Research & Vehicle Technology
"Infotainment Systems Product Development"

Feature – Shortcut Key Driver Assist

Infotainment Subsystem Part Specific Specification (SPSS)

Version 1.2

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Version Date: November 26, 2019

FORD CONFIDENTIAL

Revision History

Date	Version	Notes	
September 27, 2016	**1.0**	**Initial Release**	
March 20, 2017	**1.1**		
	REQ-251139/A-Current State		TM: reword the requirement to cover HMI feedback as well.
	UC-REQ-257623/A-HMI Cancel		Added new requirement to consider cancel from HMI.
November 26, 2019	**1.2**		
	STR-407717/A-Architectural Design		tmertiri: structure reorg
	SKDA-CLD-REQ-237761/A-Client		tmertiri:spec reorg
	SKDA-CLD-REQ-237762/A-Server		tmertiri:spec reorg
	STR-704605/A-Logical Signal Mapping		tmertiri: added LIN content
	SKDA-IIR-REQ-237755/A-Server_Tx		tmertiri: spec reorg
	MD-REQ-237759/A-DASwitch		tmertiri: spec reorg
	SKDA-IIR-REQ-237758/A-Client_Rx		tmertiri:spec reorg
	STR-407718/A-General Requirements		tmertiri: spec reorg
	SKDA-REQ-237763/A-Button Press		tmertiri: spec reorg
	STR-407719/A-Functional Definition		tmertiri: structure reorg
	SKDA-FUN-REQ-369768/A-Shortcut Key Driver Assist		tmertiri: structure update
	STR-407722/A-Use Cases		tmertiri: structure reorg
	SKDA-UC-REQ-237747/A-Driver Assist Shortcut Key Activation		tmertiri: spec reorg
	SKDA-UC-REQ-237749/A-Driver Assist Shortcut Key Deactivation		tmertiri: spec reorg
	STR-407723/A-White Box Views		tmertiri: structure reorg
	STR-407724/A-Activity Diagram		tmertiri: structure reorg
	SKDA-ACT-REQ-237779/A-Activity diagram		tmertiri:spec reorg
	STR-407725/A-Sequence Diagram		tmertiri: struct reorg
	SKDA-SD-REQ-237778/A-Activation / Deactivation Sequence diagram		tmertiri: spec reorg
	SKDA-FUN-REQ-369769/A-LIN Interface		tmertiri:New Function
	SKDA-REQ-369770/A-LIN Button		tmertiri: new requirement
	SKDA-407720/A-Appendix: Reference Documents		tmertiri: add reference material

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1 Architectural Design

1.1 Overview

Shortcut Key Driver Assist is a feature that enables the user to pull up Driver Assist menu on display with various features through a shortcut key. When the user pushes the button, the menu shall pop up and the user would be able to proceed from various options on the display.

1.2 SKDA-CLD-REQ-237761/A-Client

Responsibility: Driver Assist Shortcut Key Client is responsible for displaying the Driver Assist menu when the signal form the server notifies the client to show the menu.

1.3 SKDA-CLD-REQ-237762/A-Server

Responsibility: Driver Assist Shortcut Key Server is responsible for sending driver assist button press information from the user to the Client.

1.4 Logical Signal Mapping

The CAN signals mentioned throughout this document shall refer to the CAN signal's logical name. The logical names shall be mapped to their actual CAN signal names. Please use the table below to perform the mapping. The InfoCAN database file is the master file for the actual CAN signal names. Note: There may be cases where the actual CAN signal name is used in this documentation.

Logical Name	CAN Signal Name
DASwitch	**DrvAsstMnuButtn_B_Stat**

Table1: Logical name/CAN signal mapping.

The table below provides information for the LIN button interface.

Logical Input ID	Input Switch Name
ID_96	**Driver Assist**

Table2: LIN button name.

1.5 SKDA-IIR-REQ-237755/A-Server_Tx

1.5.1 MD-REQ-237759/A-DASwitch

DASwitch tells to the client the state of the feature, if it is ON or Off.

Name	Literals	Value	Description
DASwitch			
	Not_Pressed	0x0	Switch is not being pressed.
	Pressed	0x1	Switch has been pressed.

1.6 SKDA-IIR-REQ-237758/A-Client_Rx

1.6.1 MD-REQ-237759/A-DASwitch

DASwitch tells to the client the state of the feature, if it is ON or Off.

Name	Literals	Value	Description
DASwitch			
	Not_Pressed	0x0	Switch is not being pressed.
	Pressed	0x1	Switch has been pressed.

2 General Requirements

2.1 SKDA-REQ-237763/A-Button Press

The server shall generate a button press whenever the user presses the button.

2.2 SKDA-REQ-251139/A-Current State

Since the switch information tells of Pressed /Not Pressed conditions, the Client should keep track of the current state. The feature could be turned off through HMI interface so the Client should toggle the current state of the feature upon detection of button presses.

3 Functional Definition

3.1 SKDA-FUN-REQ-369768/A-Shortcut Key Driver Assist

3.1.1 Use Cases

3.1.1.1 SKDA-UC-REQ-237747/A-Driver Assist Shortcut Key Activation

Actors	Vehicle Occupant
Pre-conditions	The infotainment system is powered on. The ignition status is Run/Start Vehicle is equipped with shortcut key feature. Driver Assist menu is Off.
Scenario Description	Customer presses shortcut key driver assist button once.
Post-conditions	HMI shall display Driver Assist menu.
List of Exception Use Cases	
Interfaces	G-HMI Vehicle System Interface

3.1.1.2 SKDA-UC-REQ-237749/A-Driver Assist Shortcut Key Deactivation

Actors	Vehicle Occupant
Pre-conditions	The infotainment system is powered on. The ignition status is Run/Start Vehicle is equipped with shortcut key feature. Driver Assist menu is On.
Scenario Description	Customer presses shortcut key driver assist button once.
Post-conditions	HMI shall remove Driver Assist menu.
List of Exception Use Cases	
Interfaces	G-HMI Vehicle System Interface

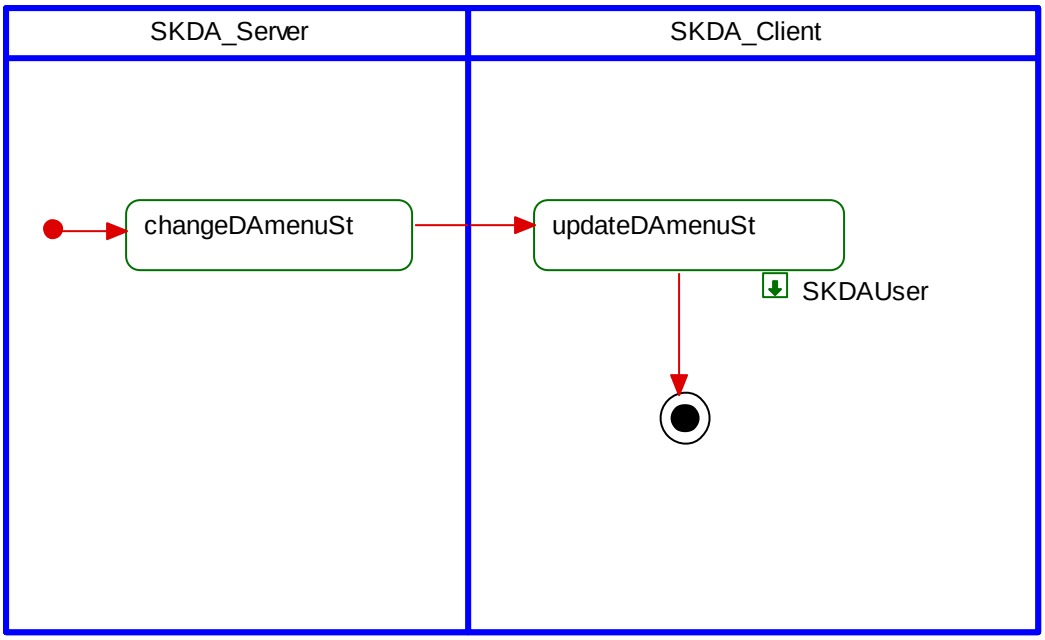
3.1.1.3 SKDA-UC-REQ-257623/A-HMI Cancel

Actors	Vehicle Occupant
Pre-conditions	The infotainment system is powered on. The ignition status is Run/Start Vehicle is equipped with shortcut key feature. Driver Assist menu is On.
Scenario Description	Customer presses cancel feature on HMI screen. Customer presses button again.
Post-conditions	HMI shall remove Driver Assist menu upon soft button press on HMI. Upon detection of hard button, the Client should turn the feature ON again and update the HMI screen accordingly.
List of Exception Use Cases	
Interfaces	G-HMI Vehicle System Interface

