



**Research & Vehicle Technology**  
**“Infotainment Systems Product Development”**

**Feature – Climate Control (CGEA 1.3  
architecture)**

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

Version 1.1

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## Revision History

Date	Version	Notes	
May 30, 2013	1.0	Initial Release	
October 30, 2014	1.1	Updated Release	
	CCSYSv2-UC-REQ-100580/A-Only single speed for automatic blower		<C. Van Auken> Support for 3-setting Auto blower feature



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# 1 Architectural Design

Refer to the 'Vehicle Settings' section for the strategy on how Fahrenheit (F) or Celsius (C) is selected for temperature.

Note: The CGEA 1.3 Architecture uses an ECP in place of an EFP. The terms are interchangeable in the specification.

## 1.1 CCSYSv2-CLD-REQ-016833/A-Climate Settings Server (TcSE ROIN-202576-1)

The Climate Settings Server is the Climate Master controlling the Climate Settings of the vehicle.

## 1.2 CCSYSv2-CLD-REQ-016834/A-Climate Settings Client (TcSE ROIN-202578-1)

The Climate Settings Client is an infotainment component making climate control requests to the Climate Settings Server

## 1.3 CCSYSv2-CLD-REQ-016835/A-Remote Climate Settings Client (TcSE ROIN-202591-1)

The Remote Climate Settings Client is an infotainment component making climate control requests to the Climate Settings Server

## 1.4 CCSYSv2-CLD-REQ-016836/A-Climate Button Input Client (TcSE ROIN-202579-1)

The Climate Button Input Client sends button presses to the applicable infotainment Climate Settings Client

## 1.5 CCSYSv2-CLD-REQ-016837/A-Centerstack HMI Output (TcSE ROIN-202592-1)

The Centerstack HMI output is an HMI device displaying Climate Control information in the centerstack.

## 1.6 CCSYSv2-CLD-REQ-016838/A-Remote HMI Output (TcSE ROIN-202593-1)

The Remote HMI output is an HMI device displaying limited climate control information in the Cluster.

## 1.7 CCSYSv2-CLD-REQ-016839/A-CC MBP Client (TcSE ROIN-202580-1)

The CC MBP Client (multiple button press client) sends diagnostic requests to the CC MBP Server

## 1.8 CCSYSv2-CLD-REQ-016840/A-CC MBP Server (TcSE ROIN-202581-1)

The CC MBP Server interfaces with the CC MBP Client during multiple button press diagnostics

## 1.9 CCSYSv2-CLD-REQ-016841/A-VR CC Setting Client (TcSE ROIN-202582-1)

The VR CC Settings Client makes request for Climate VR functions

## 1.10 CCSYSv2-CLD-REQ-016842/B-VR/Phone Blower Settings Server (TcSE ROIN-202584-1)

The VR Blower Settings Server is responsible determining whether the Climate blower speed will be reduced or not during a VR session

## 1.11 Climate Control Interface Requirements

### 1.11.1 CCSYSv2-IIR-REQ-016844/A-Climate Control Method Descriptions (TcSE ROIN-200244-1)



Method	Notes	Parameters
ClimateControl_ST	Climate message from the Climate Server with Climate Status information	See message list
SoftButtonVRCC_RQ	Climate message from the Climate Client or VR Client to the Climate Server	See message list
RemoteCC_RQ	Climate Request from the Remote Climate Client	See message list
SteeringWheelControl_RQ	Steering Wheel Button Press Request	See message list
VoiceBlowerLimit_RQ	Blower Level Reduction/Limit Request message	See message list
CCDiagnostic_RQ	Request from the Climate Server to initiate a diagnostic mode	See message list
CCDiagnostic_Data	Diagnostic data to be displayed by the Centerstack HMI output	See message list



## 2 General Requirements

Note: The following timing requirements include a maximum of 10 msec for FNOS output processing and 10 msec for FNOS input processing respectively in their timer values.

T\_reaction\_time is defined in requirement [BUTTON-GREQ-39775-1-T\\_reaction\\_time](#).

In cases in which the ECP is on info-CAN and only sends climate button presses to the RCCM then in this section timers T\_Indicator and T\_CC\_Button would need to be supported by the ECP.

### 2.1 CCSYSv2-TMR-REQ-016804/A-T\_CC\_display\_update (TcSE ROIN-200263-1)

Name	Description	Units	Range	Resolution	Default
T_CC_display_update	Maximum time allowed from the time the CC Server receives a Climate message with an update until the new climate status is updated on the display (HMI Output).	msec	0-1000	10	50

### 2.2 CCSYSv2-TMR-REQ-016805/A-T\_indicator (TcSE ROIN-200264-1)

Name	Description	Units	Range	Resolution	Default
T_indicator	Maximum time allowed from when the Bezel module receives a CAN request to illuminate an Indicator until the actual indicator is illuminated	msec	0-1000	5	20

### 2.3 CCSYSv2-TMR-REQ-016806/A-T\_CC\_RSP (TcSE ROIN-200265-2)

Name	Description	Units	Range	Resolution	Default
T_CC_RSP	Maximum time allowed from when the Climate Server receives the Climate Request message until the ClimateControl_ST message is updated and put on the CAN bus	msec	0-1000	5	45

### 2.4 CCSYSv2-TMR-REQ-016807/A-T\_Button\_Translate (TcSE ROIN-200266-1)

Name	Description	Units	Range	Resolution	Default
T_Button_Translate	Maximum time allowed from when Remote Climate Settings Client receives the Steering Wheel Button Press message until the RemoteCC_RQ message is sent on the CAN bus.	msec	0-1000	5	45

### 2.5 CCSYSv2-TMR-REQ-016808/A-T\_MFD\_Reaction\_Time (TcSE ROIN-200267-1)

Name	Description	Units	Range	Resolution	Default
T_MFD_Reaction_Time	The maximum time from when a soft button is pressed until the SoftButtonVRCC_RQ message is put on the Info-CAN bus	msec	0-1000	5	45

### 2.6 CCSYSv2-TMR-REQ-016809/A-T\_CC\_Button (TcSE ROIN-200268-1)

Name	Description	Units	Range	Resolution	Default
T_CC_Button	The maximum reaction time from when a bezel push button switch is closed until the ClimateControl_ST message is updated and put on the CAN bus. Note: in case where the ECP just sends climate button	msec	0-1000	5	80



presses to RCCM/EATC then this timing requirement would apply to those button presses also.

## 2.7 CCSYSv2-TMR-REQ-016810/A-T\_Indicator\_Button\_Press (TcSE ROIN-200269-1)

Name	Description	Units	Range	Resolution	Default
T_Indicator_Button_Press	The maximum reaction time from when bezel push button switch is closed until the indicator is illuminated.	msec	0-1000	5	80

## 2.8 CCSYSv2-TMR-REQ-016758/A-T\_Gateway (TcSE ROIN-200767-1)

Name	Description	Units	Range	Resolution	Default
T_Gateway	The delay through the Can Bus Gateway	msec	0-1000	1	2

## 2.9 Note: Gateway is assumed to be a frame gateway. If it is not a frame gateway T\_Gateway is 10.0 mS

### 3 Functional Definition

### 3.1 CCSYSv2-FUN-REQ-016741/A-Bezel Push Button Climate Control Interface (TcSE ROIN-200282-1)

### 3.1.1 Requirements

3.1.1.1 CcSYSv2-SR-REQ-016742/A-Illuminate CC Indicator within 80 msec of an CC Bezel Button Press Event (TcSE ROIN-200320-1)

Within T\_Indicator\_ButtonPress from a Bezel Climate Control button press event the corresponding indicator shall be illuminated (if button press is applicable to an indicator).

3.1.1.2 CCSYSv2-SR-REQ-016743/A-Update Center Stack and Remote (if applicable) Climate Control displays within 130 msec of a CC Bezel Button Press Event (TcSE ROIN-200321-1)

Within T\_CC\_Button from a Bezel button press event the applicable ClimateControl\_ST message shall be sent to the Climate Settings Client from the Climate Server. Within T\_CC\_display\_update of the Climate Settings Client(s) receiving the applicable ClimateControl\_ST message the Center Stack and Remote (if applicable) Climate Control displays shall be updated.

