Medium Duty Max Defrost

Status	~~TMSS-26870~~ DONE
Comments	**Assignee** / **Last Comment** Kamil Krzysztoszek (Consultant) — Kamil Krzysztoszek (Consultant) added a comment - 2025-10-27 15:27 *W44:* Review booked for W44.3.
Priority	
Product Classes	A1/A3-Conventional, A1/A3-BEV
Architectures	T2
SE-Tool Link	url:swap://setoolgtt.srv.volvo.com:3001/x04000000254E0B12
Updates	**W18:** Might need to have some changes based on proposed improvements under discussion with Anders R.

References

Product Classes: A1/A3-Conventional, A1/A3-BEV

Thermal System Requirements

SE-Tool link: url:swap://setoolgtt.srv.volvo.com:3001/x04000000254E0B12

	Item Type Icon and Level	Item Name	Item Content	FRS
Collaboration				url:swap://setoolgtt.srv.volvo.com:3001/x040000002C452DA6
Collaboration	| -			

Requirement	| - | - §	Max Defrost HVAC Actuators Request	The Thermal System shall set the final position of the HVAC actuators by sending request internally from CCM to HVAC using the below signals. HVACAct1Cmd_ConfigMode (Recirculation) HVACAct1Cmd_InitPOS (Recirculation) HVACAct1Cmd_ParamPosMode (Recirculation) HVACAct1Cmd_FPOS (Recirculation) HVACAct1Cmd_ParamFreq (Recirculation) HVACAct1Cmd_NAD (Recirculation) HVACAct1Cmd_ClearStall (Recirculation) HVACAct1Cmd_ClearReset (Recirculation) HVACAct1Cmd_ClearEmRun (Recirculation) HVACAct1Cmd_CtrlStallEn (Recirculation) HVACAct2Cmd_ConfigMode (Vent/Defrost/Floor) HVACAct2Cmd_InitPOS (Vent/Defrost/Floor) HVACAct2Cmd_ParamPosMode (Vent/Defrost/Floor) HVACAct2Cmd_FPOS (Vent/Defrost/Floor) HVACAct2Cmd_ParamFreq (Vent/Defrost/Floor) HVACAct2Cmd_NAD (Vent/Defrost/Floor) HVACAct2Cmd_ClearStall (Vent/Defrost/Floor) HVACAct2Cmd_ClearReset (Vent/Defrost/Floor) HVACAct2Cmd_ClearEmRun (Vent/Defrost/Floor) HVACAct2Cmd_CtrlStallEn (Vent/Defrost/Floor) HVACAct3Cmd_ConfigMode (Heat Blend) HVACAct3Cmd_InitPOS (Heat Blend) HVACAct3Cmd_ParamPosMode (Heat Blend) HVACAct3Cmd_FPOS (Heat Blend) HVACAct3Cmd_ParamFreq (Heat Blend) HVACAct3Cmd_NAD (Heat Blend) HVACAct3Cmd_ClearStall (Heat Blend) HVACAct3Cmd_ClearReset (Heat Blend) HVACAct3Cmd_ClearEmRun (Heat Blend) HVACAct3Cmd_CtrlStallEn (Heat Blend)	
Requirement	| - | - §	Max Defrost HVAC Actuators Feedback Status	The Thermal System shall get the final position status of the HVAC actuators by sending a feedback internally from HVAC to CCM using the below signals. HVACAct1Stat_CurrentPos (Recirculation) HVACAct2Stat_CurrentPos (Vent/Defrost/Floor) HVACAct3Stat_CurrentPos (Heat Blend)	
Requirement	| - | - §	Max Defrost Availability (ICE)	When vehicle mode is one of the valid states below, the Thermal System shall make the Max Defrost function available for activation. • PreRunning • Cranking (transitional state) • Running Note: The reason why Max Defrost is available in Vehicle Mode Cranking is to allow activation in Pre-running and keep it active while Cranking	Max Defrost - Availability ICE url:swap://setoolgtt.srv.volvo.com:3001/x040000002C349372 The max defrost function shall be available in vehicle mode Running, Crank and Pre-running
Requirement	| - | - §	Max Defrost Availability (BEV)	When vehicle mode is one of the valid states below, the Thermal System shall make the Max Defrost function available for activation. • Parked • Living • Accessory • PreRunning • Cranking (transitional state) • Running Note: The reason why Max Defrost is available in Vehicle Mode Cranking is to allow activation in Pre-running and keep it active while Cranking	Max Defrost - Availability E-mob url:swap://setoolgtt.srv.volvo.com:3001/x040000002C3493B8 The max defrost function shall be available in vehicle mode Parked, Living, Accessory, Pre-Running, Crank & Running.

