Research & Vehicle Technology
"Infotainment Systems Product Development"

Feature – Trailer Sway Control

Infotainment Subsystem Part Specific Specification (SPSS)

PILOT Project

Version 1.0

UNCONTROLLED COPY IF PRINTED

Version Date: February 3, 2020

FORD CONFIDENTIAL

Revision History

Date	Version	Notes	
February 3, 2020	1.0	Initial Release	

FORD MOTOR COMPANY CONFIDENTIAL
The information contained in this document is Proprietary to Ford Motor Company.

Table of Contents

FORD MOTOR COMPANY CONFIDENTIAL
The information contained in this document is Proprietary to Ford Motor Company.

1 Overview

Trailer Sway Control is a feature that assists the users maintain control of a connected trailer while driving by helping stabilize the driving and the connected trailer. This feature gives the user ability the enable or disable the trailer sway.

2 Architectural Design

2.1 TSC-CLD-REQ-367406/A-Trailer Sway Control Client

Trailer Sway Control Client provides the user input to request feature change.

2.2 TSC-CLD-REQ-367407/A-Trailer Sway Control Server

Trailer Sway Control Server controls the feature state. It receives user's input through Client and decides on enabling/disabling the features.

2.3 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: some CAN signals referenced throughout this document may use the logical name while some may use the actual CAN signal name.

Logical Name	CAN Signal Name
LTrlrSwaySel	TRLR_SWAY_CONFIG_CMD
LTrlrSwaySt	TRLR_SWAY_CONFIG_STAT
IgnSt	Ignition_Status

2.4 TSC-IIR-REQ-367404/A-Trailer Sway Control Client Rx

2.4.1 MD-REQ-367459/A-LTrlrSwaySt

LTrlrSwaySt: This signal is sent by the server to the client to indicate the Trailer Sway Control state

Name	Literals	Value	Description
LTrlrSwaySt			
	Off	0x0	Trailer Sway Control is Off
	On	0x1	Trailer Sway Control is On

2.4.2 MD-REQ-365943/A-IgnSt

IgnSt: 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

2.5 TSC-IIR-REQ-367405/A-Trailer Sway Control Client Tx

2.5.1 MD-REQ-367458/A-LTrlrSwaySel

LTrlrSwaySel: This signal is sent by the client to the server to request Trailer Sway Control change.

Name	Literals	Value	Description
LTrlrSwaySel			
	Off	0x0	Request Trailer Sway Off.
	On	0x1	Request Trailer Sway On.

FORD MOTOR COMPANY CONFIDENTIAL
The information contained in this document is Proprietary to Ford Motor Company.

3 General Requirements

3.1 TSC-REQ-369210/A-Value Queries

Due to Client booting time and the signal transit time and type (only on data change), there could be cases where the received values could be missed. The client should request data from the transmitting server whenever the client wakes up due to ignition cycle.

3.2 TSC-REQ-369547/A-System Accuracy

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

3.3 TSC-REQ-372720/A-Status Update

The client shall update the data given to the user provided from the signal LTrlrSwaySt whenever this signal, LTrlrSwaySt, changes its value.

4 Functional Requirements

4.1 TSC-FUN-REQ-367447/A-Trailer Sway Control

4.1.1 TSC-REQ-369209/A-Power Mode Operation

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

4.1.2 Use Cases

4.1.2.1 TSC-UC-REQ-367449/A-Trailer Sway Control Enabling

Actors	Vehicle User
Pre-conditions	Trailer Sway Control is disabled
Scenario Description	User enables Trailer Sway Control through client interface.
Post-conditions	Trailer Sway Control feature gets enabled.
List of Exception Use Cases	
Interfaces	Vehicle HMI Interface

4.1.2.2 TSC-UC-REQ-367450/A-Trailer Sway Control Disabling

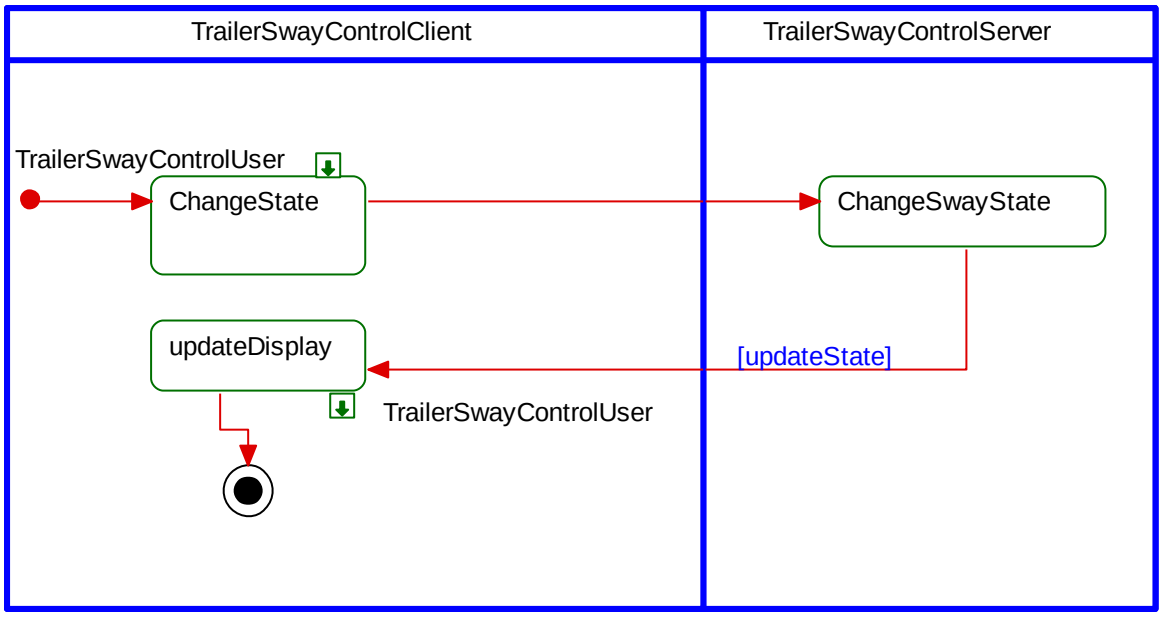
Actors	Vehicle User
Pre-conditions	Trailer Sway Control feature is enabled.
Scenario Description	User disables Trailer Sway Control feature through HMI interface.
Post-conditions	Trailer Sway Control feature gets disabled.
List of Exception Use Cases	
Interfaces	Client HMI interface.

