServer is active. RJVServer screen is ON. Rejuvenate experience is ON.
Scenario Description	User presses "Accept Phone Call" button on the HMI when phone call received, or other high priority audio requested.
Post-conditions	Rejuvenate Audio shall be overwritten. Rejuvenate experience except audio shall continue as it was.
List of Exception Use Cases	
Interfaces	HMI, CAN



3.7.3 White Box Views

3.7.3.1 Activity Diagrams

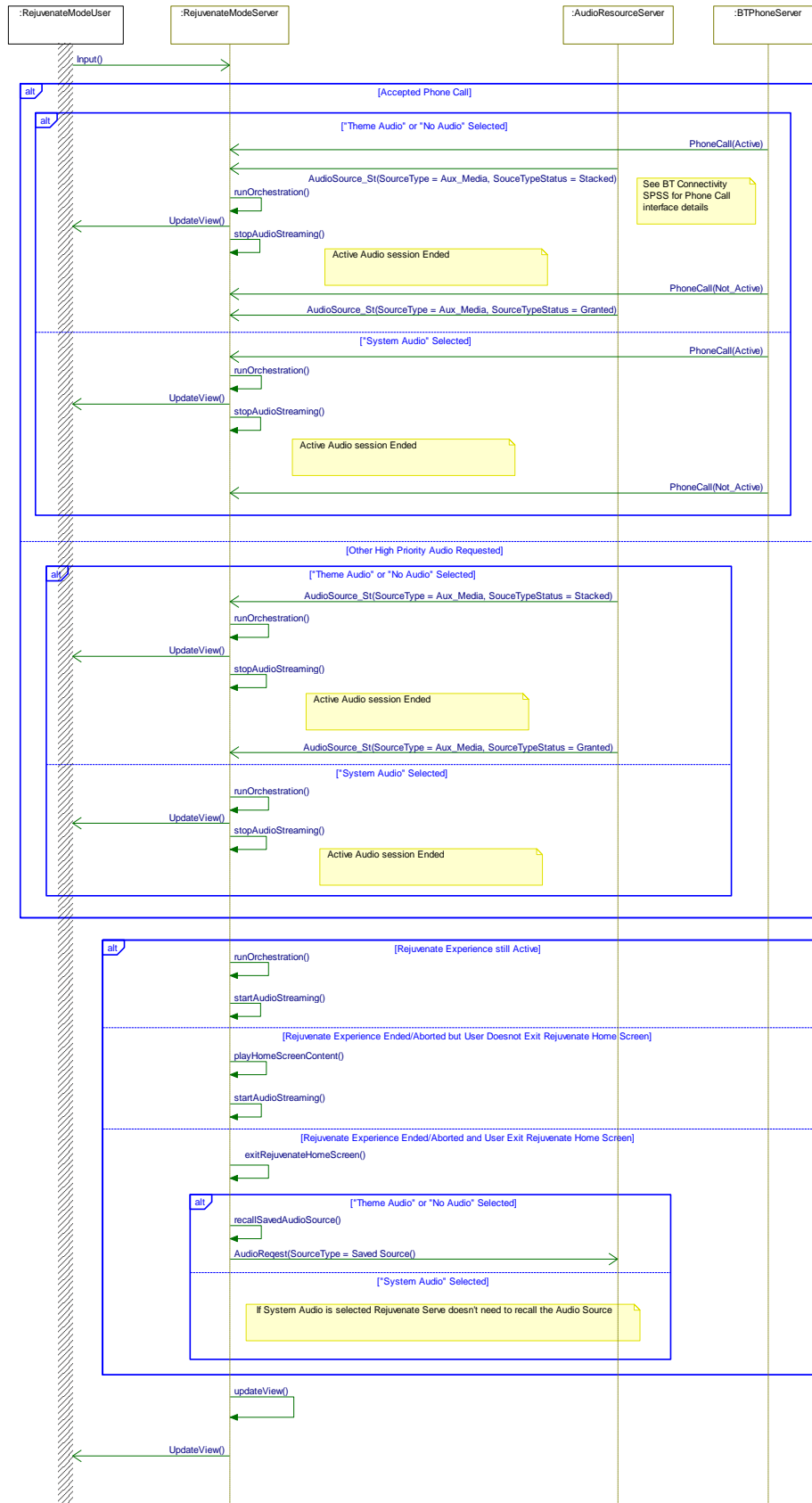
3.7.3.1.1 RJV-ACT-REQ-516987/A-Audio Interruption While Rejuvenate Active





3.7.3.2 Sequence Diagrams

3.7.3.2.1 RJV-SD-REQ-516988/A-Audio Interruption While Rejuvenate Active





3.8 RJV-FUN-REQ-466751/A-Rejuvenate Data Analytics

3.8.1 Requirements

3.8.1.1 RJV-REQ-466745/B-Record and Store Data While Rejuvenate Active

RJVServer shall provide data analytic services in support of the Rejuvenate feature. Services shall include monitoring and data recording of the subsequent signals or internal values to RJVServer software as defined here for further processing and analysis by the Rejuvenate Dashboard/API.

