

Validation Test document

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| --- | --- |
| Version | 1.0 |

History

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| **Version** | **Author** | **Changes** |
| 1.0 | Andrew MESSIHA,  Geroge WASSEM,  Farida ABDELBAKI,  Mahmoud YASSER | Initial Version |
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Document Scope

The product addressed in this document is the infotainment system of a vehicle. The system requirements are categorized into three main sections: Infotainment Functionality, Diagnostics, and Diagnostic Trouble Codes.

A) Infotainment Functionality:

This section outlines the functional requirements of the infotainment system. It includes the behavior of the on/off button, the mute and on/off states, the saving of user states, the configuration of button press duration, the handling of stuck buttons, the initial values in case of lost input signals, the handling of a corrupted EEPROM, the backlight mechanism based on the DAY\_NIGHT\_STATUS signal, and the configuration parameters' effectiveness after a system restart.

B) Diagnostics:

This section details the diagnostic services implemented in the product according to the UDS standard. It includes the implementation of DID 0203 and DID 0204, their accessibility in different diagnostic sessions, the security access required for writing to these DIDs, the correct format for writing to these DIDs, and the configuration of system parameters through these DIDs. It also includes the implementation of the IOCBI service and DID 0205, their accessibility, and the control of the Backlight's Duty Cycle through DID 0205.

C) Diagnostic Trouble Codes:

This section outlines the conditions under which certain trouble codes are raised and considered as not being an issue anymore. It includes the conditions for a button to be considered as stuck or not stuck, and the raising of DTC codes B91212 and B91214.

This document is intended to provide a comprehensive guide to the validation testing procedures for the infotainment system of a vehicle. It is designed to ensure that the system meets all specified requirements and performs correctly in its intended environment.

Environment Setup

The testing environment setup is crucial for the validation of the infotainment system. The following are the requirements for the setup:

Hardware:

- Vehicle with the infotainment system installed.

- Diagnostic tool compatible with the vehicle's diagnostic port.

- Laptop or computer system for running the diagnostic software.

Software:

- Diagnostic software compatible with the vehicle's infotainment system.

- Latest firmware of the infotainment system.

- Software for logging and analyzing the test results.

Network:

- If the infotainment system supports network connectivity, ensure a stable network connection. This could be a Wi-Fi connection or a mobile data connection, depending on the system's capabilities.

Configuration:

- The infotainment system should be configured as per the manufacturer's guidelines.

- The diagnostic tool should be configured to communicate with the infotainment system.

Test Data:

- Prepare test data as required.

|  |
| --- |
| Configuration Document [CONFIG\_INFOSYS] |
|  |
|  |
|  |
|  |
| **Initialize the System (INIT\_SYS)** |  |
| **1. Power Up**: Start the vehicle to power up the infotainment system. The system should boot up. |  |
| **2. Set Known State: - Set the onoff\_state to a known state**: set the OnOff state to functional, press the onoff button for a (tlong).  **- Set the mute signal to a known state:** set the Mute state to non-functional, press the onoff button for a short duration (tshort)  **- Save these settings** so that they will be the ‘last saved state’ for the next power cycle. This could be done by changing the ign-on signal from on to off (Func\_Req\_006). |  |
| **3.Check Initial State:** Verify that the state of the system reflects the known state you set in the previous step. For example, the onoff\_state should be functional and the mute signal should be non-functional. |  |
| **4. Check System Settings**: Navigate to the system settings and verify that  the parameters for the duration of button press (tshort and tlong) are correctly configured as the diagontics requirments |  |

Detailed Tests

1. Button Functionality
   * 1. States Functionality

1.1.1 Dual Functionality

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_DualButton\_MuteOnOff\_001 | **Test Case Description** | | Verify the dual functionality of the onoff button based on the duration of the button press. The test involves pressing the onoff button for a short and long duration and verifying the system’s response. | | | | | |
| **Requirement/s** | | Func\_Req\_001 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew MESSIHA | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | T\_SHORT | 999 | 1000 | 1001 | | |
| 3 |  | | |  | T\_LONG | 1999 | 2000 | 2001 | | |
| 4 |  | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check mute is updated to previous state if short pressed 2. Check on-off is updated to previous state if long pressed  3. Check if the system maintains the previous state when the button is not pressed. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System ON MUTE OFF | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Check the initial state of the mute signals | | Mute signal non-functional, OnOff signal functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Press button for 999 ms | | System ON MUTE OFF | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Press button for 1000 ms | | System ON MUTE ON | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Press button for 1001 ms | | System ON MUTE OFF | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Press button for 1999 ms | | System ON MUTE ON | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | Press button for 2000 ms | | System OFF MUTE ON | | TBA (to be deterimened) | | | Not executed | | |  |
| 7 | Press button for 2001 ms | | System ON MUTE ON | | TBA (to be deterimened) | | | Not executed | | |  |
| 8 | end TC | | - | | - | | | - | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  | | | | | | | | |  |