Requirement	| - | - §	Max Defrost Activation by Soft Button	When the Driver Experience System has requested activation of Max Defrost, the Thermal System shall activate Max Defrost mode. Max Defrost is activated using the signal: MaxDefrostRequest = 1 (On) Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On)	Max Defrost - Accessability url:swap://setoolgtt.srv.volvo.com:3001/x040000002C3492F5 The driver shall have direct access to activate the max defrost function _____ Max Defrost - Function activation url:swap://setoolgtt.srv.volvo.com:3001/x040000002C3492EF There shall be a max defrost function that activates all available actuators to enable as quick defrost/demist as possible regardless of truck variant
Requirement	| - | - §	Max Defrost Activation by Hard Button	When the Max Defrost is inactive and Thermal System through CCP has requested activation of Max Defrost, the Thermal System shall activate Max Defrost. Max Defrost is activated using the signal: LIN_WindscreenDefrostInd_cmd= 1 (ON (LED activated)) Max Defrost status is reported using the signals: MaxDefrostStatus = 1 (Enabled) LIN_WindscreenDefrost_ButtonSt =1 (Pushed)	
Requirement	| - | - §	Max Defrost Activation - Blower Speed Setting	While Max Defrost is activated, the Thermal System shall set the blower speed to maximum. Note: The Thermal System shall ramp the Blower Speed to the requested level. The main reason is to give time for HVAC stepper motors to reach their position. Also, the quality impression will be better compared to an instant increase of the blower speed. Max Defrost is activated using the signal: MaxDefrostRequest = 1 (On) Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On) Blower speed status is reported using the signal: HVACBlowerLevelStat_BlowerLevel	Max Defrost - Settings at Activation (Medium Duty) url:swap://setoolgtt.srv.volvo.com:3001/x040000002C452DAC When the max defrost function is activated, the following operations shall take place, • **Blower speed set to max** • Set air distribution mode to defrost only mode • Set heat level to maximum • Force maximum available heating of the air entering the cab • Turn off manual recirculation (pre-condition: Manual recirculation activated) • Force recirculation to full outside air • Force maximum dehumidification of the air entering the cab, e.g. by activating A/C on the most powerful mode
Requirement	| - | - §	Max Defrost Activation - Air Distribution Defrost Mode Setting	While Max Defrost is activated, the Thermal System shall set air distribution to defrost only mode (100% air to Defrost and Side Defrost). Note: The Max Defrost Air Distribution shall be reached as fast as possible. The Air Distribution actuators shall be run simultaneously if possible. Note: Air distribution between defrost and side defrost (Demist) is different for each Product Class. Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On) Air distribution status is requested using the signal: ClimateAirDistStatus = 1 (On)	Max Defrost - Settings at Activation (Medium Duty) url:swap://setoolgtt.srv.volvo.com:3001/x040000002C452DAC When the max defrost function is activated, the following operations shall take place, • Blower speed set to max • **Set air distribution mode to defrost only mode** • Set heat level to maximum • Force maximum available heating of the air entering the cab • Turn off manual recirculation (pre-condition: Manual recirculation activated) • Force recirculation to full outside air • Force maximum dehumidification of the air entering the cab, e.g. by activating A/C on the most powerful mode
Requirement	| - | - §	Max Defrost Activation - Maximum Heat Level Setting	While Max Defrost is activated, the Thermal System shall request max Heating. Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On) Heat level status is reported using the signals: CabHeatManStatus	Max Defrost - Settings at Activation (Medium Duty) url:swap://setoolgtt.srv.volvo.com:3001/x040000002C452DAC When the max defrost function is activated, the following operations shall take place, • Blower speed set to max • Set air distribution mode to defrost only mode • **Set heat level to maximum** • Force maximum available heating of the air entering the cab • Turn off manual recirculation (pre-condition: Manual recirculation activated) • Force recirculation to full outside air • Force maximum dehumidification of the air entering the cab, e.g. by activating A/C on the most powerful mode

Requirement	| - | - §	Max Defrost Activation - Manual Recirculation Off	When Manual recirculation is active and Max Defrost is activated, the Thermal System shall deactivate Manual recirculation. Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On) Air recirculation status is reported using the signal: AirRecirculationStatus = 0 (Disabled)	Max Defrost - Settings at Activation (Medium Duty) url:swap://setoolgtt.srv.volvo.com:3001/x040000002C452DAC When the max defrost function is activated, the following operations shall take place, • Blower speed set to max • Set air distribution mode to defrost only mode • Set heat level to maximum • Force maximum available heating of the air entering the cab • **Turn off manual recirculation (pre-condition: Manual recirculation activated)** • Force recirculation to full outside air • Force maximum dehumidification of the air entering the cab, e.g. by activating A/C on the most powerful mode
Requirement	| - | - §	Max Defrost Activation - Outside Only Recirculation	While Max Defrost is activated, the Thermal System shall use outside air only (0% recirculation). Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On) Air recirculation status is reported using the signal: AirRecirculationStatus = 0 (Off)	Max Defrost - Settings at Activation (Medium Duty) url:swap://setoolgtt.srv.volvo.com:3001/x040000002C452DAC When the max defrost function is activated, the following operations shall take place, • Blower speed set to max • Set air distribution mode to defrost only mode • Set heat level to maximum • Force maximum available heating of the air entering the cab • Turn off manual recirculation (pre-condition: Manual recirculation activated) • **Force recirculation to full outside air** • Force maximum dehumidification of the air entering the cab, e.g. by activating A/C on the most powerful mode
Requirement	| - | - §	Max Defrost Activation - AC	While Max Defrost is activated, the Thermal System shall use automatic AC function with lowest allowed evaporator reference temperature. Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On) AC status is reported using the signal: ACStatus = 1 (On)	Max Defrost - Settings at Activation (Medium Duty) url:swap://setoolgtt.srv.volvo.com:3001/x040000002C452DAC When the max defrost function is activated, the following operations shall take place, • Blower speed set to max • Set air distribution mode to defrost only mode • Set heat level to maximum • Force maximum available heating of the air entering the cab • Turn off manual recirculation (pre-condition: Manual recirculation activated) • Force recirculation to full outside air • **Force maximum dehumidification of the air entering the cab, e.g. by activating A/C on the most powerful mode**
Requirement	| - | - §	Max Defrost Deactivation - Max Defrost Button and then Restoring Manual Settings	When Max Defrost is active, one or more Manual settings were active prior to Max Defrost activation and were not changed during Max Defrost, and Driver Experience System has requested deactivation of Max Defrost by button, the Thermal System shall deactivate Max Defrost and restore the following settings to the value stored before Max Defrost activation • Recirculation setting • Air distribution setting • Temperature setting • Blower setting • AC setting Note: If none of the manual settings were active prior to activating Max Defrost, then it will become full AUTO again, the same as if the AUTO button was pressed. Max Defrost is deactivated using the signal: MaxDefrostRequest = 0 (Off) Max Defrost status is reported using the signal: MaxDefrostStatus = 0 (Off)	Max Defrost - Deactivation (Medium Duty) url:swap://setoolgtt.srv.volvo.com:3001/x040000002C452DB2 Precondition: max defrost is active, vehicle mode is running In order to deactivate the max defrost function, following actions can be taken • **Max defrost button to be pressed** • Change in air distribution mode (Return to previous settings, except for manually set Air Distribution) • Change vehicle mode from Running to any other vehicle mode • Climate system is powered OFF

