LOS ANGELES COUNTYWIDE

INFORMATION EXCHANGE NETWORK

SITE INTEGRATION

SITE SERVER TEST PROCEDURES

Release 2 - Final

Prepared for:
Los Angeles County
Department of Public Works

Prepared by:

TRANSCORE

626 Wilshire Blvd.
Suite 818
Los Angeles, California 90017

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REVISION HISTORY

VERSION	DATE	IEN RELEASE	DESCRIPTION
Release 1	10/20/06	1.08	Release 1 Version (Incorporates LA County comments from “Draft” and IEN Site Integration Test conducted in the City of West Hollywood)
Release 2		2.02	IEN Multiple Corridor Server updates

1. INTRODUCTION

1.1 PURPOSE

This document presents the LA County Information Exchange Network (IEN) Site Integration Site Server Test Procedures. The purpose of this test is to verify the functionality of an IEN Site Server as installed at a participating agency.

1.2 SCOPE

The test procedures contained within this document verify the configuration and operation of IEN Site Server components.

These components include, but are not limited to, the following:

- IEN Site Server integration with other IEN components
- Synchronization of shared ATMS Explorer Diagrams

These procedures are intended to certify that a new IEN Site Server has been installed and configured correctly. They are not intended to test the full functionality of the IEN Site Server software.

1.3 AUDIENCE

This document is intended for City/Agency personnel who are installing an IEN Site Server at their location.

1.4 REFERENCES

This document references the following materials:

- *IEN System Technical Reference Manual*

1.5 DOCUMENT CONVENTIONS

The following conventions are used within this document:

CONVENTION	EXAMPLE
A mono-spaced font is used to indicate prompts and commands typed in at a computer. The bold text is text that must be typed in.	C:> **NSLOOKUP**
Text enclosed in “greater-than” and “less-than” characters indicates keystrokes.	<TAB>
Text enclosed in brackets indicates a user-supplied value. Do not enter the brackets.	C:> **PING** [IP Address]
A plus sign indicates that two keys are to be pressed simultaneously; the first key is held down while the second key is pressed.	<SHIFT>+<F1>
A capitalized word represents a command button or menu option.	SHOW DIAGRAM
Italic typeface indicates document titles or emphasis.	*Scope of Work*

2. APPROACH

The following approach will be used for the test cases within this document.

2.1 TEST STEP FORMAT

The IEN Site Integration Site Server Test Procedures is comprised of a series of test cases. Each test case contains multiple steps, where each step exercises a discrete aspect of the system. The test steps in this document contain the following fields:

Table 2-1: Test Step Fields

FIELD	DESCRIPTION
Step	Identifier for the test step within the test case.
Description	A description of the function or component that is being tested.
Precondition	Any preconditions that must be met before the test can be performed.
Input	One or more actions to be performed by the Test Conductor as part of the test.
Expected Output	One or more operations or events that the system must return as a result of the input for the test to pass.
Notes/Comments	An open field in which the Test Conductor and/or witnesses can log comments or information related to the test step.
Pass/Fail	The result of the test (to be entered during testing).

2.2 ROLES AND RESPONSIBILITIES

The following roles are used in the Site Server Test Procedures:

- **Test Conductor**: The Test Conductor is responsible for performing the test procedures and logging the results. The Test Conductor should be familiar with IEN Workstation, Site Server, and TCS CDI components. The Test Conductor should also be familiar with the Windows Server 2003 Operating System, including how to view and change values in the Registry.
- **Test Witness**: Test Witnesses are responsible for observing the performance of the test and certifying the documented results. Test Witnesses can record additional notes and comments for the Test Report.

The Test Conductor and Test Witnesses are members of the stakeholder agencies and/or their representatives. At least one representative must be present from the LA County Department of Public Works.

2.3 TEST PERFORMANCE

The Site Server Test Procedures test cases and steps are described in Section 4 of this document. The test cases have been developed such that each test case may be run independently.

Prior to the start of the test, the Test Conductor will ensure that all test environment specifications are met and that the Test Environment Configuration Table (see Section 3).

The Test Conductor will manipulate the test environment to satisfy all preconditions for a particular step. The Test Conductor is to perform the actions specified in the Input field of each test step and then observes the behavior of the system for the criteria specified in the Expected Output fields. A test passes if the actual output meets the expected output criteria; otherwise the test fails. Additional information can be recorded in the Notes/Comments field, as needed.

Each step shall be documented as being completed with either a check mark ("√") or "P" for pass or an "X" or "F" for fail. At the conclusion of each test case, the Test Conductor, as well as any other Test Witnesses, shall log the test case results in both the Test Case Specifications and the Test Results Summary Table (see Section 5). A test case fails if any of the test steps fail. All failed test steps will be noted and System Problem/Change Request form(s) (SPCRs) (Appendix B) completed. Additional comments may be entered to document anomalies, detailed results, or redlined changes to the test steps. The Test Results Summary Table must contain an entry for each test case. The Test Case Specifications and the Test Results Summary Table are the written record of all activities that are performed as part of this integration test.

2.4 SEVERITY LEVELS

In the event that the actual results of a test step does not exactly match the stated expected results (i.e., a test step fails), the Test Conductor must rate and document the severity of the failure. Table 2.2 should be used as the guideline in this appraisal.

