Research & Vehicle Technology
"Infotainment Systems Product Development"

Feature: Trip Information on Demand (Global)

Subsystem Part Specific Specification (SPSS)

Version 1.1

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FORD CONFIDENTIAL

Revision History

Date	Version	Notes	
October 4, 2018	**1.0**	**Initial Release**	
November 16, 2018	**1.1**	**Updated Release**	
	MD-REQ-333088/A-TimerTripCurnt_T_Dsply		jmyslin2: new MD requirement for Current Trip Timer
	MD-REQ-333087/A-ElDistTripCur_No_Dsply		jmyslin2: new MD for current trip electric distance
	TRIP-FUN-REQ-319942/B-Trip Timer Data for display		<jmyslin2> updated function to add TimerTripCurnt_T_Dsply signal
	MD-REQ-333088/A-TimerTripCurnt_T_Dsply		jmyslin2: new MD requirement for Current Trip Timer
	TRIP-SR-REQ-319946/B-Trip Timer HMI Data		<jmyslin2> updated requirement to add TimerTripCurnt_T_Dsply signal
	TRIP-FUN-REQ-320000/B-Trip Electric Distance Data for Display		<jmyslin2> Updated to add signal ElDistTripCur_No_Dsply
	MD-REQ-333087/A-ElDistTripCur_No_Dsply		jmyslin2: new MD for current trip electric distance
	TRIP-SR-REQ-320023/B-Electric Trip Distance HMI Data		<jmyslin2> Updated to include ElDistTripCur_No_Dsply signal
	TRIP-SR-REQ-320040/B-Trip Timer Reset		<jmyslin2> Updated to include Current Trip

Table of Contents

1 Architectural Design

1.1 Overview

The Trip IoD (information on demand) displays the driver information Trip data on the Centerstack HMI. See the HMI Spec for details of how this is displayed.

1.2 TRIP-CLD-REQ-318899/A-Trip Driver Information Server

The Trip Driver Information Server is responsible for sending the status of the Trip Driver Information

1.3 TRIP-CLD-REQ-318901/A-Trip Driver Information HMI Client

The Trip Driver Information HMI Client is responsible for displaying the Trip HMI data from the Trip Driver Information Server

1.4 Interface Requirements

1.4.1 MD-REQ-319505/A-FuelRange_L_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal to indicate the distance left until the fuel is empty.

Logical Signal Name	Literals	Value	Description
FuelRange_L_Dsply	0.0 km	0x0	
	0.1 km	0x1	
	0.2 km	0x2	
	0.3 km	0x3	
	Cont.		
	1638.3 km	0x03FFF	

1.4.2 MD-REQ-319905/A-AvgFeTrip1_No_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal with the number to display for Average Fuel Economy for Trip 1.

Logical Signal Name	Literals	Value	Description
AvgFeTrip1_No_Dsply	0.0	0x0	This signal is sent as a number without a unit (ex no unit MPG, Km/L…)
	0.1	0x1	
	0.2	0x2	
	0.3	0x3	
	Cont.		
	1638.3	0x3FFF	

1.4.3 MD-REQ-319906/A-AvgFeTrip2_No_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal with the number to display for Average Fuel Economy for Trip 2.

Logical Signal Name	Literals	Value	Description
AvgFeTrip2_No_Dsply	0.0	0x0	This signal is sent as a number without a unit (ex no unit MPG, Km/L…)
	0.1	0x1	
	0.2	0x2	
	0.3	0x3	
	Cont.		
	1638.3	0x3FFF	

1.4.4 MD-REQ-319907/A-AvgFeTripUnit_D_Stat

Message Type: Status

The Trip Driver Information Server sends this signal with the unit to display for Trip average fuel economy.