### 3.1.2 Sequence Diagrams

### 3.1.2.1 CCSYSv2-SD-REQ-016744/A-Bezel Push Button Climate Control Sequence Diagram (TcSE ROIN-200115-1)

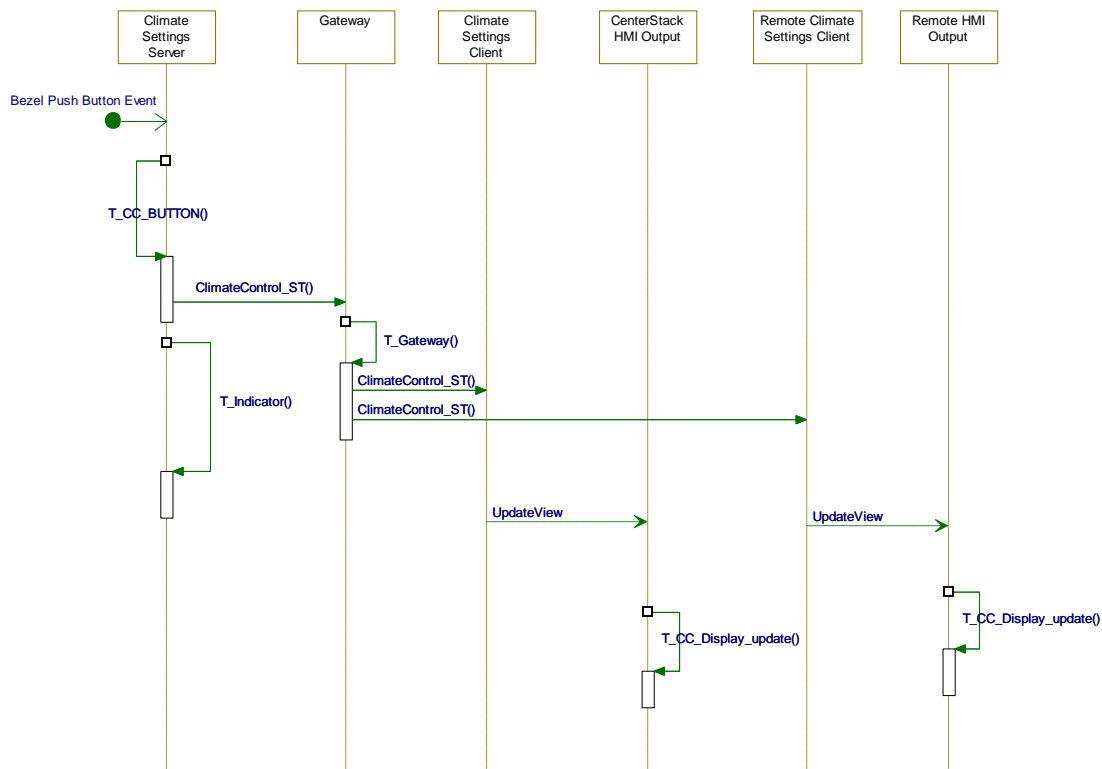
## Pre-condition

No Climate Control button press event

### Post-condition

CC display and/or CC indicator updated.

## Sequence Diagram







## 3.2 CCSYSv2-FUN-REQ-016745/A-Soft Button/VR Climate Control Interface (TcSE ROIN-200286-1)

### 3.2.1 Requirements

#### 3.2.1.1 CCSYSv2-SR-REQ-016746/A-Update the Center Stack and Remote Climate Control displays within 140 msec of a CC Soft Button Press Event (TcSE ROIN-200323-1)

Within T\_MFD\_Reaction\_Time from a Climate Control soft button press event the SoftButtonVRCC\_RQ message will be sent to the Climate Server from the Climate Settings Client. Within T\_CC\_RSP of the Climate Server receiving the SoftbuttonVRCC\_RQ message the Climate Server shall send the HMI Output the applicable ClimateControl\_ST message. Within T\_CC\_display\_update of the Climate Clients receiving the applicable ClimateControl\_ST message the Center stack and remote (if applicable) displays shall be updated.

#### 3.2.1.2 CCSYSv2-SR-REQ-016747/A-Illuminate CC Indicator within 20 msec of receiving a SoftButtonVRCC\_RQ message (TcSE ROIN-200322-1)

Within T\_Indicator of the Climate Server receiving the SoftButtonVRCC\_RQ message the applicable Climate Control indicator shall be illuminated.

### 3.2.2 Sequence Diagrams

#### 3.2.2.1 CCSYSv2-SD-REQ-016748/A-Soft Button/VR Climate Control Sequence Diagram (TcSE ROIN-200212-1)

**Pre-condition**

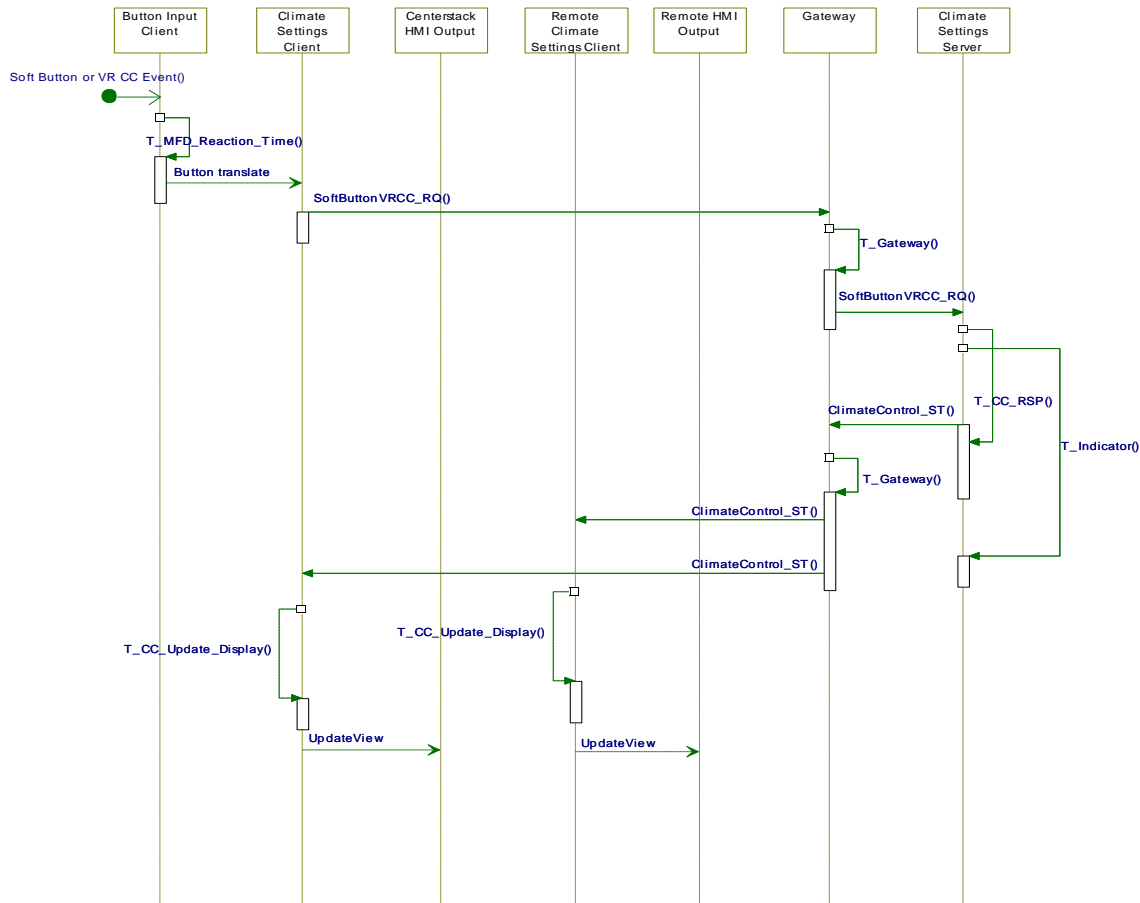
No CC soft button press event

**Post-condition**

CC display and/or CC indicator updated



## Sequence Diagram



### 3.3 CCSYSv2-FUN-REQ-016749/A-Steering Wheel Buttons Climate Control Interface (TcSE ROIN-200289-1)

#### 3.3.1 Requirements

##### 3.3.1.1 CCSYSv2-SR-REQ-016750/A-Update Remote Climate Control display within 120 msec of a Remote Climate Control Button Press Event (TcSE ROIN-200324-1)

Within T\_Reaction\_Time of a climate control steering wheel button press event the SteeringWheelControl\_RQ message will be sent to the Remote Climate Settings Client. Within T\_CC\_display\_update of the Remote Climate Settings Client receiving the SteeringWheelControl\_RQ message the Remote Climate Settings Client shall update the remote CC display. Within T\_Button\_Translate of the Remote Climate Settings Client receiving the SteeringWheelControl\_RQ the Remote Climate Settings Client shall transmit the RemoteCC\_RQ message.

