



Navigation Performance Test

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. The purpose of this document is to identify system level test procedures that are to be performed to verify the Infotainment System requirements related to Navigation. These requirements are contained in GIS-620. The test procedures to verify these requirements are contained in the CG documents referenced in Table 1.

1.2 Applicability. This document applies to all vehicle programs on the Global A and Global B vehicle architecture that get Infotainment's 3.x Infotainment architecture.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

None

2.3 Additional References.

- CG5289 Info 3.x GIS620 Navigation_ODD
- CG5290 Info 3.x GIS620 Navigation_Routing_Performance
- CG5291 Info 3.x GIS620 Navigation_Traffic
- CG5292 Info 3.x GIS620 Navigation_POI_Search
- CG5293 Info 3.x GIS620 Navigation_Non_Connected
- CG5294 Info 3.x GIS620 Navigation_Map_Appearance
- CG5295 Info 3.x GIS620 Navigation_Self_Learning
- Global Infotainment Standard (GIS): GIS-620

3 Resources

3.1 Facilities.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

All modules in the vehicle shall be updated to the latest Vehicle Software Configuration Management (VeSCoM) level that meets Development Vehicle Usage Level *(DVUL 2) as defined by the Controls Manager for the vehicle program under test. The Infotainment module shall further be updated to latest official software release intended for GM Validation.

The Center Stack Module (CSM) shall be calibrated for the region and vehicle content under test with calibration files received from GM Design group.

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For regions with back office connectivity, the Telematics Computing Platform (TCP) also known as OnStar® module, must be properly registered in the correct testing environment as specified by the Global Execution Lead (GEL). Specific details of registration are found in the test procedures referenced in 2.3 and Table 1.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.2 Equipment.

Video recording equipment and data logging equipment as defined in the test procedures referenced in 2.3 and Table 1. (Test equipment may vary from region to region; but, shall be equivalent to that defined in the test procedures referenced in 2.3 and Table 1). (Equivalent equipment shall capture the same video and data).

- Laptop computer, one (1) per vehicle. In order to review and document the driven route all way data shall be traced by a notebook with an appropriate map data program connected to a Global Positioning System (GPS) receiver
- Serial data tool (Mobile Operations Center for Communication and Analysis (MOCCA) (Media Oriented System Transport (MOST) tool), test and development software tool (CANoe), vehicle network tool (NeoVI), Serial Interface Adapter (VSI), etc.)
- Three (3) video cameras and recording equipment
- Camera mounting hardware
- Power supplies for cameras and laptop
- Extension cables
- Jump style battery charger
- Multimedia (iPod, compact disc (CD), music player (Digital Audio File (MP3)) or universal serial bus (USB) stick with audio/picture files)

3.3 Test Vehicle/Test Piece. Infotainment system to be tested.

3.4 Test Time.

Calendar time: 20 d

Test time: 160 h

Coordination time: Not applicable

Note: It is expected that there will be development and validation phases of executing this procedure.

In general, a test time of ten (10) days to cover the listed test cases is sufficient for a best case test scenario. Repeated tests for Electrical Software Issue Management System (ESIMS) verification or follow up checks also including error reporting and overall ESIMS handling depending on severity of discovered issues, will increase the time required for testing and should be considered when reserving vehicle time.

3.5 Test Required Information.

The following basic information shall be recorded for each of the test vehicles into the test procedures data sheet(s) referenced in 2.3 prior to testing.

- Vehicle make and model
- Vehicle Identification Number (VIN)
- Other key vehicle reference information
- Navigation System part number, software and Calibration File (CalFile) part numbers
- Map database supplier name, version number and compile version
- Applicable telematics system and software (SW) versions (OnStar®, XM, etc.)

3.6 Personnel/Skills.

In vehicle navigation testing requires two test engineers. One person shall drive and follow the Navigation prompts. One person shall aid in following the test procedure steps, observing system behavior, and data capture.

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