



STEP Evaluation Report

Battalion 3 Technologies Incident Command X Version 2.0.2
TR_ICx_16064

August 2013



FEMA

DISCLAIMER: The evaluation results and use of trade names in this document do not constitute a DHS or FEMA certification or endorsement of the use of such commercial hardware or software.

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Executive Summary

This report presents the results from an evaluation of Incident Command X version number 2.0.2 (hereafter referred to as ICx), a product¹ marketed by Battalion 3 Technologies. 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 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 ICx evaluation was conducted from 06 through 08 August 2013. This was a User Acceptance Test; therefore, it specifically addressed adherence to National Incident Management System (NIMS) concepts and principles. The test does not address technical standards. This test had one objective:

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

ICx is a Microsoft Windows-based software program that serves as a command board for fire service incident commanders. It enables users to track the units (apparatus and associated personnel) assigned to an incident, as well as their assignments. It provides additional assistance in the form of incident-specific checklists for critical actions and personnel accountability reports (PARs) and preset alert and notification timers. An automatic logging function records all significant events for later review. The product can be configured to reflect an individual agency's policies, standard operating procedures (SOPs), and organizational structure.

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 and remotely, using desktop and notebook computers to run ICx and screen-sharing software to coordinate activities. 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 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.

¹ The terms *product*, *system*, and *technology* are used interchangeably throughout this report.

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)	4	0	5
Resource Management (10)	3	0	7
Command and Management (2)	2	0	0

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>).

ICx is consistent with all NIMS criteria: Emergency Support; Hazards; Preparedness; Communications and Information Management; Resource Management; Command and Management. Overall, ICx applies to 12 of 24 Minimum Product Requirements, of which 12 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 Incident Command X version number 2.0.2, a product marketed by Battalion 3 Technologies. 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 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.

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 was conducted for ICx. 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 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. Other individual findings, observations, and results that fall outside the scope of accreditation are marked with an asterisk (*).

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.

ICx is a Microsoft Windows-based software program that serves as a command board for fire service incident commanders. It enables users to track the units (apparatus and associated personnel) assigned to an incident, as well as their assignments. It provides additional assistance in the form of incident-specific checklists for critical actions and personnel accountability reports (PARs) and preset alert and notification timers. An automatic logging function records all significant events for later review. The product can be configured to reflect an individual agency's policies, standard operating procedures (SOPs), and organizational structure.

1.2.1 Core Functionality

ICx's focus is personnel assignment and accountability tracking on the fireground. The functions supporting these tasks are located in a user interface (UI) that mimics a physical (e.g., dry-erase or magnetic) command board. **Figure 1: Command Board Overview** provides an example of a command board for a commercial structure fire.