1.1.2 Mute Functionality

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_DualButton\_Mute\_002 | **Test Case Description** | | Verify the dual functionality of the button based on the duration of the button press. The test involves pressing the button for a t\_short and verifying the system’s response. | | | | | |
| **Requirement/s** | | Func\_Req\_002 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | George WASSEM | **Reviewed By** | | Farida ABDELBAKY | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew MESSIHA | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | T\_SHORT | 999 | 1000 | 1001 | | |
| 3 |  | | |  |  |  |  |  |  |  |
| 4 |  | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check mute is updated to previous state if short pressed 2. Check if the system maintains the previous state when the button is not pressed. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | MUTE OFF | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Press button for 999 ms | | MUTE OFF | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Press button for 1000 ms | | MUTE ON | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Press button for 1001 ms | | MUTE OFF | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | end TC | | - | | - | | | - | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  | | | | | | | | |  |

1.1.3 OnOff Functionality

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_DualButton\_OnOff\_003 | **Test Case Description** | | Verify the dual functionality of the button based on the duration of the button press. The test involves pressing the button for a long duration and verifying the system’s response. | | | | | |
| **Requirement/s** | | Func\_Req\_001 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew MESSIHA | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | T\_LONG | 1999 | 2000 | 2001 | | |
| 3 |  | | |  |  |  |  |  |  |  |
| 4 |  | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check on-off is updated to previous state if long pressed  2. Check if the system maintains the previous state when the button is not pressed. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System ON | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Press button for 999 ms | | System ON | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | Press button for 2000 ms | | System OFF | | TBA (to be deterimened) | | | Not executed | | |  |
| 7 | Press button for 2001 ms | | System ON | | TBA (to be deterimened) | | | Not executed | | |  |
| 8 | end TC | | - | | - | | | - | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  | | | | | | | | |  |

1.1.3 Stuck Functionality

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_Button\_Stuck\_007 | **Test Case Description** | | Verify that the system correctly handles a stuck button situation | | | | | |
| **Requirement/s** | | Func\_Req\_008 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | TIME | 59999 | 60000 | 60001 | 999 | |
| 3 |  | | |  | Mute\_Signal | Functional | non\_functional | | | |
| 4 |  | | |  | Onoff\_Signal | Functional | non\_functional | | | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check if the system correctly sets the corresponding signal to non-functional when a button is stuck.  2. Check if the system maintains the current state of the corresponding signal when the button is not stuck. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System is operating | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Check the initial state of the mute and onoff\_state signals | | Mute signal non-functional, OnOff signal functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Press button for 999 ms | | Mute signal non-functional, OnOff signal functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Press button for 59999 ms | | Mute signal non-functional Signal tshort\_onoff in non-functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Press button for 60000 ms | | Mute signal non-functional Signal tshort\_onoff in non-functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | Press button for 60001 ms | | Mute signal non-functional Signal tshort\_onoff in non-functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 7 | Set the ign-on signal to on | | Ign signal is non-functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 8 | end TC | | - | | - | | | - | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  | | | | | | | | |  |

## *DTC Button*

## DTC Button Stuck

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_ButtonDTC\_Stuck\_008 | **Test Case Description** | | Verify that the system correctly handles a stuck button situation by raising the correct DTC codes | | | | | |
| **Requirement/s** | | DTC\_Req\_001,002,003 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | TIME | 5999 | 6000 | 6001 | | |
| 3 |  | | |  | Mute\_Signal | Functional | non\_functional | | | |
| 4 |  | | |  | Onoff\_Signal | Functional | non\_functional | | | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check if the system correctly sets the corresponding signal to non-functional when a button is stuck DTC B91212 is raised.  2. Check if the system maintains the current state of the corresponding signal when the button is not stuck after releasing the button for 2 secs. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System is operating | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Check the initial state of the mute and onoff\_state signals | | Mute signal non-functional, OnOff signal functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Press button for 59999 ms | | Mute signal non-functional,  OnOff signal non-functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Press button for 60000 ms | | DTC code B91212 should be raised | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Press button for 60001 ms | | DTC code B91212 should be still raised | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Release button for 1000 msec | | Mute signal non-functional Signal tshort\_onoff in non-functional  DTC code B91212 should be still raised | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | Set the ign-on signal to on | | Ign signal is non-functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 7 | Release button for 1000 msec more  (Total released for: 2000 msec) | | Mute signal non-functional,  OnOff signal non-functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 8 | end TC | | - | | - | | | - | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  | | | | | | | | |  |

# *2.0 Signal Functionality*

## 2.1.1 Signal Mute Functionality

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_Button\_SIGMute\_004 | **Test Case Description** | | Verify the functionality of the mute signal | | | | | |
| **Requirement/s** | | Func\_Req\_004 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | T\_SHORT | 999 | 1000 | 1001 | | |
| 3 |  | | |  | Mute\_Signal | Functional | non\_functional | | | |
| 4 |  | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check mute signal = functional when current state = functional 2. Check mute signal = non-functional when current state = non- functional | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System is operating | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Check the initial state of the mute signals | | Mute signal non-functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Press button for 999 ms | | Mute signal non-functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Press button for 1000 ms | | Mute signal is functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Press button for 1001 ms | | Mute signal is non-functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | end TC | | - | | - | | | - | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
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| **Attachments** | |  | | | | | | | | |  |