Requirement	| - | - §	Max Defrost Deactivation - Vehicle Mode Leaving Running and Restoring Manual Settings	When Max Defrost is active, one or more Manual settings were active prior to Max Defrost activation and were not changed during Max Defrost, and vehicle mode leaves Running, the Thermal System shall deactivate Max Defrost and restore the following settings to the value stored before Max Defrost activation • Recirculation setting • Air distribution setting • Temperature setting • Blower setting • AC setting Max Defrost status is reported using the signal: MaxDefrostStatus = 0 (Off)	Max Defrost - Deactivation (Medium Duty) url:swap://setoolgtt.srv.volvo.com:3001/x040000002C452DB2 Precondition: max defrost is active, vehicle mode is running In order to deactivate the max defrost function, following actions can be taken • Max defrost button to be pressed • Change in air distribution mode (Return to previous settings, except for manually set Air Distribution) • **Change vehicle mode from Running to any other vehicle mode** • Climate system is powered OFF
Requirement	| - | - §	Max Defrost Deactivation - Air Distribution Changing	When Max Defrost is active and the Driver Experience System has changed the air distribution, the Thermal System shall deactivate Max Defrost and the blower level at maximum level and temperature level at maximum level. Max Defrost status is reported using the signal: MaxDefrostStatus = 0 (Off) Blower speed status is reported using the signal: HVACBlowerLevelStat_BlowerLevel Heat level status is reported using the signals: CabHeatManStatus	Max Defrost - Deactivation (Medium Duty) url:swap://setoolgtt.srv.volvo.com:3001/x040000002C452DB2 Precondition: max defrost is active, vehicle mode is running In order to deactivate the max defrost function, following actions can be taken • Max defrost button to be pressed • **Change in air distribution mode (Return to previous settings, except for manually set Air Distribution)** • Change vehicle mode from Running to any other vehicle mode • Climate system is powered OFF
Requirement	| - | - §	Max Defrost - Keep Active at Blower ~~Speed~~ Setting Manual Change	When Max Defrost is active and the Driver Experience System has changed the blower setting, the Thermal System shall change blower to the corresponding level, keep Max Defrost active and store blower setting. Blower speed is set using the signal: HVACBlowerRequest Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On) Blower speed level status is reported using the signal: HVACBlowerLevelStat_BlowerLevel	Max Defrost - Blower speed change url:swap://setoolgtt.srv.volvo.com:3001/x040000002C349307 When max defrost is activated, it shall still be possible to change blower speed without exiting max defrost function. Note: Changing the blower speed can impact the max defroster performance negatively.
Requirement	| - | - §	Max Defrost - Keep Active at Heat Level Manual Change	When Max Defrost is active and the Driver Experience System has changed the Heat Level setting (Except to LO/MIN), the Thermal System shall change Heat Level setting accordingly, keep Max Defrost active and store Heat Level setting. Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On) Heat Level is set using the signal: CabHeatManReq Heat level status is reported using the signals: CabHeatManStatus	Max Defrost - Heat Level Change (Medium Duty) url:swap://setoolgtt.srv.volvo.com:3001/x040000002C452DB8 When max defrost is activated, it shall still be possible to change Heat Level settings without exiting max defrost function. Note: Changing the Heat Level set can impact the max defroster performance negatively.
Requirement	| - | - §	Max Defrost - Keep Active at AC Manual Setting	When the Driver Experience system has requested activation /deactivation of AC, the Thermal System shall set AC On/Off, keep Max Defrost active and store AC setting. Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On) AC setting is changed using the signals: ACRequest = 0 (Off) or 1 (On) AC status is reported using the signal: ACStatus = 0 (Off) or 1 (On)	Max Defrost - A/C manual setting url:swap://setoolgtt.srv.volvo.com:3001/x040000002C452DB8 When max defrost is activated, it shall still be possible to de-activate/activate A /C without exiting max defrost function. Note: De-activate A/C can impact the max defroster performance negatively.