Table 2-2: Failure Severity

#	SEVERITY	DESCRIPTION
1	CRITICAL	Causes a system or application to fail. No work around is available.
2	SEVERE	Major functionality is missing and no work around is available.
3	MODERATE	Required functionality is missing but work around is available.
4	INCONVENIENCE	Inconvenient or an annoying but does not affect functionality. Documentation errors.
5	SUGGESTION	Improvement or enhancement that is outside the scope of required work.

3. TEST ENVIRONMENT SPECIFICATIONS

The Site Server Test Environment consists of the following components.

Table 3-1: Test Environment Components

COMPONENT	DESCRIPTION
Command/Data Interface	Software that connects an IEN Site Server to the local TCS. This component is only required for Sites that are connecting a TCS
IEN Regional Server	A Windows-based PC located at LA County on which the IEN Regional Server software is installed
IEN Database Server	A Windows-based PC located at LA County that hosts the central IEN Database
Network	COTS networking components that interconnect the other test environment components. These components will vary from site to site, however the following should be true: • Traffic is not permitted between the IEN and other local networks with the exception of the connection between the Site Server, CDI, and TCS • The Site Server and CDI host system are connected over a 100 Mbps or better network link • The Site Server and Workstation system are connected over a 100 Mbps or better network link • The Site Server and Workstation systems are connected to the IEN servers at LACO over a 1.54 Mbps or better network link.
IEN Site Server	A Windows-based PC on which the IEN Site Server software is installed
IEN Workstation	A Windows-based PC on which the IEN Workstation software is installed
IEN Utility Server	A Windows-based PC located at LA County that provides various network services that support the IEN
TCS Server	A Traffic Control System that connects to an IEN Site Server through a Command/Data Interface. This component may not be available at all Sites.

The terms *local* and *remote* are used to differentiate between components installed at the Site where the IEN Site Server is located as opposed to components installed at other Sites within the IEN.

The IEN Site Server is the component being tested herein. The other components listed above support the Site Server's operation. The IEN Site Server being tested must be configured as specified in the *IEN System Technical Reference Manual*, meaning that the following actions have been performed:

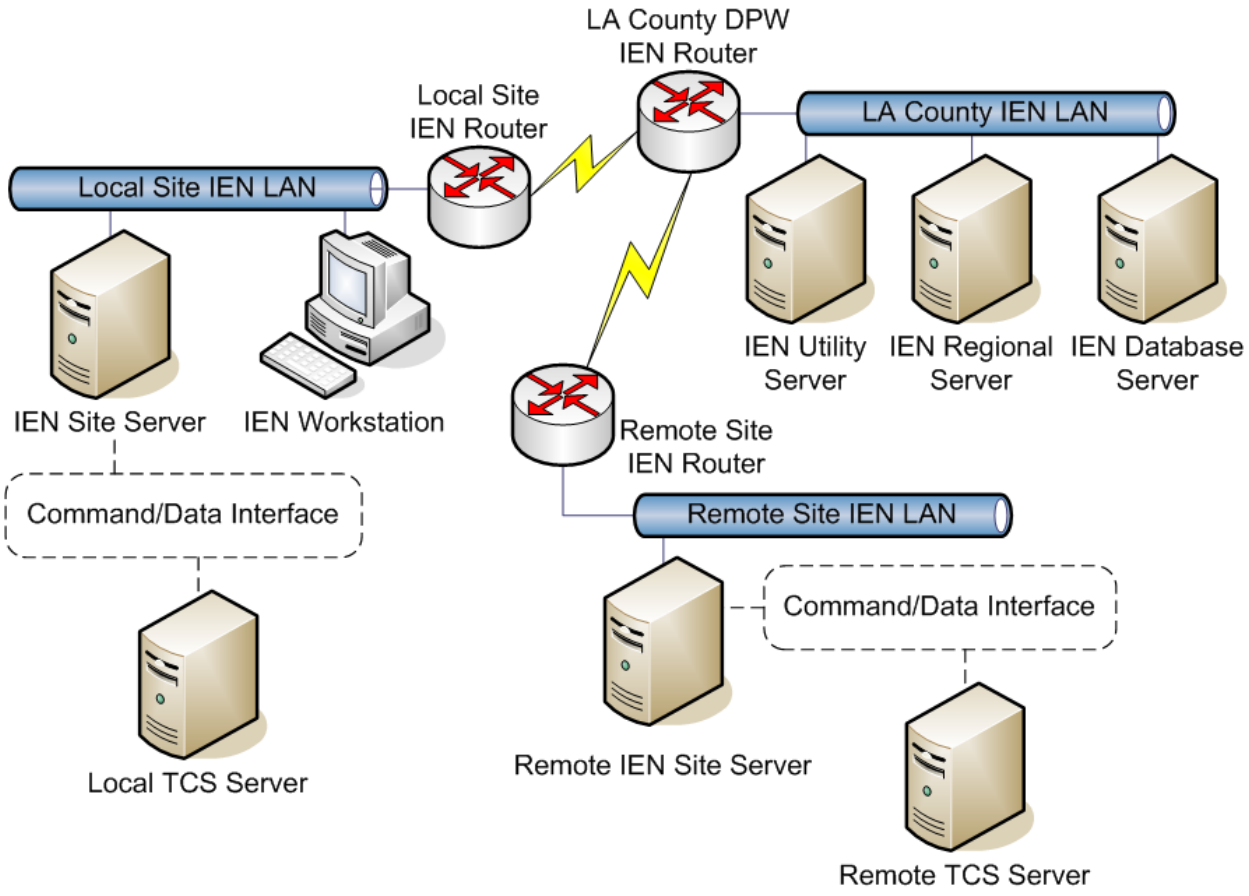
- All required COTS software has been installed on the Site Server
- The Site Server has network connectivity to the local Traffic Control System (if one is being connected at this Site)
- IEN Site Server software has been installed and configured appropriately for the Site
- The IEN Site Server has been registered in the IEN DNS