## 2.1.2 Signal OnOff Functionality

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_Button\_SIGOnOff\_005 | **Test Case Description** | | Verify the functionality of the onoff\_state signal | | | | | |
| **Requirement/s** | | Func\_Req\_005 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | T\_LONG | 1999 | 2000 | 2001 | | |
| 3 |  | | |  | Onoff\_Signal | Functional | non\_functional | | | |
| 4 |  | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check on-off signal = functional when state = functional 2. Check on-ff signal = non-functional when state =non- functional | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System is operating | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Check the initial state of the onoff\_state signal | | OnOff signal functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Press button for 999 ms | | OnOff signal functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | Press button for 1999 ms | | OnOff signal is functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 7 | Press button for 2000 ms | | OnOff signal is non-functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 8 | Press button for 2001 ms | | OnOff signal is functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 9 | end TC | | - | | - | | | - | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  | | | | | | | | |  |

## 2.1.3 Signal Ignition

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_Ign\_UserStateSaving\_006 | **Test Case Description** | | Verify that the system correctly saves and restores the user’s current states based on the ign-on signal | | | | | |
| **Requirement/s** | | Func\_Req\_006 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The ign-on signal is functional and responsive to user input. | | |  | **Field** | **Value** | | | | |
| 2 |  | | |  | Ign-on signal | ON | | | | |
| 3 |  | | |  | Ign-on signal | OFF | | | | |
| 4 |  | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check if the system correctly saves the user’s current states when the ign-on signal changes from on to off.  2. Check systems restore the user's previous states when ign-on signal changes from OFF to ON.  3. Check if the system maintains the user’s current states  when the ign-on signal does not change. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System is operating | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Check the initial state of the mute and onoff\_state signals | | Mute signal non-functional, OnOff signal functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Set the ign-on signal to on | | Ign signal is on | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Press button for 1000 ms | | Mute signal is functional OnOff signal is functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Set the ign-on signal to OFF | | System saves the current state (mute signal is functional) | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | Set the ign-on signal to ON again | | System restores the previous state (mute signal is functional) | | TBA (to be deterimened) | | | Not executed | | |  |
| 7 | Press button for 2000 ms | | OnOff signal is non-functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 8 | Change the ign-on signal from on to off | | System saves the current state (onoff\_state signal is non-functional) | | TBA (to be deterimened) | | | Not executed | | |  |
| 9 | Set the ign-on signal to on again | | System restores the previous state (onoff\_state signal is non-functional) | | TBA (to be deterimened) | | | Not executed | | |  |
| 10 | end TC | | - | | - | | | - | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  | | | | | | | | |  |

## 2.1.3 Input Signal Loss

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_InputSignal\_LossHandle\_009 | **Test Case Description** | | Verify that the system correctly handles the loss of input signals and raises the appropriate DTC codes | | | | | |
| **Requirement/s** | | Func\_Req\_009 DTC\_Req\_004,005 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | Mute\_Signal | Functional | non\_functional | | | |
| 3 | The vehicle’s battery is in good condition | | |  | Onoff\_Signal | Functional | non\_functional | | | |
| 4 |  | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check if INPUT = lost, then system takes initial values 2. 1. Check if INPUT != lost, then system maintains the current values | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System is operating | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Check the initial state of the mute and onoff\_state signals | | Mute signal non-functional, OnOff signal functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Press button for 1000 ms | | Mute signal functional,  OnOff signal functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Press button for 1000 ms and stop that signal to the system (info\_sys\_input) by disconnecting the battery | |  | |  | | |  | | |  |
| 5 | wait for 200 msec | | DTC code B91214 should be raised info\_sys\_input non-functional | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | keep checking the first frame in (info\_sys\_input) | | frame returned  B91214 is considered not lost | | TBA (to be deterimened) | | | Not executed | | |  |
| 7 | end TC | | - | | - | | | - | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  | | | | | | | | |  |

# **Backlight Functionality**

## *States Functionality*

## DayNight Status Functionality

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_BacklightStatus\_DayNight\_010 | **Test Case Description** | | Verify that the system correctly adjusts the backlight mechanism based on the DAY\_NIGHT\_STATUS signal | | | | | |
| **Requirement/s** | | Func\_Req\_011 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | Medium | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | DAY\_NIGHT\_STATUS | Day | Night | | | |
| 3 | The backlight mechanism is functional | | |  |  |  |  |  |  |  |
| 4 |  | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check DAY\_NIGHT\_STATUS if changed adjusts the backlight mechanism  2. Check DAY\_NIGHT\_STATUS if not changed maintains the current backlight mechanism | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System is operating | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Set the DAY\_NIGHT\_STATUS signal to Day | | DAY\_NIGHT\_STATUS = Day | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Set the DAY\_NIGHT\_STATUS signal to Night | | DAY\_NIGHT\_STATUS = Night | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | end TC | |  | | TBA (to be deterimened) | | | Not executed | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
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| **Attachments** | |  | | | | | | | | |  |

## *Backlight PWM Functionality*

## Day Functionality

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_BacklightPWM\_Day\_011 | **Test Case Description** | | Verify Backlight PWM Duty Cycle in Day Mode | | | | | |
| **Requirement/s** | | Func\_Req\_012 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | Medium | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | DAY\_NIGHT\_STATUS | Day | | | | |
| 3 | The backlight mechanism is functional | | |  |  |  |  |  |  |  |
| 4 |  | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check DAY\_NIGHT\_STATUS = Day then correctly sets the duty cycle of the backlight to Day\_DC   2. Check DAY\_NIGHT\_STATUS != Day then maintains the current duty cycle of the backlight | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System is operating | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Set the DAY\_NIGHT\_STATUS signal to Day | | DAY\_NIGHT\_STATUS = Day | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Measure the PWM duty cycle of the backlight using appropriate tool (using oscilloscope) is equal Day\_DC = 100 | | PWM = 100 | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Set the DAY\_NIGHT\_STATUS signal to Night | | DAY\_NIGHT\_STATUS = Night | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Measure the PWM duty cycle of the backlight using appropriate tool (using oscilloscope) is equal Night\_DC = 200 | | PWM = 200 | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | end TC | |  | | TBA (to be deterimened) | | | Not executed | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
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| **Attachments** | |  | | | | | | | | |  |