Requirement	| - | - §	Max Defrost - Keep Active at Manual Recirculation	When the Driver Experience system has requested activation /deactivation of Manual recirculation, the Thermal System shall set Manual recirculation Active/Inactive, keep Max Defrost active and store Manual recirculation setting. Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On) Full recirculation is activated using the signal: AirRecirculationRequest = 1 (Disable) or 2 (Enable) Full recirculation status is reported using the signal: AirRecirculationStatus = 0 (Disabled) or 1 (Enabled)	Max Defrost - Recirculation Manual Setting url:swap://setoolgtt.srv.volvo.com:3001/x040000002E2DEF09 When max defrost is activated, it shall still be possible to de-activate/activate manual Recirculation without exiting max defrost function. Note: Activation of Manual Recirculation can impact the max defroster performance negatively.
Requirement	| - | - §		-	Max Defrost - Duration url:swap://setoolgtt.srv.volvo.com:3001/x040000002C349313 Max Defrost function shall be active until its deactivated by user according to requirements F_Req-6911 & F_Req-37891 (HD & MD respectively)
Requirement	| - | - §	Max Defrost - Setting Memory	When the Driver Experience System has requested activation of Max Defrost, the Thermal system shall store the following settings: • Recirculation setting • Air distribution setting • Temperature setting • Blower setting • AC setting Max Defrost is activated using the signal: MaxDefrostRequest = 1 (On) Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On)	Max Defrost - Setting memory url:swap://setoolgtt.srv.volvo.com:3001/x040000002C349319 When leaving the max defrost function, settings that was selected previous to when max defrost was activated shall be restored, except if some of the following settings were changed during the max defrost session such as A/C Setting, Temp/Heat Setting, Recirculation Setting, Air Distribution Setting (which also ends Max Defrost Function) or Blower Speed Setting, which in that case shall be kept.
Requirement	| - | - §	Max Defrost Memory - Climate Power On	When the Climate System is powered ON and vehicle mode is running, and Max Defrost was active when the Climate System was turned OFF during the same uninterrupted session, the Thermal System shall activate Max Defrost and restore the following parameters to their previously stored values. • AC setting • Temperature setting • Blower setting Note: The other setting shall be as for a normal activation of Max Defrost. Note: The power toggle needs to be performed during one uninterrupted sequence of Vehicle Mode Running. Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On) Climate is powered on using the signal: ClimatePowerRequest= 2 (Enable) Climate power status is indicated using the signal: ClimatePowerStatus = 1 (Enabled)	Max Defrost - Memory at climate system OFF/ON toggle url:swap://setoolgtt.srv.volvo.com:3001/x040000002C349320 Pre-condition: Max defrost is active When selecting climate system OFF, Max Defrost setting shall be saved and activated again when selecting climate system ON, if the changes is made during one uninterrupted session of vehicle mode running
Requirement	| - | - §	Max Defrost - Transition from lower vehicle modes to running	When Max Defrost was activated in Pre-Running or any other lower vehicle mode and the VM is changed to Running, the Thermal System shall maintain Max Defrost activation. Max Defrost status is reported using the signal: MaxDefrostStatus = 1 (On)	Max Defrost - Transition from lower vehicle modes to running url:swap://setoolgtt.srv.volvo.com:3001/x040000002C349326 Pre-condition: Max defrost is activated in lower vehicle modes When transitioning from lower vehicle modes to Running, Max Defrost activation shall be kept
Requirement	| - | - §	Max Defrost - Report Status	The Thermal System shall report the Max Defrost status to the Driver Experience System using the values below. MaxDefrostStatus = 0 (Off) Or 1 (On) ACStatus = 0 (Off) Or 1 (On) ClimatePowerStatus = 0 (Off) Or 1 (On) AirRecirculationStatus = 0 (Off) Or 1 (On) CabHeatManStatus	Max Defrost - Feedback url:swap://setoolgtt.srv.volvo.com:3001/x040000002C3492FB The driver shall be constantly informed if the max defrost function is active or not. In addition AC, REC and Tempset status shall be displayed when Max Defrost is active. Max Defrost - Sub-functions feedback url:swap://setoolgtt.srv.volvo.com:3001/x040000002C349301 The user shall normally be informed about settings that is changed by the user i.e. Blower Speed Change, Temp/Heat set Change, AC Setting, Recirculation Setting during active max defrost function.

Tech Report Information

Overview

ICE Truck (A1 & A3)

The purpose of Max Defrost is to remove ice and mist from windows as fast as possible. When the Driver Experience System sends a request to activate the Max Defrost, the Thermal System needs to activate some internal functions to get it working. To have full performance of the Max Defrost function only fresh outside air should be used in the Cabin, recirculated air from the Cabin can include a high level of humidity that might condense on the windows. Moreover, by enabling the AC and using the highest possible heating of the incoming air, maximum dehumidification can be achieved which is needed for Max Defrost. The AC is not possible to be enabled in low ambient temperature although in low ambient temperature the air is dry. Air distribution process needs to be set to Defrost/Side Defrost (Demist), not Floor and Vent, hence, air needs to be distributed toward the Defrost. Moreover, It is important to keep the blower speed as high as possible during Max Defrost operation to be able to distribute heat to the entire window surface. The activation process can be performed while the vehicle is in one of the modes PreRunning, Crank or Running. If the vehicle mode switches to Running from PreRunning via Crank and Max Defrost is active, it will be kept active. It should be mentioned any changes in the blower speed, or heat level, or disabling/enabling A/C are allowed during Max Defrost, although it affects Max Defrost performance negatively.

In the Vehicle Mode lower than Running, the A/C is not activated, we will not have any heat nor dehumidification.

The only way of deactivating Max Defrost is when the driver requests deactivation directly by pressing the Max Defrost button or changing some settings. Any changes in the air distribution mode from fully defrosting cause to deactivate the Max Defrost. Also, Recirculation, or Climate deactivation cause Max Defrost to be deactivated. If Vehicle Mode leaves Running, Max Defrost will be deactivated.