The information contained in this document is Proprietary to Ford Motor Company.

4.1.3 Activity Views

4.1.3.1 Activity Diagram

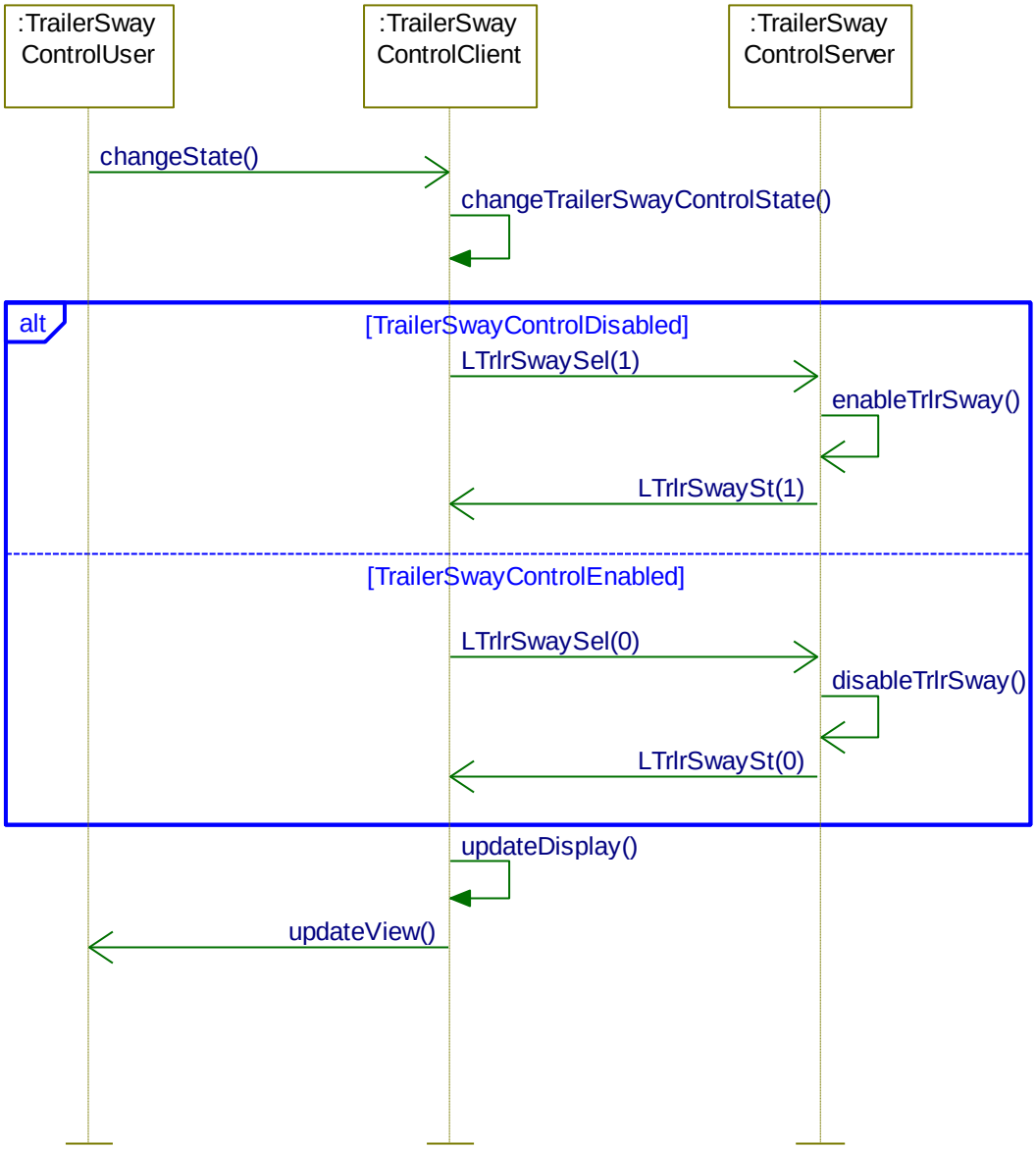
4.1.3.1.1 TSC-ACT-REQ-367451/A-Trailer Sway Control



FORD MOTOR COMPANY CONFIDENTIAL
The information contained in this document is Proprietary to Ford Motor Company.

4.1.3.2 Sequence Diagram

4.1.3.2.1 TSC-SD-REQ-367452/A-Trailer Sway Control



5 Appendix: Reference Documents

1	614984 Trailer Sway Control Function - CGEA1.3 (STSS)