Logical Signal Name	Literals	Value	Description
AvgFeTripUnit_D_Stat	Inactive	0x0	
	MPG	0x1	
	KM/L	0x2	
	L/100KM	0x3	
	Reserved for future use	0x4 – 0xF	

1.4.5 MD-REQ-319943/A-TimerTrip1_T_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal to indicate how many seconds has passed since the Trip 1 started

Logical Signal Name	Literals	Value	Description
TimerTrip1_T_Dsply	Second 0	0x0	Note: this supports 9999 hours, 59 minutes, 59 seconds… HMI team to decide what to display when over limit
	Second 1	0x1	
	Second 2	0x2	
	Second 3	0x3	
	Cont.		
	Second 67,108,863	0x3FFFFFF	

1.4.6 MD-REQ-319944/A-TimerTrip2_T_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal to indicate how many seconds has passed since the Trip 2 started

Logical Signal Name	Literals	Value	Description
	Second 0	0x0	Note: this supports 9999 hours, 59 minutes, 59 seconds… HMI team
	Second 1	0x1	

TimerTrip2_T_Dsply	Second 2	0x2	to decide what to display when over limit
	Second 3	0x3	
	Cont.		
	Second 67,108,863	0x3FFFFFF	

1.4.7 MD-REQ-333088/A-TimerTripCurnt_T_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal to indicate how many seconds has passed since the Current Trip started

Logical Signal Name	Literals	Value	Description
TimerTripCurnt_T_Dsply	Second 0	0x0	Note: this supports 9999 hours, 59 minutes, 59 seconds… HMI team to decide what to display when over limit
	Second 1	0x1	
	Second 2	0x2	
	Second 3	0x3	
	Cont.		
	Second 67,108,863	0x3FFFFFF	

1.4.8 MD-REQ-319957/A-DistTrip1_No_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal with the number to display for Distance for Trip 1.

Logical Signal Name	Literals	Value	Description
DistTrip1_No_Dsply	0.0	0x0	This signal is sent as a number without a unit (ex no unit Kilometers, Miles…)
	0.1	0x1	
	0.2	0x2	
	0.3	0x3	
	Cont.		
	13107.1	0x1FFFF	

1.4.9 MD-REQ-319971/A-DistTrip2_No_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal with the number to display for Distance for Trip 2.

Logical Signal Name	Literals	Value	Description
DistTrip2_No_Dsply	0.0	0x0	This signal is sent as a number without a unit (ex no unit Kilometers, Miles…)
	0.1	0x1	
	0.2	0x2	
	0.3	0x3	
	Cont.		
	13107.1	0x1FFFF	

1.4.10 MD-REQ-319988/A-DistTripUnit_D_Stat

Message Type: Status

The Trip Driver Information Server sends this signal with the unit to display for Trip Distance.

Logical Signal Name	Literals	Value	Description
DistTripUnit_D_Stat	Inactive	0x0	
	Kilometers	0x1	
	Miles	0x2	
	Reserved	0x3	

1.4.11 MD-REQ-320006/A-ElDistTrip1_No_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal with the number to display for the Electric Distance for Trip 1.

Logical Signal Name	Literals	Value	Description
ElDistTrip1_No_Dsply	0.0	0x0	This signal is sent as a number without a unit (ex no unit Kilometers, Miles…)
	0.1	0x1	
	0.2	0x2	
	0.3	0x3	
	Cont.		
	13107.1	0x1FFFF	

1.4.12 MD-REQ-320021/A-ElDistTrip2_No_Dsply

The Trip Driver Information Server sends this signal with the number to display for the Electric Distance for Trip 2.

Logical Signal Name	Literals	Value	Description
ElDistTrip2_No_Dsply	0.0	0x0	This signal is sent as a number without a unit (ex no unit Kilometers, Miles…)
	0.1	0x1	
	0.2	0x2	
	0.3	0x3	
	Cont.		
	13107.1	0x1FFFF	

1.4.13 MD-REQ-333087/A-ElDistTripCur_No_Dsply

The Trip Driver Information Server sends this signal with the number to display for the Electric Distance for the Current Trip.

Logical Signal Name	Literals	Value	Description
ElDistTripCur_No_Dsply	0.0	0x0	This signal is sent as a number without a unit (ex no unit Kilometers, Miles…)
	0.1	0x1	
	0.2	0x2	
	0.3	0x3	
	Cont.		
	13107.1	0x1FFFF	

1.4.14 MD-REQ-320022/A-ElDistTripUnit_D_Stat

Message Type: Status

The Trip Driver Information Server sends this signal with the unit to display for Electric Trip Distance.