BEV Truck (A1 & A3)

The purpose of Max Defrost is to remove ice and mist from windows as fast as possible. When the Driver Experience System sends a request to activate the Max Defrost, the Thermal System needs to activate some internal functions to get it working. To have full performance of the Max Defrost function only fresh outside air should be used in the Cabin, recirculated air from the Cabin can include a high level of humidity that might condense on the windows. Moreover, by enabling the AC and using the highest possible heating of the incoming air, maximum dehumidification can be achieved which is needed for Max Defrost. The AC is not possible to be enabled in low ambient temperature although in low ambient temperature the air is dry. Air distribution process needs to be set to Defrost/Side Defrost (Demist), not Floor and Vent, hence, air needs to be distributed toward the Defrost. Moreover, It is important to keep the blower speed as high as possible during Max Defrost operation to be able to distribute heat to the entire window surface. The activation process can be performed while the vehicle is in one of the modes Parked, Living, Accessory, Crank, PreRunning, or Running. If the vehicle mode switches to Running from PreRunning via Crank vehicle modes and Max Defrost is active, it will be kept active. It should be mentioned any changes in the blower speed, or heat level, or disabling/enabling AC are allowed during Max Defrost, although it affects Max Defrost performance negatively.

The only way of deactivating Max Defrost is when the driver requests deactivation directly by pressing the Max Defrost button or changing some settings. Any changes in the air distribution mode from fully defrosting cause to deactivate the Max Defrost. Also, Recirculation, or Climate deactivation cause Max Defrost to be deactivated. If Vehicle Mode leaves Running, Max Defrost will be deactivated.

Logic Structure

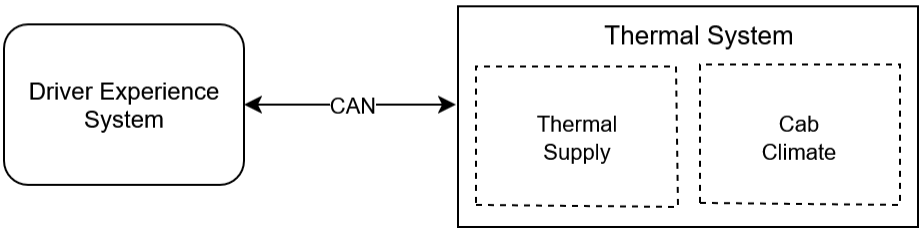
A1, A3: BEV

The interacting systems are the Thermal System and the Driver Experience System which use CAN signals and internally LIN signals.

A1, A3: ICE

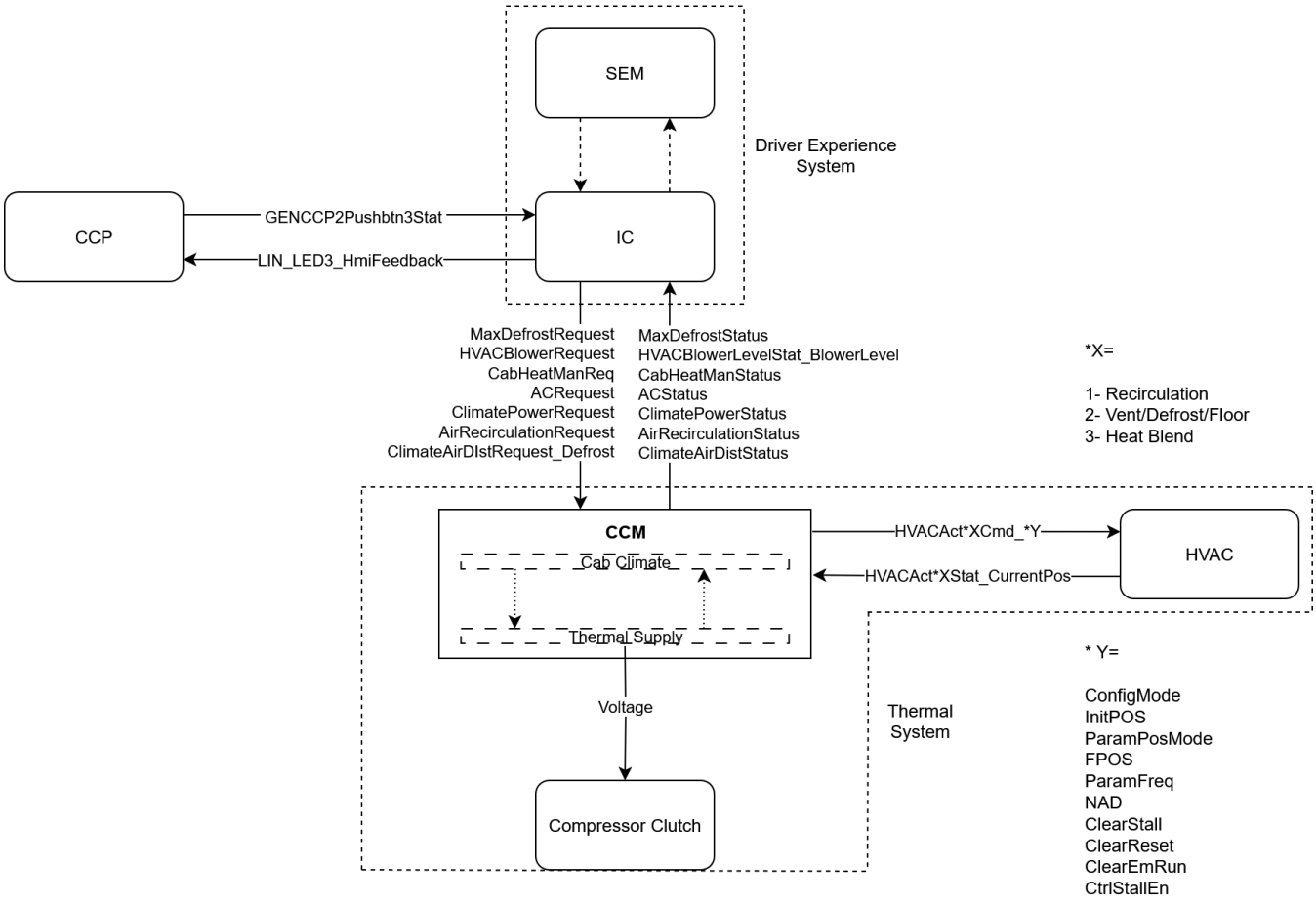
The interacting systems are the Thermal System and the Driver Experience System which use CAN signals and internally LIN signals and voltage.

