STEP

Evaluation Report

ELERTS Campus™ v2.1.5
TR_ELERTS_Campus_16187

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Executive Summary

This report presents the results from an evaluation of ELERTS Campus™ version number 2.1.5[1] (hereafter referred to as ELERTS Campus), a product[2] marketed by ELERTS Corporation. Evaluation activities are conducted as part of the Supporting Technology Evaluation Project (STEP). STEP is managed by the Preparedness-Technology, Analysis, and Coordination (P-TAC) Center, which is operated by Leidos, formerly Science Applications International Corporation (SAIC), under contract with the Federal Emergency Management Agency's National Preparedness Directorate (FEMA NPD). Located in Somerset, Kentucky, the Center includes an emergency operations center (EOC) test environment, complete with supporting technologies, and the Incident Management Test and Evaluation Laboratory (IMTEL), an American Association for Laboratory Accreditation (A2LA) accredited laboratory.

The ELERTS Campus evaluation was conducted from 17 through 19 September 2013. This was a user acceptance test (UAT); therefore, it specifically addressed adherence to National Incident Management System (NIMS) concepts and principles. The test did not address technical standards. This test had one objective:

- Evaluate the system's incorporation of NIMS concepts and principles.

ELERTS Campus is an incident reporting and alert and notification system designed for deployment on academic and corporate campuses. It consists of two main components. The first is a mobile app which individual mobile users can install on personal or issued smartphones. This app enables mobile users to send incident reports to a public safety monitoring center and to report their status and position to public safety officials or personal contacts. The second component is a Web-based report management console. The console enables safety officials to monitor incoming incident and status reports from mobile users and to send alerts and notifications to selected groups of mobile users.

The vendor provided end user documentation, technical assistance for initial setup of the product, and one hour of online training for end users. Once setup and training were complete, the STEP team conducted test activities on-site at IMTEL, using desktop computers to access the command console and iOS and Android smartphones to run the mobile app. Assessors with subject matter expertise in emergency response and emergency management conducted a test of the system and provided qualitative analysis and feedback on the product based on the concepts and principles from the NIMS document *[Ref 3]*.

NIMS Concepts and Principles

Table 1: NIMS Criteria Rating Summary provides a summary of findings for NIMS criteria. Key elements identified within each NIMS criterion are cited as Minimum Product Requirements. These requirements were derived from the NIMS document and impact the overall rating of the product's

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[1] This product has multiple components, which are versioned separately. This version number refers to the version of the central management console that was evaluated. Also included in the evaluation was the ELERTS Campus mobile app for iOS (version 1.1.0) and for Android (version 1.1.1).

[2] The terms *product*, *system*, and *technology* are used interchangeably throughout this report.

adherence to NIMS concepts and principles. The numbers provided below summarize ratings (i.e., Agree, Disagree, and Not Applicable) for Minimum Product Requirements within each NIMS criterion.

Table 1: NIMS Criteria Rating Summary

NIMS Criteria (Number of Minimum Product Requirements)	# Agree	# Disagree	# Not Applicable
Emergency Support (**1**)	1	0	0
Hazards (**1**)	1	0	0
Preparedness (**1**)	1	0	0
Communications and Information Management (**9**)	7	0	2
Resource Management (**10**)	2	0	8
Command and Management (**2**)	1	0	1

Note: NIMS criteria and Minimum Product Requirements are described in the STEP Guide, available from the P-TAC Center website (https://www.ptaccenter.org/step/index).

ELERTS Campus is consistent with all NIMS criteria: Emergency Support; Hazards; Preparedness; Communications and Information Management; Resource Management; Command and Management. Overall, ELERTS Campus applies to 13 of 24 Minimum Product Requirements, of which 13 are consistent with NIMS concepts and principles. Explanations of all findings are provided in **Section 2.0: Results**.

1.0 Introduction

This report presents the results from an evaluation of ELERTS Campus™ version number 2.1.5[3], a product marketed by ELERTS Corporation. Evaluation activities are conducted as part of the Supporting Technology Evaluation Project (STEP). STEP is managed by the Preparedness-Technology, Analysis, and Coordination (P-TAC) Center, which is operated by Leidos, formerly Science Applications International Corporation (SAIC[4]), under contract with the Federal Emergency Management Agency's National Preparedness Directorate (FEMA NPD). Located in Somerset, Kentucky, the Center includes an Emergency Operations Center (EOC) test environment, complete with supporting technologies, and the Incident Management Test and Evaluation Laboratory (IMTEL), an American Association for Laboratory Accreditation (A2LA) accredited laboratory.

STEP provides evaluations of supporting technologies relating to incident management and response. Test activities are designed to verify system compliance with National Incident Management System (NIMS) concepts and principles and applicable supporting technology standards. STEP evaluation reports provide the emergency management and response community with data to support purchasing decisions. For more information on the project and types of tests performed, visit the P-TAC Center website at https://www.ptaccenter.org.

A User Acceptance Test (UAT) was conducted for ELERTS Campus. The intent of this test was to determine the system's incorporation of NIMS concepts and principles.

Vendor participation in STEP is voluntary. The use of trade names and test results in this document do not constitute a Department of Homeland Security (DHS) or FEMA endorsement or certification of the use of such commercial hardware or software.

1.1 STEP Project Summary

Systems operating in an incident management environment must be able to interact smoothly across disciplines and jurisdictions. Interoperability and compatibility are achieved through the use of mutually-supporting technologies that are compliant with the concepts and principles of NIMS and FEMA-accepted technical standards. The STEP project is designed to conduct controlled evaluations of products marketed as supporting technologies for emergency management and response. STEP evaluation reports provide feedback to the user community on product performance and compliance with NIMS principles and FEMA-accepted technical standards.

STEP testing takes place in a controlled, EOC-based environment. However, some systems may require an additional or alternate environment, such as a limited field setting. In these cases, the field setting is considered an extension of the laboratory environment. Tests vary in duration based on complexity but

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[3] This product has multiple components, which are versioned separately. This version number refers to the version of the central management console that was evaluated. Also included in the evaluation was the ELERTS Campus mobile app for iOS (version 1.1.0) and for Android (version 1.1.1).

[4] Some screen captures in this report show the product in use by an SAIC user account. This reflects the fact that the evaluation occurred before the transition from SAIC to Leidos.

typically do not exceed four days. The team is scaled based on the complexity and type of test to include an analyst and assessors or test engineers. Participants adhere to a non-disclosure agreement, which ensures the protection of the vendor's sensitive information.

The test took place at IMTEL, which is accredited through the A2LA. To achieve and maintain accreditation status, the laboratory meets general requirements for the competencies of testing and calibration laboratories, as provided in International Organization for Standardization (ISO)/International Electrotechnical Commission (IEC) 17025:2005. The current scope of accreditation and associated certification required by ISO/IEC 17025:2005 is available on the A2LA website *[Ref 1]*. Results presented in **Section 2.1.1: Objective 1: Evaluate Incorporation of NIMS Concepts and Principles** are within IMTEL's ISO/IEC 17025:2005 scope of accreditation. In the event that any individual findings fall outside the scope of accreditation, they will be clearly annotated as such.

1.2   System Description

> *The vendor provided the majority of the information within this section. Assessors and test engineers did not verify all of the system's capabilities during the evaluation, only those associated with the standards and criteria tested.*

ELERTS Campus is an incident reporting and alert and notification system designed for deployment on academic and corporate campuses. It consists of two main components. The first is a mobile app which individual mobile users can install on personal or issued smartphones. This app enables mobile users to send incident reports to a public safety monitoring center and to report their status and position to public safety officials or personal contacts. The second component is a Web-based report management console, ELERTS EPICenter (hereafter referred to as EPICenter). This enables safety officials to monitor incoming incident and status reports from mobile users and to send alerts and notifications to selected groups of mobile users. **Section 1.2.1: Mobile App** describes the functionality and user interface (UI) of the mobile component, while **Section 1.2.2: EPICenter** describes the functionality and UI of the Web-based report management console.

The ELERTS Campus system is a commercial product. All purchase and support fees are associated with an organization's acquisition of the overall system and use of EPICenter. The mobile app is a free download, which encourages a campus' employees, students, and visitors to install and use it.

1.2.1   Mobile App

The ELERTS Campus mobile app is available for the iOS and Android mobile operating systems. It is a free download from the Apple App Store (for iOS) and Google Play (for Android). The versions of this app evaluated by STEP were, respectively, 1.1.0 and 1.1.1. All screen captures in this report are taken from the iOS version (on an iPhone running iOS v7.0) but, unless otherwise indicated, functionality is identical between the two platforms. **Figure 1: Mobile App Home Screen** shows the mobile app's home screen.