- The IEN Site Server is synchronized to the IEN's time server
- The IEN Site Server maintains a local copy of IEN ATMS Explorer diagrams

The Site Server Test Procedures rely on the availability of TCS data from local and remote Sites. Local TCS data originates from a local Traffic Control System that has been connected to the IEN Site Server through a Command/Data Interface. Local TCS data will not be available if no TCS is connected to the Site Server.

The Test Environment is depicted below.

Figure 3-1: Test Environment



Each Site Server must be configured for the Site at which it is located. In Table 3-2 below, record the appropriate values for the Site Server being tested.

Table 3-2: Test Environment Configuration Values

PARAMETER	VALUE
Regional Server ID Number	
Regional Server Host Name	
Regional Server IP Address	
Site ID Number	
Site Name	
Site Server Host Name	
Site Server IP Address	
Workstation Host Names/IP Addresses	

The tests may be run with any valid IEN user account that has logon rights for the IEN Site Server. Additional user requirements are noted in the test step preconditions.

4. TEST CASES

The following sections contain the test cases of the IEN Site Integration Site Server Test Procedures. Each test case is written to be a stand-alone test and the test cases may be performed in any order.

The Site Server being tested must be in the default test environment configuration (as specified in Section 3) prior to the start of the test, unless otherwise noted within the specifications of the test case.

It is the responsibility of the Test Conductor to insure that the test results are logged for each test case and test step. It is the responsibility of Test Witness(es) to sign the test results verifying Test Case completion(s) as documented. All witnesses must be listed on the Test Results Form.

It will take one to two hours to perform this test.

4.1 VERIFY SITE SERVER SYSTEM CONFIGURATION

TEST CASE SPECIFICATION	
ID	SS-1
Name	Verify Site Server System Configuration
Version	2.0.0
Description	Verifies that the Site Server uses a supported platform, is connected to other IEN systems, and that all prerequisite software is installed and properly configured.
Prerequisites	The IEN Site Server being tested is configured as specified in the *IEN System Technical Reference Manual* and connected to the other Test Environment components.
Environment	Default
Number of Steps	11
TEST CASE ACCEPTANCE	
Acceptance Targets	n/a
Acceptance Criteria	All test steps must pass
TEST CASE EXECUTION	
Software version/date	
Test start date/time	
Test end date/time	
Total Pass/Fail	

STEP	DESCRIPTION				P/F
	PRECONDITION	INPUT	EXPECTED OUTPUT	NOTES/COMMENTS	
1	Verify that the system is a member of the IEN domain.				
		Log onto the system with an IEN domain account.	The IEN domain account is able to log onto the Site Server.		
2	Verify that the system has network connectivity to the Regional Server.				
		Open a command prompt on the Site Server and run the command **PING** [IP ADDRESS OF THE REGIONAL SERVER].	The Regional Server responds to the Site Server's pings.		
3	Verify that the system has network connectivity to the IEN Utility Server.				
		Open a command prompt on the Site Server and run the command **PING 10.10.2.10**.	The Utility Server responds to the Site Server's pings.		
4	Verify that the system has network connectivity to local Workstations.				
		Open a command prompt on the Site Server and run the command **PING** [IP ADDRESS OF LOCAL IEN WORKSTATION].	Local workstations respond to the Site Server's pings.		
5	Verify that the system has network connectivity to the local TCS CDI (if one is being connected at the Site).				
	ICMP network traffic is permitted between the Site Server and CDI.	Open a command prompt on the Site Server and run the command **PING** [IP ADDRESS OF THE CDI HOST SYSTEM].	The CDI host system responds to the Site Server's pings.		

STEP	DESCRIPTION				P/F
	PRECONDITION	INPUT	EXPECTED OUTPUT	NOTES/COMMENTS	
6	Verify that the system can connect to the IEN DNS and resolve IEN hostnames.				
		Open a command prompt and run the following commands: 1. **NSLOOKUP** [HOSTNAME OF THE REGIONAL SERVER] 2. **NSLOOKUP** [HOSTNAME OF LOCAL WORKSTATION]	The system is able to resolve IP addresses from the given hostnames		
7	Verify that the system is registered in the IEN DNS.				
		Open a command prompt and run the commands: • **NSLOOKUP** [THE SYSTEM'S HOSTNAME] • **NSLOOKUP** [THE SYSTEM'S IP ADDRESS]	The DNS resolves the system's hostname and IP address correctly.		
8	Verify that the system is synchronized to the IEN Time Server.				
		Open a command prompt and run the commands: 1. C:> **NTPQ** 2. NTPQ> **PEERS** 3. NTPQ> <CTRL> + C	(1) The peers list contains IENUTILSVR1.IEN.LOCAL (the IEN time server). (2) The time server listing is annotated with an asterisk.		
9	Verify that the system is running Windows XP Professional or Windows 2003.				
		Right-click the MY COMPUTERS icon and select PROPERTIES.	The Properties dialog shows that the operating system is Microsoft Windows XP Professional or Windows 2003.		
10	Verify that the Oracle 10g Database client has been installed and configured to connect to the IEN database.				