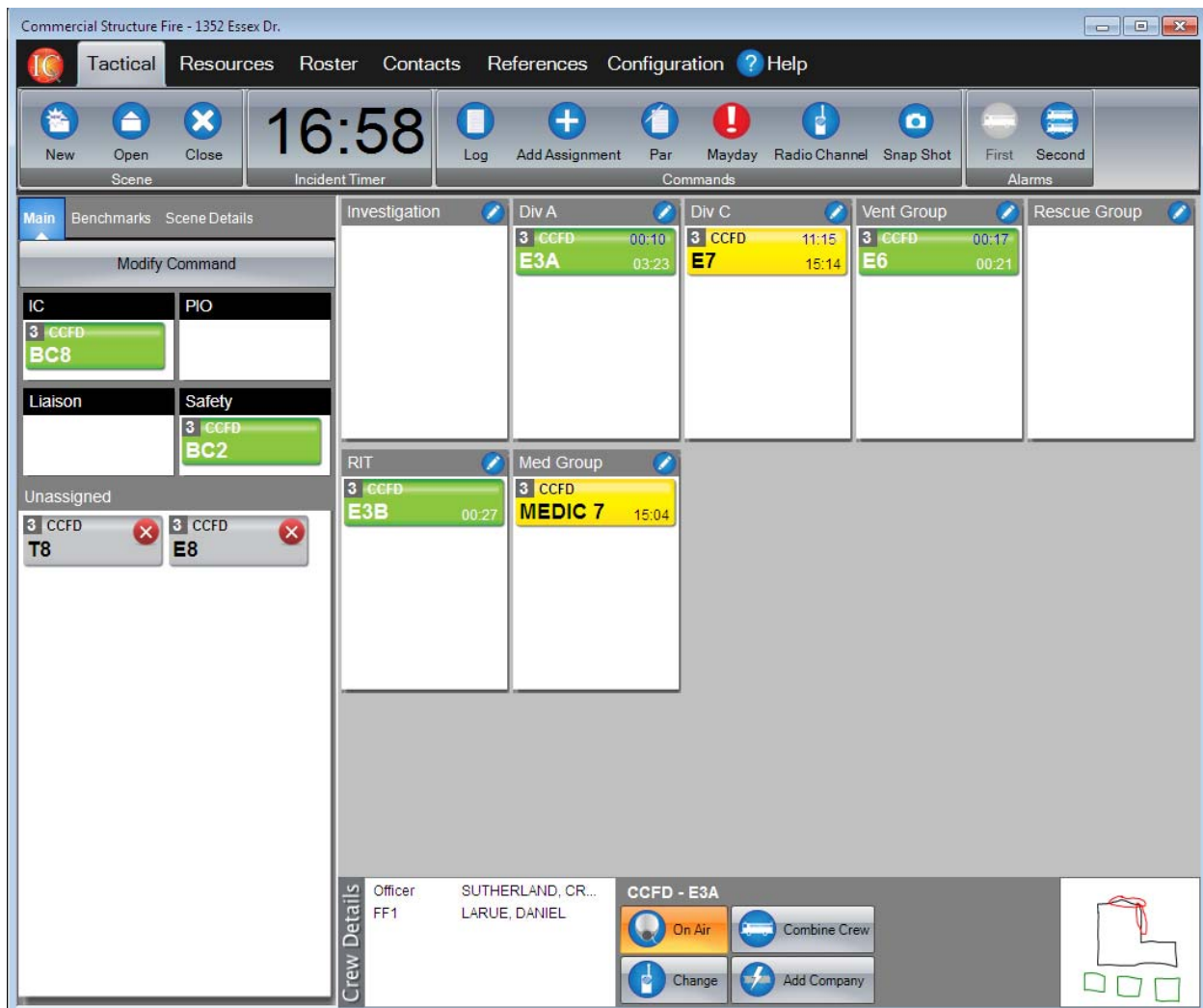


Figure 1: Command Board Overview

In the screen capture above, the top of the screen contains the primary menu bar and toolbar and an overall incident timer. The left side of the screen shows the units assigned to incident command roles (Incident Commander [IC], Public Information Officer [PIO], Safety Officer, and Liaison Officer), as well as units that are tasked to the incident but not assigned within the incident.

The central area of the screen shows assignments within the incident, as well as which units are in each assignment. The user can add, remove, or rename assignments to reflect the organizational structure in use for the current incident. Unit assignments are managed via a drag-and-drop UI, mimicking the process of moving tags on a physical command board.

The bottom section of the screen displays the details of the selected unit's crew. It also contains controls for modifying that crew's on-air status and radio channel assignment and for splitting that crew into two elements. The user can give a split crew's elements separate assignments (e.g., Truck 3A to ventilation and Truck 3B to rescue) and can merge them when they resume operating as a single unit.

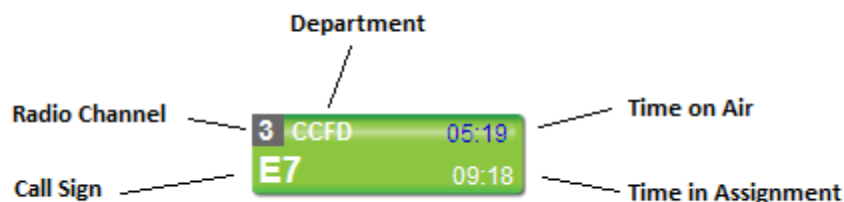


Figure 2: Unit Indicator Detail

Figure 2: Unit Indicator Detail, shown above, is a close-up of a sample unit indicator. This includes the unit's assigned radio channel, its department, its call sign or designation, and the length of time it has been in its current assignment. Once a unit has been in an incident duty assignment for a predetermined length of time (10 minutes by default), the unit indicator's background color changes from green to yellow. The user can use the unit-level controls to flag a unit as "on air," indicating that personnel are using self-contained breathing apparatus (SCBA); this starts a separate timer for tracking air use.

