FORD LDM Localization - #3017

#2519 ( ): Ford_SYSR: System Requirement

Ford_SYSR: FS_REQ0029_V1 DRL Response to Turn Indicator Activation

2024-11-05 08:57 -

:		:		2024-11-05
:		:		2024-11-07
:		% :		100%
:		:		0.00
:	H003_SW0007169.A001.8	:		0.00

In EEL LIN systems, the LDM shall take the configured performance control action when the TI is activated on the same side. The LDM shall use the LIN signal 'Turn_Signal_Light_Cmd' to determine whether the turn indicator is activated.

The parameter 'DRL_TI_Control_cfg' shall be used to determine if the DRL shall remain in the current state, dim to '-ParkPos_Intensity_cfg', or turn off completely. Also defined the parameter to fade or snap to expected intensity once the Turn is deactivated, the fade time shall be configured by 'DRL_activation_time_after_deact_cfg'.

'DRL_activation_time_after_deact_cfg' definitions:
- Range: 0ms to 1000ms
- Resolution: 100ms
-

If 'LSDx_usage_cfg' is not 0x03 use 1 DRL behavior.
If 'LSDx_usage_cfg' is 0x03 use 2 DRL behavior.

1 DRL behavior:
'DRL_TI_Control_cfg' parameter definition:
0x00 = TI has no impact on DRL.

0x01 = Turn off DRL and POS when TI active.
After TI deactivation and if DRL or POS is still requested then smooth fade in of constant current from 0 to requested value within 'DRL_activation_time_after_deact_cfg' +/- 0.2s. The current control shall not start before 1 second after the deactivation of TI has been detected by HW.

0x02 = Dim DRL to 'ParkPos_Intensity_cfg' when TI is active. After TI deactivation same behavior as by 0x01, but from 'ParkPos_Intensity_cfg' to 'DRL_Intensity' to requested intensity.

0x03 = If DRL is in dim intensity when TI begins do not change DRL intensity for the duration of turn indicator.
If DRL is at bright intensity or switches to requesting bright intensity during TI immediately turn DRL off. After TI deactivation same behavior as by 0x01.

LSDx_usage_cfg	DRL_TI_Control_cfg	DRL/PO intensity	DRL behavior when TI avtive
<> 0x03	0x00	Don't care	No impact on DRL/PO
	0x01	Don't care	Turn off DRL/PO
	0x02	DRL	Dim to 'ParkPos_Intensity_cfg'
		POS	Keep 'ParkPos_Intensity_cfg'
	0x03	DRL	Turn off DRL
		POS	Keep 'ParkPos_Intensity_cfg'

Table 12: 1 DRL respond to TI strategy

2 DRL behavior:
'DRL_TI_Control_cfg' parameter definition:
0x00 = The intent of this option is to support DRL2 being in the same chamber as the TI. While DRL1 is too close to the turn indicator to support DRL function during the day and still achieving POS at night.
If DRL is dim intensity when TI begins then turn off DRL2 and leave DRL1 at dim intensity. If DRL is at bright intensity or switches to requesting bright intensity during TI, immediately turn both DRL1 and DRL2 off.
After TI deactivation and if DRL or POS is still requested, then smooth fade in DRL1/2 from 0 to requested intensity within 'DRL_activation_time_after_deact_cfg' +/- 0.2s. The fade shall not start until 1 second after the deactivation of TI has been detected by HW..

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0x01 = The intent of this option with two-part DRL is to support DRL2 being in the same chamber as TI, while DRL1 is far enough away from the TI to not need to be deactivated.

For DRL2 deactivate DRL and POS when TI is active, but do not change the state of DRL1.

After TI deactivation and if DRL or POS is still requested, then smooth fade in DRL2 from 0 to requested intensity same behavior as 0x00.

0x02 = The intent of this option with two-part DRL is to support DRL2 being close to TI while DRL1 is far enough away from TI to not be affected by TI.

When TI is active dim DRL2 to 'ParkPos_Intensity_cfg' and do not change DRL1.

After TI deactivation 1 second later and if DRL or POS is still requested, then smooth fade in on DRL2 from 'ParkPos_Intensity_cfg' to requested intensity.

0x03 = The intent of this option with two-part DRL is to support DRL2 being adjacent to the turn indicator and DRL1 being far enough away that it is not affected by TI,

If DRL2 is in dim intensity when TI begins do not change DRL2 intensity for the duration of turn indicator. If DRL2 is at bright intensity or switches to requesting bright intensity during TI, immediately turn DRL2 off.

After TI deactivation and if DRL or POS is still requested, then smooth fade in DRL2 from 0 to requested intensity same behavior as 0x00.

Table 13: 2 DRL respond to TI strategy

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