## Night Functionality

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_BacklightPWM\_Night\_012 | **Test Case Description** | | Verify Backlight PWM Duty Cycle in Night Mode | | | | | |
| **Requirement/s** | | Func\_Req\_013 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | Medium | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | DAY\_NIGHT\_STATUS | Night | | | | |
| 3 | The backlight mechanism is functional | | |  |  |  |  |  |  |  |
| 4 |  | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check DAY\_NIGHT\_STATUS = Night then correctly sets the duty cycle of the backlight to Night\_DC   2. Check DAY\_NIGHT\_STATUS != Night then maintains the current duty cycle of the backlight | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System is operating | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Set the DAY\_NIGHT\_STATUS signal to Night | | DAY\_NIGHT\_STATUS = Night | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Measure the PWM duty cycle of the backlight using appropriate tool (using oscilloscope) is equal Night\_DC = 200 | | PWM = 200 | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Set the DAY\_NIGHT\_STATUS signal to Day | | DAY\_NIGHT\_STATUS = Day | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Measure the PWM duty cycle of the backlight using appropriate tool (using oscilloscope) is equal Day\_DC = 100 | | PWM = 100 | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | end TC | |  | | TBA (to be deterimened) | | | Not executed | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  | | | | | | | | |  |

# **Configuration Parameter Functionality**

# 4.1 Push Configure

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_diagnosticParameters\_Push\_013 | **Test Case Description** | | Verify that the parameters of the duration of push can be configured by diagnostic services after a system restart. | | | | | |
| **Requirement/s** | | Func\_Req\_007,015 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | low | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | T\_SHORT | 1500 msec | | | | |
| 3 | The vehicle’s battery is in good condition | | |  | T\_LONG | 2500 msec | | | | |
| 4 |  | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check if the system correctly updates the parameters of the duration of push (tshort and tlong) when configured by diagnostic services using DID 0203 after a system restart.  2. Check if the system maintains the current parameters of the duration of push when not configured by diagnostic services. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System is operating | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Check the value of T\_SHORT, T\_LONG using service 22H | | T\_SHORT = 1000 msec, T\_LONG = 2000 msec | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Configure the parameters of the duration of push using diagnostic services(T\_SHORT = 1500 msec, T\_LONG = 2500 msec) | | Parameters are the same T\_SHORT = 1000 msec, T\_LONG = 2000 msec | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | Restart the system | |  | |  | | |  | | |  |
| 7 | Verify the set configuration parameters are effective after the system restart | | T\_SHORT = 1500 msec, T\_LONG = 2500 msec | | TBA (to be deterimened) | | | Not executed | | |  |
| 7 | end TC | | - | | - | | | - | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  | | | | | | | | |  |

# 4.2 DayNight Configure

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_diagnosticParameters\_DayNight\_014 | **Test Case Description** | | Verify that the parameters of the Duty Cycle in day and night can be configured by diagnostic services after a system restart. | | | | | |
| **Requirement/s** | | Func\_Req\_014,015 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | low | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | Day\_DC | 70 | | | | |
| 3 | The vehicle’s battery is in good condition | | |  | Night\_DC | 30 | | | | |
| 4 |  | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | Check if the parameters of the Duty Cycle in day and night can be configured by diagnostic services only after a system restart | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System is operating | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Check the value of Day\_Dc, T\_Night\_DC using service 22H | | Day\_DC = 100  Night\_DC = 200 | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Configure the parameters of the Duty Cycle in day and night using diagnostic services (Day\_DC = 70 , Night\_DC = 30) | | Parameters are the same (Day\_DC = 100 ,  Night\_DC = 200) | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Restart the system | |  | |  | | |  | | |  |
| 5 | Verify the set configuration parameters are effective after the system restart | | Day\_DC = 70  Night\_DC = 30 | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | end TC | | - | | - | | | - | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  | | | | | | | | |  |