STEP	DESCRIPTION				P/F
	PRECONDITION	INPUT	EXPECTED OUTPUT	NOTES/COMMENTS	
		Open a command prompt and run the command **`TNSPING IENDB`**.	(1) The TNS Ping Utility is reported to be version 10.2. (2) The command returns a status of "OK".		
11	Verify that Java RE 1.6 software has been installed.				
		Open a command prompt and run the command **`JAVA -VERSION`**.	The command output reports that the Java version is a variant of "1.6.0".		

COMMENTS:

4.2 VERIFY IEN SITE SERVER SOFTWARE CONFIGURATION

TEST CASE SPECIFICATION	
ID	SS-2
Name	Verify IEN Site Server Software Configuration
Version	2.0.0
Description	Verifies that IEN Site Server software is installed and configured properly.
Prerequisites	The IEN Site Server being tested is configured as specified in the *IEN System Technical Reference Manual* and connected to the other Test Environment components.
Environment	Default
Number of Steps	10
TEST CASE ACCEPTANCE	
Acceptance Targets	n/a
Acceptance Criteria	All test steps must pass
TEST CASE EXECUTION	
Software version/date	
Test start date/time	
Test end date/time	
Total Pass/Fail	

STEP	DESCRIPTION				P/F
	PRECONDITION	INPUT	EXPECTED OUTPUT	NOTES/COMMENTS	
1	Verify that IEN software has been installed.				
		Open Add/Remove Programs and examine the installed programs list.	Los Angeles County Information Exchange Network software (Version 2.02) is listed as a currently installed program.		
2	Verify that the IEN support directory exists and that the IEN software has been configured to use it.				
		(1) Open a command prompt and run the command **ECHO %IEN_SUPPORT_DIR%**. (2) Examine the contents of the directory identified in the command output.	(1) The directory identified in the command output is a valid directory on the system. (2) The IEN support directory contains a sub-directory named "logs" in which site server application logs have been created.		
3	Verify the Site Server configuration file.				
		Open a command prompt and run the command **NOTEPAD %IEN_INSTALL_DIR%\SITE.PROPERTIES**. Examine the site server configuration file.	The ien.site.id and ien.region.id values are set to the appropriate values.		

STEP	DESCRIPTION				P/F
	PRECONDITION	INPUT	EXPECTED OUTPUT	NOTES/COMMENTS	
4	Verify that the IEN software starts properly.				
		(1) Reboot the Site Server. (2) Open the Windows Services console. (3) Check the status of the following services: • IEN Site Server • omniNames CORBA naming service	(1) The Status column shows that the specified services have all started. (2) The Startup Type column shows that all specified services are set to “Automatic”.		
5	Verify that Site Server object references are registered in the local Naming Service.				
		Select START > ALL PROGRAMS > LOS ANGELES COUNTY IEN > ADMINISTRATIVE TOOLS > SYSTEM COMMANDS > SHOW NAMING REFERENCES.	The command output shows that the following references have been registered under the {ROOT/IEN} context: • IENSiteServer.IENSiteServer • IENCommandInterface.IENCommandInterface		

STEP	DESCRIPTION				P/F
	PRECONDITION	INPUT	EXPECTED OUTPUT	NOTES/COMMENTS	
6	Verify that Regional Server object references are registered in the local Naming Service.				
		Select START > ALL PROGRAMS > LOS ANGELES COUNTY IEN > ADMINISTRATIVE TOOLS > SYSTEM COMMANDS > SHOW NAMING REFERENCES.	The command output shows that the following references have been registered under the {ROOT/IEN/REGION} context: • RegionalServer1.RegionalServer • SecurityManager • AlarmManager		

STEP	DESCRIPTION				P/F
	PRECONDITION	INPUT	EXPECTED OUTPUT	NOTES/COMMENTS	
7	Verify that CDI object references are registered in the local Naming Service.				
	Connected TCS. CDI software started. Command object references only need to be registered if the CDI supports IEN commands.	Select START > ALL PROGRAMS > LOS ANGELES COUNTY IEN > ADMINISTRATIVE TOOLS > SYSTEM COMMANDS > SHOW NAMING REFERENCES.	The command output shows that the following references have been registered under the {ROOT} context: Version 2 CDIs: • TCSCDIData[SiteID].Site[SiteID] • TCSCDICmd[SiteID].Site[SiteID] Version 3 CDIs: • TCSCDIData[SiteID]:[SysID].Site[SiteID] • TCSCDICmd[SiteID]:[SysID].Site[SiteID] Where: • [SiteID] is the local site ID number • [SysID] is the system ID used by the CDI (this is usually “1”.		
8	Verify that the local IEN ATMS Explorer diagrams are synchronized nightly to the central IEN diagram share.				
		Open the Windows Scheduled Tasks and examine the “Sync IEN Database” task.	The event is scheduled to run nightly.		