The bottom right corner of the screen contains a sketch board. The user can launch this in a separate window to create tactical diagrams. **Figure 3: Sketch Board**, below, depicts the sketch board in drawing mode.

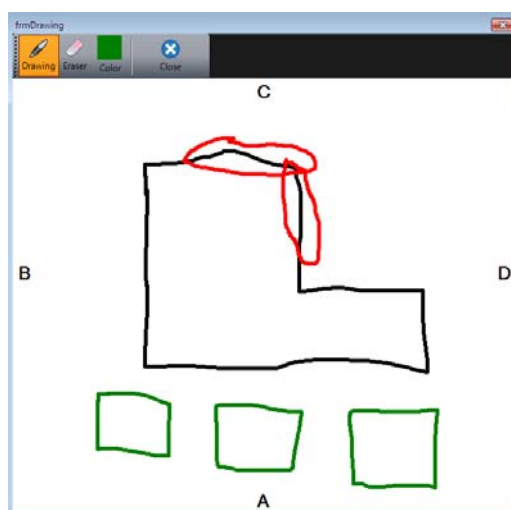


Figure 3: Sketch Board

1.2.1.1 Benchmark and Scene Detail Functionality

In addition to displaying incident command assignments and unassigned units under the Main tab, two additional tabs are available to display incident information. The Benchmarks tab contains a checklist of incident benchmarks. Clicking a benchmark button marks it as achieved, along with the time at which it was completed. This also creates an incident log entry for that status change. The Scene Details tab contains basic dispatch and record-keeping information about the incident, which also is recorded in the ongoing incident log as the user enters it. **Figure 4: Main, Benchmark, and Scene Details Tabs** illustrates all three of these tabs in use.

The figure displays three screenshots of a software interface, likely for incident management, showing different tabs: Main, Benchmarks, and Scene Details.

Main Tab: Features a 'Modify Command' section with a table for assigning personnel. The table has columns for 'IC' and 'PIO'. Under 'IC', there is a green button labeled '3 CCFD BC8'. Under 'PIO', there is a green button labeled '3 CCFD BC2'. Below the table, there is an 'Unassigned' section with a green button labeled '3 CCFD E3' and a red 'X' icon.

Benchmarks Tab: Displays a list of benchmarks with their status and time. The benchmarks are: '360/Size up' (Achieved, 08:37:24), 'Survivability Profile' (Incomplete), 'Water Supply' (Achieved, 08:37:48), '2 Out' (Incomplete), 'Utilities GAS' (Incomplete), and 'Utilities ELEC' (Incomplete).

Scene Details Tab: Displays incident information. The 'Incident Time' is 08/14/2013 12:54:23. The 'Address / Scene Location' is 1352 Essex Dr. The 'Incident number' is 2013-05114. The 'Command Post Location' is Side A. The 'RIT Location' is Side D. The 'Staging Location' is Essex & 31st Street. The 'Responsible Party' is blank. The 'Responsible's Phone Number' is blank. The 'Weather Info' is blank.

Figure 4: Main, Benchmark, and Scene Details Tabs

1.2.1.2 Incident Log Functionality

The product's incident log feature automatically records each change in incident, unit, and benchmark status, as shown below in **Figure 5: Incident Log**. The user also can manually add log entries. The user can print the log and export it to PDF but cannot edit it.

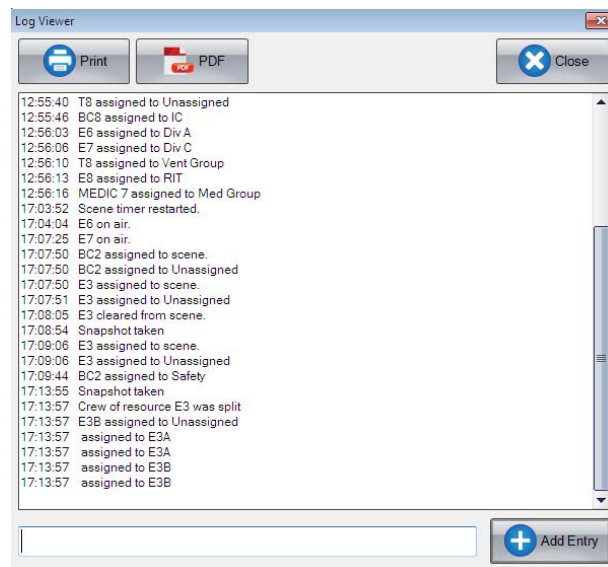


Figure 5: Incident Log

In addition to this text-based log, the user can use a “snapshot” function to save screen images. Each image shows the state of the UI at the time it was taken. This includes the state of the sketch board described in **Section 1.2.1: Core Functionality**.