# 4.3 After System Restart

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | InfoSys\_ConfigParameters\_SysRestart\_015 | **Test Case Description** | | Verify that the configuration parameters are only effective after a system restart | | | | | |
| **Requirement/s** | | Func\_Req\_015 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | The infotainment system is powered and operational. | | |  | **Field** | **Value** | | | | |
| 2 | The button is functional and responsive to user input. | | |  | Day\_DC | 70 | | | | |
| 3 | The vehicle’s battery is in good condition | | |  | Night\_DC | 30 | | | | |
| 4 | The configuration parameters have been set. | | |  | T\_SHORT | 1500 msec | | | | |
|  |  |  |  |  | T\_LONG | 2500 msec | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | 1. Check if the system correctly applies the configuration parameters only after a system restart.  2. Check if the system maintains the current configuration parameters when the system is not restarted. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Initialize the System [INIT\_SYS] | | System is operating | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Check the value of Day\_Dc, T\_Night\_DC using service 22H | | Day\_DC = 100  Night\_DC = 200 | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Check the value of T\_SHORT, T\_LONG using service 22H | | T\_SHORT = 1000 msec, T\_LONG = 2000 msec | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Configure the parameters of the Duty Cycle in day and night using diagnostic services (Day\_DC = 70 , Night\_DC = 30) | | Parameters are the same (Day\_DC = 100 ,  Night\_DC = 200) | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Configure the parameters of the duration of push using diagnostic services(T\_SHORT = 1500 msec, T\_LONG = 2500 msec) | | Parameters are the same T\_SHORT = 1000 msec, T\_LONG = 2000 msec | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | Restart the system | |  | |  | | |  | | |  |
| 7 | Verify the set configuration parameters are effective after the system restart | | Day\_DC = 70  Night\_DC = 30 T\_SHORT = 1000 msec, T\_LONG = 2000 msec | | TBA (to be deterimened) | | | Not executed | | |  |
| 8 | end TC | | - | | TBA (to be deterimened) | | | Not executed | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  | | | | | | | | |  |

# **Diagnostics**

## *DID 0203 Functionality*

## RDBI service (22H)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | infoSys\_DID0203\_RDBI\_016 | **Test Case Description** | | Verify that the Read Data By Identifier (RDBI) service for DID 0203 is accessible in all diagnostic sessions and handles both successful and unsuccessful reads. | | | | | |
| **Requirement/s** | | Diag\_Req\_001,004 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | Diagnostic system is up and running. | | |  | **Field** | **Value** | | | | |
| 2 | Connection to the diagnostic system is established | | |  | RDBI service | 22H | | | | |
| 3 |  | | |  | DID | 0203 | | | | |
| 4 |  | | |  | Sessions | (01) Default,(02) Programmer ,(03) Extended | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | The test involves sending a service request with 22h (RDBI service) and setting the DID to 0203 in all diagnostic sessions, and checking both successful and unsuccessful read responses. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Connect to the diagnostic system. | | Successful connection to the system. | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Start a diagnostic session (default session) | | Diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Send a service request with 22h (RDBI service) and set the DID to 0203 (valid DID) | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Verify that the system responds with the correct data for DID 0203 for a successful read | | System responds with the correct data (622C2C(data)) for DID 0203 for a successful read. | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Send a service request with 22h (RDBI service) and set the DID to 0203H (an invalid DID) | | Service request is successfully sent. | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | Verify that the system responds with the correct error code for an unsuccessful read | | System responds with the correct error code (7F22 nrc=22) for an unsuccessful read. | | TBA (to be deterimened) | | | Not executed | | |  |
| 7 | Repeat steps 2-6 for all other Programmer and Extended Seassions. | | System responds correctly for both successful and unsuccessful reads for DID 0203 in all diagnostic sessions | | TBA (to be deterimened) | | | Not executed | | |  |
| 8 | End Tc | | - | | TBA (to be deterimened) | | | Not executed | | |  |

## 5.1.2 WDBI service (2E H)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | infoSys\_DID0203\_WDBI\_018 | **Test Case Description** | | Verify that the write Data By Identifier (WDBI) service for DID 0203 is accessible in exendted diagnostic sessions only | | | | | |
| **Requirement/s** | | Diag\_Req\_002,005 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | Diagnostic system is up and running. | | |  | **Field** | **Value** | | | | |
| 2 | Connection to the diagnostic system is established | | |  | WDBI service | 2EH | | | | |
| 3 |  | | |  | DID | 0203 | | | | |
| 4 |  | | |  | Sessions | (01) Default,(02) Programmer ,(03) Extended | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | The test involves sending a service request with 2Eh (WDBI service and checking if its accessible on extended session only and not accessiable in default and progammer sessions. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Connect to the diagnostic system. | | Successful connection to the system. | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Start a diagnostic session (default session) | | Diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Send a service request with 2Eh (WDBI service) and set the DID to 0203 | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Verify that the system responds with error access session | | System responds with the 0x7F: Service not supported in active session | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Start a diagnostic session (extended session) | | Diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | Send a service request with 2Eh (WDBI service) and set the DID to 0203 | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 7 | Verify that the system responds with sucessful access session | | System responds with the correct data for a successful write(2E2C2C(data) to write) ->(6E2C2C) | | TBA (to be deterimened) | | | Not executed | | |  |
| 8 | Start a diagnostic session (Programmer session) | | Diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 9 | Send a service request with 2Eh (WDBI service) and set the DID to 0203 | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 10 | Verify that the system responds with sucessful access session | | System responds with the 0x7F: Service not supported in active session | | TBA (to be deterimened) | | | Not executed | | |  |
| 11 | End Tc | | - | | TBA (to be deterimened) | | | Not executed | | |  |