Logical Signal Name	Literals	Value	Description
ElDistTripUnit_D_Stat	Inactive	0x0	
	Kilometers	0x1	
	Miles	0x2	
	Reserved	0x3	

1.4.15 MD-REQ-320036/A-ResetTrip1_B_Rq

Message Type: Status

The Trip Driver Information HMI Client sends this signal to reset the Trip 1 HMI

Logical Signal Name	Literals	Value	Description
ResetTrip1_B_Rq	Null	0x0	
	Reset	0x1	

1.4.16 MD-REQ-320039/A-ResetTrip2_B_Rq

Message Type: Status

The Trip Driver Information HMI Client sends this signal to reset the Trip 2 HMI

Logical Signal Name	Literals	Value	Description
ResetTrip2_B_Rq	Null	0x0	
	Reset	0x1	

1.4.17 MD-REQ-324184/A-AvgFeTrip1Actv_B_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal to indicate if AvgFeTrip1_No_Dsply signal should be used or not on the HMI (ex after a reset).

Logical Signal Name	Literals	Value	Description
AvgFeTrip1Actv_B_Dsply	Inactive	0x0	
	Active	0x1	

1.4.18 MD-REQ-324186/A-AvgFeTrip2Actv_B_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal to indicate if AvgFeTrip2_No_Dsply signal should be used or not on the HMI (ex after a reset).

Logical Signal Name	Literals	Value	Description
AvgFeTrip2Actv_B_Dsply	Inactive	0x0	
	Active	0x1	

2 Functional Definition

2.1 TRIP-FUN-REQ-319913/A-Trip DTE (Distance to Empty) Data for display

2.1.1 MD-REQ-319505/A-FuelRange_L_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal to indicate the distance left until the fuel is empty.

Logical Signal Name	Literals	Value	Description
FuelRange_L_Dsply	0.0 km	0x0	
	0.1 km	0x1	
	0.2 km	0x2	
	0.3 km	0x3	
	Cont.		
	1638.3 km	0x03FFF	

2.1.2 TRIP-SR-REQ-319504/A-DTE (Distance To Empty) HMI Data

The FuelRange_L_Dsply signal is used to display the Distance to Empty on both the Trip 1 and Trip 2 HMI.

The Measure Units setting shall be used for converting between the different units for DTE (ex kilometers, miles…).

- Reference Measure Units settings as called out in the Settings in the Centerstack SPSS

The km value to be displayed to the customer shall be FuelRange_L_Dsply truncated to whole units. When the display is to be in English units, FuelRange_L_Dsply shall be divided by 1.609344 to convert it from km to mi prior to its truncation. (For example, when FuelRange_L_Dsply is 0.9 km and the display is in km, the driver sees “0 km”. Similarly, when FuelRange_L_Dsply is 1.6 km and the display is in miles, the driver sees “0 miles”.)

Unit Conversion for the FuelRange_L_Dsply signal:

- Shall use kilometer to miles conversion constant of 1/1.609344

2.2 TRIP-FUN-REQ-319916/A-Trip AFE (Average Fuel Economy) Data for display

2.2.1 MD-REQ-319905/A-AvgFeTrip1_No_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal with the number to display for Average Fuel Economy for Trip 1.

Logical Signal Name	Literals	Value	Description
AvgFeTrip1_No_Dsply	0.0	0x0	This signal is sent as a number without a unit (ex no unit MPG, Km/L…)
	0.1	0x1	
	0.2	0x2	
	0.3	0x3	
	Cont.		
	1638.3	0x3FFF	

2.2.2 MD-REQ-319906/A-AvgFeTrip2_No_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal with the number to display for Average Fuel Economy for Trip 2.

Logical Signal Name	Literals	Value	Description
AvgFeTrip2_No_Dsply	0.0	0x0	This signal is sent as a number without a unit (ex no unit MPG, Km/L…)
	0.1	0x1	
	0.2	0x2	
	0.3	0x3	
	Cont.		
	1638.3	0x3FFF	

2.2.3 MD-REQ-319907/A-AvgFeTripUnit_D_Stat

Message Type: Status

The Trip Driver Information Server sends this signal with the unit to display for Trip average fuel economy.

