



Technical Memorandum

SunGuide® Software System



SunGuide Software Release 6.1 Patch 1 Independent Verification and Validation Test Plan

Version 1.0

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Prepared for:

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Table of Contents

1	Background.....	3
1.1	Document Identification.....	3
1.2	Project Overview.....	3
1.3	References.....	3
1.4	Contacts.....	4
2	Test Plan.....	4
2.1	SunGuide Software Release 6.1 Patch 1 General Information.....	4
2.2	IV&V Plan Summary.....	6
2.3	Schedule.....	6
2.4	IV&V Environment.....	7
2.5	Staffing.....	8

List of Tables

Table 2-1:	Footprint Issues Included in Release 6.1 Patch 1.....	5
Table 2-2:	Schedule of Activities.....	6
Table 2-2:	Test Site Resources.....	7
Table 2-3:	IV&V Testing Team at TERL.....	8

List of Figures

Figure 2-1:	Diagram of the TERL Systems Environment.....	7
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List of Acronyms and Abbreviations

511.....	Florida Advanced Travel Information System
CCTV.....	Closed-Circuit Television
DMS.....	Dynamic Message Sign
FDOT.....	Florida Department of Transportation
FTE.....	Florida's Turnpike Enterprise
ID.....	Identification
IDS.....	Incident Detection Subsystem
IP.....	Internet Protocol
ITS.....	Intelligent Transportation Systems
IV&V.....	Independent Verification and Validation
LCD.....	Liquid Crystal Display
MAS.....	Message Arbitration Subsystem
RTMC.....	Regional Transportation Management Center
RWIS.....	Road Weather Information Subsystem
SQL.....	Structured Query Language
TERL.....	Traffic Engineering Research Laboratory
TMC.....	Traffic Management Center
TSS.....	Traffic Sensor Subsystem
VLC.....	Video LAN Client
VOD.....	Video On Desktop
WWD.....	Wrong-Way Driving

1 Background

This document provides an overview of the independent verification and validation (IV&V) test plan for SunGuide® Software Release 6.1 Patch 1.

1.1 Document Identification

This document presents a detailed plan for setting up and conducting an IV&V test that will determine if SunGuide software Release 6.1 Patch 1 correctly resolves the Footprint issues identified to be resolved in this release. The first sections of this document describe the software and resource management needed in order to conduct the test. The last sections of this document specify the Footprint issues to be verified by this IV&V test.

1.2 Project Overview

The SunGuide Software is a system developed by FDOT Central Office and deployed in FDOT's regional traffic management centers (RTMC) to support traffic operations of Florida's roadways. More information about the SunGuide software can be obtained at the project website at <http://sunguidesoftware.com>.

SunGuide® Software Release 6.1 patch 1 is a minor release, containing modifications to address the Footprint issues in Table 2-1. The Release 6.1 Patch 1 IV&V is an effort to verify the quality of the software version to be released.

1.3 References

The following document and information sources form a part of this document to the extent specified herein. In the event of a conflict between the documents referenced herein and the contents of this document, this document shall be considered the superseding document.

- *SunGuide® Software Support, Maintenance, and Development Scope of Services*
<http://sunguidesoftware.com/sunguidesoftware/documentlibrary/ReadingRoom/Contract%20Documents/BDQ69%20Scope%20of%20Services.pdf>
- <http://fdotweb.datasys.swri.edu/footprints>
- [SunGuide Software Release 6.1 Patch 1 Version Description Document](#)

These documents are available from the document library on the SunGuide software project web site at <http://sunguidesoftware.com>.

Alternatively, they can be obtained by request to:

Florida Department of Transportation
Traffic Engineering and Operations Office
605 Suwannee Street, M.S. 90
Tallahassee, Florida 32399-0450
(850) 410-5600

1.4 Contacts

The following is a list of contacts for the SunGuide software project:

- Derek Vollmer, FDOT SunGuide Project Manager,
derek.vollmer@dot.state.fl.us, 850-410-5615
- Clay Packard, Atkins Project Manager,
clay.packard@dot.state.fl.us, 850-410-5623

2 Test Plan

This section provides details of what will be tested and how resources will be allocated to setup and conduct the IV&V testing.

2.1 SunGuide Software Release 6.1 Patch 1 General Information

FDOT modified the SunGuide software to address 27 reported software issues in Table 2-1.

Table 2-1: Footprint Issues Included in Release 6.1 Patch 1

Issue Number	Title
2811	Email is replicating in chronology
3001	Primary/Secondary events are being "Unassociated" within the chronology
3011	Error Message from MAS for Express Lanes Sign
3015	Log File Messages with IDs and No Names
3100	Request for new report - WWD Detector Uptime
3122	Events getting stuck on 511 and need to be manually removed.
3141	Road Ranger Change Vehicle State Dialog
3160	Transparent TSS Links on Map and No Detector Icon After IP Change
3162	Camera blocking no longer works
3163	Erroneous Latitude/Longitude Values for TSS Detector Location in Admin Editor
3165	Volume missing in ramp meter detectors
3168	IDS deployment issues with WWD
3170	Camera Config Changes Do Not Save When Operator Map is Open
3181	Chronology Description is Blank
3184	Unable to disable Citilog camera detection
3185	CCTV subsystem polling and reporting
3188	Event List Report Shows Events as having Blockage after Blockage Removed via Auditing
3189	FTE Travel Time report investigation
3197	DMS Posted items appear in chronology for wrong event
3204	511 Travel Time Route Names use TMC Codes instead of Display Name
3215	RWIS dialog appearing incorrectly
3216	Update VLC library deployment for Operator Map
3217	Add quick search box to VOD CCTV Listing
3222	Mile Marker shields not appearing on map
3226	6.1 Documentation Issues
3246	Toolset Resource Importer crashes when saving new spreadsheet
3252	Extra column in IDS_WRONG_WAY_DEVICE table

2.2 IV&V Plan Summary

The IV&V testing will be conducted on a candidate version for SunGuide software Release 6.1 Patch 1. The IV&V testing events will be conducted at the Traffic Engineering Research Laboratory (TERL) in Tallahassee. The testing will consist of the following steps for each of the Footprint issues included in this release.

