# Drive Control in Stationary Mode RTT – CGEA1.3

## Functional Description

The purpose of the Drive Control in Stationary mode RTT contained within this STSS is to inform the vehicle assembly operator that the vehicle drive control is in Stationary mode. Stationary mode allows the Continuously Controlled Damping system to function with zero vehicle speed.

This RTT will be activated under special circumstances during the vehicle testing at the assembly plants. Since the end user will never see this RTT as a result of Drive Control, the icon displayed for this feature will be the Engineering Test RTT.

The Drive Control in Stationary mode RTT correlates the CcdMsgTxt\_D\_RqDsply signal from the CCD/VDM module and Operational\_Mode to either activate or deactivate the Engineering Test RTT on the cluster display.

## Interfaces

### Interface Context Diagram (I/O Block Diagram)

Drive Control in Stationary Mode RTT Context Diagram



### Inputs

#### IR-REQ-343806/A-INTERNAL:

SDM\_Cfg

Operational\_Mode

#### MUX signal on CAN

##### SIG-REQ-343799/A-CcdMsgTxt\_D\_RqDsply Signal

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Signal Name** | **Size**  **(bits)** | **Detail** | **Units** | **Res.** | **Offset** | **State**  **Encoded** | **Min** | **Max** |
| CcdMsgTxt\_D\_RqDsply | 4 |  | SED | 1 | 0 |  | 0 (0x0) | 15 (0xF) |
|  |  | No\_Mode\_Selected |  |  |  | 0x0 |  |  |
|  |  | Comfort |  |  |  | 0x1 |  |  |
|  |  | Normal |  |  |  | 0x2 |  |  |
|  |  | Sport |  |  |  | 0x3 |  |  |
|  |  | Faulty |  |  |  | 0x4 |  |  |
|  |  | CCD\_Service\_Required |  |  |  | 0x5 |  |  |
|  |  | CCD\_Temporarily\_Off |  |  |  | 0x6 |  |  |
|  |  | Mode\_Change\_Unavailable |  |  |  | 0x7 |  |  |
|  |  | Stationary\_Mode |  |  |  | 0x8 |  |  |
|  |  | Not used |  |  |  | 0x9 – 0xF |  |  |

### IR-REQ-343809/A-Outputs

* + - * Drive\_Control\_RTT\_Status\_Flag, which is used to control the state of the RTT.

## Function/Performance

### F-REQ-343811/A-Operational Modes

|  |  |
| --- | --- |
| **Mode** | **Operational Mode** |
| Sleep Mode | Drive Control RTT Inactive |
| Limited Mode | Drive Control RTT Inactive |
| Normal Mode | Drive Control RTT Active / Inactive |
| Crank Mode | Drive Control RTT Active / Inactive |

### Voltage Levels

Refer to the Cluster Features table located in the Operational Modes and Voltage Range Strategies section in this SPSS.

### Human-Machine Interface

#### Visual

##### HMI-REQ-343813/A-Indicator Graphics / Display Format



##### Indicator Color Coordinates

Reference section COLOR & ILLUMINATION REQUIREMENTS (GRAPHICS).

#### Audio

None

#### Switch Control Logic

None.

### PFM-REQ-343810/A-System Accuracy

Within 100 msec of receiving a message that results in a change of state the cluster will update the output flag to the proper state.

### Operation: Performance and Functional

#### Subsystem Algorithm Flowchart / State Diagram

##### F-REQ-343801/A-Emergency Call System Diagnostic Configuration Routine Diagram



##### F-REQ-343802/A-State Matrix for Drive Control RTT

|  |  |  |  |
| --- | --- | --- | --- |
| SDM\_Cfg | Operational\_  Mode | CcdMsgTxt\_D\_RqDsply Signal | Drive\_Control\_RTT\_Status\_Flag |
| Enabled (0x1) | Normal or Crank | 0x8 | Active |
| All Other Cases | | | Inactive |

##### F-REQ-343834/A-RTT Status Flag to RTT Icon

|  |  |
| --- | --- |
| **RTT Status Flag** | **RTT icon** |
| Drive\_Control\_RTT\_Status\_Flag | As per HMI-REQ-343813 |

#### Operation Description (supports algorithm flowchart /state diagram)

* For definition of how the Message Center arbitrates and displays Active warnings, see the Warning / Alert Display Logic Diagram, located in the Message Center – X Display with W Button Interface section of this SPSS (where X and W are appropriate values in this document).

##### F-REQ-343804/A-Module Configuration

* The RTT shall only be activated when SDM\_Cfg is set to “Enabled” (0x1).