After the Remote Climate Settings Client updates the remote CC display it shall disregard any new ClimateControl\_ST signals for updating the remote CC display for the next 150 msec. After 150 msec the Remote Climate Settings Client shall look at any new ClimateControl\_St signals to update the remote CC display. This is to avoid race conditions with the Remote Climate Settings Client displaying old data on the remote CC display from the periodic ClimateControl\_St signal before the Climate Settings Server has updated the ClimateControl\_St signal.

##### 3.3.1.2 CCSYSv2-SR-REQ-016751/A-Illuminate Appropriate Climate Control Indicator within 22 msec of a receiving a RemoteCC\_RQ message (TcSE ROIN-200325-2)

Within T\_Indicator of the Climate Server receiving the RemoteCC\_RQ message the applicable Climate Control indicator shall be illuminated.



Within T\_CC\_RSP of the Climate Server receiving the RemoteCC\_RQ message the Climate Server shall respond with the updated ClimateControl\_St message

**3.3.1.3 CCSYSv2-SR-REQ-016752/A-Update Center Stack display within 50 msec of receiving a RemoteCC\_RQ message from the remote climate client (TcSE ROIN-200326-1)**

Within T\_CC\_display\_update of the Climate Settings Client receiving the RemoteCC\_RQ message the Centerstack display shall be updated.

After the Climate Settings Client receives the RemoteCC\_Rq to update the Center Stack display it shall disregard any new ClimateControl\_St signals for updating the Center Stack display for the next 150 msec. After 150 msec the Climate Settings Client shall look at any new applicable ClimateControl\_St signals to update the Centerstack display. This is to avoid race conditions with the Climate Settings Client displaying old data on the Centerstack display from the periodic ClimateControl\_St signal before the Climate Settings Server has updated the ClimateControl\_St signal.

### 3.3.2 Sequence Diagrams

**3.3.2.1 CCSYSv2-SD-REQ-016753/A-Steering Wheel Climate Control Sequence Diagram (TcSE ROIN-200216-1)**

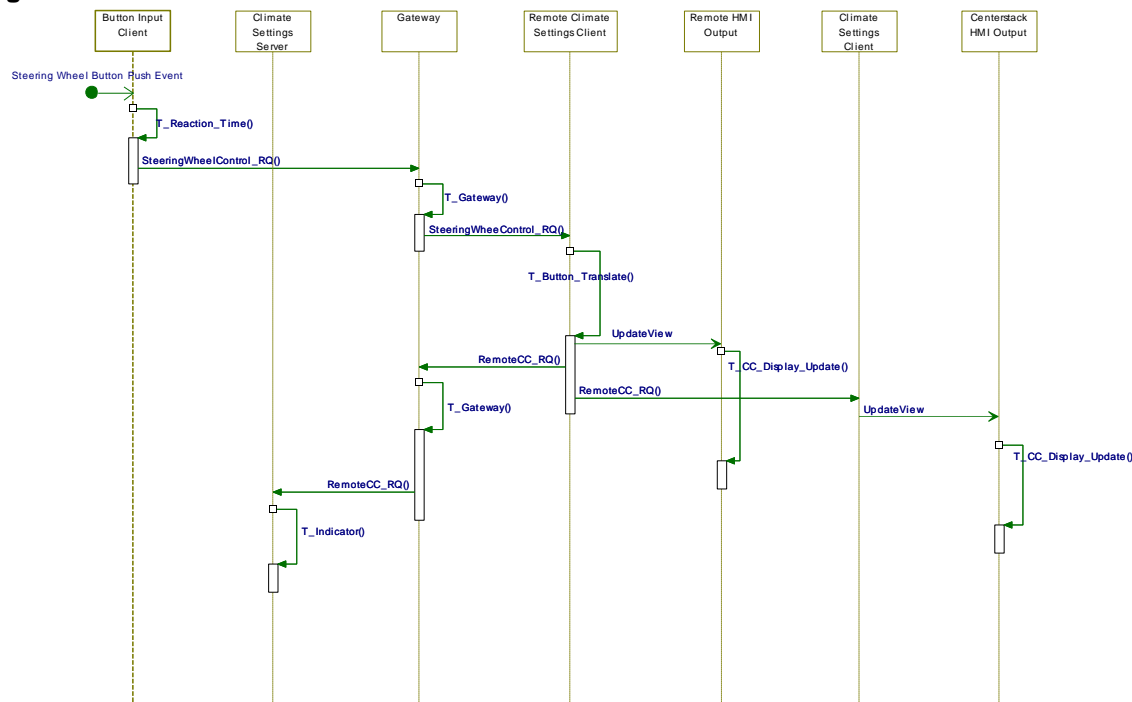
**Pre-condition**

No Climate Control button press event

**Post-condition**

CC display and/or CC indicator updated

#### Sequence Diagram





### 3.4 CCSYSv2-FUN-REQ-016739/A-Climate Control Bezel Diagnostics (TcSE ROIN-200279-1)

#### 3.4.1 Sequence Diagrams

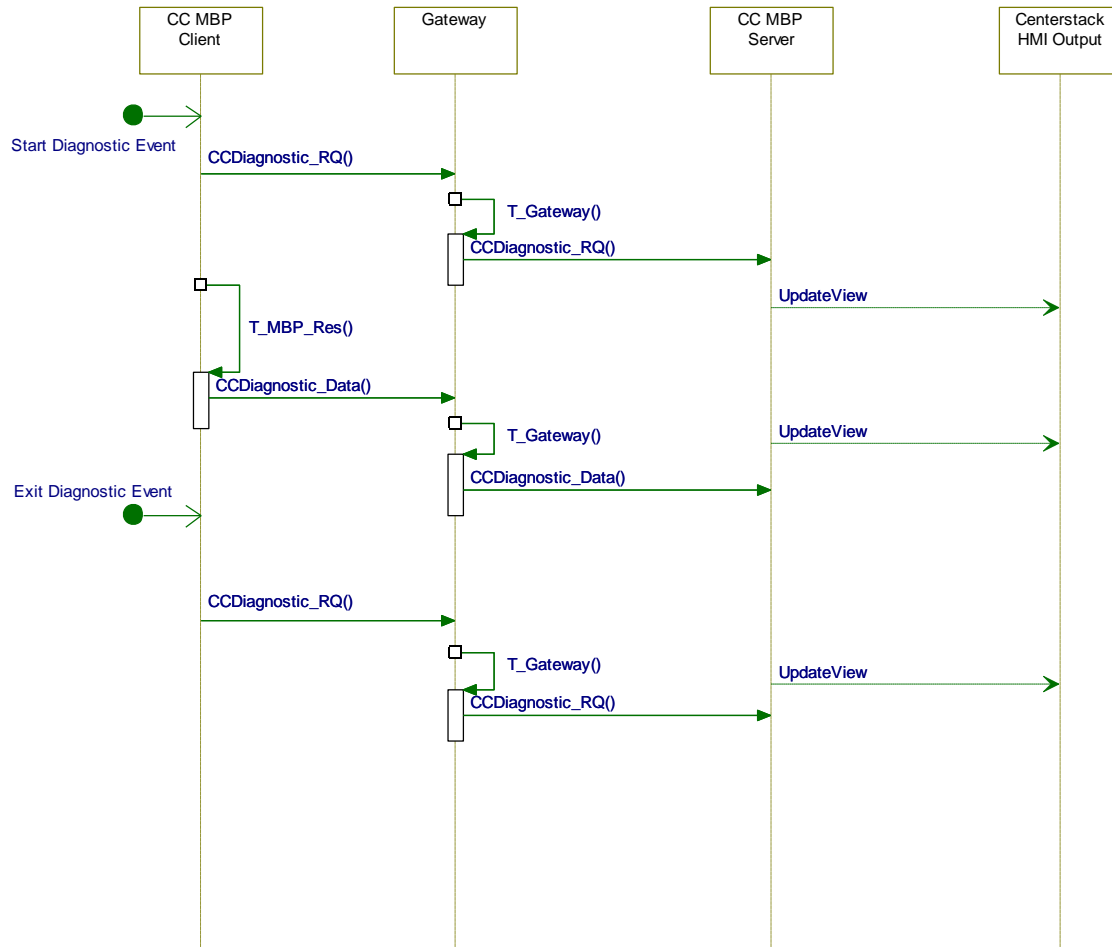
##### 3.4.1.1 CCSYSv2-SD-REQ-016740/A-Climate Control Bezel Diagnostics Sequence Diagram (TcSE ROIN-200205-1)

**Pre-condition**

Climate Control diagnostics is not active

**Post-condition**

Diagnostic mode is exited

**Sequence Diagram**

### 3.5 CCSYSv2-FUN-REQ-016754/A-Climate Control Voice Recognition commands and Voice/Phone Blower Limit (TcSE ROIN-200292-1)

For details of VR use reference the 'Climate Control Interface Requirements document version X'.