Figure 1: Mobile App Home Screen

The ELERTS Campus mobile app is an incident reporting tool through which individual mobile users – the students, staff, and visitors on an academic or corporate campus – can send incident reports to that campus' safety and security authorities. In addition to this core incident reporting functionality, it also provides the following features:
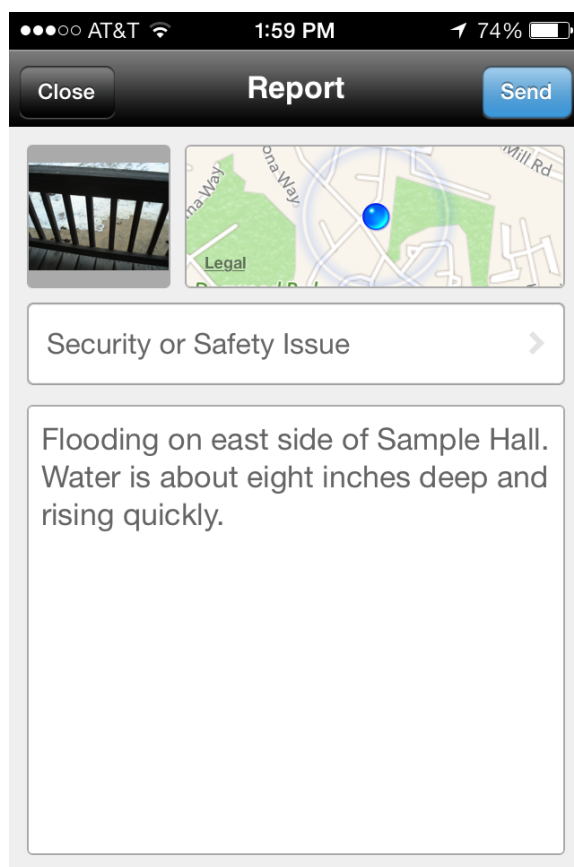
- Reception of alerts, notifications, and responses to reports (described in **Section 1.2.1.1: Incident Reporting** and **Section 1.2.1.2: Alert and Notification Reception**);

- EscortMe, which enables mobile users to request remote monitoring of their locations as they move around the campus (described in **Section 1.2.1.3: EscortMe**); and

- SkyWriter™, which enables mobile users to send geotagged personal status reports or requests for assistance via multiple communication channels (described in **Section 1.2.1.4: SkyWriter**).

1.2.1.1   Incident Reporting

The user can log an incident report from the mobile app. The user can select a report type (e.g., security or safety issue, suspicious activity, illegal parking) or enter a custom report type, then can enter free-form text to describe the incident. **Figure 2: Composing a Report** shows the reporting form's UI.

Figure 2: Composing a Report

The reporting form also allows the attachment of a photo, either taken with the smartphone's camera or loaded from the smartphone's existing image library.[5] The app disables the phone's flash to reduce the user's visibility in a potentially hazardous situation (e.g., taking a photo of a developing violent incident). It also prompts the user to silence the smartphone to disable any camera-related sound effects in the phone's software.

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[5] The app limits users to taking and attaching photographs, even if audio/video recording is normally a function of the smartphone.

Each report is geotagged with the user's current location, using the smartphone's onboard global positioning system (GPS) receiver. The map inset at the top right corner of the form in **Figure 2** provides confirmation that the app is receiving the correct position information from the phone's GPS.

When the user sends the report, the app saves a copy of the report in its list of alerts. When the EPICenter server receives the report, the server sends a receipt confirmation, which also appears in the list of alerts. See **Section 1.2.1.2: Alert and Notification Reception** for details on the list of alerts.

1.2.1.2   Alert and Notification Reception

The app enables mobile users to receive alert and notification messages sent by safety officials from EPICenter (see **Section 1.2.2.3: Alerts**). This provides the campus with a direct broadcast communication channel to its mobile users, in addition to any other alert and notification systems it may use.

When the mobile app receives a message, the smartphone's operating system notifies the user through an alert tone and/or banner at the top of the screen. In the mobile app, the Alerts button is highlighted with a badge showing the number of unread messages, as shown in **Figure 1: Mobile App Home Screen**.

In the app's list of alerts, the new message is marked as unread according to the UI design standards for the OS (in iOS, a blue dot, as shown below). The user can open the message and view any attached image. **Figure 3: Alert List and Alert Details**, below, shows the alert list and an open message. In addition, the user can respond to the authority that issued the alert by selecting the message and tapping in the "Enter a reply..." box. This enables the user to send text and a photo in the same manner as an incident report.
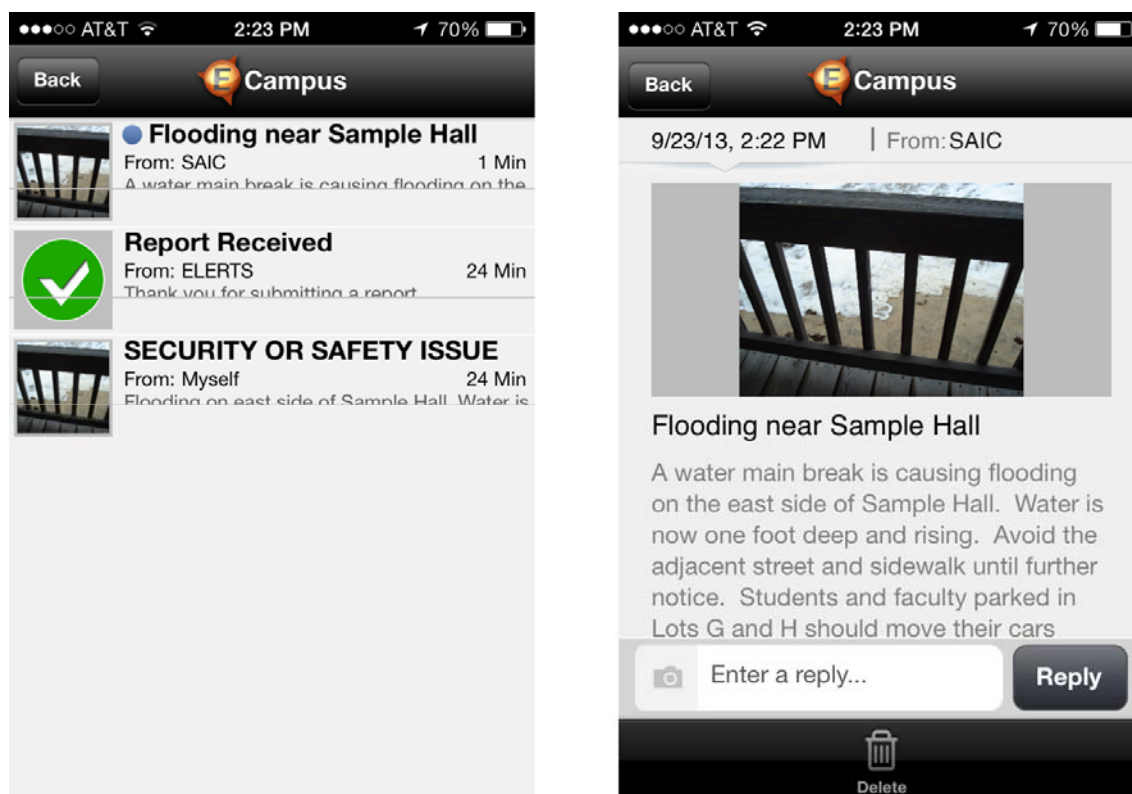

Figure 3: Alert List and Alert Details

1.2.1.3   EscortMe

EscortMe is a GPS-based equivalent of campus escort services. Instead of relying on a call for service that dispatches a safety officer or volunteer escort, this feature places the user's smartphone in constant contact with the campus' public safety monitoring center. The app provides ongoing location updates to EPICenter, along with an automated mechanism for signaling trouble.

