1.1 Overview

Some vehicles have a feature that shuts off the engine if the vehicle sits idle with no inputs from the driver for a certain period of time in order to improve fuel economy.

This feature documented in this SPSS gives the user the ability to override the automatic engine shut down, thus preventing the engine from turning off.

1.2 Architectural Design

1.2.1 REQ-391577/A-Client 1

Automatic Engine Shutdown Client 1 is the client interface to the user located in centerstack. This documentation provides requirements for this module. Interface method descriptions could be provided for Client 2 if it interfaces directly with Client 1.

1.2.2 REQ-391578/A-Client 2

Automatic Engine Shutdown Client 2 is the client interface to the user located in front of the driver.

1.2.3 REQ-391579/A-Server

Automatic Engine Shutdown Server is the module or modules that provide additional feature operation, such as various can signals or data that is used by the feature.

1.2.4 Logical Signal Mapping

The logical methods mentioned below shall refer to Can signal names. 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.

Logical Name	CAN Signal Name
LidleRq	EngIdleShutDown_B_RqDrv
LignSt	Ignition_Status

The logical methods mentioned below shall refer to new interface between client 1 and client 2 names. The logical names shall be mapped to their actual signal names. Please use the table below to perform the mapping.

Logical Name	New Signal Name
LEngSt	TBD

1.2.5 REQ-391580/A-Client 1 Tx

1.2.5.1 REQ-391984/A-LidleRq

LidleRq: This signal is sent from Client 1 to the server to request feature state change.

Detail	State Encoded
No Inhibit	0 (0x0)
Inhibit	1 (0x1)

1.2.6 REQ-391581/A-Client 1 Rx

1.2.6.1 REQ-391583/A-LEngSt

LengSt: this method is sent from Client 2 to client 1 and describes the state of the feature.

FID:0xD03
Parameters:
No Inhibit: The Engine will shut off.
Inhibit: Engine will Not shut off.

1.2.6.2 REQ-391588/A-LignSt

LignSt: This signal is received by the client. It provides vehicle power state.

Signal Parameter	Parameter Description
0x0	Unknown
0x1	Off
0x2	Accessory
0x4	Run
0x8	Start
0xF	Invalid

1.2.7 REQ-391582/A-Client 2 Tx

1.2.7.1 REQ-391583/A-LEngSt

LengSt: this method is sent from Client 2 to client 1 and describes the state of the feature.

FID:0xD03
Parameters:
No Inhibit: The Engine will shut off.
Inhibit: Engine will Not shut off.

1.3 Functional Requirements

1.3.1 REQ-391584/A-the FUN

1.3.1.1 Requirements

1.3.1.1.1 REQ-391585/A-System Accuracy

Within a 100 msec of receiving data that results in a change of state the client will update the display to the proper status.

1.3.1.1.2 REQ-391586/A-Power Mode Operation

The feature should be accessible for interaction to the user while signal IgnSt is 0x4 (Run) or 0x8 (Start).

1.3.1.1.3 REQ-391587/A-Send User Requested Option

The user should be able to request feature state change.
To disable the engine shutdown, the signal LidleRq, should be sent with parameter 0x1 (Inhibit).
To enable the engine shut down again, the signal LidleRq needs to be sent with parameter 0x0 (No Inhibit).

1.3.1.1.4 REQ-392879/A-Update Feature State

Feature state is indicated by the parameters of LEngSt.
When LEngSt = No Inhibit, the Engine will shut off.
When LEngSt = Inhibit, the engine will shut off.

Any item indicator in Client 1 HMi should be updated accordingly.

1.3.1.1.5 REQ-392880/A-Default State

Default status of LIdleRe should be No Inhibit.
Default state of indicator associated with LEngSt should be No inhibit.

1.3.1.2 Use Cases

1.3.1.2.1 UC-REQ-391590/A-Time Extension Confirm

Actors	User
Pre-conditions	Auto Engine shutdown feature is in **No Inhibit** state.
Scenario Description	User requests feature Inhibit option to the client.
Post-conditions	Client sends user's request to the server. LidleRq = 0x1
List of Exception Use Cases	
Interfaces	Client 1 HMI

1.3.1.2.2 UC-REQ-391591/A-Feature Inhibit State Update

Actors	User
Pre-conditions	Vehicle is on, engine is running.
Scenario Description	Server sends notification to the user through Client 2 that Engine will shut down. User choses in the menu of Client 2 to inhibit the shutdown (thus keeping the engine on). Client 2 sends the users request to client 1.
Post-conditions	Client 1 updates the state of the feature in its HMI screen.
List of Exception Use Cases	
Interfaces	Client 1 HMI, Client 2 HMI

1.4 Appendix: Reference Documents

1	Automatic Engine Shutdown Control Function Waning Messages - CGEA1.3