#### FS-REQ-343812/A-Function Safety Classification (EMC)

Class B

#### Memory Storage

##### NVM-REQ-343805/A-Parameters Table

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter Name** | **Description** | **Value at**  **Battery Connect** | **Value at**  **Module Wake-up** |
| Drive\_Control\_RTT\_Status\_Flag | Output display status flag used to activate RTT. | Inactive | Inactive |
| CcdMsgTxt\_D\_RqDsply Signal | CAN signal sent from the CCD/VDM module. | No (0x0) | No (0x0) |
| SDM\_Cfg | State Indicator for feature presence controlled via CAN at EOL at VO plant. Defaulted to DISABLED at supplier manufacturing. | Use Stored Value | Use Stored Value |
| Operational\_Mode | 4 state indicator for cluster operational mode. | Limited | Limited, Normal or Crank |

#### Prove Out

None.

#### HMI-REQ-343835/A-Reconfigurable Telltale

As per HMI-REQ-343813

#### Message Center Message

None

## Error Handling

### Missing Message Strategy

None

## Diagnostics

### Self Test

None.

### Engineering Test Mode

None.

### Part II Performance

#### DCR-REQ-343808/A-DID $DE05

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Block**  **Num** | **Block Description** | **Size (bits)** | **Byte(s)** | **Bit(s)** | **State: Description** | **"0"** | **"1"** | **Default** | **Comments/**  **Information** |
| PACKETED BLOCKS | |  |  |  |  |  |  |  |  |
| $05 | Option Content (B&A) | 1 | \* | \* | Selectable Drive Mode | Disabled | Enabled | Disabled | Disabled means this feature is not offered on the vehicle |
|  | \*Byte and bit location to be identified in Part II Specification for this cluster. | | | | |  |  |  |  |

#### Supported Diagnostic Trouble Codes (DTCs)

DTCs shall be logged as per the diagnostics section of this SPSS.\*

|  |  |
| --- | --- |
| **DTC** | **Description** |
| None |  |

## Reference Specifications

IS-0001 WARNINGS/INDICATORS/DISPLAYS PROVEOUT

IS-0046 INSTRUMENTATION MATERIAL RESISTANCE TO CLEANING

IS-0052 OPERATING VOLTAGES - FUNCTIONAL/PERFORMANCE

IS-0069 FUNCTIONAL IMPORTANCE CLASS

IS-0324 WINDSHIELD & OTHER REFLECTIONS

IS-0327 WARNING INDICATOR EVALUATION

IS-0379 NORTH AMERICAN WARNINGS AND INDICATORS STRATEGY

IL-0021 CRAFTSMANSHIP - DISPLAYS

IL-0023 CLARITY/LEGIBILITY/READABILITY

IL-0025 INTERIOR ILLUMINATION INTENSITY

IL-0027 VISUAL CONTRAST

IL-0043 OPERATIONAL ENVIRONMENT FUNCTIONALITY

IL-0045 COLOR

IL-0048 ILLUMINATION ACCEPTABILITY

03-0661  PLACEMENT: CONTROL AND DISPLAY LOCATIONS

03-0662  PLACEMENT: LOGICAL GROUPING FUNCTION AND USAGE

03-0664  PLACEMENT: DOWN VISION TO COMPONENTS WITH HIGH VISUAL DEMAND

03-0665  PLACEMENT: EXPECTED LOCATIONS OF CONTROLS AND DISPLAYS VDS

03-0670  INTERIOR VISIBILITY

03-0671  INTERIOR VISIBILITY: REFLECTIONS FROM COMPONENTS & SURFACES

03-0672  INTERIOR VISIBILITY: REFLECTIONS IN DISPLAYS

03-0673  INTERIOR VISIBILITY: VISUAL OBSCURATIONS

03-0674  INTERIOR VISIBILITY: ILLUMINATION CONTROLS / DISPLAYS

03-0675  INTERIOR VISIBILITY: VEILING GLARE

03-0677  INTERIOR VISIBILITY: SUNLIGHT WASHOUT

03-0681  IDENTIFICATION: CHARACTER AND SYMBOL SIZE

03-0682  IDENTIFICATION: LEGIBILITY

03-0685  IDENTIFICATION: SYMBOLS,  ABBREV FOR CONTROL

03-0721  LOGIC OF OPERATION: OPERATIONAL STEREOTYPES

03-0722  LOGIC OF OPERATION: INTERPRETATION

03-0723  LOGIC OF OPERATION: USE OF SYSTEMS WITH VISUAL DISPLAYS

## Revision History

**STSS Module Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Revision Level** | **Name** | **Change Description** | **Date** |
| 1.0 | V. Patel | Initial release.  (Feature owner: Grohnke, Daniel) | 02/10/2017 |
| 1.1 | V. Patel | Initial release for VSEM requirements migration | 2/26/2019 |
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