1.2.1.3 PAR and Mayday Functionality

As a personnel accountability tool, the product enables the user to perform and track a PAR. The PAR can be logged by unit or by individual crew member, as shown in **Figure 6: PAR by Unit or Crew Member** (respectively, left and right sides of the figure).



Figure 6: PAR by Unit or Crew Member

If a unit or crew member fails to report or declares a mayday, ICx also enables the user to track related actions. Declaring a mayday in the product launches a separate unit assignment area on the right side of the screen that is specific to the mayday, as shown below in **Figure 7: Mayday**. The unit in distress and the units serving in the Rapid Intervention Team (RIT) assignment can be moved here, with the unit in distress highlighted in red (a color which, in the product’s UI, is reserved solely for mayday functions). Declaring a mayday also saves a screen image.

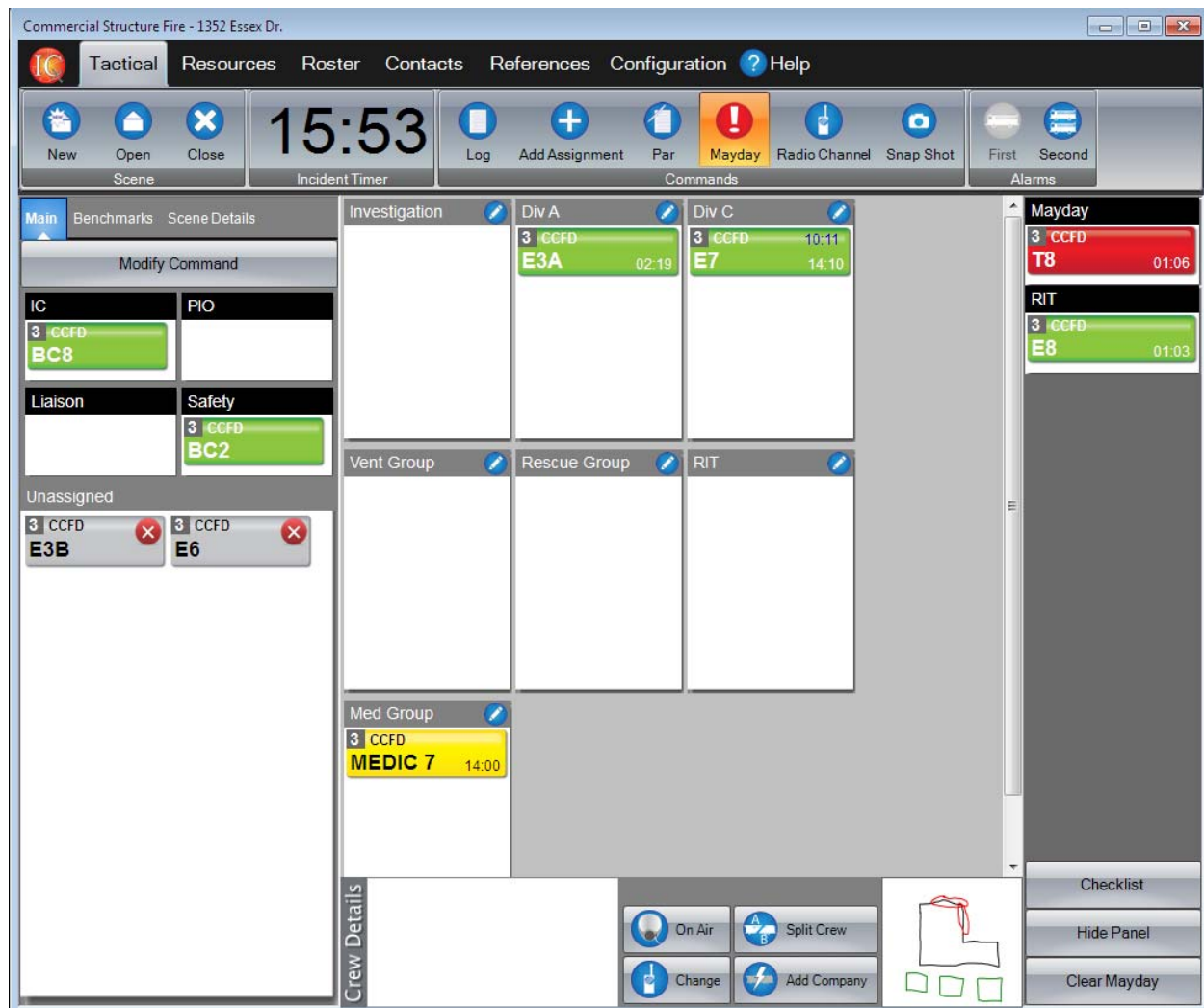
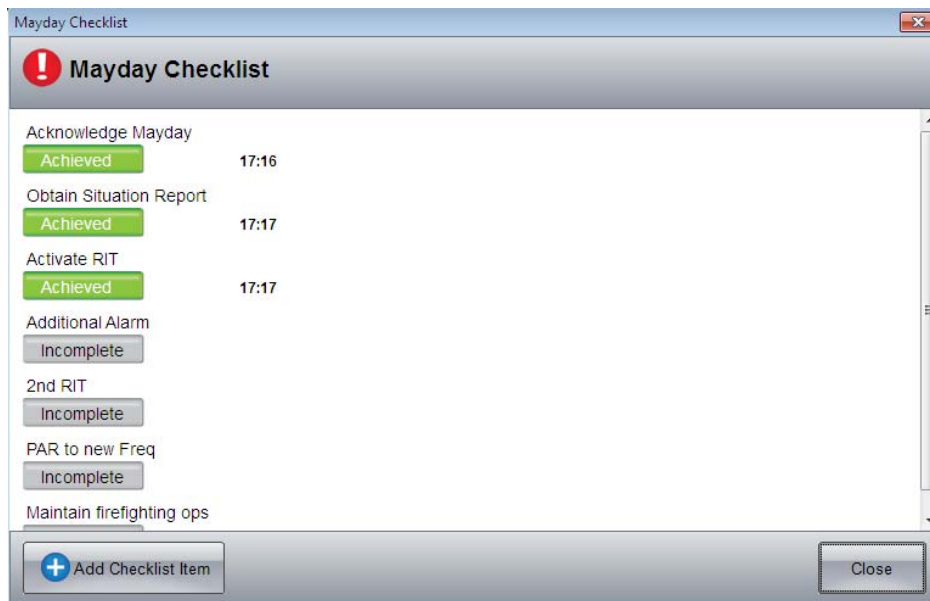