1. Develop steps to reproduce the issues, to verify the enhancement was made correctly, or identifying the issue will be deferred to the District for verification with justification.
 - a. For issues with steps to reproduce, the issue will be recreated on a previous version in order to validate the steps to reproduce.
2. Issues not deferred to Districts will be tested on the version under test for both an SQL Server and an Oracle based system.
 - a. Issues found with the 6.1 Patch 1 system will be reported to the software contractor as they are discovered so they can be addressed in parallel to the testing of the remaining issues.
3. A test report will be developed to document the findings of the 6.1 Patch 1 IV&V.
4. If needed, additional candidate releases with additional fixes will be tested until a version with sufficient quality is ready to be released.

2.3 Schedule

The Release 6.1 Patch 1 IV&V will consist of the following schedule of activities in Table 2.1.

Table 2-2: Schedule of Activities

Date (2015)	Activity
7/30	6.1 Patch 1 Candidate Release provided to FDOT
7/29 – 8/3	Environment Preparations
8/3 – 8/5	Testing
8/7	Issues List
8/10 – 8/14	Corrections and Retesting
8/14	Release for statewide usage
8/17	Deployment to City of Tallahassee TMC

2.4 IV&V Environment

Figure 2.1 illustrates the TERL systems environment used for testing.

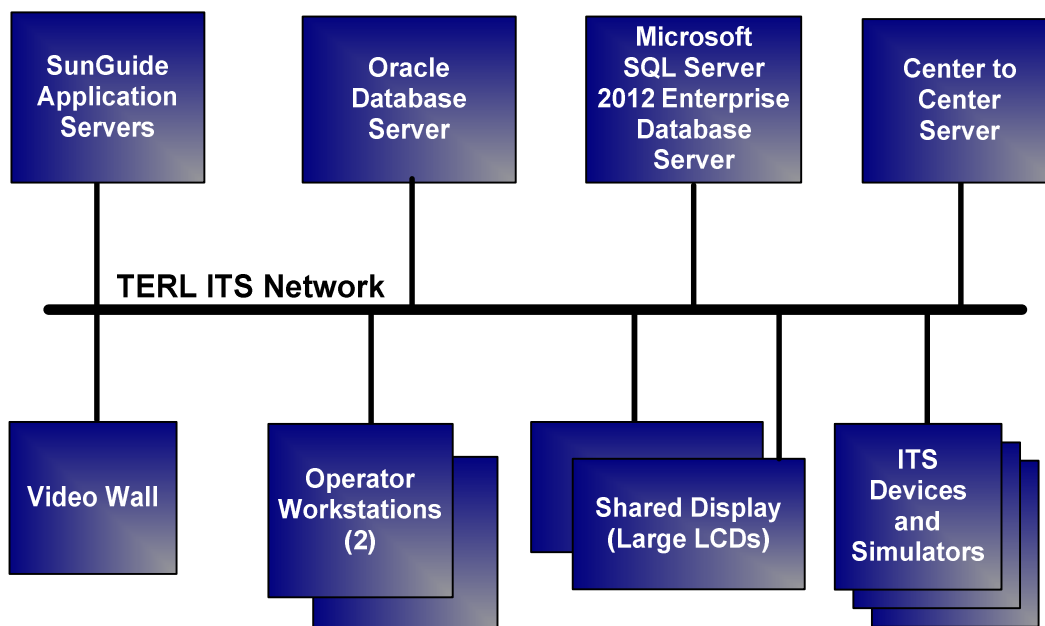


Figure 2-1: Diagram of the TERL Systems Environment

The TERL systems environment will include multiple SunGuide software systems supporting the testing. The TERL has a primary system configuration that is well-suited to integrate devices under evaluation and test, as well as testing general software functionality. This configuration will be used for the majority of the testing of various software features. There will need to be three SunGuide software systems deployed, one for each database vendor and another for the previous version.

Table 2.2 lists each resource required to conduct the testing.

Table 2-2: Test Site Resources

Resource (quantity, if more than one)
SunGuide software 6.1 test system for issue reproduction
SunGuide software 6.1 Patch 1 Candidate Release
SunGuide software application test server for SQL Server and Oracle test systems
TMC Operator workstation
Various network and systems management tools
Various ITS device simulators

2.5 Staffing

Table 2.3 lists the participants and their roles in the IV&V testing event.

Table 2-3: IV&V Testing Team at TERL

	Test Procedures	Environment Preparations	Execution
Derek Vollmer, FDOT			Approver
Clay Packard, Atkins	Conductor	Support	Conductor
Brian Ritchson, MCG	Conductor		Conductor
Philip Blaiklock, Atkins	Conductor		Conductor
Vernell Johnson, Atkins		Conductor	