Upon activation of Rejuvenate feature which shall be detected when RActv_St signal transitions from Inactive to Active, RJVServer shall record and store the following data elements independently and in association with their accompanying UTC timestamp :

1. Rejuvenate settings:

- Rejuvenate Theme as per RThemSel_St value
- Heated Seat Status – ON or OFF as per RSeatHeat_Rq = 0x1 (On) or 0x0 (OFF)
- Cooled Seat Status – ON or OFF as per RSeatCool_Rq = 0x1 (On) or 0x0 (OFF)
- Massage Setting Status – ON or OFF as per RSeatMassage_Rq = 0x7 (CushionMassage) for ON or 0x2 (MiddleLumbar) for OFF
- Cabin Scent Status – ON or OFF as per Rejuvenate Status = 0x1 (Feature Active) or 0x0 (Feature Not Active)
- Meditation Audio Setting – ON or OFF
- Selected Length of Rejuvenation Experience
- Changed Audio Track – “System Audio” is selected at beginning of experience or while experience is ON

2. Other Data:

- UTC time from LocationServices_1 message
- Date from LocationServices_1 message
- Vehicle Location from LocationServices_1 message
- Vehicle Cabin Temperature as in CabnAmb_Te_ActlAft
- Outdoor Temperature transmitted as in Outside_Air_Temp_Stat
- Cabin Mode Status as in CabinScentMode_St
- Cabin Scent Intensity as in CabinScentIntensity_St
- Cabin Scent Selection as in CabinScentChannel_St
- Ambient Light Level Litval
- Phone Call Accepted – When user accepts incoming phone call BTServer shall send PhoneCall (Active) signal to RJVServer

3.8.1.2 RJV-REQ-466746/A-Record and Store Engine ON time and Data Logging Timer

RJVServer shall record and store the event instance when CAN signal Eng_D_Stat changes state from OFF to ON. RJVServer shall accompany this instance by recording a UTC timestamp of the event.

RJVServer shall maintain a log of total duration between the vehicle's engine ON status and when a user activates the feature Rejuvenate. A change in CAN signal Eng_D_Stat from the state OFF to ON shall indicate the start of a data logging timer; CAN signal RjvntActv_D transitioning from the state INACTIVE to ACTIVE shall indicate the end of such timer. The total duration shall be stored by RJVServer. In the event the user does not use activate Rejuvenate before turning the vehicle off where Eng_D_Stat transitions from ON to OFF, RJVServer shall end the timer and not log any duration.



3.8.1.3 RJV-REQ-466747/A-Record Feature Completed Instances

RJVServer shall maintain a running tally of total completed instances of the feature Rejuvenate. A single instance of Rejuvenate shall be defined as an activation of the feature where the CAN signal RActv_St transitions from the INACTIVE to ACTIVE state and is not aborted.

3.8.1.4 RJV-REQ-466748/A-Record Feature Preview Instances

RJVServer shall maintain and store a running tally of total uses of the feature's preview function. Every instance of a user selecting a Rejuvenate theme's preview and playing it shall increase the tally by one. RJVServer shall identified theme selection as per CAN signal RThemSel_St. RJVServer shall record and store separately a tally for each available theme.

3.8.1.5 RJV-REQ-466749/A-Record Feature Aborted Instances

RJVServer shall maintain a running tally of total aborted instances of the feature Rejuvenate. An aborted instance of Rejuvenate shall be defined as an activation of the feature where the CAN signal RActv_St transitions from the INACTIVE to ACTIVE state but Rejuvenate does not complete all phases or is ended prematurely.

RJVServer shall maintain a log of duration for when users activate Rejuvenate and the feature undergoes an abortion or premature exit of the experience. Whenever a premature exit of Rejuvenate occurs, RJVServer shall record the activity or trigger that causes the premature exit and store this instance along with total duration before abortion.

Please refer section RJV-FUN-REQ-438070-Abort Experience for abort or premature exit triggers.

3.8.1.6 RJV-REQ-466750/B-Record Alterations during Rejuvenate Experience

RJVServer shall monitor the vehicle for customer-initiated setting changes during Rejuvenate's user experience. The following data elements shall be monitored and changes in state or value shall be recorded with an accompanying timestamp:

- Any Climate Setting Changes – YES or NO - RClimtOvrdTyp_St
- Climate Related Setting Changed (Which Climate Setting Changed related to Rejuvenate) - RClimtOvrrd_St, RSeatOvrrd_St
- Driver Climate Temperature Setting (User Selected Temperature) - Drv_Set_Temp
- Driver Seat Temperature Setting (COOL SETTING 1,2,3 or HEATED SETTING 1,2,3) - LHS_Cond_Seat_Status
- Driver AC Blower Setting (INCREASE BLOWER SPEED or DECREASE BLOWER SPEED) - Frt_Btn_Status_1st, Frt_Btn_Status_2nd
- Seat Motion – User manually changes the seat position



4 Appendix: Reference Documents

Reference #	Document Title
1	Orchestration with Theme Matrix document
2	Audio Management Variant 2 SPSS
3	MSS Zone Audio Management APIM_AOS SPSS
4	Bluetooth Connectivity APIM_AOS SPSS
5	Infotainment Diagnostics Specification
6	X93_Rejuvenate
7	Enclosure Service Specification
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