EscortMe operates in two modes. The first is press and hold. In this mode, the user presses the smartphone's touchscreen to initiate a virtual escort. As long as the user maintains contact with the touchscreen, the app sends periodic updates of the phone's location to EPICenter. If the user releases the touchscreen, the app prompts the user for a status update. If the user taps the "I AM SAFE" button, the app cancels the virtual escort. If the user taps the "I NEED HELP" button, or if the user does not tap any button for 10 seconds, the app sends a safety alert to EPICenter, geotagged with the phone's current location. **Figure 4: EscortMe in Press and Hold Mode** illustrates this set of functionality.
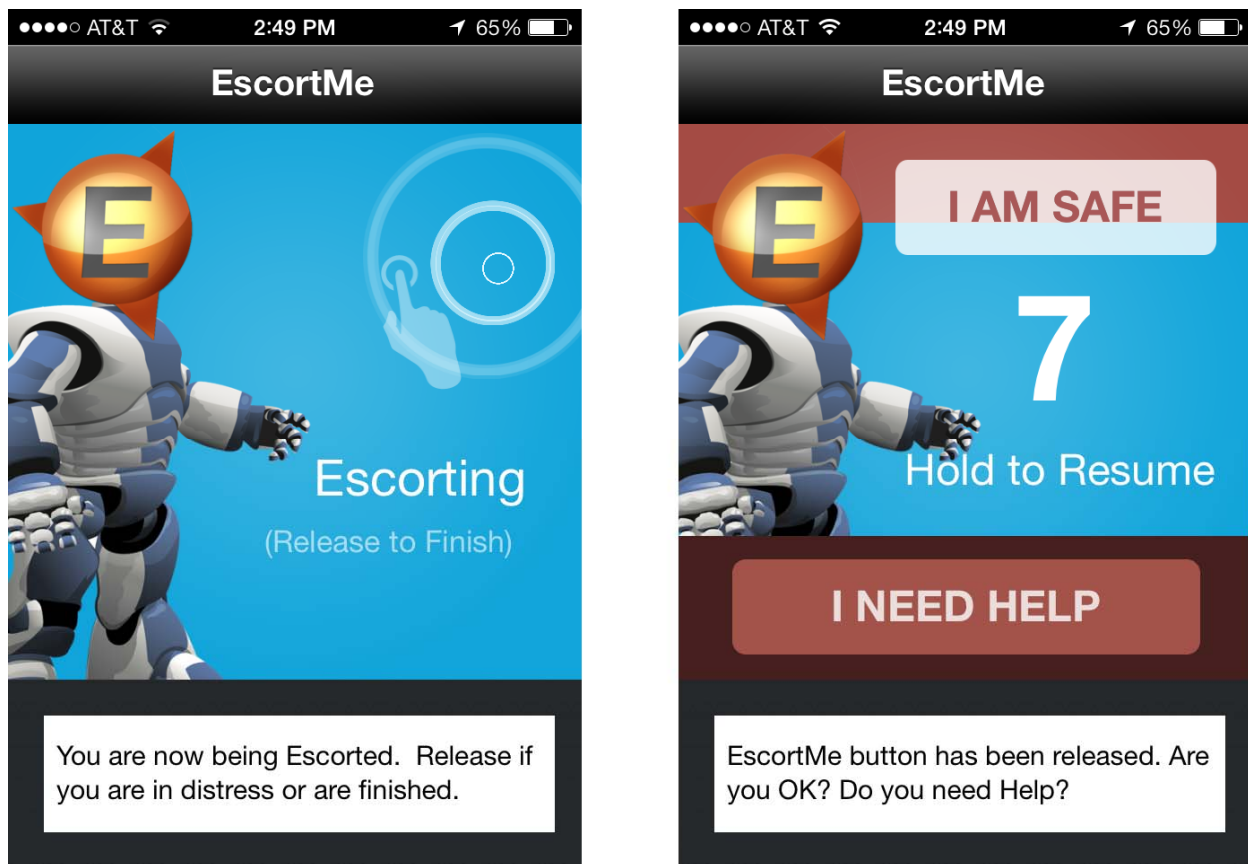
Figure 4: EscortMe in Press and Hold Mode

EscortMe's second mode is hands-free. In this mode, the user sets an escort duration, then starts the virtual escort. The app starts a countdown timer and sends periodic updates of the phone's location to EPICenter. When the timer ends, or if the user terminates the timer by tapping the touchscreen, the app prompts the user for a status update. The user also can add another 30 seconds to the timer. This prompt works the same way as the corresponding prompt in press and hold mode, save for a 20-second delay

(longer to allow the user to retrieve the phone from a purse or pocket). **Figure 5: EscortMe in Hands-Free Mode** illustrates this set of functionality.
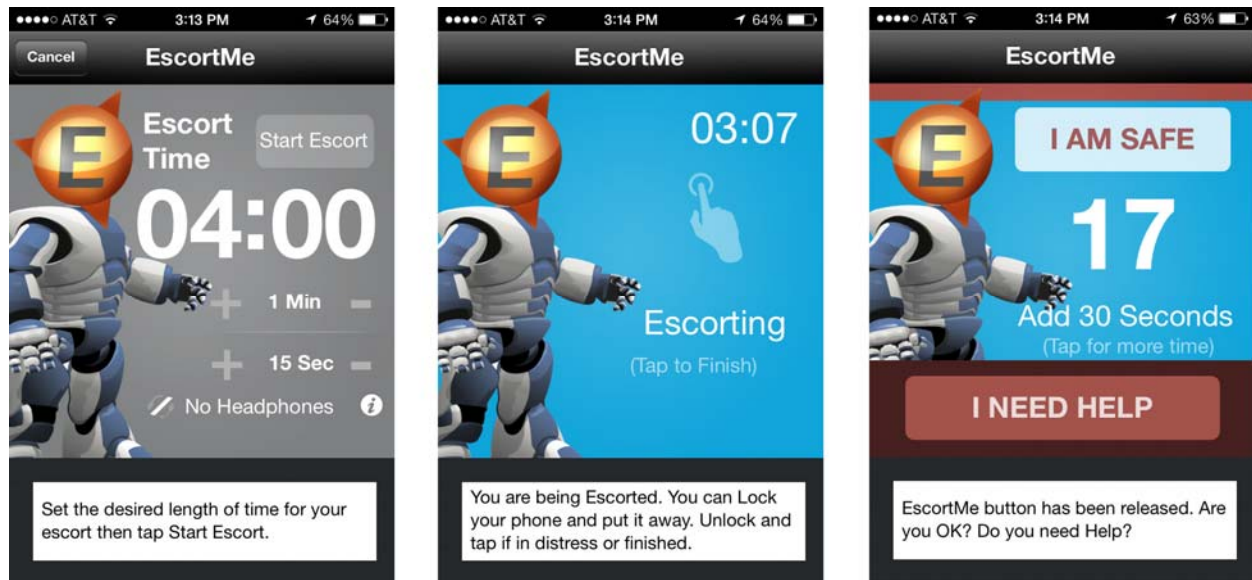
Figure 5: EscortMe in Hands-Free Mode

1.2.1.4   SkyWriter

SkyWriter is a GPS-integrated messaging function. It enables a mobile user to send geotagged messages via the smartphone's existing digital communication methods. By default, the function supports two statuses – "I am Ok" and "I Need Help" – but the user can customize the message text before sending.

When the user launches SkyWriter, the app displays a map with the phone's current location (address or latitude/longitude, as determined by the phone's onboard GPS and mapping functionality). When the user taps one of the status buttons at the bottom of the screen, the app launches a menu with all of the available communication channels that are configured on the phone. SkyWriter supports Facebook, Twitter, email, and Short Message Service (SMS) and Apple iMessage text messages. **Figure 6: SkyWriter Map and Communication Options** shows this UI on an iPhone with Twitter, email, and SMS/iMessage (but not Facebook) configured.
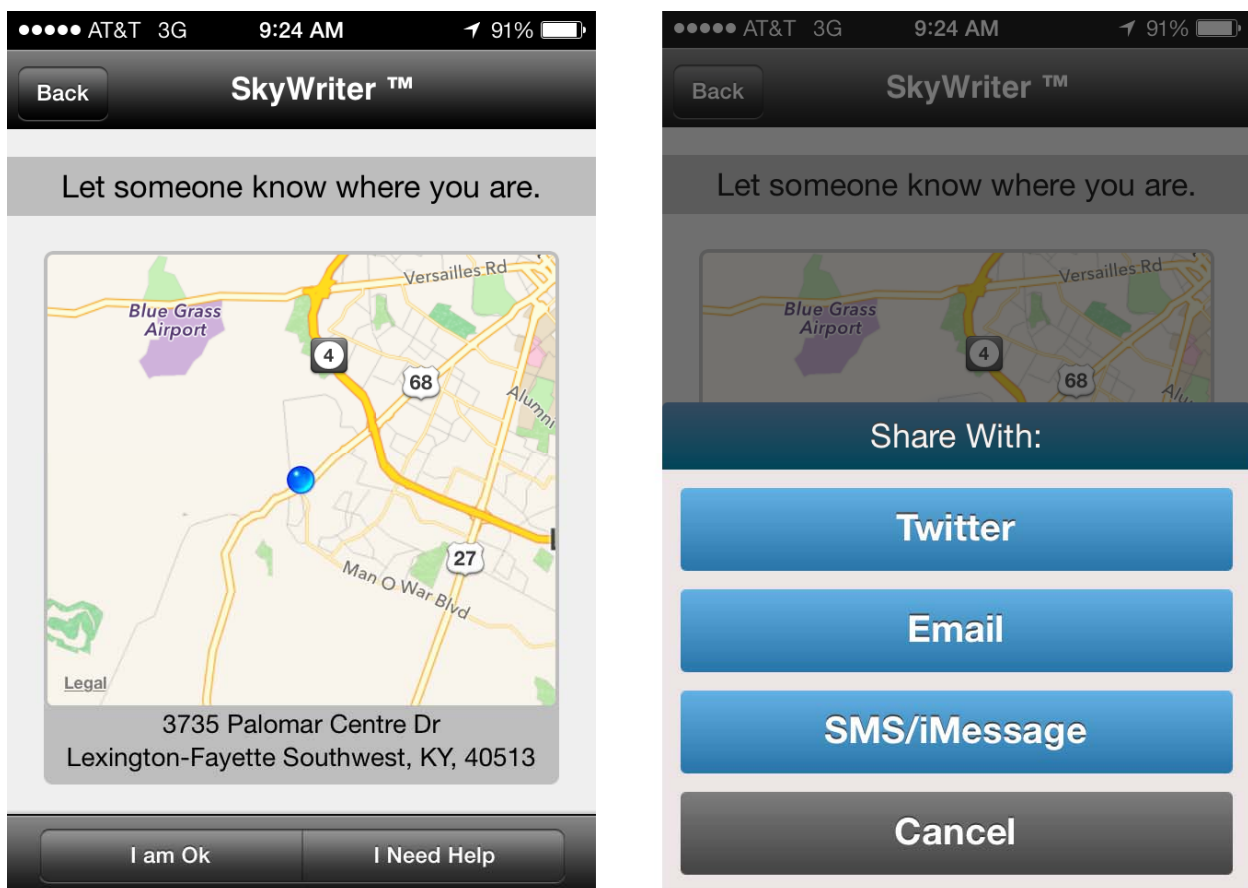
Figure 6: SkyWriter Map and Communication Options