Logical Signal Name	Literals	Value	Description
AvgFeTripUnit_D_Stat	Inactive	0x0	
	MPG	0x1	
	KM/L	0x2	
	L/100KM	0x3	
	Reserved for future use	0x4 – 0xF	

2.2.4 MD-REQ-324184/A-AvgFeTrip1Actv_B_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal to indicate if AvgFeTrip1_No_Dsply signal should be used or not on the HMI (ex after a reset).

Logical Signal Name	Literals	Value	Description
AvgFeTrip1Actv_B_Dsply	Inactive	0x0	
	Active	0x1	

2.2.5 MD-REQ-324186/A-AvgFeTrip2Actv_B_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal to indicate if AvgFeTrip2_No_Dsply signal should be used or not on the HMI (ex after a reset).

Logical Signal Name	Literals	Value	Description
AvgFeTrip2Actv_B_Dsply	Inactive	0x0	
	Active	0x1	

2.2.6 TRIP-SR-REQ-319909/A-AFE (Average Fuel Economy) HMI Data

The signal AvgFeTripUnit_D_Stat shall be used to display the trip average fuel economy units (ex MPG, KM/L…) on the HMI with the data in signals AvgFeTrip1_No_Dsply and AvgFeTrip2_No_Dsply.

- Ex if AvgFeTrip1_No_Dsply = 25.5 and AvgFeTripUnit_D_Stat = KM/L then the HMI would show 25.5 KM/L.

The AvgFeTrip1_No_Dsply, AvgFeTrip2_No_Dsply and AvgFeTripUnit_D_Stat signals must all be placed in the same message so the HMI can update simultaneously.

2.2.7 TRIP-SR-REQ-324197/A-Reset AFE HMI Data

Trip 1:
When AvgFeTrip1Actv_B_Dsply is set to Inactive then the data in AvgFeTrip1_No_Dsply shall not be displayed by the HMI.

When AvgFeTrip1Actv_B_Dsply is set to Active then the data in AvgFeTrip1_No_Dsply shall be displayed by the HMI.

Trip 2:
When AvgFeTrip2Actv_B_Dsply is set to Inactive then the data in AvgFeTrip2_No_Dsply shall not be displayed by the HMI.

When AvgFeTrip2Actv_B_Dsply is set to Active then the data in AvgFeTrip2_No_Dsply shall be displayed by the HMI.

Reference HMI for details of what to show when AvgFeTrip(1 or 2)Actv_B_Dsply = Inactive.

- Example perhaps HMI shows - - . – MPG with dashes in place of numbers to show HMI when AvgFeTrip1Actv_B_Dsply = Inactive. HMI team and not this example is to be used for what to show when set to Inactive.
- If units (ex - - . – *MPG*) are shown when AvgFeTrip(1 or 2)Actv_B_Dsply = Inactive then the HMI shall use the AvgFeTripUnit_D_Stat signal for the units.

2.3 TRIP-FUN-REQ-319942/B-Trip Timer Data for display

2.3.1 MD-REQ-319943/A-TimerTrip1_T_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal to indicate how many seconds has passed since the Trip 1 started

Logical Signal Name	Literals	Value	Description
TimerTrip1_T_Dsply	Second 0	0x0	Note: this supports 9999 hours, 59 minutes, 59 seconds… HMI team to decide what to display when over limit
	Second 1	0x1	
	Second 2	0x2	
	Second 3	0x3	
	Cont.		
	Second 67,108,863	0x3FFFFFF	

2.3.2 MD-REQ-319944/A-TimerTrip2_T_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal to indicate how many seconds has passed since the Trip 2 started

Logical Signal Name	Literals	Value	Description
TimerTrip2_T_Dsply	Second 0	0x0	Note: this supports 9999 hours, 59 minutes, 59 seconds… HMI team to decide what to display when over limit
	Second 1	0x1	
	Second 2	0x2	
	Second 3	0x3	