#### 3.5.1 Requirements

##### 3.5.1.1 CCSYSv2-SR-REQ-016755/A-Voice Commands sending Not Pressed after Press (TcSE ROIN-200340-1)

During a VR session voice commands are sent using the SoftButtonVRCC\_RQ command.



If a pressed command is sent using VR then the VR Client shall automatically send a Not\_Pressed / None\_Pressed after Tvr\_np\_rsp.

### 3.5.1.2 CCSYSv2-TMR-REQ-016756/A-Tvr\_np\_rsp (TcSE ROIN-200341-1)

Name	Description	Units	Range	Resolution	Default
Tvr_np_rsp	For a VR command using a button press message the VR Client shall transmit the 'Not_Pressed / None_Pressed' response within Tvr_np_rsp +/- 20% from the 'Pressed' status being sent.	msec	0-1000	10	60

### 3.5.1.3 CCSYSv2-SR-REQ-016757/A-Automatic or Manual Climate Control Head for Voice Recognition (TcSE ROIN-200360-1)

The VR module shall have a configuration setting for type of Climate Control Module (ex Automatic or Manual).

Note: The VR interface may have limited or no functionality for the Manual Climate.

### 3.5.1.3.1 CCSYSv2-TMR-REQ-016758/A-T\_Gateway (TcSE ROIN-200767-1)

Name	Description	Units	Range	Resolution	Default
T_Gateway	The delay through the Can Bus Gateway	msec	0-1000	1	2

### 3.5.1.4 CCSYSv2-SR-REQ-016759/B-Voice Blower Limit (TcSE ROIN-200362-2)

When a VR session is entered [or a Phone Call becomes active](#) the VR / [Phone](#) Client shall request a reduction in blower speed via the VoiceBlowerLimit\_RQ signal equal to 'Request'. It is up to the Climate module to determine if the request should be granted.

When [both the VR session and Phone call are no longer active then](#) the VR / [Phone](#) Client shall indicate it no longer requires the blower speed reduction with the VoiceBlowerLimit\_RQ signal equal to 'No Request'.

## 3.5.2 Sequence Diagrams

### 3.5.2.1 CCSYSv2-SD-REQ-016760/B-Blower Reduction Sequence Diagram (TcSE ROIN-200225-1)

#### Pre-condition

The user is not in a VR session, there is no active Phone call and the climate blower is not limited by infotainment

#### Scenario

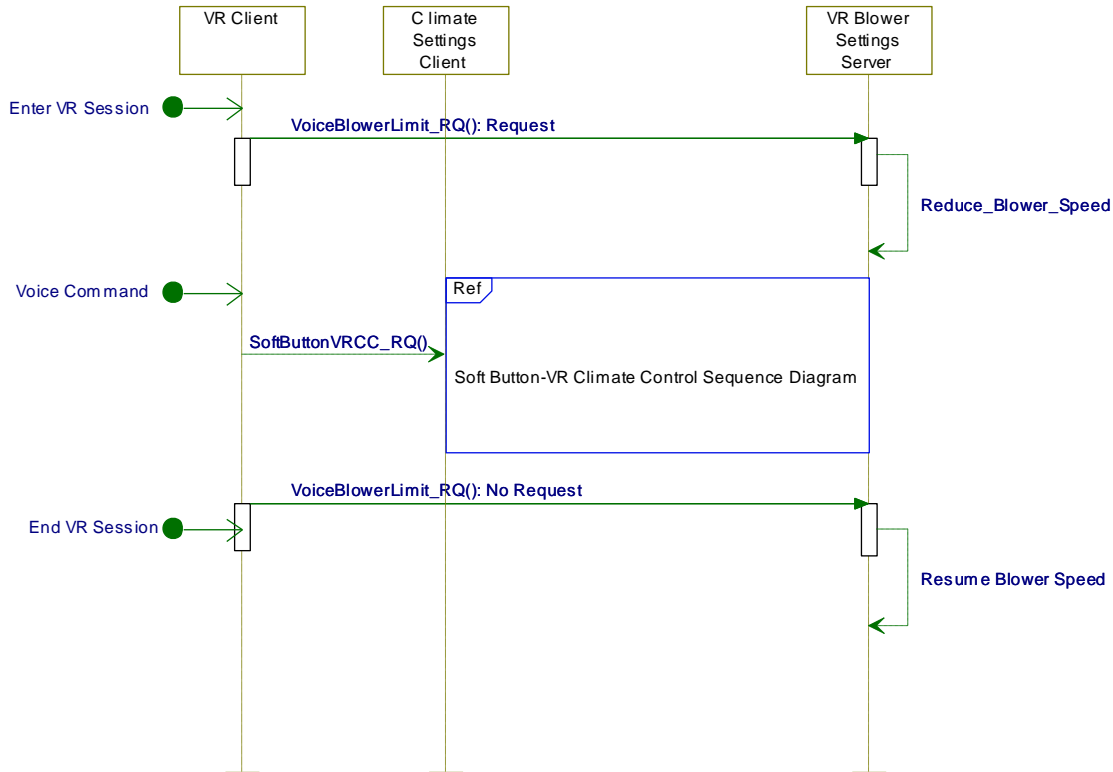
A phone call or VR session is entered and a climate blower reduction is requested (note: the sequence diagram shows for VR but same applies for Phone minus the voice commands).

#### Post-condition

When there is no longer a VR session or Phone Call then the climate blower speed is no longer being requested to have the blower limited



## Sequence Diagram



## 3.6 CCSYSv2-FUN-REQ-016647/B-Dual Zone Automatic Climate Controls (TcSE ROIN-290729)

## 3.6.1 Use Cases

## 3.6.1.1 CCSYSv2-UC-REQ-016648/C-Climate Control (CC) System Power Selection (ON) (TcSE ROIN-290694-1)

Actors	Vehicle Occupant
Pre-conditions	Climate Module is connected to a power source Ignition switch is in RUN/START position CC system is off
Scenario Description	Climate power command issued to turn CC system on via HMI
Post-conditions	<p>Touchscreen</p> <ul style="list-style-type: none"><li>-- HMI displays driver and passenger setpoint temperatures(persistently)</li><li>-- HMI displays any manually selected blower speed(persistently)</li><li>-- Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status</li><li>-- Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable</li><li>-- HMI updates expression for all touchscreen buttons to reflect current state</li></ul> <p>Non-Touch Centerstack Display</p> <ul style="list-style-type: none"><li>-- HMI displays driver and passenger setpoint</li></ul>



	<p>temperatures(persistently) -- HMI displays any manually selected blower speed(persistently)</p> <p>Instrument Cluster -- HMI displays driver setpoint temperature as applicable -- HMI displays blower speed as applicable</p> <p>Centerstack (Hard Buttons) -- Indications for all applicable climate functions are updated to reflect status</p>
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) SWC (Steering Wheel Control) CBI (Center Stack Button Interface – Touch/Non Touch)

### 3.6.1.2 CCSYSv2-UC-REQ-016649/B-Climate Control (CC) System Power Selection (OFF) (TcSE ROIN-290695-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position CC system is on
<b>Scenario Description</b>	Climate power command issued to turn CC system off via HMI
<b>Post-conditions</b>	<p><b>Touchscreen</b> HMI displays some notification that Climate system is off i.e. 'OFF' in place of setpoint temperatures and blower speed (persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state</p> <p><b>Instrument Cluster</b> HMI displays 'CLIMATE OFF' as applicable</p> <p><b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status</p>
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) SWC (Steering Wheel Control) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.6.1.3 CCSYSv2-UC-REQ-016650/B-Driver Temperature Adjustment - Temp adjusted up or down (TcSE ROIN-290696-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Driver Temperature is adjusted up or down via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays the new driver setpoint temperature per the following: -- If English units selected - 2 digit display (LO, HI or whole number between 60 and 85 with °F label) -- If Metric units selected - 3 digit display (LO, HI or number between 15.5 and 29.5 in 0.5 increments with °C label) HMI displays passenger setpoint temperature(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b> HMI displays the new driver setpoint temperature as applicable HMI displays blower speed as applicable  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) SWC (Steering Wheel Control) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.6.1.4 CCSYSv2-UC-REQ-016651/B-Driver Temperature Selection - Temp is set to a specific value (TcSE ROIN-290697-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Driver Temperature is set to a specific value, HI or LO via voice control(only)
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays the new driver setpoint temperature per the following: -- If English units selected - 2 digit display (LO, HI or whole number between 60 and 85 with °F label) -- If Metric units selected - 3 digit display (LO, HI or number between