Logical Context



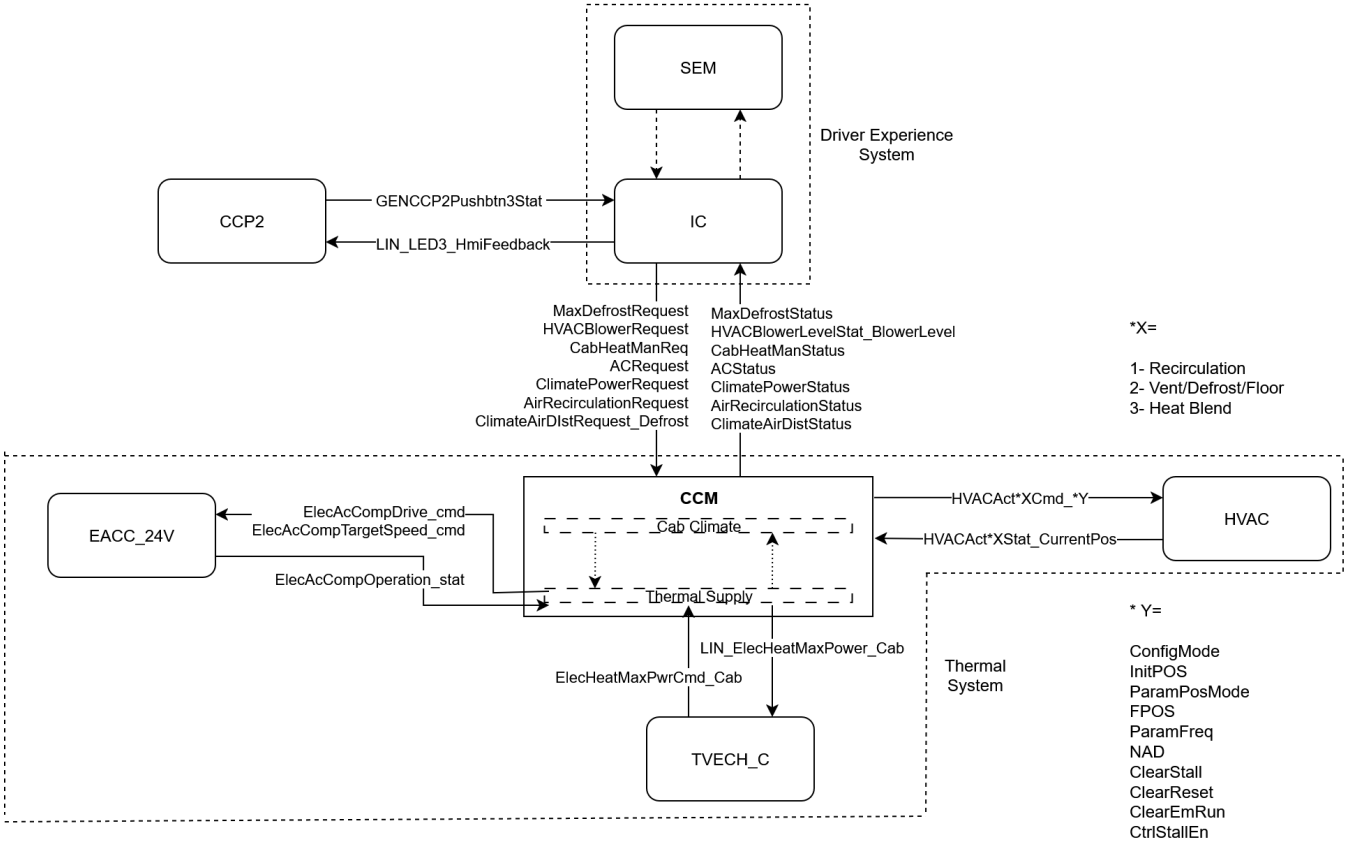
ICE

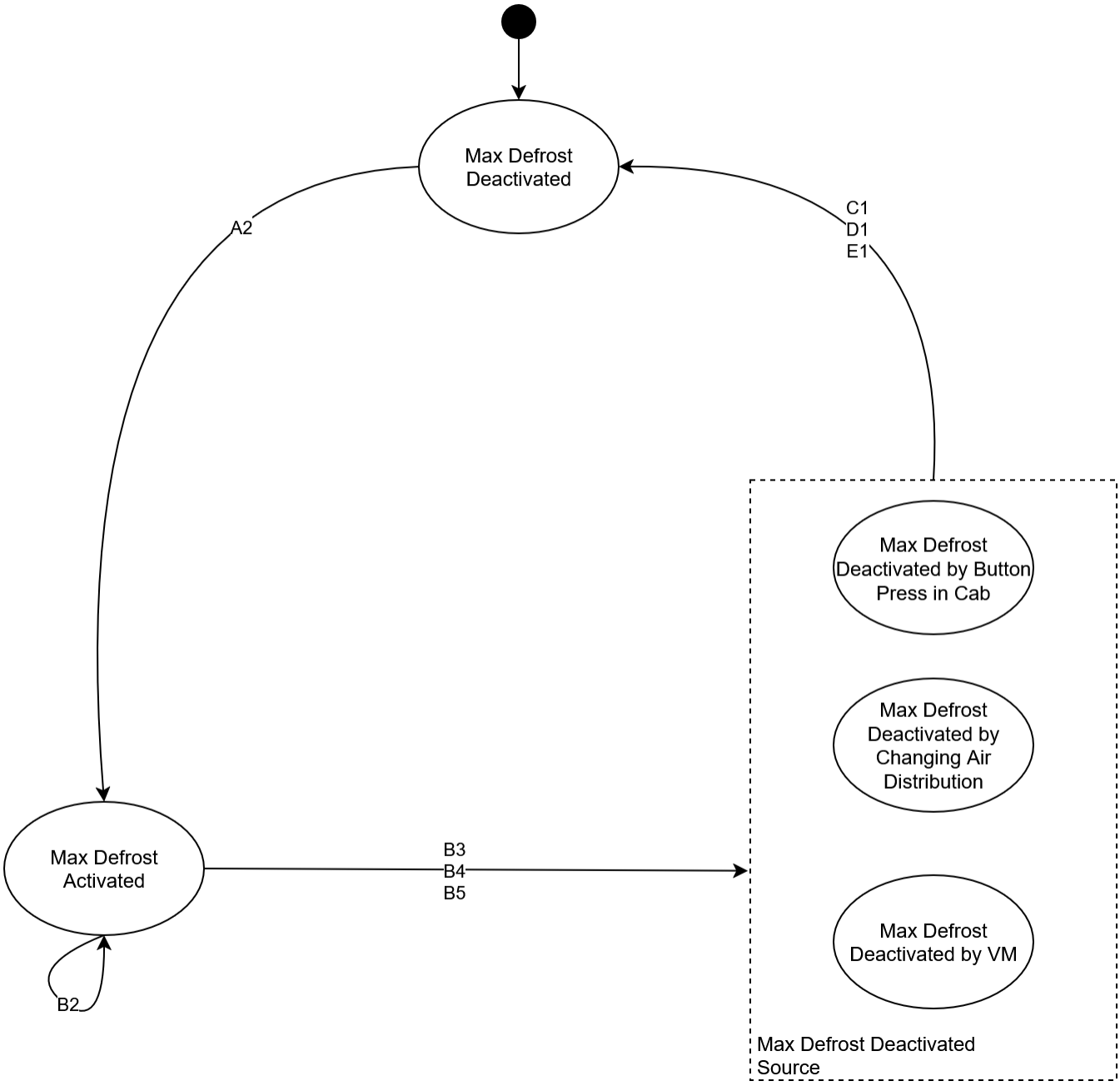
Logical Flow



BEV

Logical Flow





State Name	State Description
Max Defrost Deactivated	Max Defrost is off.
Max Defrost Activated	Max Defrost has been turned on.
Max Defrost Deactivated by Button Press in Cab	Max Defrost has been turned off using button in cab.
Max Defrost Deactivated by Changing Air Distribution	Max Defrost has been turned off due to change in air distribution.
Max Defrost Deactivated by VM	Max Defrost has been turned off due to a change of Vehicle Mode.

	Sink	Max Defrost Deactivated	Max Defrost Activated	Max Defrost Deactivated by Button Press in Cab	Max Defrost Deactivated by Changing Air Distribution	Max Defrost Deactivated by VM

Source	-	1	2	3	4	5
Max Defrost Deactivated	**A**	N/A	A2	N/A	N/A	N/A
Max Defrost Activated	**B**	N/A	N/A	B3	B4	B5
Max Defrost Deactivated by Button Press in Cab	**C**	C1	N/A	N/A	N/A	N/A
Max Defrost Deactivated by Changing Air Distribution	**D**	D1	N/A	N/A	N/A	N/A
Max Defrost Deactivated by VM	**E**	E1	N/A	N/A	N/A	N/A

ICE Trucks

Transition	Precondition	Trigger	Action
A2	VM = PreRunning, Crank, Running	Max defrost activation is requested via button press.	The following settings should be stored. • Recirculation • Air distribution • Heat Level • Blower speed • A/C And Max Defrost is activated and the following setting is set: • Set blower speed to max. • Set air distribution to defrost only mode. • Set temperature to maximum. • Force maximum available heating entering cab. • Turn off Manual recirculation. • Force recirculation to full outside air. • Activate A/C to force maximum dehumidification of the air entering the cab.
B2	~~Cab~~ Running Climate is Off.	Running Climate activation is requested.	Max defrost is activated with stored values.
B3	-	Max Defrost deactivation is requested via button press.	Max Defrost is deactivated. The following settings are set to their stored value. • Recirculation On/Off • Air distribution • Heat Level • Manual blower speed • AC On/Off
B4	-	Air distribution is changed.	Max Defrost is deactivated. The blower speed and temperature level remain unchanged.
B5	VM = Running	Vehicle mode leaves Running.	Max Defrost is deactivated. The following settings are set to their stored value. • Recirculation On/Off • Air distribution • Heat Level • Blower speed • AC On/Off
C1, D1, E1	-	Automatically after action(s) are performed.	Max Defrost is deactivated