## 5.1.3 WDBI service (2E H) (Security Access)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | infoSys\_DID0203\_WDBI\_018 | **Test Case Description** | | Verify that the write Data By Identifier (WDBI) service for DID 0203 is accessible in exendted diagnostic sessions only | | | | | |
| **Requirement/s** | | Diag\_Req\_002,005 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | Diagnostic system is up and running. | | |  | **Field** | **Value** | | | | |
| 2 | Connection to the diagnostic system is established | | |  | WDBI service | 2EH | | | | |
| 3 |  | | |  | DID | 0203 | | | | |
| 4 |  | | |  | Sessions | (01) Default,(02) Programmer ,(03) Extended | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | The test involves sending a service request with 2Eh (WDBI service and checking if its accessible on extended session only and not accessiable in default and progammer sessions. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Connect to the diagnostic system. | | Successful connection to the system. | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Start a diagnostic session (default session) | | Diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Send a service request with 2Eh (WDBI service) and set the DID to 0203 | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Verify that the system responds with error access session | | System responds with the 0x7F: Service not supported in active session | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Start a diagnostic session (extended session) | | Diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | Send a service request with 2Eh (WDBI service) and set the DID to 0203 | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 7 | Verify that the system responds with sucessful access session | | System responds with the correct data for a successful write(2E2C2C(data) to write) ->(6E2C2C) | | TBA (to be deterimened) | | | Not executed | | |  |
| 8 | Start a diagnostic session (Programmer session) | | Diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 9 | Send a service request with 2Eh (WDBI service) and set the DID to 0203 | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 10 | Verify that the system responds with sucessful access session | | System responds with the 0x7F: Service not supported in active session | | TBA (to be deterimened) | | | Not executed | | |  |
| 11 | End Tc | | - | | TBA (to be deterimened) | | | Not executed | | |  |

## 5.1.3 WDBI service (2E H) (Incorrect Format)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | infoSys\_DID0203\_IncorrectFormat\_019 | **Test Case Description** | | Verify that the Write Data By Identifier (WDBI) service for a specific DID cannot be accessed with an incorrect format in DID0203. | | | | | |
| **Requirement/s** | | Diag\_Req\_007 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | Diagnostic system is up and running. | | |  | **Field** | **Value** | | | | |
| 2 | Connection to the diagnostic system is established | | |  | WDBI service | 2Eh | | | | |
| 3 | Extended diagnostic session is started | | |  | DID | 0203 | | | | |
| 4 | Correct security access is granted. | | |  | Sessions | (03) Extended | | | | |
|  |  |  |  |  | Data | incorrect Data | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | The test involves sending a service request with 2Eh (WDBI service) and setting the data to an incorrect format in the extended diagnostic session. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Connect to the diagnostic system. | | Successful connection to the system. | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Start an extended diagnostic session and provide the correct security access. | | Extended diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Send a service request with 2Eh (WDBI service) and set the DID to 0203 and data to be incorrect | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Verify that the system responds with an incorrect format error | | System respond with a “requestOutOfRange” error code (NRC 0x31) | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | End Tc | | - | | TBA (to be deterimened) | | | Not executed | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

## 5.1.4 WDBI service (2E H) (Setting T\_Short and T\_Long)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | infoSys\_DID0203\_SetTSHORTLONG\_022 | **Test Case Description** | | Verify that DID 0203 can configure the tshort and tlong Duration of the system | | | | | |
| **Requirement/s** | | Diag\_Req\_008 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | Diagnostic system is up and running. | | |  | **Field** | **Value** | | | | |
| 2 | Connection to the diagnostic system is established | | |  | WDBI service | 2E H | | | | |
| 3 |  | | |  | T\_SHORT | 1500 msec | | | | |
| 4 |  | | |  | T\_LONG | 2500 msec | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | The test will involve setting tshort to 1500 msec and tlong to 2500 msec and verifying that the system’s tshort and tlong duration are configured as per the input parameters | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Connect to the diagnostic system. | | Successful connection to the system. | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Start an extended diagnostic session and provide the correct security access. | | Extended diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Send a Read Data By Identifier (RDBI) service request to the system with the DID set to 0203 to get the current values of `tshort` and `tlong` | | The system responds with the current values of `tshort` and `tlong` | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Send a Write Data By Identifier (WDBI) service request to the system with the DID set to 0203, and provide new values for `tshort` and `tlong` (e.g., `tshort` = 1500 msec, `tlong` = 2500 msec). | | The system acknowledges the write request | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Send another RDBI service request to the system with the DID set to 0203 to get the updated values of `tshort` and `tlong` | | The updated values of `tshort` and `tlong` match the new values provided in Step 4 | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | End Tc | | - | | TBA (to be deterimened) | | | Not executed | | |  |
| **Attachments** | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

## 5.1.4 WDBI service (2E H) (Setting Day\_Dc and Night\_DC)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | infoSys\_DID0203\_SetTDAYNIGHTDC\_023 | **Test Case Description** | | Verify that DID 0204 can configure the Day\_DC and Night\_DC | | | | | |
| **Requirement/s** | | Diag\_Req\_014 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | Diagnostic system is up and running. | | |  | **Field** | **Value** | | | | |
| 2 | Connection to the diagnostic system is established | | |  | WDBI service | 2E H | | | | |
| 3 |  | | |  | Day\_DC | 75 | | | | |
| 4 |  | | |  | Night\_DC | 50 | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | The test will involve setting Day\_Dc, Night\_DC to desired value 75 and 50 and verifying that the system’s are configured as per the input parameters | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Connect to the diagnostic system. | | Successful connection to the system. | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Start an extended diagnostic session and provide the correct security access. | | Extended diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Send a Read Data By Identifier (RDBI) service request to the system with the DID set to 0204 to get the current values of `Day\_DC` and `Night\_DC` | | The system responds with the current values of `Day\_DC` and `Night\_DC` | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Send a Write Data By Identifier (WDBI) service request to the system with the DID set to 0204, and provide new values for `Day\_DC` and `Night\_DC` (e.g., `Day\_DC` = 75%, `Night\_DC` = 50%) | | The system acknowledges the write request | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | end another RDBI service request to the system with the DID set to 0204 to get the updated values of `Day\_DC` and `Night\_DC`. | | The updated values of `Day\_DC` and `Night\_DC` match the new values provided in Step 4 | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | End Tc | | - | | TBA (to be deterimened) | | | Not executed | | |  |
| **Attachments** | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