	<p>15.5 and 29.5 in 0.5 increments with °C label)</p> <p>HMI displays passenger setpoint temperature(persistently)</p> <p>HMI displays any manually selected blower speed(persistently)</p> <p>Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status</p> <p>Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable</p> <p>HMI updates expression for all touchscreen buttons to reflect current state</p> <p><b>Instrument Cluster</b></p> <p>HMI displays the new driver setpoint temperature as applicable</p> <p>HMI displays blower speed as applicable</p> <p><b>Centerstack (Hard Buttons)</b></p> <p>Indications for all applicable climate functions are updated to reflect status</p>
<b>List of Exception Use Cases</b>	<p>E1-<a href="#">CCSYSv2-GUC-290698-1-Requested Temp value is not valid for currently selected units (English or Metric)</a></p> <p>E2-<a href="#">CCSYSv2-GUC-290699-1-Requested Temp value is not valid for any units (English or Metric)</a></p>
<b>Interfaces</b>	<p>G-HMI (Graphic HMI)</p> <p>V-HMI (Voice HMI)</p>

### 3.6.1.5 CCSYSv2-UC-REQ-016652/B-Requested Temp value is not valid for currently selected units (English or Metric) (TcSE ROIN-290698-1)

#### Linked Elements

CCSYSv2-UC-REQ-016651/B-Driver Temperature Selection - Temp is set to a specific value (TcSE ROIN-290697-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Same as normal use case
<b>Scenario Description</b>	Driver Temperature is set to a specific value via voice control that is not valid for currently selected units (English or Metric)
<b>Post-conditions</b>	System converts requested value to currently selected units (English or Metric) before displaying. Otherwise same as Normal Use case
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	<p>G-HMI (Graphic HMI)</p> <p>V-HMI (Voice HMI)</p>

### 3.6.1.6 CCSYSv2-UC-REQ-016653/B-Requested Temp value is not valid for any units (English or Metric) (TcSE ROIN-290699-1)

#### Linked Elements

CCSYSv2-UC-REQ-016651/B-Driver Temperature Selection - Temp is set to a specific value (TcSE ROIN-290697-1)

<b>Actors</b>	Vehicle Occupant
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<b>Pre-conditions</b>	Same as normal use case
<b>Scenario Description</b>	Driver Temperature is set to a specific value via voice control that is not valid for any units (English or Metric)
<b>Post-conditions</b>	System informs occupant that requested value is not valid. No change of state.
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI)

### 3.6.1.7 CCSYSv2-UC-REQ-016654/B-Passenger Temperature Adjustment (TcSE ROIN-290700-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Passenger Temperature is adjusted up or down via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays the new passenger setpoint temperature per the following: <ul style="list-style-type: none"><li>-- If English units selected - 2 digit display (LO, HI or whole number between 60 and 85 with °F label)</li><li>-- If Metric units selected - 3 digit display (LO, HI or number between 15.5 and 29.5 in 0.5 increments with °C label)</li></ul> HMI displays driver setpoint temperature(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays blower speed as applicable  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.6.1.8 CCSYSv2-UC-REQ-016655/B-Blower Speed Adjustment (TcSE ROIN-290701-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Blower speed is adjusted up or down via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays any manually selected blower speed (persistently) per the following: -- Bars illuminated to reflect speed selection between 0 and 7 along with a Fan symbol HMI displays driver and passenger setpoint temperatures(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b> HMI displays the new driver setpoint temperature as applicable HMI displays the manually selected blower speed as applicable  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) SWC (Steering Wheel Control) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.6.1.9 CCSYSv2-UC-REQ-016656/B-Blower Speed Selection (TcSE ROIN-290702-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Blower speed is set to Maximum or Minimum speed via voice control(only)
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays any manually selected blower speed (persistently) per the following: -- Bars illuminated to reflect speed selection between 0 and 7 along with a Fan symbol HMI displays driver and passenger setpoint temperatures(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect



	<p>status as applicable HMI updates expression for all touchscreen buttons to reflect current state</p> <p><b>Instrument Cluster</b> HMI displays the new driver setpoint temperature as applicable HMI displays the manually selected blower speed as applicable</p> <p><b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status</p>
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI)

#### 3.6.1.10 CCSYSv2-UC-REQ-016657/B-AC Selection (on/off) (TcSE ROIN-290703-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	AC selection made via HMI
<b>Post-conditions</b>	<p><b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state</p> <p><b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays blower speed as applicable</p> <p><b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status</p>
<b>List of Exception Use Cases</b>	E1- <a href="#">CCSYSv2-GUC-290704-1-Function not available for turning CC system ON</a> (ref climate spec for determining if this exception applies)
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.6.1.11 CCSYSv2-UC-REQ-016658/B-Function not available for turning CC system ON (TcSE ROIN-290704-1)****Linked Elements**

CCSYSv2-UC-REQ-016657/B-AC Selection (on/off) (TcSE ROIN-290703-1)  
CCSYSv2-UC-REQ-016659/B-Recirc Selection (on/off) (TcSE ROIN-290705-1)  
CCSYSv2-UC-REQ-016660/B-Max AC Selection (on/off) (TcSE ROIN-290706-1)  
CCSYSv2-UC-REQ-016661/B-Max Defrost Selection (on/off) (TcSE ROIN-290707-1)  
CCSYSv2-UC-REQ-016662/B-Defrost Mode Selection (on/off) (TcSE ROIN-290708-1)  
CCSYSv2-UC-REQ-016663/B-Panel Mode Selection (on/off) (TcSE ROIN-290709-1)  
CCSYSv2-UC-REQ-016664/B-Floor Mode Selection (on/off) (TcSE ROIN-290710-1)  
CCSYSv2-UC-REQ-016665/B-Panel/Floor Mode Selection (on) (TcSE ROIN-290711-1)  
CCSYSv2-UC-REQ-016666/B-Floor/Defrost Mode Selection (on) (TcSE ROIN-290712-1)  
CCSYSv2-UC-REQ-016667/B-Panel/Defrost Mode Selection (on) (TcSE ROIN-290713-1)  
CCSYSv2-UC-REQ-016668/B-Panel/Floor/Defrost Mode Selection (on) (TcSE ROIN-290714-1)  
CCSYSv2-UC-REQ-016669/B-Dual Selection (on/off) (TcSE ROIN-290715-1)  
CCSYSv2-UC-REQ-016670/C-Auto Selection (on) (TcSE ROIN-290716-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position CC system is off
<b>Scenario Description</b>	Function selected via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> Climate Screen: <ul style="list-style-type: none"><li>• No Change</li></ul> <b>Instrument Cluster</b> <ul style="list-style-type: none"><li>• No Change</li></ul> <b>Centerstack (Hard Buttons)</b> <ul style="list-style-type: none"><li>• No Change</li></ul>
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.6.1.12 CCSYSv2-UC-REQ-016659/B-Recirc Selection (on/off) (TcSE ROIN-290705-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario</b>	Recirc selection made via HMI



<b>Description</b>	
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays blower speed as applicable  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	E1- <a href="#">CCSYSv2-GUC-290704-1-Function not available for turning CC system ON</a>
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

### 3.6.1.13 CCSYSv2-UC-REQ-016660/B-Max AC Selection (on/off) (TcSE ROIN-290706-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Max AC selection made via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays blower speed as applicable  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status



<b>List of Exception Use Cases</b>	E1- <a href="#">CCSYSv2-GUC-290704-1-Function not available for turning CC system ON</a>
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

#### 3.6.1.14 CCSYSv2-UC-REQ-016661/B-Max Defrost Selection (on/off) (TcSE ROIN-290707-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Max Defrost selection made via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays blower speed as applicable  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	E1- <a href="#">CCSYSv2-GUC-290704-1-Function not available for turning CC system ON</a>
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch)



**3.6.1.15 CCSYSv2-UC-REQ-016662/B-Defrost Mode Selection (on/off) (TcSE ROIN-290708-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Defrost mode selection made via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays blower speed as applicable  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	E1- <a href="#">CCSYSv2-GUC-290704-1-Function not available for turning CC system ON</a>
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) SWC (Steering Wheel Control) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.6.1.16 CCSYSv2-UC-REQ-016663/B-Panel Mode Selection (on/off) (TcSE ROIN-290709-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Panel mode selection made via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b>





	HMI displays driver setpoint temperature as applicable HMI displays blower speed as applicable  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
List of Exception Use Cases	E1- <a href="#">CCSYSv2-GUC-290704-1-Function not available for turning CC system ON</a>
Interfaces	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