STEP	DESCRIPTION				P/F
	PRECONDITION	INPUT	EXPECTED OUTPUT	NOTES/COMMENTS	
9	Verify that the ATMS Explorer Diagram Synchronization task runs correctly.				
		(1) Add a new diagram to the ATMSExplorerDiagrams share on the Regional Server. (2) Right-click the "Synchronize ATMS Explorer Diagrams" task and select RUN. (3) Examine the contents of the %IEN_SUPPORT_DIR%\ATMSExplorerDiagrams directory on the Site Server.	(1) The task runs without error. (2) The new diagram has been copied to the ATMSExplorerDiagrams directory on the Site Server.		
10	Verify that the ATMSExplorerDiagrams directory on the Site Server is shared out to Site's IEN Workstations.				
		(1) Log onto a local IEN Workstation and browse to the ATMSExplorerDiagrams share on the Site Server. (2) Open a diagram in the share.	(1) The Site Server's ATMSExplorerDiagrams directory has been shared. (2) Users are able to access shared diagrams from the local Workstation.		

COMMENTS:

4.3 VERIFY SITE SERVER SOFTWARE FUNCTIONALITY

TEST CASE SPECIFICATION	
ID	SS-3
Name	Verify Basic Site Server Software Functionality
Version	2.0.0
Description	Verifies basic Site Server functionality
Prerequisites	The IEN Site Server being tested is configured as specified in the *IEN System Technical Reference Manual* and connected to the other Test Environment components.
Environment	Default
Number of Steps	4
TEST CASE ACCEPTANCE	
Acceptance Targets	n/a
Acceptance Criteria	All test steps must pass
TEST CASE EXECUTION	
Software version/date	
Test start date/time	
Test end date/time	
Total Pass/Fail	

STEP	DESCRIPTION				P/F
	PRECONDITION	INPUT	EXPECTED OUTPUT	NOTES/COMMENTS	
1	Verify that the Site Server software can connect to the IEN Naming Service.				
		(1) Stop and restart the IEN Site Server service. (2) Open the file %IEN_SUPPORT_DIR%\logs\site.log and search for the following messages: • SiteServer WorkstationConnector bound to the Naming Service • SiteServer CommandInteface bound to the Naming Service	The log file contains the specified messages.		
2	Verify that the Site Server software can connect to the Regional Server.				
		(1) Select START > ALL PROGRAMS > LOS ANGELES COUNTY IEN > ADMINISTRATIVE TOOLS > COMPONENT STATUS REPORTS > SITE SERVER STATUS. (2) Enter the local site ID into the ID field on the Simple filter bar and then click the SIMPLE button. (3) Examine the resulting logs that have a message number of “500”.	The logs report that the data is being exchanged between the site server and the regional server.		
3	Verify that the Site Server software can connect to local Workstations.				

STEP	DESCRIPTION				P/F
	PRECONDITION	INPUT	EXPECTED OUTPUT	NOTES/COMMENTS	
		(1) Select START > ALL PROGRAMS > LOS ANGELES COUNTY IEN > ADMINISTRATIVE TOOLS > COMPONENT STATUS REPORTS > SITE SERVER STATUS. (2) Enter the local site ID into the ID field on the Simple filter bar and then click the SIMPLE button. (3) Examine the resulting logs that have a message number of "502".	The logs report that the data is being exchanged between the site server and local workstations.		
4	Verify that local Workstations are receiving data from the site server.				
		Log onto a local workstation, open ATMS Map, change the view to detail level 2, and enable the Intersection Layer.	Data from remote intersections is shown on the map.		

COMMENTS:

4.4 VERIFY SITE SERVER INTEGRATION WITH CDI

TEST CASE SPECIFICATION	
ID	SS-4
Name	Verify Site Server Integration With CDI
Version	2.0.0
Description	Verifies Site Server integration with CDI
Prerequisites	The IEN Site Server being tested is configured as specified in the *IEN System Technical Reference Manual* and connected to the other Test Environment components. A Traffic Control System is connected to the Site Server.
Environment	Default
Number of Steps	3
TEST CASE ACCEPTANCE	
Acceptance Targets	n/a
Acceptance Criteria	All test steps must pass
TEST CASE EXECUTION	
Software version/date	
Test start date/time	
Test end date/time	
Total Pass/Fail	

STEP	DESCRIPTION				P/F
	PRECONDITION	INPUT	EXPECTED OUTPUT	NOTES/COMMENTS	
1	Verify that the Site Server Service can connect to the local TCS CDI.				
		(1) Stop and restart the IEN Site Server service. (2) Open the file %IEN_SUPPORT_DIR%\logs\site.log and search for the following messages: • Info Have started CDI Handler for Site • CDIHandler The latest device inventory has been received	The log file contains the specified messages.		
2	Verify that the Site Server Service is collecting data from the local TCS CDI.				
		(1) Select START > ALL PROGRAMS > LOS ANGELES COUNTY IEN > ADMINISTRATIVE TOOLS > COMPONENT STATUS REPORTS > SITE SERVER STATUS. (2) Enter the local site ID into the ID field on the Simple filter bar and then click the SIMPLE button. (3) Examine the resulting logs that have a message number of “503”.	The logs report that the data is being from the local TCS CDI.		
3	Verify that remote Workstations are receiving local data.				
	Remote site is configured to receive local data.	Log onto a remote workstation, open ATMS Map, change the view to detail level 2, and enable the Intersection Layer.	Data from local intersections is shown on the map.		