## *DID 0204 Functionality*

## RDBI service (22H)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | infoSys\_DID0204\_RDBI\_017 | **Test Case Description** | | Verify that the Read Data By Identifier (RDBI) service for DID 0204 is accessible in all diagnostic sessions and handles both successful and unsuccessful reads. | | | | | |
| **Requirement/s** | | Diag\_Req\_001,010 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | Diagnostic system is up and running. | | |  | **Field** | **Value** | | | | |
| 2 | Connection to the diagnostic system is established | | |  | RDBI service | 22H | | | | |
| 3 |  | | |  | DID | 0204 | | | | |
| 4 |  | | |  | Sessions | (01) Default,(02) Programmer ,(03) Extended | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | The test involves sending a service request with 22h (RDBI service) and setting the DID to 0204 in all diagnostic sessions, and checking both successful and unsuccessful read responses. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Connect to the diagnostic system. | | Successful connection to the system. | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Start a diagnostic session (default session) | | Diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Send a service request with 22h (RDBI service) and set the DID to 0204 (valid DID) | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Verify that the system responds with the correct data for DID 0204 for a successful read | | System responds with the correct data (622C2C(data)) for DID 0204 for a successful read. | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Send a service request with 22h (RDBI service) and set the DID to 0204H (an invalid DID) | | Service request is successfully sent. | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | Verify that the system responds with the correct error code for an unsuccessful read | | System responds with the correct error code (7F22 nrc=22) for an unsuccessful read. | | TBA (to be deterimened) | | | Not executed | | |  |
| 7 | Repeat steps 2-6 for all other Programmer and Extended Seassions. | | System responds correctly for both successful and unsuccessful reads for DID 0203 in all diagnostic sessions | | TBA (to be deterimened) | | | Not executed | | |  |
| 8 | End Tc | | - | | TBA (to be deterimened) | | | Not executed | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

## WDBI service (2EH)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | infoSys\_DID0204\_WDBI\_019 | **Test Case Description** | | Verify that the write Data By Identifier (WDBI) service for DID 0204 is accessible in exendted diagnostic sessions only | | | | | |
| **Requirement/s** | | Diag\_Req\_002,011 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  | | |  |  | | | | | |
| 1 | Diagnostic system is up and running. | | |  | **Field** | **Value** | | | | |
| 2 | Connection to the diagnostic system is established | | |  | WDBI service | 2EH | | | | |
| 3 |  | | |  | DID | 0204 | | | | |
| 4 |  | | |  | Sessions | (01) Default,(02) Programmer ,(03) Extended | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | The test involves sending a service request with 2Eh (WDBI service and checking if its accessible on extended session only and not accessiable in default and progammer sessions. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Connect to the diagnostic system. | | Successful connection to the system. | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Start a diagnostic session (default session) | | Diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Send a service request with 2Eh (WDBI service) and set the DID to 0204 | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Verify that the system responds with error access session | | System responds with the 0x7F: Service not supported in active session | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Start a diagnostic session (extended session) | | Diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | Send a service request with 2Eh (WDBI service) and set the DID to 0204 | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 7 | Verify that the system responds with sucessful access session | | System responds with the correct data for a successful write(2E2C2C(data) to write) ->(6E2C2C) | | TBA (to be deterimened) | | | Not executed | | |  |
| 8 | Start a diagnostic session (Programmer session) | | Diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 9 | Send a service request with 2Eh (WDBI service) and set the DID to 0204 | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 10 | Verify that the system responds with sucessful access session | | System responds with the 0x7F: Service not supported in active session | | TBA (to be deterimened) | | | Not executed | | |  |
| 11 | End Tc | | - | | TBA (to be deterimened) | | | Not executed | | |  |

## WDBI service (22H) (Security Access)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | infoSys\_DID0204\_WDBISercuity\_018 | **Test Case Description** | | Verify that the Write Data By Identifier (WDBI) service for DID 0204 is accessible in the extended diagnostic session with the correct security access | | | | | |
| **Requirement/s** | | Diag\_Req\_012 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | Diagnostic system is up and running. | | |  | **Field** | **Value** | | | | |
| 2 | Connection to the diagnostic system is established | | |  | WDBI service | 2Eh | | | | |
| 3 |  | | |  | DID | 0204 | | | | |
| 4 |  | | |  | Sessions | (03) Extended | | | | |
|  |  |  |  |  | Security code | given | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | he test involves sending a service request with 2Eh (WDBI service) and setting the DID to 0204 in the extended diagnostic session | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Connect to the diagnostic system. | | Successful connection to the system. | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Start a diagnostic session (extended session) | | Diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Send a service request with 2Eh (WDBI service) with the correct security code and set the DID to 0204 | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Verify that the system allows write access | | System responds with the correct data for a successful write(2E2C2C(data) to write) ->(6E2C2C) | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Send a service request with 2Eh (WDBI service) and set the DID to 0204 without security access | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | Verify that the system responds with a write denied error code for DIDs 0204 | | System responds with a write denied error code for DIDs 0204 code (0x33) | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | End Tc | | - | | TBA (to be deterimened) | | | Not executed | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