### 3.6.1.17 CCSYSv2-UC-REQ-016664/B-Floor Mode Selection (on/off) (TcSE ROIN-290710-1)

Actors	Vehicle Occupant
Pre-conditions	Climate Module is connected to a power source Ignition switch is in RUN/START position
Scenario Description	Floor mode selection made via HMI
Post-conditions	<b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays blower speed as applicable  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
List of Exception Use Cases	E1- <a href="#">CCSYSv2-GUC-290704-1-Function not available for turning CC system ON</a>
Interfaces	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.6.1.18 CCSYSv2-UC-REQ-016665/B-Panel/Floor Mode Selection (on) (TcSE ROIN-290711-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Panel/Floor combination mode selection made via voice control (only)
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays blower speed as applicable  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	E1- <a href="#">CCSYSv2-GUC-290704-1-Function not available for turning CC system ON</a>
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI)

**3.6.1.19 CCSYSv2-UC-REQ-016666/B-Floor/Defrost Mode Selection (on) (TcSE ROIN-290712-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Floor/Defrost combination mode selection made via voice control (only)
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status



	<p>Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state</p> <p><b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays blower speed as applicable</p> <p><b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status</p>
<b>List of Exception Use Cases</b>	E1- <a href="#">CCSYSv2-GUC-290704-1-Function not available for turning CC system ON</a>
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI)

#### 3.6.1.20 CCSYSv2-UC-REQ-016667/B-Panel/Defrost Mode Selection (on) (TcSE ROIN-290713-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Panel/Defrost combination mode selection made via voice control(only)
<b>Post-conditions</b>	<p><b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state</p> <p><b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays blower speed as applicable</p> <p><b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status</p>
<b>List of Exception Use Cases</b>	E1- <a href="#">CCSYSv2-GUC-290704-1-Function not available for turning CC system ON</a>
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI)

**3.6.1.21 CCSYSv2-UC-REQ-016668/B-Panel/Floor/Defrost Mode Selection (on) (TcSE ROIN-290714-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Panel/Floor/Defrost combination mode selection made via voice control(only)
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays blower speed as applicable  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	E1- <a href="#">CCSYSv2-GUC-290704-1-Function not available for turning CC system ON</a>
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI)

**3.6.1.22 CCSYSv2-UC-REQ-016669/B-Dual Selection (on/off) (TcSE ROIN-290715-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Dual selection made via HMI



<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI displays any manually selected blower speed(persistently) Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays blower speed as applicable  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	E1- <a href="#">CCSYSv2-GUC-290704-1-Function not available for turning CC system ON</a>
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) – NOTE: Only when climate system is off CBI (Center Stack Button Interface – Touch/Non Touch)

### 3.6.1.23 CCSYSv2-UC-REQ-016670/C-Auto Selection (on) (TcSE ROIN-290716-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Auto selection made to enable full automatic control and set automatic blower speed of climate system via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI blanks off blower speed display Auto indications are updated to reflect auto blower speed status – Low, Medium or High Indications for all other applicable climate functions (Power, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays a label to tell occupant that blower speed is being automatically controlled as applicable



	<b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	E1-CCSYSv2-GUC-290704- Function not available for turning CC system ON CCSYSv2-UC-REQ-100580-Only single speed for automatic blower
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

#### 3.6.1.24 CCSYSv2-UC-REQ-016671/B-Rear Defrost Selection (on/off) (TcSE ROIN-290717-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Rear defrost selection made via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> Indication for Rear Defrost is updated to reflect status HMI updates expression for Rear Defrost touchscreen button to reflect current state  <b>Centerstack (Hard Buttons)</b> Indications for applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

#### 3.6.1.25 CCSYSv2-UC-REQ-016672/B-Heated Windscreen Selection (on/off) (TcSE ROIN-290718-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Heated Windscreen selection made via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> Indication for Heated Windscreen is updated to reflect status HMI updates expression for Heated Windscreen touchscreen button to reflect current state  <b>Centerstack (Hard Buttons)</b> Indications for applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.6.1.26 CCSYSv2-UC-REQ-016673/B-Driver or Passenger Heated Seat adjustment (TcSE ROIN-290719-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Driver or Passenger side Heated seat settings are adjusted via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> All cooled seat indications are turned off (if applicable and on) Heated seat indications are updated to reflect setting – Off, Low, Medium, or High HMI updates expression for Heated touchscreen buttons to reflect current state  AND/OR <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.6.1.27 CCSYSv2-UC-REQ-016674/B-Driver or Passenger Cooled Seat adjustment (TcSE ROIN-290720-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Driver or Passenger side Cooled seat settings are adjusted via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> All heated seat indications are turned off (if on) Cooled seat indications are updated to reflect setting – Off, Low, Medium, or High HMI updates expression for Heated touchscreen buttons to reflect current state  AND/OR <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.6.1.28 CCSYSv2-UC-REQ-016675/B-Heated Steering Wheel (on/off) (TcSE ROIN-290721-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Heated Steering Wheel selection is made via HMI
<b>Post-conditions</b>	<b>Touchscreen</b>



	Indication for Heated Steering Wheel is updated to reflect status HMI updates expression for Heated Steering Wheel touchscreen button to reflect current state  AND/OR  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

### 3.6.1.29 CCSYSv2-UC-REQ-016676/B-Outside Air Temperature display (TcSE ROIN-290722-1)

<b>Actors</b>	N/A
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Occupant wants to know the Outside Air Temperature
<b>Post-conditions</b>	<b>Touchscreen</b> Outside Air Temperature is displayed (persistently) per following: Whole values from -40 to 190 °F (or °C equivalent if metric units selected) Include °F or °C label per unit selection (English or Metric)
<b>List of Exception Use Cases</b>	E1– <a href="#">CCSYSv2-GUC-290723-1-Outside Air Temperature - Sensor Not Available</a>  E2– <a href="#">CCSYSv2-GUC-290724-1-Outside Air Temperature - Sensor Disconnected and/or Faulty</a>
<b>Interfaces</b>	G-HMI (Graphic HMI)

### 3.6.1.30 CCSYSv2-UC-REQ-016677/B-Outside Air Temperature - Sensor Not Available (TcSE ROIN-290723-1)

#### Linked Elements

CCSYSv2-UC-REQ-016676/B-Outside Air Temperature display (TcSE ROIN-290722-1)

<b>Actors</b>	N/A
<b>Pre-conditions</b>	Same as normal use case
<b>Scenario Description</b>	Occupant wants to know the Outside Air Temperature, but there is no sensor installed on vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> Nothing is displayed for Outside Air Temperature i.e. no value, no dashes, no labels etc.
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI)



**3.6.1.31 CCSYSv2-UC-REQ-016678/B-Outside Air Temperature - Sensor Disconnected and/or Faulty (TcSE ROIN-290724-1)****Linked Elements**

CCSYSv2-UC-REQ-016676/B-Outside Air Temperature display (TcSE ROIN-290722-1)

<b>Actors</b>	N/A
<b>Pre-conditions</b>	Same as normal use case
<b>Scenario Description</b>	Occupant wants to know the Outside Air Temperature, but Sensor is disconnected
<b>Post-conditions</b>	<b>Touchscreen</b> Outside Air Temperature is displayed (persistently) per following: - Three dashes in place of temperature value Include °F or °C label per unit selection (English or Metric)
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI)

**3.6.1.32 CCSYSv2-UC-REQ-016679/B-Ignition Cycle (TcSE ROIN-290725-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch position is in RUN/START
<b>Scenario Description</b>	Ignition switch position is changed out of RUN/START
<b>Post-conditions</b>	<b>Touchscreen</b> All Climate displays are blanked off Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect disabled state  <b>Instrument Cluster</b> All Climate displays are blanked off  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) SWC (Steering Wheel Control) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.6.1.33 CCSYSv2-UC-REQ-016680/B-Voice Blower Limiting (TcSE ROIN-290726-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch position is in RUN/START Climate System is ON
<b>Scenario Description</b>	Occupant initiates a voice session or a phone call becomes active



<b>Post-conditions</b>	Blower speed may be automatically reduced to a pre-determined maximum speed  <b>Touchscreen</b> HMI may be updated to reflect current state  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions may be updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) SWC (Steering Wheel Control) CBI (Center Stack Button Interface – Touch/Non Touch)

#### 3.6.1.34 CCSYSv2-UC-REQ-016681/B-Remote Start (TcSE ROIN-290727-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch position is not RUN/START
<b>Scenario Description</b>	User initiates a Remote Start event
<b>Post-conditions</b>	<b>Touchscreen</b> All Climate displays are blanked off Indications for all other applicable climate functions (Power, Auto, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) remain off Indications for Heated only or Heated/Cooled seats remain off HMI updates expression for all touchscreen buttons to reflect disabled state  <b>Instrument Cluster</b> All Climate displays are blanked off  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions remain off
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) SWC (Steering Wheel Control) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.6.1.35 CCSYSv2-UC-REQ-100580/A-Only single speed for automatic blower**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Auto selection made to enable full automatic control of climate system via HMI
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays driver and passenger setpoint temperatures(persistently) HMI blanks off blower speed display Single, Auto indication is updated to reflect status Indications for all other applicable climate functions (Power, AC, Recirc, Max AC, Max Defrost, Defrost, Panel, Floor, Rear Defrost, Dual and Heated Windscreen, Heated Steering Wheel) are updated to reflect status Indications for Heated only or Heated/Cooled seats are updated to reflect status as applicable HMI updates expression for all touchscreen buttons to reflect current state  <b>Instrument Cluster</b> HMI displays driver setpoint temperature as applicable HMI displays a label to tell occupant that blower speed is being automatically controlled as applicable  <b>Centerstack (Hard Buttons)</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch)

**3.7 CCSYSv2-FUN-REQ-016682/B-Front Control of Automatic Rear Climate (TcSE ROIN-290730)**

Note: for Use Cases Unless noted specifically as “persistent” within following use cases, post conditions only required when specified content would normally be displayed.