When the user selects a communication channel, the app launches the appropriate communication service. The communication UI is pre-loaded with a message appropriate to the status the user selected. **Figure 7: SkyWriter Message Composition** illustrates the Twitter, email, and SMS/iMessage user interfaces.
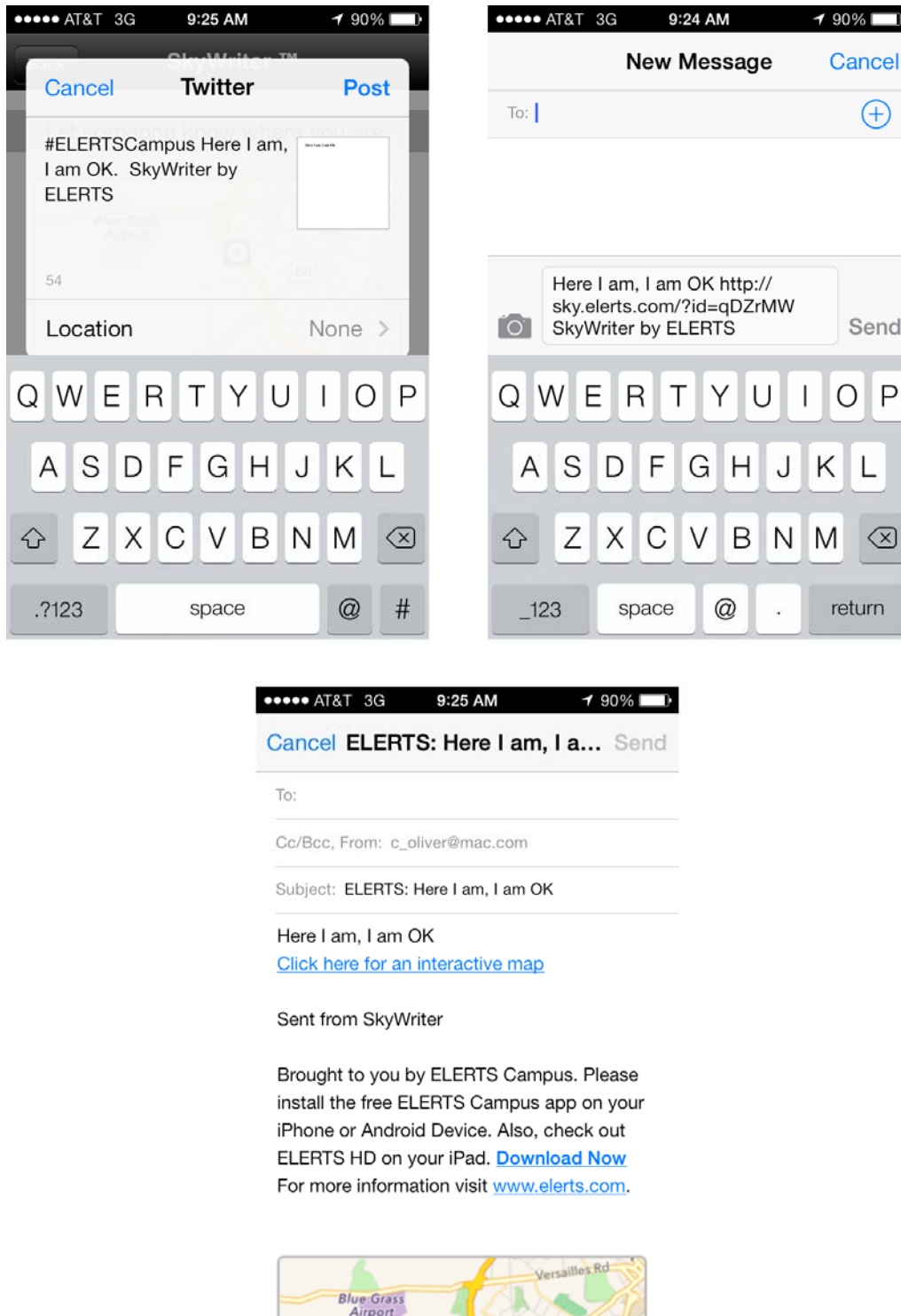
Figure 7: SkyWriter Message Composition

In a Twitter or Facebook message, the message is broadcast according to the user's privacy settings on that system. In an email or SMS message, the user can select recipients from the phone's address book or enter them manually. **Figure 8: SkyWriter Email** shows the content of a sample email message.

Figure 8: SkyWriter Email

1.2.2   EPICenter

EPICenter is the Web-based report management console for ELERTS Campus. It enables public safety officials to monitor incident reports and EscortMe virtual escort requests, send alert and notification messages to mobile users, and configure the behavior of the organization's ELERTS Campus system. EPICenter users also can engage in two-way text communication with mobile users who send incident reports or respond to alert and notification messages.

1.2.2.1   *Reports*

When a mobile user submits a report, EPICenter displays it in a list of incoming reports, as shown in **Figure 9: Incoming Reports**. Each report is summarized with its report type (title), content, any attached photo, and the location from which it was sent (if geotagging was enabled on the sender's phone).
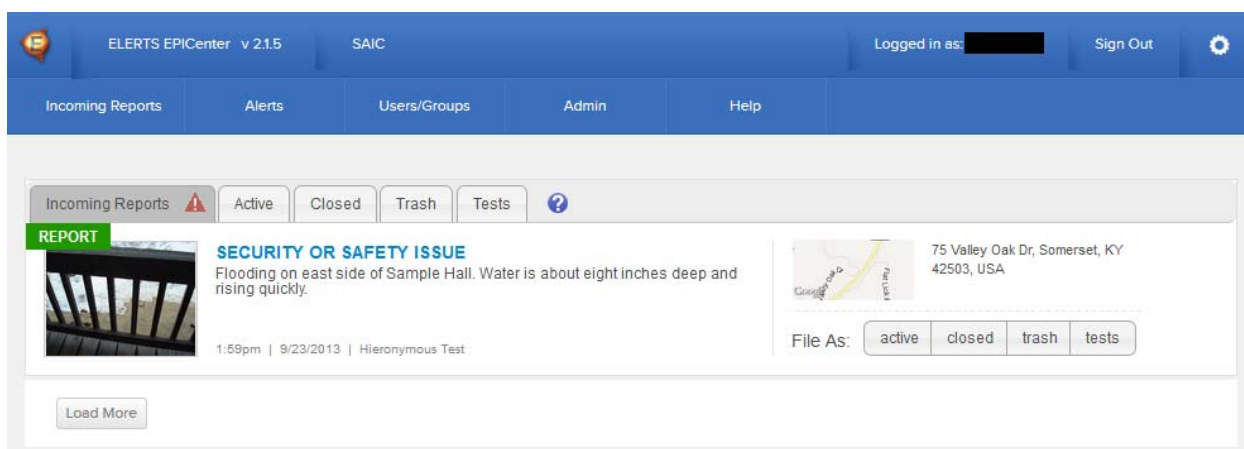
Figure 9: Incoming Reports

When a report is open, the user can "file" it as active, closed, trash, or a test; forward it as an email; and generate an alert and notification message (see **Section 1.2.2.3: Alerts**) based on the report. The user also can reply to the mobile user who sent the report. Such a reply will be sent to the mobile app, arriving as an alert in the mobile user's alert list (see **Section 1.2.1.2: Alert and Notification Reception**). **Figure 10: Report Details** shows the details of a selected report; the controls for responding to a report are at the top right of this screen.

Figure 10: Report Details

EPICenter can be configured to notify users if an incoming report remains unfiled or unattended for more than a set period of time. This notification can be a flashing red on-screen reminder, an audible alert tone, or an SMS message sent to a user or supervisor's phone.