BEV Trucks

Transition	Precondition	Trigger	Action
A2	Parked, Living, Accessory, Crank, PreRunning, or Running	Max defrost activation is requested via button press.	The following settings should be stored. • Recirculation • Air distribution • Heat Level • Blower speed • A/C And Max Defrost is activated and the following setting is set: • Set blower speed to max. • Set air distribution to defrost only mode. • Set temperature to maximum. • Force maximum available heating entering cab. • Turn off Manual recirculation. • Force recirculation to full outside air. • Activate A/C to force maximum dehumidification of the air entering the cab.
B2	Running Climate is Off.	Running Climate activation is requested.	Max defrost is activated with stored values.
B3	-	Max Defrost deactivation is requested via button press.	Max Defrost is deactivated. The following settings are set to their stored value. • Recirculation On/Off • Air distribution • Heat Level • Manual blower speed • AC On/Off
B4	-	Air distribution is changed.	Max Defrost is deactivated. The blower speed and temperature level remain unchanged.
B5	VM = Running	Vehicle mode leaves Running.	Max Defrost is deactivated. The following settings are set to their stored value. • Recirculation On/Off • Air distribution • Heat Level • Blower speed • AC On/Off
C1, D1, E1	-	Automatically after action(s) are performed.	Max Defrost is deactivated

Interface Specification

The signal routes are based on "TEA2+ T2 Network Topology – European Medium Duty Trucks BEV (PCA1 & PCA3)" in TEA2+ T2 Network Topology.

Signal name	Source	Via	Sink	Integration Status
ClimateAirDistRequest_Defrost	IC	-	CCM	New integrated
ClimateAirDistStatus	CCM	-	IC	New integrated
MaxDefrostRequest	IC	-	CCM	New integrated
MaxDefrostStatus	CCM	-	IC	New integrated
HVACBlowerRequest	IC	-	CCM	New integrated
AutoBlowerLevel_Status	CCM	-	IC	New integrated
CabHeatManReq	IC	-	CCM	New integrated

CabHeatStatus	CCM	-	IC	New integrated
ACRequest	IC	-	CCM	New integrated
ACStatus	CCM	-	IC	New integrated
ClimatePowerRequest	IC	-	CCM	New integrated
ClimatePowerStatus	CCM	-	IC	New integrated
HVACAct1Cmd_ConfigMode	CCM	-	HVAC	Newly integrated
HVACAct1Cmd_InitPOS	CCM	-	HVAC	Newly integrated
HVACAct1Cmd_ParamPosMode	CCM	-	HVAC	Newly integrated
HVACAct1Cmd_FPOS	CCM	-	HVAC	Newly integrated
HVACAct1Cmd_ParamFreq	CCM	-	HVAC	Newly integrated
HVACAct1Cmd_NAD	CCM	-	HVAC	Newly integrated
HVACAct1Cmd_ClearReset	CCM	-	HVAC	Newly integrated
HVACAct1Cmd_ClearStall	CCM	-	HVAC	Newly integrated
HVACAct1Cmd_ClearEmRun	CCM	-	HVAC	Newly integrated
HVACAct1Cmd_CtrlStallEn	CCM	-	HVAC	Newly integrated
HVACAct1Stat_CurrentPos	HVAC	-	CCM	Newly integrated
HVACAct2Cmd_ConfigMode	CCM	-	HVAC	Newly integrated
HVACAct2Cmd_InitPOS	CCM	-	HVAC	Newly integrated
HVACAct2Cmd_ParamPosMode	CCM	-	HVAC	Newly integrated
HVACAct2Cmd_FPOS	CCM	-	HVAC	Newly integrated
HVACAct2Cmd_ParamFreq	CCM	-	HVAC	Newly integrated
HVACAct2Cmd_NAD	CCM	-	HVAC	Newly integrated
HVACAct2Cmd_ClearReset	CCM	-	HVAC	Newly integrated
HVACAct2Cmd_ClearStall	CCM	-	HVAC	Newly integrated
HVACAct2Cmd_ClearEmRun	CCM	-	HVAC	Newly integrated
HVACAct2Cmd_CtrlStallEn	CCM	-	HVAC	Newly integrated
HVACAct2Stat_CurrentPos	HVAC	-	CCM	Newly integrated
HVACAct3Cmd_ConfigMode	CCM	-	HVAC	Newly integrated
HVACAct3Cmd_InitPOS	CCM	-	HVAC	Newly integrated
HVACAct3Cmd_ParamPosMode	CCM	-	HVAC	Newly integrated
HVACAct3Cmd_FPOS	CCM	-	HVAC	Newly integrated
HVACAct3Cmd_ParamFreq	CCM	-	HVAC	Newly integrated
HVACAct3Cmd_NAD	CCM	-	HVAC	Newly integrated
HVACAct3Cmd_ClearReset	CCM	-	HVAC	Newly integrated
HVACAct3Cmd_ClearStall	CCM	-	HVAC	Newly integrated
HVACAct3Cmd_ClearEmRun	CCM	-	HVAC	Newly integrated
HVACAct3Cmd_CtrlStallEn	CCM	-	HVAC	Newly integrated
HVACAct3Stat_CurrentPos	HVAC	-	CCM	Newly integrated
GENCCP2Pushbtn3Stat	IC	-	CCP2	Newly integrated
LIN_LED3_HmiFeedback	CCP2	-	IC	Newly integrated