**3.7.1 Use Cases****3.7.1.1 CCSYSv2-UC-REQ-016683/B-Front Climate Control System Power Selection (ON) w/ Rear Off (TcSE ROIN-290732-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Front climate system is off Rear climate system was previously off
<b>Scenario Description</b>	Power command issued to turn front climate system on via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays some notification that Rear climate system is off i.e. 'OFF' in place of setpoint temperatures and blower speed



	Indications for rear Power, rear Auto and Rear Lock are updated to reflect status HMI updates expression for rear Power, rear Auto and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch) RCI (Rear Controls Interface)

### 3.7.1.2 CCSYSv2-UC-REQ-016684/B-Front Climate Control System Power Selection (ON) w/ Rear On (TcSE ROIN-290733-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Front climate system is off Rear climate system was previously on
<b>Scenario Description</b>	Power command issued to turn front climate system on via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays rear temperature setpoint HMI displays any manually selected rear blower speed Indications for rear Power(persistent within dedicated climate screens), rear Auto and Rear Lock are updated to reflect status HMI updates expression for rear Power, rear Auto and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch) RCI (Rear Controls Interface)

**3.7.1.3 CCSYSv2-UC-REQ-016685/B-Front Climate Control System Power Selection (OFF) (TcSE ROIN-290734-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Front climate system is on
<b>Scenario Description</b>	Power command issued to turn front climate system off via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays some notification that Rear climate system is off i.e. 'OFF' in place of setpoint temperatures and blower speed Indications for rear Power, rear Auto and Rear Lock are updated to reflect status HMI updates expression for rear Power, rear Auto and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch) RCI (Rear Controls Interface)

**3.7.1.4 CCSYSv2-UC-REQ-016686/B-Rear Climate Control System Power Selection (ON) (TcSE ROIN-290735-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Rear climate system is off
<b>Scenario Description</b>	Rear power command issued to turn rear climate system on via HMI located in the front OR rear of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays rear temperature setpoint HMI displays any manually selected rear blower speed Indications for rear Power(persistent within dedicated climate screens), rear Auto and Rear Lock are updated to reflect status HMI updates expression for rear Power, rear Auto and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	



<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)
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### 3.7.1.5 CCSYSv2-UC-REQ-016687/B-Rear Climate Control System Power Selection (OFF) (TcSE ROIN-290736-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Rear climate system is on
<b>Scenario Description</b>	Rear power command issued to turn rear climate system off via HMI located in the front OR rear of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays some notification that Rear climate system is off i.e. 'OFF' in place of setpoint temperatures and blower speed Indications for rear Power, rear Auto and Rear Lock are updated to reflect status HMI updates expression for rear Power, rear Auto and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

### 3.7.1.6 CCSYSv2-UC-REQ-016688/B-Rear Temperature Adjustment from front controls (TcSE ROIN-290737-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Rear Temperature is adjusted up or down via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays the new rear temperature setpoint per the following: -- If English units selected - 2 digit display (LO, HI or whole number between 60 and 85 with °F label)



	<p>-- If Metric units selected - 3 digit display (LO, HI or number between 15.5 and 29.5 in 0.5 increments with °C label)</p> <p>HMI displays any manually selected rear blower speed</p> <p>Indications for rear Power(persistent within dedicated climate screens), rear Auto and Rear Lock are updated to reflect status</p> <p>HMI updates expression for rear Power, rear Auto and Rear Lock buttons to reflect current state</p> <p><b>Controls located in rear of vehicle</b></p> <p>Indications for all applicable climate functions are updated to reflect status</p>
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

### 3.7.1.7 CCSYSv2-UC-REQ-016689/B-Rear Blower Speed Adjustment from front controls (TcSE ROIN-290738-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Rear blower speed is adjusted up or down via HMI located in the front of the vehicle
<b>Post-conditions</b>	<p><b>Touchscreen</b></p> <p>HMI displays rear temperature setpoint</p> <p>HMI displays the new rear blower speed setting per the following: 7 bars illuminated to reflect speed selection between 1 and 7 w/ Fan symbol</p> <p>Indications for rear Power(persistent within dedicated climate screens), rear Auto and Rear Lock are updated to reflect status</p> <p>HMI updates expression for rear Power, rear Auto and Rear Lock buttons to reflect current state</p> <p><b>Controls located in rear of vehicle</b></p> <p>Indications for all applicable climate functions are updated to reflect status</p>
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

**3.7.1.8 CCSYSv2-UC-REQ-016690/B-Rear Lock Selection (on/off) from front controls (TcSE ROIN-290739-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Rear Lock selection made via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays rear temperature setpoint HMI displays any manually selected rear blower speed Indications for rear Power(persistent within dedicated climate screens), rear Auto and Rear Lock are updated to reflect status HMI updates expression for rear Power, rear Auto and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

**3.7.1.9 CCSYSv2-UC-REQ-016691/B-Rear Auto Selection (on) from front controls (TcSE ROIN-290740-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Rear Auto selection made to enable full Auto control of rear climate system via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays rear temperature setpoint HMI blanks off rear blower speed Indications for rear Power(persistent within dedicated climate screens), rear Auto and Rear Lock are updated to reflect status HMI updates expression for rear Power, rear Auto and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status





<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

### 3.7.1.10 CCSYSv2-UC-REQ-016692/B-Climate Adjustment via Controls Located in Rear of Vehicle (TcSE ROIN-290741-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Rear Lock is off
<b>Scenario Description</b>	Adjustment of rear climate system is made via HMI located in the rear of vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays rear temperature setpoint HMI displays any manually selected rear blower speed Indications for rear Power(persistent within dedicated climate screens), rear Auto and Rear Lock are updated to reflect status HMI updates expression for rear Power, rear Auto and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	E1- <a href="#">CCSYSv2-GUC-290742-1-Climate Adjustment via Controls Located in Rear of Vehicle w/ Rear Lock on</a>
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

### 3.7.1.11 CCSYSv2-UC-REQ-016693/B-Climate Adjustment via Controls Located in Rear of Vehicle w/ Rear Lock on (TcSE ROIN-290742-1)

#### Linked Elements

CCSYSv2-UC-REQ-016692/B-Climate Adjustment via Controls Located in Rear of Vehicle (TcSE ROIN-290741-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Adjustment of rear climate system is made via controls located in rear of vehicle with Rear Lock on
<b>Post-conditions</b>	<b>Touchscreen</b> No change  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect



	status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

**3.7.1.12 CCSYSv2-UC-REQ-016694/B-Max Defrost Selection (on) from front controls (TcSE ROIN-290743-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Max Defrost is off
<b>Scenario Description</b>	Selection made to turn on Max Defrost via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays some notification that Rear climate system is off i.e. 'OFF' in place of setpoint temperatures and blower speed Indications for rear Power, rear Auto and Rear Lock are updated to reflect status HMI updates expression for rear Power, rear Auto and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

**3.7.1.13 CCSYSv2-UC-REQ-016695/B-Ignition Off – Rear Climate (TcSE ROIN-290744-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Ignition switch position is in RUN/START
<b>Scenario Description</b>	Ignition switch position is changed out of RUN/START
<b>Post-conditions</b>	<b>Touchscreen</b>



	HMI blanks off rear temperature setpoint display HMI blanks off rear blower speed Indications for rear Power, rear Auto and Rear Lock are updated to reflect status HMI updates expression for all rear buttons to reflect disabled state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

### 3.8 CCSYSv2-FUN-REQ-016696/B-Front Control of Manual Rear Climate (TcSE ROIN-290731)

#### NOTES:

Unless noted specifically as “persistent” within following use cases, post conditions only required when specified content would normally be displayed.