1.2.2.2   EscortMe

EPICenter monitors and records all EscortMe virtual escort requests. Users can view all currently active requests, watching mobile user movements in real time. Users also can search for requests logged in a specific date range and/or by a specific mobile user, as shown in **Figure 11: EscortMe Escort Requests**.
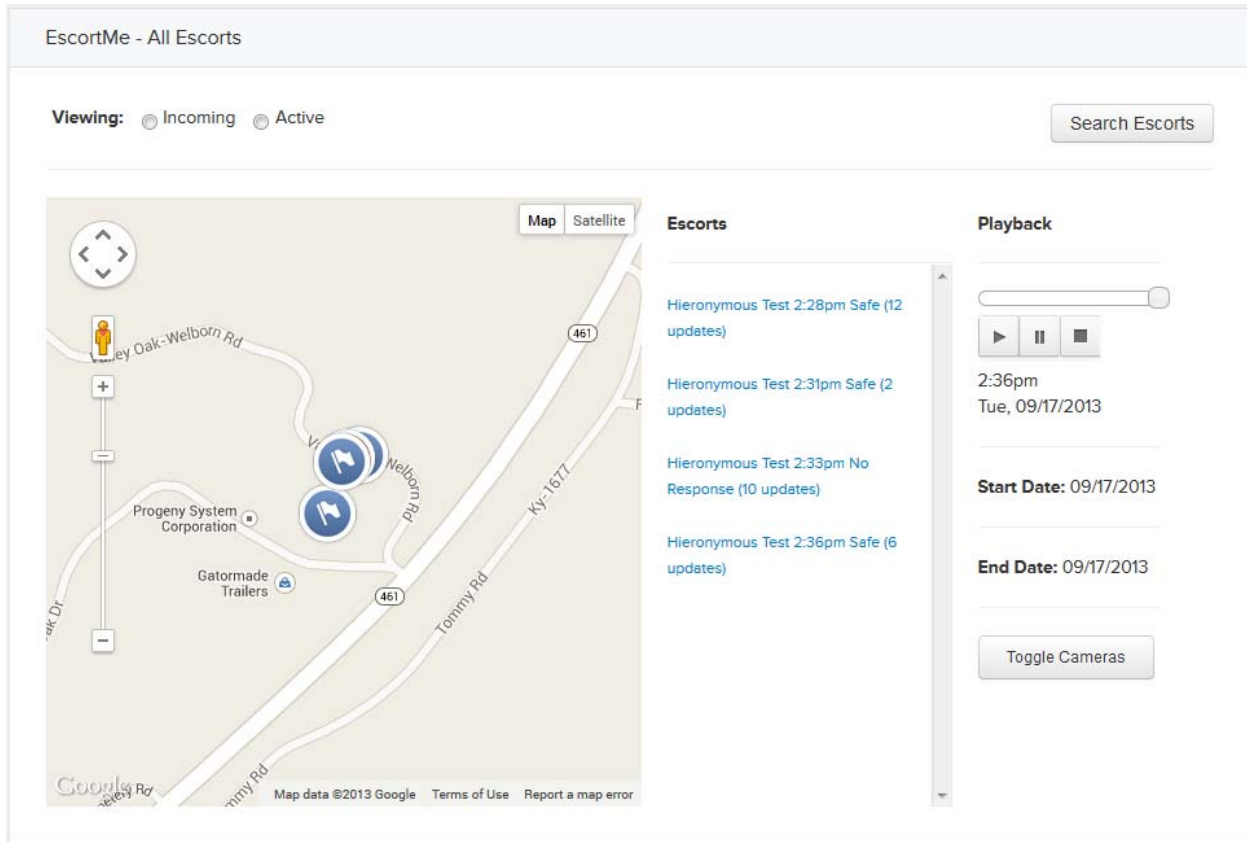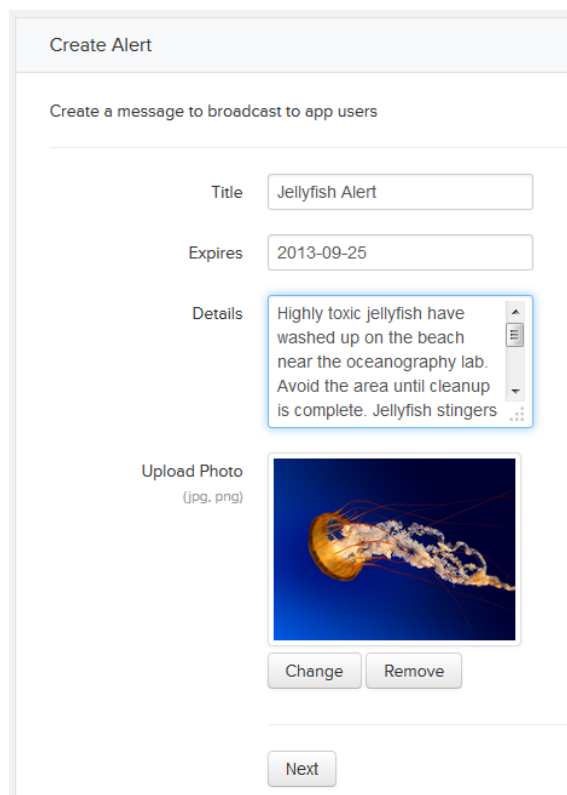
Figure 11: EscortMe Escort Requests

The user can display the mobile user's identifying information and the recorded position track of the virtual escort. It's also possible to replay the mobile user's movement at varying speeds.

1.2.2.3 Alerts

EPICenter enables users to compose alert messages and broadcast them to mobile users. The user can enter a message title, expiration date, and details, and can attach a photo. **Figure 12: Create Alert** shows the user interface for this functionality.

Figure 12: Create Alert

Once the alert is composed, the user can select one or more pre-defined user groups (see **Section 1.2.2.4: Mobile User and User Group Management**). These user groups will receive the alert through the mobile app when the EPICenter user sends it. The EPICenter user also can choose to send the alert to all mobile users, regardless of group membership. **Figure 13: Select Recipient Groups** shows the UI for this functionality.

Figure 13: Select Recipient Groups

1.2.2.4   Mobile User and User Group Management

EPICenter maintains a database of all mobile users who have installed the ELERTS Campus mobile app and used it to register with the organization. EPICenter users can create specific mobile user groups and include each mobile user in one or more of them. This enables users who issue alerts and warnings to target specific groups, such as campus security personnel, faculty who teach in a given building, or workers assigned to a certain shift. EPICenter users also can delete mobile users, removing them from all further alert distribution (though this does not remotely delete the mobile app from any user's smartphone).

1.2.2.5 Camera Management

EPICenter can record the locations and fields of view of campus security cameras. This enables users to overlay these cameras on EPICenter's maps, including those used to display the locations of incoming reports or the movement tracks of EscortMe mobile users. The screen also includes a search function, enabling users to search for cameras in or near a selected area. This information can aid public safety personnel in determining which cameras are in the best position to monitor or reconstruct an incident, or to verify the legitimacy of a report. **Figure 14: Camera Management** shows the UI for managing cameras.
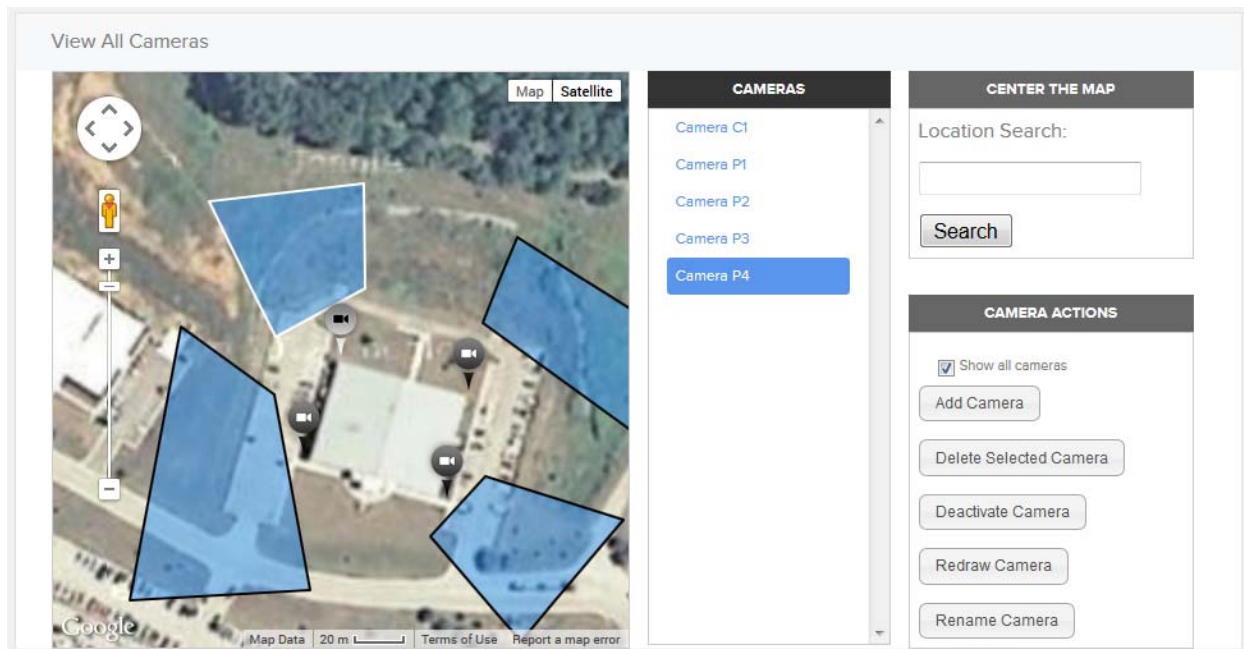
Figure 14: Camera Management

1.3 Objectives

The following objective established parameters for this evaluation:

Address the incorporation of NIMS concepts and principles. This includes a determination of how the system applies to the criteria for Emergency Support, Hazards, Preparedness, Communications and Information Management, Resource Management, and Command and Management. General questions on the system, including implementation considerations of the product, were also addressed.