## WDBI service (22H) (Incorrect Format)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | infoSys\_DID0204\_IncorrectFormat\_020 | **Test Case Description** | | Verify that the Write Data By Identifier (WDBI) service for a specific DID cannot be accessed with an incorrect format in DID0204 | | | | | |
| **Requirement/s** | | Diag\_Req\_013 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | Diagnostic system is up and running. | | |  | **Field** | **Value** | | | | |
| 2 | Connection to the diagnostic system is established | | |  | WDBI service | 2Eh | | | | |
| 3 | Extended diagnostic session is started | | |  | DID | 0204 | | | | |
| 4 | Correct security access is granted. | | |  | Sessions | (03) Extended | | | | |
|  |  |  |  |  | Data | incorrect Data | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | The test involves sending a service request with 2Eh (WDBI service) and setting the data to an incorrect format in the extended diagnostic session. | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Connect to the diagnostic system. | | Successful connection to the system. | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Start an extended diagnostic session and provide the correct security access. | | Extended diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Send a service request with 2Eh (WDBI service) and set the DID to 0204 and data to be incorrect | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Verify that the system responds with an incorrect format error | | System respond with a “requestOutOfRange” error code (NRC 0x31) | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | End Tc | | - | | TBA (to be deterimened) | | | Not executed | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

## Diagnostic Service

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | infoSys\_Diagnostics\_WrongService\_021 | **Test Case Description** | | Verify that the system responds with the correct error code when an attempt is made to access a service that does not exist or is not implemented | | | | | |
| **Requirement/s** | | Diag\_Req\_001,002 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | Diagnostic system is up and running. | | |  | **Field** | **Value** | | | | |
| 2 | Connection to the diagnostic system is established | | |  | WDBI service | Empty or unimplemnted | | | | |
| 3 | Extended diagnostic session is started | | |  | DID | 0203, 0205 | | | | |
| 4 |  | | |  | Sessions | (03) Extended | | | | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | The test involves sending a service request with a non-existent or unimplemented service code in the extended diagnostic session | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Connect to the diagnostic system. | | Successful connection to the system. | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Start an extended diagnostic session and provide the correct security access. | | Extended diagnostic session is successfully started | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Send a service request with a non-existent or unimplemented service code. | | Service request is successfully sent | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Verify that the system responds with a service not supported error code 0x10 | | System responds with a service not supported error code 0x10 | | TBA (to be deterimened) | | | Not executed | | |  |
| 5 | End Tc | | - | | TBA (to be deterimened) | | | Not executed | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Attachments** | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

## IOCBIO205

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Test Case ID** | | infoSys\_IOCBI0205\_BacklightControl\_024 | **Test Case Description** | | This test case verifies that IOCBI DID 0205 can control the Duty Cycle of the Backlight of the system | | | | | |
| **Requirement/s** | | Diag\_Req\_016,17,18 | **Reference** | | [AD1], [DESGIN\_INFOSYS], [CONFIG\_INFOSYS] | | **Version** | | 1.0 | |
| **Created By** | | Andrew MESSIHA | **Reviewed By** | | Mahmoud ABDELHAMID | | **ASIL** | | QM | |
|  |  |  |  |  |  |  | **Status** | | Not executed | |
| **Tester's Name** | | Andrew | **Date Tested** | | December 5, 2023 | | **Priority** | | HIGH | |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **S #** | **Prerequisites:** | | |  | **Test Data** | | | | | |
| 1 | Diagnostic system is up and running. | | |  | **Field** | **Value** | | | | |
| 2 | Connection to the diagnostic system is established | | |  | WDBI service | 2E H | | | | |
| 3 |  | | |  | Duty Cycle | 75% | | | | |
| 4 |  | | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Test Scenario** | Verify that IOCBI DID 0205 can control the Duty Cycle of the Backlight of the system. The test will involve setting the Duty Cycle of the Backlight to 75% and verifying that the Duty Cycle of the Backlight of the system is controlled as per the input parameters | | | | | |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **Step #** | **Step Details** | | **Expected Results** | | **Actual Results** | | | **Pass / Fail / Not executed / Suspended** | | |
|  |
| 1 | Connect to the diagnostic system. | | Successful connection to the system. | | TBA (to be deterimened) | | | Not executed | | |  |
| 2 | Send an Input Output Control By Identifier (IOCBI) service request to the system with the DID set to 0205 to get the current Duty Cycle of the Backlight | | The system responds with the current Duty Cycle of the Backlight | | TBA (to be deterimened) | | | Not executed | | |  |
| 3 | Send an IOCBI service request to the system with the DID set to 0205, and provide a new value for the Duty Cycle of the Backlight (e.g., 75%). | | The system acknowledges the control request. | | TBA (to be deterimened) | | | Not executed | | |  |
| 4 | Send another IOCBI service request to the system with the DID set to 0205 to get the updated Duty Cycle of the Backlight | | The updated Duty Cycle of the Backlight matches the new value provided in Step 4. | | TBA (to be deterimened) | | | Not executed | | |  |
| 6 | End Tc | | - | | TBA (to be deterimened) | | | Not executed | | |  |
| **Attachments** | |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |