Research & Vehicle Technology
"Infotainment Systems Product Development"

Feature – Lost Passive Key (LPK)

Infotainment Subsystem Part Specific Specification (SPSS)

Version 1.0

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Revision History

Date	Version	Notes	
March 15, 2021	**1.0**	**Initial Release**	

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1 Overview

Lost Phone Key Strategy is a feature that reminds the user that the vehicle is still running when vehicle is running, and the key is outside of the vehicle. This spec pertaining to this feature is about the user enabling or disabling this feature.

2 Architectural Design

2.1 LPK-CLD-REQ-397049/A-Lost Phone Key Strategy Client

Lost Phone Key Client: Client is the module that provides the interface to the user to enable or disable the feature. Also, the user can be notified ff the feature state.

2.2 LPK-CLD-REQ-397050/A-Lost Phone Key Strategy Server

Lost Phone Key Server: The server controls the feature behavior. Upon getting user request to enable/disable the feature it can proceed with the user request and notify the client of the feature state.

2.3 LPK-REQ-410397/A-Feature ID

Due to feature development timing, the team made use of Feature Based Messaging Protocol (FBMP) to interface between client and server.

Feature ID is 0x0423. The configuration values are as marked below.

Feature Description	Feature Number	Configuration Number	HMI selection / Configuration Name
Horn Chirp	0x0423	0x00	DISABLE
		0x01	ENABLE
		0x02	INOP

Only a small set of FBMP requirements have been documented in this SPSS. Only those requirements specific to the LPK feature. To get more detailed requirements for FBMP refer to Appendix listed documents.

Paramter 0x02 is for legacy purposes. Client is to not interact or try to interact with 0x02 (INOP) value.

3 General Requirements

3.1 LPK-REQ-397058/A-User Input

The client shall forward user request to enable the feature like below:

Feature_Rq (Operation = Set, FeatureID = 0x0423 [LPP], Configuration = 0x00 [Enable], PersIndex = Vehicle)

The client shall forward user request to disable the feature like below:
Feature_Rq (Operation = Set, FeatureID = 0x0423 [LPP], Configuration = 0x01 [Disable], PersIndex = Vehicle)

3.2 LPK-REQ-397059/A-Update Feature Status

The client shall update the feature status based on the information that the server sends like below:

When feature is enabled:
Feature_St (Operation = Set, FeatureID = 0x0423 [LPP], Configuration = 0x00 [Enable], PersIndex = Vehicle)

When feature is disabled:
Feature_St (Operation = Set, FeatureID = 0x0423 [LPP], Configuration = 0x01 [Disable], PersIndex = Vehicle)

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4 Functional Definition

4.1 LPK-FUN-REQ-397055/A-Lost Phone Key Strategy

4.1.1 LPK-REQ-397060/A-Feature Availability

None of the requirements of this feature will be applicable if the feature has been configured as disabled.

4.1.2 Use Cases

4.1.2.1 LPK-UC-REQ-397056/A-Horn Chirp Enable

Actors	Vehicle driver
Pre-conditions	Horn Chirp is disabled
Scenario Description	User enables the feature on Client HMI
Post-conditions	Client sends user request to Server Server enables the feature and notifies the client. Client updates the feature state indicator.
List of Exception Use Cases	
Interfaces	Client HMI

4.1.2.2 LPK-UC-REQ-397057/A-Horn Chirp Disable

Actors	Vehicle driver
Pre-conditions	Horn Chirp is enabled
Scenario Description	User disables the feature on Client HMI
Post-conditions	Client sends user request to Server Server disables the feature and notifies the client. Client updates the feature state indicator.
List of Exception Use Cases	
Interfaces	Client HMI

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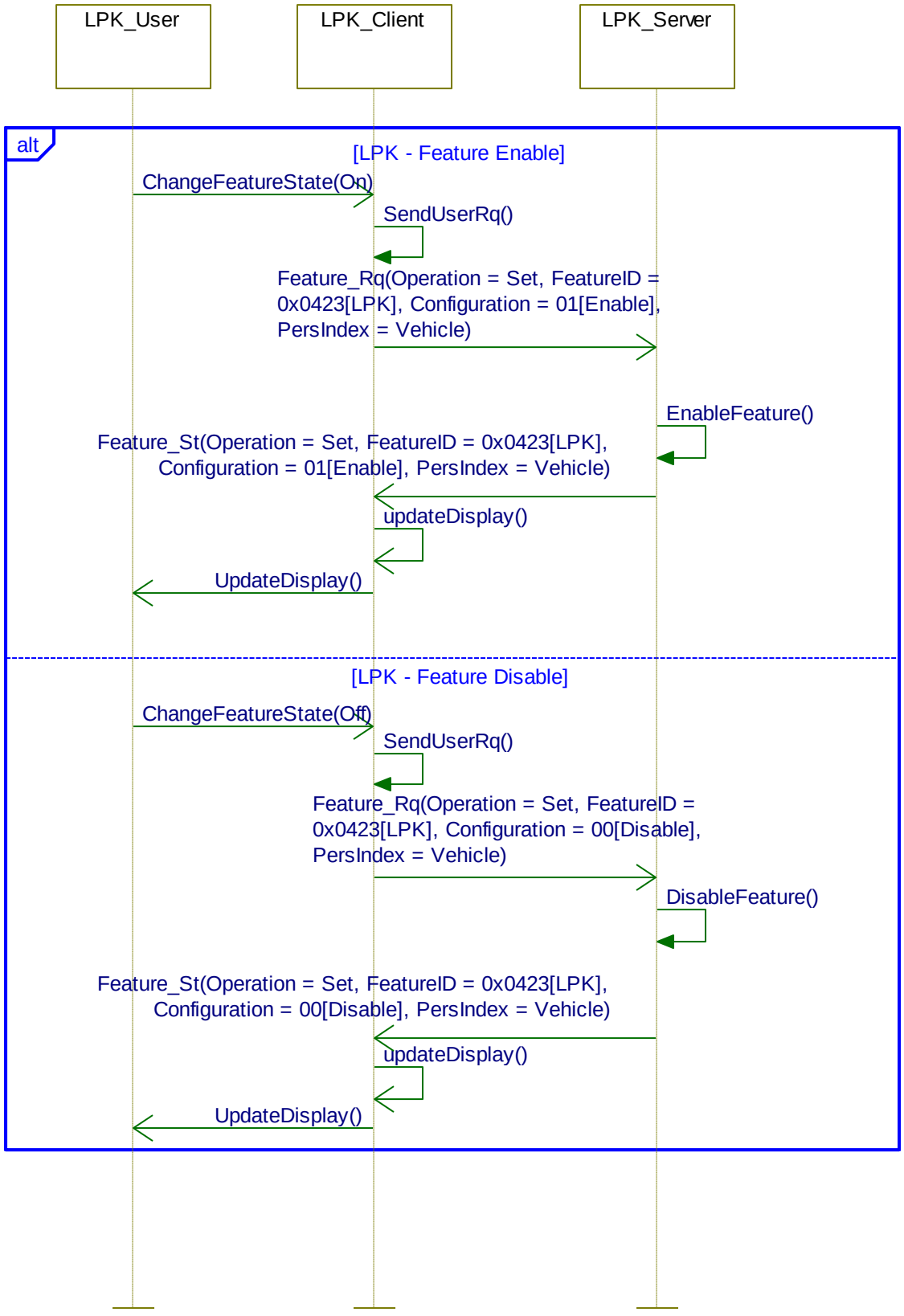
4.1.3 White Box Views

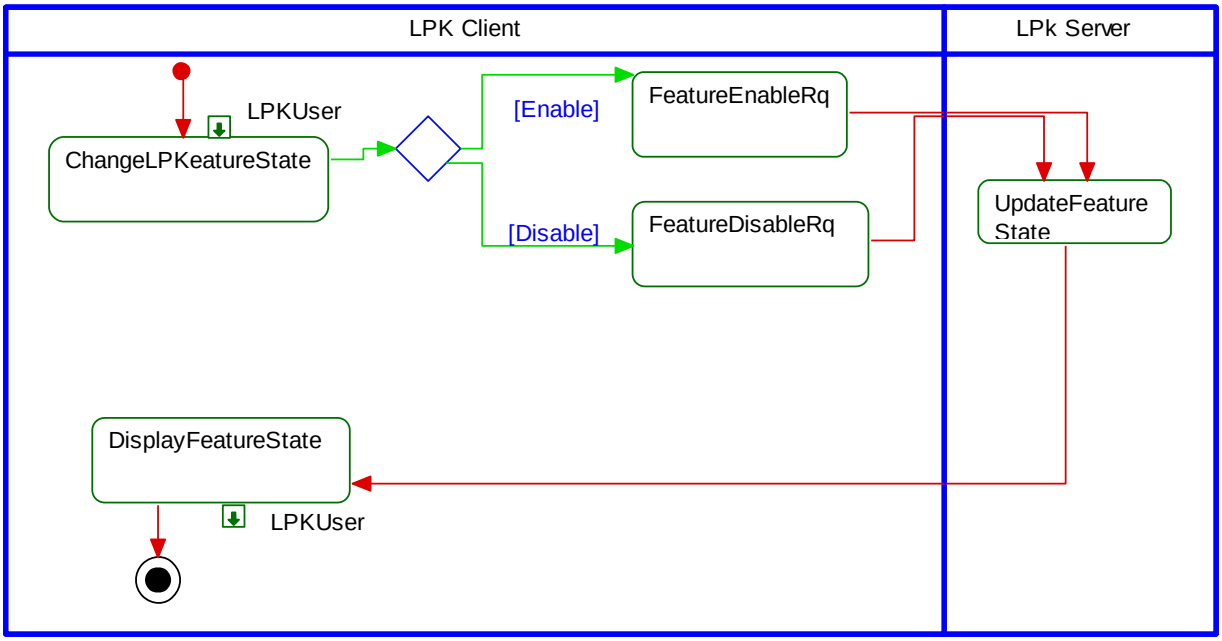
4.1.3.1 Sequence Diagram

4.1.3.1.1 LPK-SD-REQ-397061/A-Feature Operation


LPK_User
LPK_Client
LPK_Server
alt
[LPK - Feature Enable]
ChangeFeatureState(On)
SendUserRq()
Feature_Rq(Operation = Set, FeatureID = 0x0423[LPK], Configuration = 01[Enable], PersIndex = Vehicle)
EnableFeature()
Feature_St(Operation = Set, FeatureID = 0x0423[LPK], Configuration = 01[Enable], PersIndex = Vehicle)
updateDisplay()
UpdateDisplay()
[LPK - Feature Disable]
ChangeFeatureState(Off)
SendUserRq()
Feature_Rq(Operation = Set, FeatureID = 0x0423[LPK], Configuration = 00[Disable], PersIndex = Vehicle)
DisableFeature()
Feature_St(Operation = Set, FeatureID = 0x0423[LPK], Configuration = 00[Disable], PersIndex = Vehicle)
updateDisplay()
UpdateDisplay()

4.1.3.2 Activity Diagram

4.1.3.2.1 LPK-ACT-REQ-397062/A-Feature Operation



5 Appendix: Reference Documents

Reference #	Document Title
1	FBMP APIM SPSS v1.3
2	Settings In Infotainment CenterStack SPSS v1.14
3	
4	
5	
6	
7	
8	

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