COMMENTS:

5. TEST RESULTS FORM

Test Date _____

Test Location _____

Test Name/ID _____

The undersigned verify that this test was conducted as redlined in the test cases and/or documented in the Test Result Summary Table (see

Table 5-2).

Table 5-1: Test Witness Signatures

	Name (Printed)	Signature	Date
Test Conductor			
Test Recorder			
Client Witness			
Other Witness			

Table 5-2: Test Results Summary Table

TEST CASE	DATE	START TIME	END TIME	PASS/FAIL	FAILED STEPS	SPCR #'S	REMARKS
1							
2							
3							
4							

6. APPENDICES

6.1 APPENDIX A – ACRONYMS AND DEFINITIONS

TERM	DEFINITION
ATMS	Advanced Traffic Management System
CORBA	Common Object Request Broker Architecture
COTS	Commercial Off the Shelf Software
CDI	Command and Data Interface. Software that connects an IEN Site Server to a Traffic Control System.
DNS	Domain Name Service
DPW	(Los Angeles County) Department of Public Works
EC	Event Channel, a CORBA architectural element that mediates the transfer of events between the suppliers and consumers
ICMP	Internet Control Message Protocol
IEN	Information Exchange Network
IIOP	Internet Inter-Orb Protocol, a protocol by which CORBA ORBs communicate.
IMS	Incident Management System
IOR	Interoperable Object Reference
IP	Internet Protocol
LAN	Local Area Network
MTA (Metro)	(Los Angeles County) Metropolitan Transportation Authority
ORB	Object Request Broker
SPCR	System Problem/Change Request form
TCS	Traffic Control System

6.2 APPENDIX B – SOFTWARE PROBLEM/CHANGE REQUEST FORM

SPCR Report Identifier: _____ Suggested Priority (1-5) _____

Reported By: _____ Date _____
Organization: _____ Phone _____

Problem Title: _____
Project _____
Component/Program Unit _____ Version _____

Description (Be concise, include equipment involved and location. Attach additional sheets or supporting information as necessary)

_____
_____
_____
_____
_____
_____
_____

Test Step/Scenario _____
Repeatable (Check One) Always ( ) Frequently ( ) Rarely ( ) Unable to Repeat ( )

Phase Found _____
Requirement(s) Affected (Reference Document and Paragraph) _____
_____

Initially Assign To _____

Priority Legend

#	PRIORITY	DESCRIPTION
1	CRITICAL	Causes a system or application to fail. No work around is available.
2	SEVERE	Major functionality is missing and no work around is available.
3	MODERATE	Required functionality is missing but work around is available.
4	INCONVENIENCE	Inconvenient or an annoying but does not affect functionality. Documentation errors.
5	SUGGESTION	Improvement or enhancement that is outside the scope of required work.

6.3 APPENDIX C – VIEWING TCS DATA IN IEN USER INTERFACES

6.3.1 Intersection Data

The following table indicates where TCS intersection data is displayed in the IEN:

Table 6-1: IEN Intersection Data Displays

DATA	WHERE DISPLAYED
IEN_INTERSECTIONINFO[1]	
Intersection ID number	Intersection detail screen
ID number of section containing this intersection	Intersection detail screen (labeled “Section Number”)
Seconds between poll attempts to the intersection controller	Intersection detail screen
Controller type	Intersection detail screen
Description of the intersection controller	Intersection detail screen
Name of main street	Intersection detail screen
Name of cross street	Intersection detail screen
Direction of movement along the main street	Intersection detail screen
Latitude coordinate of intersection location	Intersection configuration screen
Longitude coordinate of intersection location	Intersection configuration screen
IEN_INTERSECTIONRTSTATUS	
Cycle counter, seconds since start of cycle	Intersection detail screen
Reference cycle counter for the intersection	Intersection detail screen