3.1.2 White Box Views

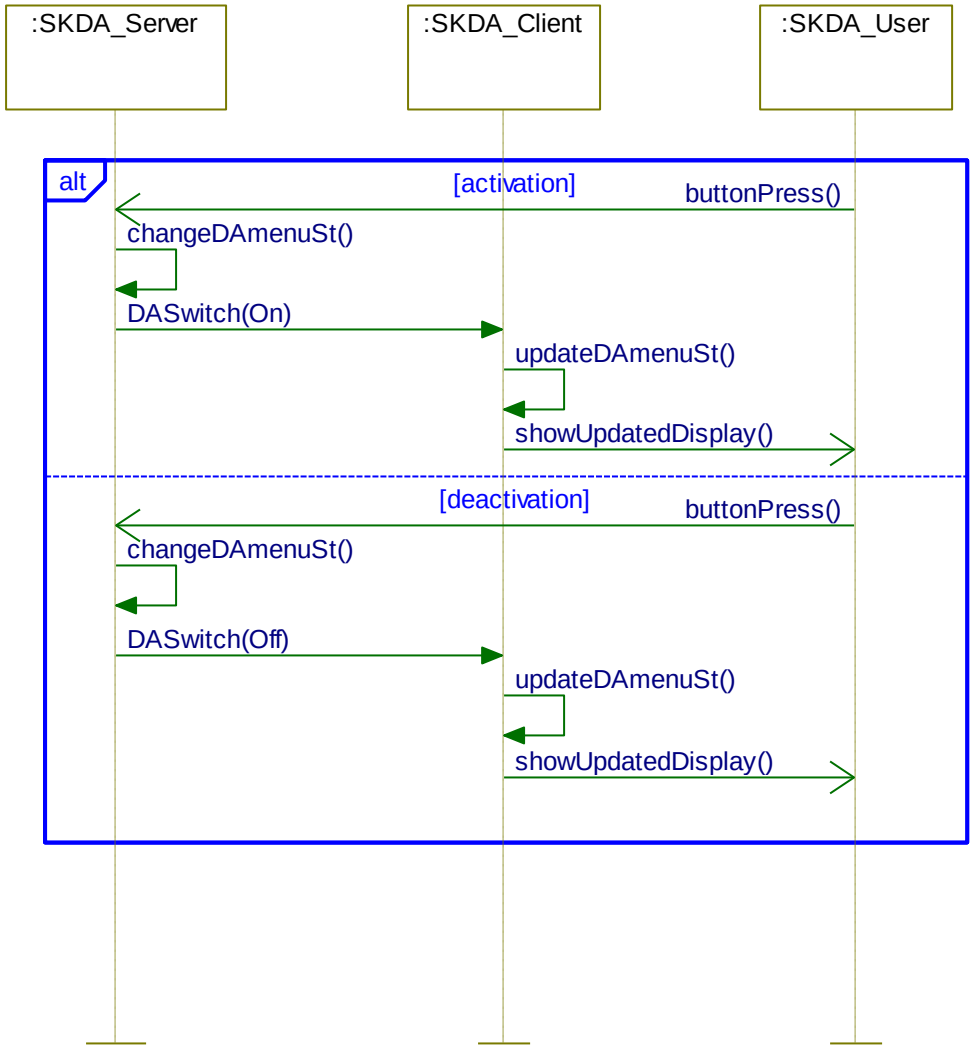
3.1.2.1 Activity Diagram

3.1.2.1.1 SKDA-ACT-REQ-237779/A-Activity diagram



3.1.2.2 Sequence Diagram

3.1.2.2.1 SKDA-SD-REQ-237778/A-Activation / Deactivation Sequence diagram



3.2 SKDA-FUN-REQ-369769/A-LIN Interface

3.2.1 SKDA-REQ-369770/A-LIN Button

Some vehicle programs could use a hard button that links directly to Client through LIN interface instead of through CAN signal communication.

For those programs that use LIN button connection, the Logical Input ID ID_96 should be used. For further details about hard buttons through LIN connections refer to Appendix reference documentation.

4 Appendix: Reference Documents

1	Global Input Translation Matrix
2	Button Strategy SPSS