	Cont.		
	Second 67,108,863	0x3FFFFFF	

2.3.3 MD-REQ-333088/A-TimerTripCurnt_T_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal to indicate how many seconds has passed since the Current Trip started

Logical Signal Name	Literals	Value	Description
TimerTripCurnt_T_Dsply	Second 0	0x0	Note: this supports 9999 hours, 59 minutes, 59 seconds… HMI team to decide what to display when over limit
	Second 1	0x1	
	Second 2	0x2	
	Second 3	0x3	
	Cont.		
	Second 67,108,863	0x3FFFFFF	

2.3.4 TRIP-SR-REQ-319946/B-Trip Timer HMI Data

The signals TimerTrip1_T_Dsply, TimerTrip2_T_Dsply and TimerTripCurnt_T_Dsply are used to display the time elapsed since the trip began. See HMI for details on how displayed.

2.4 TRIP-FUN-REQ-319947/A-Trip Distance Data for display

2.4.1 MD-REQ-319957/A-DistTrip1_No_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal with the number to display for Distance for Trip 1.

Logical Signal Name	Literals	Value	Description
DistTrip1_No_Dsply	0.0	0x0	This signal is sent as a number without a unit (ex no unit Kilometers, Miles…)
	0.1	0x1	
	0.2	0x2	
	0.3	0x3	
	Cont.		
	13107.1	0x1FFFF	

2.4.2 MD-REQ-319971/A-DistTrip2_No_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal with the number to display for Distance for Trip 2.

Logical Signal Name	Literals	Value	Description
DistTrip2_No_Dsply	0.0	0x0	This signal is sent as a number without a unit (ex no unit Kilometers, Miles…)
	0.1	0x1	
	0.2	0x2	

	0.3	0x3	
	Cont.		
	13107.1	0x1FFFF	

2.4.3 MD-REQ-319988/A-DistTripUnit_D_Stat

Message Type: Status

The Trip Driver Information Server sends this signal with the unit to display for Trip Distance.

Logical Signal Name	Literals	Value	Description
DistTripUnit_D_Stat	Inactive	0x0	
	Kilometers	0x1	
	Miles	0x2	
	Reserved	0x3	

2.4.4 TRIP-SR-REQ-319992/A-Trip Distance HMI Data

The signal DistTripUnit_D_Stat shall be used to display the trip distance units (ex Miles, Kilometers) on the HMI with the numbers in signals DistTrip1_No_Dsply and DistTrip2_No_Dsply.

- Ex DistTrip1_No_Dsply = 12.3 and DistTripUnit_D_Stat = Miles then the HMI would show 12.3 Miles.

The DistTrip1_No_Dsply, DistTrip2_No_Dsply and DistTripUnit_D_Stat signals must all be placed in the same message so the HMI can update simultaneously.

2.5 TRIP-FUN-REQ-320000/B-Trip Electric Distance Data for Display

2.5.1 MD-REQ-320006/A-ElDistTrip1_No_Dsply

Message Type: Status

The Trip Driver Information Server sends this signal with the number to display for the Electric Distance for Trip 1.

Logical Signal Name	Literals	Value	Description
ElDistTrip1_No_Dsply	0.0	0x0	This signal is sent as a number without a unit (ex no unit Kilometers, Miles…)
	0.1	0x1	
	0.2	0x2	
	0.3	0x3	
	Cont.		
	13107.1	0x1FFFF	

2.5.2 MD-REQ-320021/A-ElDistTrip2_No_Dsply

The Trip Driver Information Server sends this signal with the number to display for the Electric Distance for Trip 2.

Logical Signal Name	Literals	Value	Description
	0.0	0x0	

ElDistTrip2_No_Dsply	0.1	0x1	This signal is sent as a number without a unit (ex no unit Kilometers, Miles…)
	0.2	0x2	
	0.3	0x3	
	Cont.		
	13107.1	0x1FFFF	

2.5.3 MD-REQ-333087/A-ElDistTripCur_No_Dsply

The Trip Driver Information Server sends this signal with the number to display for the Electric Distance for the Current Trip.