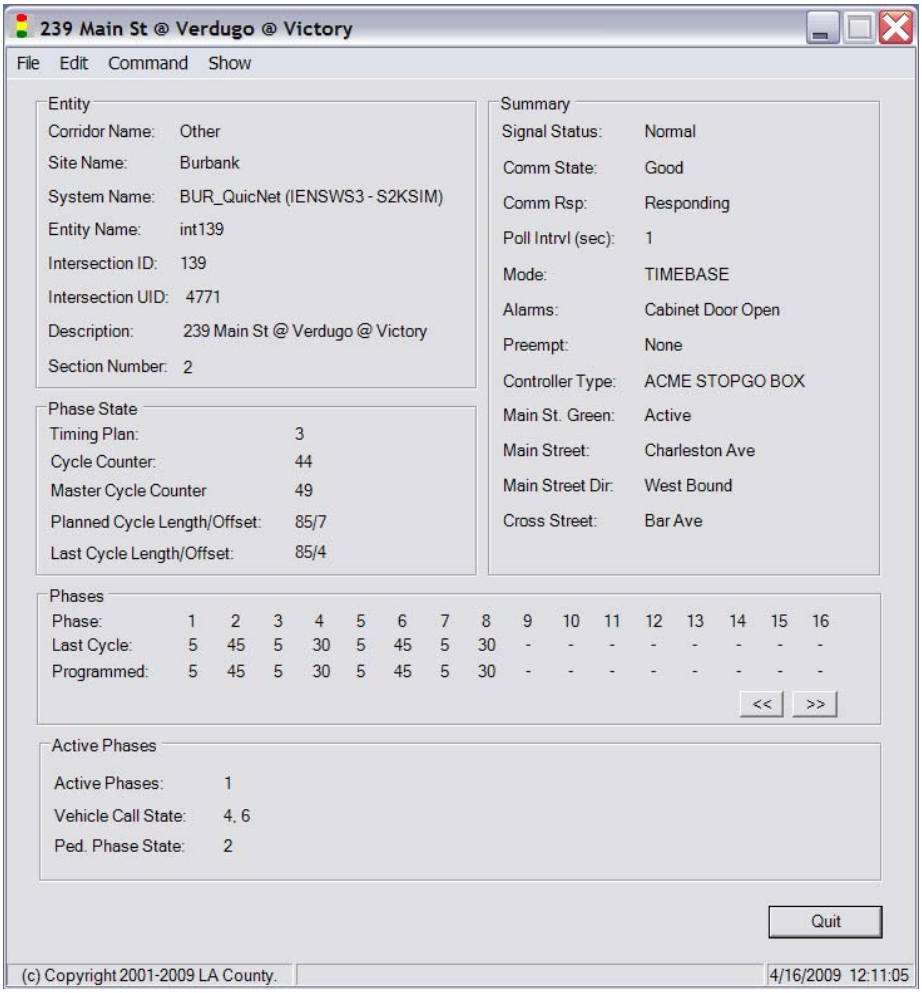
[1] IEN administrators can override the device configuration values that are reported by the CDI with values manually entered through IEN device configuration screens.

DATA	WHERE DISPLAYED
IEN_INTERSECTIONRTSUMMARY	
Signal control mode	Intersection detail screen (labeled “Mode”)
Intersection signal state	Intersection detail screen (labeled “Signal Status”)
Controller response state	Intersection detail screen (labeled “Comm Rsp”)
Preemption type	Intersection detail screen (labeled “Preempt”)
Controller alarms	Intersection detail screen (labeled “Alarms”)
Main street green active	Intersection detail screen (labeled “Main St. Green”)
Communication state for the intersection controller	Intersection detail screen (labeled “Comm State”)
Timing plan ID number	Intersection detail screen (labeled “Timing Plan”)
Desired cycle length	Intersection detail screen (the first value of the “Planned Cycle Length/Offset” pair)
Desired offset	Intersection detail screen (the second value of the “Planned Cycle Length/Offset” pair)
Actual offset	Intersection detail screen (the second value of the “Last Cycle Length/Offset” pair)
IEN_PHASE_STATEDATA	
Active green phases	Intersection detail screen (labeled “Active Phases”)
IEN_PEDPHASE_STATEDATA	
Active pedestrian phases	Intersection detail screen (labeled “Ped. Phase State”)

DATA	WHERE DISPLAYED
IEN_VEHCALL_STATEDATA	
Active actuation phases	Intersection detail screen (labeled “Vehicle Call State”)
IEN_LASTCYCLE_PHASEDATA	
Length of last cycle	Intersection detail screen (the first value of the “Last Cycle Length/Offset”)
Total green time for each active phase in the controller's last cycle.	Intersection detail screen (labeled “Last Cycle”)
IEN_TP_PHASEDATA	
Maximum permissible green time for each phase of the active timing plan.	Intersection detail screen (labeled “Programmed”)

With the exception of latitude and longitude coordinates, all intersection data can be viewed on the intersection detail screen.

Figure 6-1: IEN Intersection Detail Screen



Latitude and longitude coordinates can be viewed through the IEN intersection configuration screens, which are accessible to administrative users only.

To open the intersection detail screen, right-click an intersection control within ATMS Map or ATMS Explorer and select MONITOR.

6.3.2 System Detector Data

The following table indicates where TCS system detector data is displayed in the IEN:

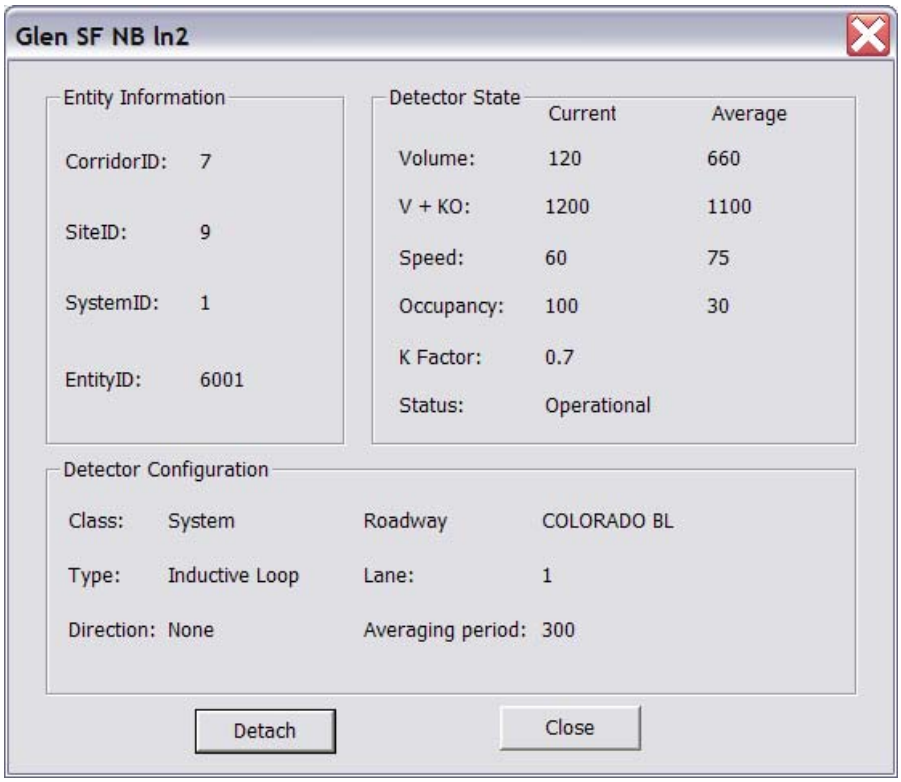
Table 6-2: IEN System Detector Data Displays