1.4 Test Setup

The test was conducted on-site at IMTEL. The vendor provided:

- An instance of the ELERTS Campus EPICenter console (version 2.1.5) with administrator login credentials;

- An Apple iPhone pre-loaded with the ELERTS Campus mobile app for iOS (version 1.1.0); and

- A Samsung Galaxy S4 pre-loaded with the ELERTS Campus mobile app for Android (version 1.1.1).

Test engineers used vendor-provided documentation for product setup and configuration.

1.5   Test Schedule

The vendor provided remote training (presentation, demonstration, and hands on) to participants on 17 September 2013. The STEP team conducted the ELERTS Campus evaluation from 18 through 19 September 2013.

1.6   Scope and Limitations

Table 2: Scope and Limitations identifies issues that impacted the test of ELERTS Campus and the team's approach to mitigating them.

Table 2: Scope and Limitations

Limitation	Impact	Mitigation Strategy
None identified.	N/A	N/A

1.7   Execution

1.7.1   Participant Credentials

Table 3: Participant Credentials summarizes the STEP team's areas of expertise, roles during the evaluation, and years of experience.

Table 3: Participant Credentials

Title	Role	Years of Experience
Senior Security Analyst	Assessor; law enforcement and emergency management subject matter expert (SME)	36
Senior Systems Analyst	Assessor; medical and emergency management SME	5
Test Analyst	Test Analysis	3
Test Engineer	Test Engineer	8
Test Manager	STEP Test Manager	3

2.0 Results

Results presented in **Section 2.1.1: Objective 1: Evaluate Incorporation of NIMS Concepts and Principles** are within IMTEL's ISO/IEC 17025:2005 scope of accreditation. In the event that any individual findings fall outside the scope of accreditation, they will be clearly annotated as such.

2.1 NIMS Concepts and Principles

2.1.1 Objective 1: Evaluate Incorporation of NIMS Concepts and Principles

Assessors evaluated ELERTS Campus to determine if the system incorporates NIMS concepts and principles and documented results as identified in the following sections for Objective 1. Refer to **Appendix A: Detailed Results for NIMS Concepts and Principles** for additional details. The incorporation of NIMS concepts and principles is within IMTEL's ISO/IEC 17025:2005 scope of accreditation. The ratings for the NIMS concepts and principles are based on the professional opinions of subject matter experts with expertise in this specific subject matter.

ELERTS Campus is consistent with all NIMS criteria: Emergency Support, Hazards, Preparedness, Communications and Information Management, Resource Management, and Command and Management. The sections below summarize test results for NIMS concepts and principles.

2.1.1.1 Emergency Support

ELERTS Campus applies to all Emergency Support Functions (ESFs): Transportation; Communications; Public Works and Engineering; Firefighting; Emergency Management; Mass Care, Emergency Assistance, Housing, and Human Services; Logistics Management and Resource Support; Public Health and Medical Services; Search and Rescue; Oil and Hazardous Materials Response; Agriculture and Natural Resources; Energy; Public Safety and Security; Long-Term Community Recovery; and External Affairs.

ELERTS Campus applies to 8 of 9 Incident Command functions: Incident Command, Operations, Planning, Logistics, Intelligence/Investigations, Public Information, Safety, and Liaison.

2.1.1.2 Hazards

ELERTS Campus can support responses to natural hazards, human-caused events, and technological-caused events.

2.1.1.3 Preparedness

ELERTS Campus can be used to effectively support the preparedness activities for planning; procedures and protocols; training and exercises; and evaluation and revision.

2.1.1.4   Communications and Information Management

Common Operating Picture:

ELERTS Campus provides access to critical information. The system enables on- and off- scene personnel to have the same information about the incident. It offers an incident overview by collating and gathering information that enables users to make effective decisions. The system has the capability to be updated continually in order to maintain situational awareness. It uses geospatial information to track individual reports, which can be aggregated to form a geographic portrayal of an incident.

Interoperability:

The product is designed to allow members of an organization's staff or constituency, or the general public, to submit incident reports to public safety officials, and to enable those same officials to broadcast alerts and notifications to those mobile users. Interoperability under the SAFECOM definition *[Ref 2]* is outside its design scope, as it is not intended to interface with other incident management or incident command data systems.

Scalability:

ELERTS Campus can be used during small- and large-scale events, by a single jurisdiction or by multiple cooperating organizations, and across the full spectrum of multi-agency and multi-discipline incidents and events. The product allows responders to increase the numbers of users on the system, subject only to the capacity limits of data communication infrastructure. It can be used on scene or remotely and can be used by all levels of government and the private sector.

Plain Language:

The product and its end user documentation adhere to the principle of plain language (clear text).

Information Security:

The mobile components of ELERTS Campus allow mobile users to attain full functionality with minimal barriers. Mobile user management occurs through EPICenter, which allows administrators to create specific groups of mobile users and to send alerts and notifications only to those groups (as opposed to all mobile users).

EPICenter offers different levels of user access. Information restrictions are integrated into these access levels, enabling administrators to tailor the level of information that each user can see. User authentication is an ID/password system.

The vendor states that the server portion of the system is hosted on Amazon Web Services (AWS). Amazon's "AWS Security Center" page (http://aws.amazon.com/security/) states, "The AWS virtual infrastructure has been designed to provide optimum availability while ensuring complete customer privacy and segregation." Further assessment of this platform's security and redundancy was outside the scope of this evaluation.

2.1.1.5   Resource Management

ELERTS Campus addresses the need to manage resources. The product's alert and notification broadcast functionality provides a mechanism for mobilizing resources, while its reporting features support personnel accountability and resource ordering tasks.

2.1.1.6   Command and Management

ELERTS Campus is consistent with all 14 management characteristics of the Incident Command System (ICS): Common Terminology, Modular Organization, Management by Objectives, Incident Action Planning, Manageable Span of Control, Incident Facilities and Locations, Comprehensive Resource Management, Integrated Communications, Establishment and Transfer of Command, Chain of Command and Unity of Command, Unified Command, Accountability, Dispatch/Deployment, and Information and Intelligence Management.

As observed in the evaluation, the product does not use or generate ICS forms, organization charts, or terminology.

2.1.1.7   Implementation and Product Overview

It should take less than two weeks for a department/agency to implement this system (from acquiring and installing to achieving user proficiency). However, the system's utility will grow with the number of mobile users, because more mobile users will generate more reports and provide a broader base of alert and notification recipients. Because installation of the mobile app is a personal choice unless an organization issues managed smartphones to its employees, deploying the mobile app will be an ongoing effort for public outreach and/or employee training.

The EPICenter user guide is comprehensive. The vendor offers online, train-the-trainer, on-site presentation, and hands-on training. The vendor-provided training is comprehensive and enables recipients to proficiently use the system. Customer support is available based on the service level agreement (SLA) negotiated with the vendor at the time of purchase.

The mobile app is intuitive to use and include integrated tutorials. The vendor-provided training for the assessors included an overview of this app's functions, and assessors rapidly gained proficiency with no additional vendor input.

2.2   Additional Observations

Participants recorded the following observations during the test:

System Capabilities

- A user can attach only one photo to any one message (whether sent from EPICenter or from the mobile app). However, each reply to an existing message can have a different photo attached, and EPICenter does collect all of these photos within the displayed message thread.

- Assessors noted that the transmission of reports and alert messages in both directions (mobile app to EPICenter and EPICenter to mobile app) was near real time, with delays of no more than a few seconds.

Reliability

- The accuracy of geospatial data recorded by the mobile app is dependent on the GPS receiver of the smartphone. This accuracy can be reduced by any factor that affects GPS reception, including weather, terrain, and being indoors.

- The vendor states that the mobile app can function even in areas of limited cellular data coverage. In testing with a disconnected device, assessors observed that the mobile app automatically queued messages while the device was disconnected, then sent those messages as soon as connectivity was restored.

Appendix A: Detailed Results for NIMS Concepts and Principles

The ratings for the NIMS concepts and principles are based on the professional opinions of subject matter experts with expertise in this specific subject matter. **Table 4: STEP Worksheet Results** provides specific details of the test results.