Logical Signal Name	Literals	Value	Description
ElDistTripCur_No_Dsply	0.0	0x0	This signal is sent as a number without a unit (ex no unit Kilometers, Miles…)
	0.1	0x1	
	0.2	0x2	
	0.3	0x3	
	Cont.		
	13107.1	0x1FFFF	

2.5.4 MD-REQ-320022/A-ElDistTripUnit_D_Stat

Message Type: Status

The Trip Driver Information Server sends this signal with the unit to display for Electric Trip Distance.

Logical Signal Name	Literals	Value	Description
ElDistTripUnit_D_Stat	Inactive	0x0	
	Kilometers	0x1	
	Miles	0x2	
	Reserved	0x3	

2.5.5 TRIP-SR-REQ-320023/B-Electric Trip Distance HMI Data

The signal ElDistTripUnit_D_Stat shall be used to display the trip electric distance units (ex Miles, Kilometers) on the HMI with the numbers in signals ElDistTrip1_No_Dsply, ElDistTrip2_No_Dsply and ElDistTripCur_No_Dsply.

- Ex ElDistTrip1_No_Dsply = 33.6 and ElDistTripUnit_D_Stat = Kilometers then the HMI would show 33.6 Kilometers.

The ElDistTrip1_No_Dsply, ElDistTrip2_No_Dsply, ElDistTripCur_No_Dsply and ElDistTripUnit_D_Stat signals must all be placed in the same message so the HMI can update simultaneously.

2.6 TRIP-FUN-REQ-320024/A-Trip Reset

2.6.1 MD-REQ-320036/A-ResetTrip1_B_Rq

Message Type: Status

The Trip Driver Information HMI Client sends this signal to reset the Trip 1 HMI

Logical Signal Name	Literals	Value	Description
ResetTrip1_B_Rq	Null	0x0	
	Reset	0x1	

2.6.2 MD-REQ-320039/A-ResetTrip2_B_Rq

Message Type: Status

The Trip Driver Information HMI Client sends this signal to reset the Trip 2 HMI

Logical Signal Name	Literals	Value	Description
ResetTrip2_B_Rq	Null	0x0	
	Reset	0x1	

2.6.3 TRIP-SR-REQ-320040/B-Trip Timer Reset

When the reset HMI (HMI team define how shown) is activated on the Trip Driver HMI Client the Trip Driver HMI Client shall set ResetTrip1_B_Rq = Reset and then set back to Null.

- Reference "IFS-MMCAN-REQ-015114-Sending of Request and Response" requirement for setting a Request back to Null. For this requirement (015114) the Null encoding shall be treated the same as inactive in meeting the requirement.

The Trip Driver HMI Client shall only show the reset values when the Trip Driver HMI Client receives the Trip 1 status signals in this SPSS back with the reset values (ex. ElDistTrip1_No_Dsply, DistTrip1_No_Dsply…).

The Trip Driver information Server shall reset Trip 1 and the applicable Trip 1 status signals when ResetTrip1_B_Rq = Reset.

Note: above showed the ResetTrip1_B_Rq operation for Trip 1. The requirements would apply for Trip 2 with ResetTrip2_B_Rq and the corresponding Trip 2 status signals.

The Current Trip signals (ex TimerTripCurnt_T_Dsply, ElDistTripCur_No_Dsply) are not reset by ResetTrip1_B_Rq or ResetTrip2_B_Rq signals.

2.6.4 IFS-MMCAN-FUR-REQ-015114/D-Sending of Request and Response (TcSE ROIN-66252-1)

Unless noted otherwise request and response signals shall only be sent once and when they have been sent it is important that they are set to inactive/null again. The signals should be set back to inactive/null as soon as FNOS has reported that the signal has been transmitted unless noted otherwise.

- Example of an exception: an event-periodic signal going across network gateway and encoding value may need to be held until other bus wakes up. Reference the feature specs for exceptions.

For event based signals this has to be done in order to keep FNOS from accidentally sending out the signal twice when another signal in the same frame is to be transmitted, either by a change of another signal or by a periodic transmission.

3 Appendix: Reference Documents

Reference #	Document Title
1	Trip IoD HMI specifications
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
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