#### 3.8.1 Use Cases

##### 3.8.1.1 CCSYSv2-UC-REQ-016697/B-Front Climate Control System Power Selection (ON) w/ Rear Off (TcSE ROIN-290745-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Front climate system is off Rear climate system was previously off
<b>Scenario Description</b>	Power command issued to turn front climate system on via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays some notification that Rear climate system is off i.e. 'OFF' in place of setpoint temperatures and blower speed Indications for rear Power and Rear Lock are updated to reflect status HMI updates expression for rear Power and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch) RCI (Rear Controls Interface)

**3.8.1.2 CCSYSv2-UC-REQ-016698/B-Front Climate Control System Power Selection (ON) w/ Rear On(controlled by front) (TcSE ROIN-290746-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Front climate system is off Rear climate system was previously on Rear climate system was previously being controlled via the HMI located in the front of the vehicle
<b>Scenario Description</b>	Power command issued to turn front climate system on via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays rear temperature setting HMI displays rear blower speed Indications for rear Power(persistent within dedicated climate screens) and Rear Lock are updated to reflect status HMI updates expression for rear Power and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch) RCI (Rear Controls Interface)

**3.8.1.3 CCSYSv2-UC-REQ-016699/B-Front Climate Control System Power Selection (ON) w/ Rear On(controlled by rear) (TcSE ROIN-290747-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Front climate system is off Rear climate system was previously on Rear climate system was previously being controlled via the HMI located in the rear of the vehicle
<b>Scenario Description</b>	Power command issued to turn front climate system on via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI blanks off rear temperature setting HMI blanks off rear blower speed Indications for rear Power(persistent within dedicated climate screens) and Rear Lock are updated to reflect status HMI updates expression for rear Power and Rear Lock buttons to reflect current state



	<b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch) RCI (Rear Controls Interface)

#### 3.8.1.4 CCSYSv2-UC-REQ-016700/B-Front Climate Control System Power Selection (OFF) (TcSE ROIN-290748-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Front climate system is on
<b>Scenario Description</b>	Power command issued to turn front climate system off via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays some notification that Rear climate system is off i.e. 'OFF' in place of setpoint temperatures and blower speed Indications for rear Power and Rear Lock are updated to reflect status HMI updates expression for rear Power and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) V-HMI (Voice HMI) CBI (Center Stack Button Interface – Touch/Non Touch) RCI (Rear Controls Interface)

#### 3.8.1.5 CCSYSv2-UC-REQ-016701/B-Rear Climate Control System Power Selection (ON) – controlled by front (TcSE ROIN-290749-1)



<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Rear climate system is off Rear climate system was previously being controlled via the HMI located in the front of the vehicle
<b>Scenario Description</b>	Rear power command issued to turn rear climate system on via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays rear temperature setting HMI displays rear blower speed Indications for rear Power(persistent within dedicated climate screens) and Rear Lock are updated to reflect status HMI updates expression for rear Power and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

### 3.8.1.6 CCSYSv2-UC-REQ-016702/B-Rear Climate Control System Power Selection (ON) – controlled by rear (TcSE ROIN-290750-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Rear climate system is off Rear climate system was previously being controlled via the HMI located in the rear of the vehicle
<b>Scenario Description</b>	Rear power command issued to turn rear climate system on via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI blanks off rear temperature setting HMI blanks off rear blower speed Indications for rear Power(persistent within dedicated climate screens) and Rear Lock are updated to reflect status HMI updates expression for rear Power and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception</b>	



<b>Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

#### 3.8.1.7 CCSYSv2-UC-REQ-016703/B-Rear Climate Control System Power Selection (OFF) (TcSE ROIN-290751-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Rear climate system is on
<b>Scenario Description</b>	Rear power command issued to turn rear climate system off via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays some notification that Rear climate system is off i.e. 'OFF' in place of setpoint temperatures and blower speed Indications for rear Power and Rear Lock are updated to reflect status HMI updates expression for rear Power and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

#### 3.8.1.8 CCSYSv2-UC-REQ-016704/B-Rear Temperature Adjustment from front controls (TcSE ROIN-290752-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Rear Temperature is adjusted up or down via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays the new rear temperature setting per the following: 9 bars illuminated to reflect temperature setting 4/9 blue bars for cool settings



	<p>1/9 neutral bar in middle for medium setting 4/9 red bars for heat settings</p> <p>HMI displays rear blower speed Indications for rear Power(persistent within dedicated climate screens) and Rear Lock are updated to reflect status HMI updates expression for rear Power and Rear Lock buttons to reflect current state</p> <p><b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status</p>
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

#### 3.8.1.9 CCSYSv2-UC-REQ-016705/B-Rear Blower Speed Adjustment from front controls (TcSE ROIN-290753-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Rear blower speed is adjusted up or down via HMI located in the front of the vehicle
<b>Post-conditions</b>	<p><b>Touchscreen</b> HMI displays rear temperature setting HMI displays the new rear blower speed setting per the following: 7 bars illuminated to reflect speed selection between 1 and 7 w/ Fan symbol Indications for rear Power(persistent within dedicated climate screens) and Rear Lock are updated to reflect status HMI updates expression for rear Power and Rear Lock buttons to reflect current state</p> <p><b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status</p>
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)



**3.8.1.10 CCSYSv2-UC-REQ-016706/B-Rear Lock Selection (on/off) from front controls (TcSE ROIN-290754-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Rear Lock selection made via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays rear temperature setting HMI displays rear blower speed Indications for rear Power(persistent within dedicated climate screens) and Rear Lock are updated to reflect status HMI updates expression for rear Power and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

**3.8.1.11 CCSYSv2-UC-REQ-016707/B-Climate Adjustment via Controls Located in Rear of Vehicle (TcSE ROIN-290755-1)**

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Rear Lock is off
<b>Scenario Description</b>	Adjustment of rear climate system is made via HMI located in the rear of vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI blanks off rear temperature setting HMI blanks off rear blower speed Indications for rear Power(persistent within dedicated climate screens) and Rear Lock are updated to reflect status HMI updates expression for rear Power and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status



<b>List of Exception Use Cases</b>	E1– <a href="#">CCSYSv2-GUC-290756-1-Climate Adjustment via Controls Located in Rear of Vehicle w/ Rear Lock on</a>
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

### 3.8.1.12 CCSYSv2-UC-REQ-016708/B-Climate Adjustment via Controls Located in Rear of Vehicle w/ Rear Lock on (TcSE ROIN-290756-1)

#### Linked Elements

CCSYSv2-UC-REQ-016707/B-Climate Adjustment via Controls Located in Rear of Vehicle (TcSE ROIN-290755-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position
<b>Scenario Description</b>	Adjustment of rear climate system is made via controls located in rear of vehicle with Rear Lock on
<b>Post-conditions</b>	<b>Touchscreen</b> No change  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

### 3.8.1.13 CCSYSv2-UC-REQ-016709/B-Max Defrost Selection (on) from front controls (TcSE ROIN-290757-1)

<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Climate Module is connected to a power source Ignition switch is in RUN/START position Max Defrost is off
<b>Scenario Description</b>	Selection made to turn on Max Defrost via HMI located in the front of the vehicle
<b>Post-conditions</b>	<b>Touchscreen</b> HMI displays some notification that Rear climate system is off i.e. 'OFF' in place of setpoint temperatures and blower speed Indications for rear Power and Rear Lock are updated to reflect status HMI updates expression for rear Power and Rear Lock buttons to reflect current state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)

### 3.8.1.14 CCSYSv2-UC-REQ-016710/B-Ignition Off – Rear Climate (TcSE ROIN-290758-1)



<b>Actors</b>	Vehicle Occupant
<b>Pre-conditions</b>	Ignition switch position is in RUN/START
<b>Scenario Description</b>	Ignition switch position is changed out of RUN/START
<b>Post-conditions</b>	<b>Touchscreen</b> HMI blanks off rear temperature setting HMI blanks off rear blower speed Indications for rear Power and Rear Lock are updated to reflect status HMI updates expression for all rear buttons to reflect disabled state  <b>Controls located in rear of vehicle</b> Indications for all applicable climate functions are updated to reflect status
<b>List of Exception Use Cases</b>	
<b>Interfaces</b>	G-HMI (Graphic HMI) RCI (Rear Controls Interface)



## 4 Appendix: Reference Documents

Reference #	Document Title
1	CGEA 1.3 Brand DNA Climate Control System HMI Requirements
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
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