Table 4: STEP Worksheet Results

Criteria and Question	Result
EMERGENCY SUPPORT	
EMERGENCY SUPPORT FUNCTIONS	
1. This product supports the following ESFs:	Agree/Disagree/Not Applicable
a. *ESF #1 - Transportation*	Agree
b. *ESF #2 - Communications*	Agree
c. *ESF #3 - Public Works and Engineering*	Agree
d. *ESF #4 - Firefighting*	Agree
e. *ESF #5 - Emergency Management*	Agree
f. *ESF #6 - Mass Care, Emergency Assistance, Housing, and Human Services*	Agree
g. *ESF #7 - Logistics Management and Resource Support*	Agree
h. *ESF #8 - Public Health and Medical Services*	Agree
i. *ESF #9 - Search and Rescue*	Agree
j. *ESF #10 - Oil and Hazardous Materials Response*	Agree
k. *ESF #11 - Agriculture and Natural Resources*	Agree
l. *ESF #12 - Energy*	Agree
m. *ESF #13 - Public Safety and Security*	Agree
n. *ESF #14 - Long-Term Community Recovery*	Agree
■ *Community Planning and Capacity Building*	Agree
■ *Health and Social Services*	Agree
■ *Infrastructure Systems*	Agree
■ *Economic*	Not Applicable
■ *Housing*	Agree
■ *Natural and Cultural Resources*	Not Applicable
o. *ESF #15 - External Affairs*	Agree
2. There are no obstacles to ESF(s) or RSF(s) implementing this product (i.e., from acquisition and installation to user proficiency).	Agree
3. Provide comments on ESF(s) or RSF(s) implementing this product, including direct and indirect support.	This product is broadly applicable to all response and recovery functions that require mass notification and/or public reporting of hazards or needs.
INCIDENT COMMAND	
4. This product supports the following Incident Command functions:	Agree/Disagree/Not Applicable

	a. *Incident Command*	Agree
	b. *Operations*	Agree
	c. *Planning*	Agree
	d. *Logistics*	Agree
	e. *Finance/Administration*	Not Applicable
	f. *Intelligence/Investigations*	Agree
	g. *Public Information*	Agree
	h. *Safety*	Agree
	i. *Liaison*	Agree
5.	There are no obstacles to Incident Command functions implementing this product (i.e., from acquisition and installation to user proficiency).	Agree
6.	Provide comments on Incident Command functions implementing this product, including direct and indirect support.	None.
7.	This product is consistent with the applicable ESFs and core functions of ICS. **(Minimum Product Requirement 1)**	Agree

HAZARDS	
Criteria and Question	**Result**
8. This product can be used to plan for or respond to the following hazard types:	Agree/Disagree/Not Applicable
a. *Natural hazards*	Agree
b. *Human-caused events*	Agree
c. *Technological-caused events*	Agree
9. Provide comments on hazards applicability.	This product is equally applicable to incidents involving all types of hazards.
10. This product can be used to plan for or respond to at least one hazard. **(Minimum Product Requirement 2)**	Agree

PREPAREDNESS	
Criteria and Question	**Result**
11. This product can be used to effectively support the following pre- and/or post-disaster recovery planning preparedness activities:	Agree/Disagree/Not Applicable
a. *Planning*	Agree
b. *Procedures and Protocols*	Agree
c. *Training and Exercises*	Agree
d. *Personnel Qualifications, Licensure, and Certification*	Not Applicable
e. *Equipment Certification*	Not Applicable
f. *Evaluation and Revision*	Agree
12. Provide comments on the product's support to preparedness activities.	The product is usable for all preparedness activities that rely on mass communication or require an audit log of such communication.
13. This product can be used to support one or more core preparedness activities; a, b, or c above. **(Minimum Product Requirement 3)**	Agree

COMMUNICATIONS AND INFORMATION MANAGEMENT	
Criteria and Question	**Result**
COMMON OPERATING PICTURE	
	Agree/Disagree/Not Applicable
14. This product supports user access to critical information.	Agree
15. This product allows on-scene and off-scene personnel to have the same information about the incident (e.g., situational awareness).	Agree
16. This product offers an incident overview by collating and gathering information that enables the Incident Commander (IC), Unified Command (UC), and supporting agencies and organizations to make effective, consistent, and timely decisions.	Agree
17. This product has the capability to be updated continually in order to maintain situational awareness.	Agree
18. This product uses or interacts with geospatial information to portray the incident.	Agree
19. This product includes geographic information system (GIS) features or functions. Identify the grid coordinate system(s) it supports:	Agree/Disagree/Not Applicable
a. Latitude/Longitude	Agree
b. Military Grid Reference System (MGRS)	Not Applicable
c. North American Datum of 1983 (NAD83)	Not Applicable
d. Universal Polar Stereographic (UPS)	Not Applicable
e. Universal Transverse Mercator (UTM)	Not Applicable
f. US National Grid (USNG)	Not Applicable
g. Other (specify)	None
20. Provide comments on the common operating picture.	The mobile app's geospatial functionality is dependent on the operating system's onboard mapping capabilities (respectively, Apple Maps for iOS and Google Maps for Android). The geospatial functionality of EPICenter is dependent on Google Maps. As tested, latitude/longitude was the only coordinate system available within the product.
INTEROPERABILITY	
	Agree/Disagree/Not Applicable
21. Incident reporting and documentation procedures are standardized to ensure situational awareness.	Agree

22. Comment on incident reporting and documentation procedures.	The product is designed for two-way incident-related communication. Individual members of the public or employees or constituents of an organization can use the mobile app for incident reporting. This generates a crowdsourced data set which drives situational awareness for the organization. All incoming reports are logged for future after-action reports (AARs) or audits.
23. This product allows NIMS ICS forms to be completed.	Not Applicable
24. If the product uses ICS forms, they remain consistent with the ICS form numbers and purpose of the specific type of form as identified by NIMS. (**Minimum Product Requirement 4**)	Not Applicable
25. Provide comments on ICS forms.	None.
26. This product provides a method for data sharing or is interoperable with other incident management systems via voice, data, or video, etc. Identify the applicable level(s) of Data Elements interoperability on the SAFECOM Interoperability Continuum:	Agree/Disagree/Not Applicable
a. *Swap Files*	Not Applicable
b. *Common Applications*	Not Applicable
c. *Custom-Interfaced Applications*	Not Applicable
d. *One-Way Standards-Based Sharing*	Not Applicable
e. *Two-Way Standards-Based Sharing*	Not Applicable
27. Provide comments on data sharing.	The product is a self-contained system for gathering public reports and broadcasting alerts. It is designed for stand-alone operations and has a specific role as an incident command tool.
28. This product is interoperable with other systems at the level of c, d, or e above. (**Minimum Product Requirement 5**)	Not Applicable
SCALABILITY	
	Agree/Disagree/Not Applicable
29. This product can be used to respond to small scale incidents and events. (**Minimum Product Requirement 6**)	Agree
30. This product can be used to respond to large scale incidents and events. (**Minimum Product Requirement 7**)	Agree
31. This product can be used by a single jurisdiction during incidents and events. (**Minimum Product Requirement 8**)	Agree
32. This product can be used across the full spectrum of multi-agency incidents and events. (**Minimum Product Requirement 9**)	Agree
33. This product can be used across the full spectrum of multi-discipline incidents and events. (**Minimum Product Requirement 10**)	Agree

34. This product allows responders to increase the number of users on a system.	Agree
35. Provide comments on scalability.	The mobile app is free to download. The only limit on the scale of the mobile user population is the number of interested parties who own smartphones. EPICenter is Web-based, allowing multiple authorized users simultaneous access.
36. The product can be used at the following:	Agree/Disagree/Not Applicable
a. On scene as a portable or static device.	Agree
b. On scene at the Incident Command Post (ICP).	Agree
c. At a Staging Area, Base, or Camp.	Agree
d. At a local EOC.	Agree
e. At a State EOC.	Agree
f. At a Federal Joint Field Office (JFO) or EOC.	Agree
37. Provide comments on Command and Coordination levels.	EPICenter is usable in any environment that provides Web access.
38. This product can be used by the following levels of government:	Agree/Disagree/Not Applicable
a. Municipality	Agree
b. County	Agree
c. Regional	Agree
d. Tribal	Agree
e. State	Agree
f. Federal	Agree
g. Special District	Agree
h. Agency	Agree
i. Other	Agree
39. This product can be used to support communications among multiple levels of government(s).	Agree
40. Provide comments on levels of government.	The product is applicable to public safety operations at any level of government. In the alert and notification role, the product can be used to send alerts and other messages to selected sub-groups of users. In an institutional setting that includes multiple levels of government, these sub-groups can include individuals from some or all of those levels.
41. This product is flexible enough to be used by the public and private sectors.	Agree

42. Provide comments on use by the public and private sectors.	The product is equally applicable to public safety operations in the public and private sectors.
PLAIN LANGUAGE	
	Agree/Disagree/Not Applicable
43. This product adheres to the principle of plain language (clear text). (**Minimum Product Requirement 11**)	Agree
44. Provide comments on the use of plain language.	The product's user interface adheres to the plain language principle. However, the content of messages sent through the product is dependent on individual users' adoption of plain language.
INFORMATION SECURITY	
	Agree/Disagree/Not Applicable
45. This product has redundancy capabilities as a part of its functionality.	Agree
46. The product provides a means to properly authenticate and certify users for security purposes.	Agree
47. This product provides controls to restrict access to sensitive information. (**Minimum Product Requirement 12)**	Agree
48. This product does not introduce any unique security or vulnerability concerns.	Agree
49. Describe any safeguards integrated to minimize security and/or vulnerability concerns.	EPICenter offers different levels of user access, with information restrictions integrated into user role definitions.
50. Provide comments on information security.	None.
Minimum Product Requirement Summary: Rating for the Communications and Information Management category.	**Agree:** 7 of 9 **Disagree:** 0 of 9 **Not Applicable:** 2 of 9
RESOURCE MANAGEMENT	
Criteria and Question	**Result**
	Agree/Disagree/Not Applicable
51. This product addresses the need to manage resources.	Agree
52. This product provides for requirements identification.	Not Applicable
53. This product provides for mobilizing resources.	Agree
54. This product addresses the use of Mutual Aid Agreements and resources. (**Minimum Product Requirement 13)**	Not Applicable
55. This product provides an integrated means for resource typing definitions. (**Minimum Product Requirement 14)**	Not Applicable
56. This product provides a means for inventorying FEMA typed resources. (**Minimum Product Requirement 15)**	Not Applicable
57. This product provides a means for inventorying non-FEMA typed resources. (**Minimum Product Requirement 16)**	Not Applicable
58. This product provides a record of credentialed and other personnel. (**Minimum Product Requirement 17)**	Not Applicable