DATA	WHERE DISPLAYED
IEN_DETECTORINFO[2]	
Detector data averaging period	System detector detail screen
Detector ID	System detector detail screen
Detector class	System detector detail screen
Detector type	System detector detail screen
Direction of traffic flow over the detector	System detector detail screen
Lane number for traffic passing over the detector	System detector detail screen
Name of the roadway that contains the detector	System detector detail screen
Weighting factor (K) for volume + weighted occupancy calculations	System detector detail screen
IEN_DETECTORSTATE	
Volume from the most recent upload, in vehicles per hour	System detector detail screen (labeled “current volume”)
Average volume, in units of vehicles per hour	System detector detail screen
Volume, in vehicles per hour + weighted occupancy, for volume and occupancy from the most recent upload.	System detector detail screen (labeled “current V+ KO)
Average volume, in vehicles per hour + weighted occupancy, for volume and occupancy in the averaging period.	System detector detail screen (labeled “average V + KO”)
Detector status	System detector detail screen
Speed data from the most recent upload, in miles per hour	System detector detail screen (labeled “current speed”)
Average speed, in miles per hour	System detector detail screen
Occupancy data from the most recent upload, in percent	System detector detail screen (labeled “current occupancy)
Average occupancy, in percent	System detector detail screen

[2] IEN administrators can override the device configuration values that are reported by the CDI with values manually entered through IEN device configuration screens.

All detector data can be viewed on the system detector detail screen.

Figure 6-2: IEN System Detector Screen



To open the system detector detail screen, right-click a system detector control within an ATMS Explorer diagram and select MONITOR.

6.3.3 Section Detail Screen

The following table indicates where TCS section data is displayed in the IEN:

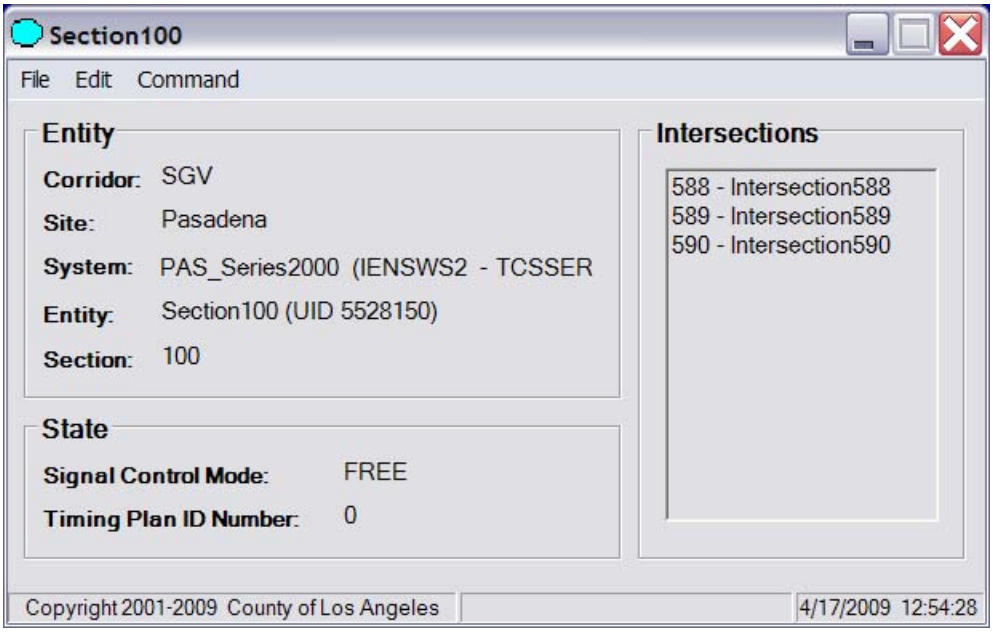
Table 6-3: IEN Section Data Displays

DATA	WHERE DISPLAYED
IEN_SECTIONINFO[3]	
List of member intersections	Section detail screen
IEN_SECTIONSTATE	
Section control mode	Section detail screen
Section timing plan	Section detail screen

All section data can be viewed on the section detail screen.

[3] IEN administrators can override the device configuration values that are reported by the CDI with values manually entered through IEN device configuration screens.

Figure 6-3: IEN Section Detail Screen



To open the section detail screen, right-click a section control within an ATMS Explorer diagram and select MONITOR.