59. This product provides a means for performing personnel and equipment accountability. **(Minimum Product Requirement 18)**	Agree
60. This product provides a means for resource requesting/ordering. **(Minimum Product Requirement 19)**	Agree
61. This product provides a means for resource tracking/reporting. **(Minimum Product Requirement 20)**	Not Applicable
62. This product provides a means for resource recovery and demobilization. **(Minimum Product Requirement 21)**	Not Applicable
63. This product assists in the reimbursement process. **(Minimum Product Requirement 22)**	Not Applicable
64. This product provides a means for communicating resource requests and/or responses.	Agree
65. Provide comments on resource management.	The product is not designed as a resource management tool. However, its communication functions can be applied to personnel accountability, resource requests, and other alert and notification activities related to resource management.
Minimum Product Requirement Summary: Ratings for the Resource Management category.	**Agree:** 2 of 10 **Disagree:** 0 of 10 **Not Applicable:** 8 of 10
COMMAND AND MANAGEMENT	
Criteria and Question	**Result**
	Agree/Disagree/Not Applicable
66. This product assists users in the management of an incident.	Agree
67. This product supports (or is consistent with) the following management characteristics of ICS:	Agree/Disagree/Not Applicable
a. Common Terminology	Agree
b. Modular Organization	Agree
c. Management by Objectives	Agree
d. Incident Action Planning	Agree
e. Manageable Span of Control	Agree
f. Incident Facilities and Locations	Agree
g. Comprehensive Resource Management	Agree
h. Integrated Communications	Agree
i. Establishment and Transfer of Command	Agree
j. Chain of Command and Unity of Command	Agree
k. Unified Command	Agree
l. Accountability	Agree
m. Dispatch/Deployment	Agree
n. Information and Intelligence Management	Agree
68. Overall, this product is consistent with the applicable 14 ICS management characteristics. **(Minimum Product Requirement 23)**	Agree

Criteria and Question	Result
69. If the product references ICS, the organization charts and/or terminology are consistent with it. **(Minimum Product Requirement 24)**	Not Applicable
70. Comment on the product's integration of ICS management characteristics.	Although the product is not designed as an ICS command tool, its communication capabilities can support all ICS management functions.
Minimum Product Requirement Summary: Ratings for the Command and Management category.	**Agree:** 1 of 2 **Disagree:** 0 of 2 **Not Applicable:** 1 of 2
IMPLEMENTATION AND PRODUCT OVERVIEW	
Criteria and Question	**Result**
IMPLEMENTATION	
	Agree/Disagree/Not Applicable
71. This product can be easily implemented.	Agree
72. Vendor-supplied documentation (including training materials and user's guides) is comprehensive.	Agree
73. Comment on implementation.	The product is simple to use. Documentation is appropriate for the UI's level of complexity.
74. The vendor provides the following types of practitioner training:	Agree/Disagree/Not Applicable
a. *Online*	Agree
b. *Train-the-trainer*	Agree
c. *On-site presentation*	Agree
d. *Hands-on training*	Agree
75. Comment on practitioner training.	The training provided by the vendor to assessors, in conjunction with hands-on familiarization, was adequate for the product.
76. Training provided allows recipients to proficiently use this product.	Agree
77. There are no unique obstacles introduced by this product that would prohibit a department or agency from providing product training.	Agree
78. Describe any unique obstacles to training.	None.
79. This product has an integrated help tool that is comprehensive.	Agree
80. Comment on the help tool.	The product's integrated help system is a PDF document, which launches within Acrobat Reader. The UI is largely intuitive and this PDF provides an appropriate amount of detail and user assistance.

81. Is customer support available? If so, what is its availability and what medium is used (e.g., e-mail, phone, live-chat)?	Customer support was available through email and teleconference during this evaluation, which was conducted during normal business hours. The vendor states that they work closely with individual customers to establish SLAs for support.
82. How long would it take a department, agency, or jurisdiction to implement this product?	Less than two weeks.
83. Comment on how the size or makeup of a department, agency, or jurisdiction can impact the implementation of this product.	The product is scalable. The only impact a purchasing institution's size would have on implementation is the need to train a larger user base on EPICenter (i.e., a larger institution would presumably have a larger public safety staff to monitor EPICenter). The mobile app is intuitive and requires, at most, minimal training.
84. Comment on any identified impacts.	None.
85. Federal, state, or local laws or regulations will not hinder the implementation of this product.	Agree
86. Comment on any laws that may hinder this implementation.	Use of some communication modes that the product supports may be subject to state or local laws.
87. Identify any issues with urban or rural implementation.	In areas with limited cellular data coverage, this product's communication abilities will be impaired.
88. Identify any issues with paid, combination, or volunteer departments.	None noted.

89. Identify associated expenditures that may be incurred in addition to the initial procurement of this product.	Overall system use and hosting of EPICenter may require an annual service fee, depending on the customer's contract with the vendor. Scaling up the system for major events (e.g., sporting events that draw tens of thousands of spectators, some of whom will become additional mobile users) may incur added service and staffing costs. The mobile app is a free download. However, if a institution requires some or all mobile users to subscribe to the system for alert and notification purposes, those individuals will need to have compatible smartphones with data plans.
PRODUCT OVERVIEW	
90. Overall, this product is consistent with the concepts and principles of NIMS. To receive an "Agree" in this category, this product must be consistent with all of the applicable supporting Minimum Product Requirements.	Agree
91. Identify any issues with NIMS consistency.	None noted.
92. Comment on what position(s) would benefit most from this product and how it will impact the job performance for the user.	This product is both a data collection tool for crowdsourced reports and an alert and notification tool for broadcasting messages to subscribers.
93. This product was easy to use and intuitive.	Agree
94. Comment on the products ease of use.	Assessors found the mobile app and EPICenter to be easy and intuitive to use.
95. This product was reliable during the evaluation.	Agree
96. Describe any issues with reliability.	None noted.
97. Comment on the primary capability/features provided by this product.	The product provides two primary capabilities. The first is the ability to gather incident and hazard reports from mobile users. The second is the capability to disseminate alerts and notifications to those mobile users.
98. Provide any other observations.	See **Section 2.2: Additional Observations**.

Appendix B: References

1. American Association for Laboratory Accreditation. http://www.a2la.org/

2. *Fiscal Year 2012 SAFECOM Guidance on Emergency Communications Grants*. U.S. Department of Homeland Security, Office of Emergency Communications. http://www.safecomprogram.gov/SiteCollectionDocuments/2012_SAFECOM%20Guidance_FINAL.pdf

3. *National Incident Management System*. U.S. Department of Homeland Security, December 2008. http://www.fema.gov/pdf/emergency/nims/NIMS_core.pdf

4. *National Response Framework*. U.S. Department of Homeland Security, January 2008. http://www.fema.gov/pdf/emergency/nrf/nrf-core.pdf

5. *NIMS Recommended Standard List (RSL)*. Federal Emergency Management Agency, January 2009. http://www.fema.gov/pdf/emergency/nims/FY09_Recommend_Standards_List_121708.pdf

6. *Supporting Technology Evaluation Project (STEP) Guide*. Preparedness-Technology, Analysis, and Coordination Center, May 2013. https://www.ptaccenter.org/static/files/STEP-Guide.pdf

Appendix C: Acronyms and Abbreviations

A2LA   American Association for Laboratory Accreditation

AAR   After-Action Report

AWS   Amazon Web Services

DHS   Department of Homeland Security

EOC   Emergency Operations Center

ESF   Emergency Support Function

FEMA   Federal Emergency Management Agency

GIS   Geographic Information System

GPS   Global Positioning System

IC   Incident Commander

ICP   Incident Command Post

ICS   Incident Command System

IEC   International Electrotechnical Commission

IMTEL   Incident Management Test and Evaluation Laboratory

ISO   International Organization for Standardization

JFO   Joint Field Office

NIMS   National Incident Management System

NPD   National Preparedness Directorate

P-TAC   Preparedness-Technology, Analysis, and Coordination

RSF   Recovery Support Function

SAIC   Science Applications International Corporation

SLA   Service Level Agreement

SME   Subject Matter Expert

SMS   Short Message Service

STEP   Supporting Technology Evaluation Project

TR   Test Report

UAT   User Acceptance Test

UC   Unified Command

UI   User Interface