Figure 7: Mayday

The product also contains a customizable mayday checklist, as shown below in **Figure 8: Mayday Checklist**. This checklist functions similarly to the benchmark checklist, displaying the time at which each objective was marked as achieved.



The image shows a software window titled "Mayday Checklist". It has a header bar with a red exclamation mark icon and the text "Mayday Checklist". Below the header, there is a list of tasks. Each task has a status button (green for "Achieved", grey for "Incomplete") and a time stamp. The tasks are: "Acknowledge Mayday" (Achieved, 17:16), "Obtain Situation Report" (Achieved, 17:17), "Activate RIT" (Achieved, 17:17), "Additional Alarm" (Incomplete), "2nd RIT" (Incomplete), "PAR to new Freq" (Incomplete), and "Maintain firefighting ops". At the bottom of the window, there is a button with a plus icon and the text "Add Checklist Item", and a "Close" button.

Task	Status	Time
Acknowledge Mayday	Achieved	17:16
Obtain Situation Report	Achieved	17:17
Activate RIT	Achieved	17:17
Additional Alarm	Incomplete	
2nd RIT	Incomplete	
PAR to new Freq	Incomplete	
Maintain firefighting ops		

Figure 8: Mayday Checklist

1.2.2 Resource and Roster Management

While it is possible to assign units and personnel to an incident in an ad hoc fashion, ICx enables a fire department to configure units and crews prior to an incident. Resources can be organized by department, station, and battalion; can be classified by apparatus or company type; and can be assigned to an incident that is currently active in the product. **Figure 9: Resource Management** shows the resource management UI.

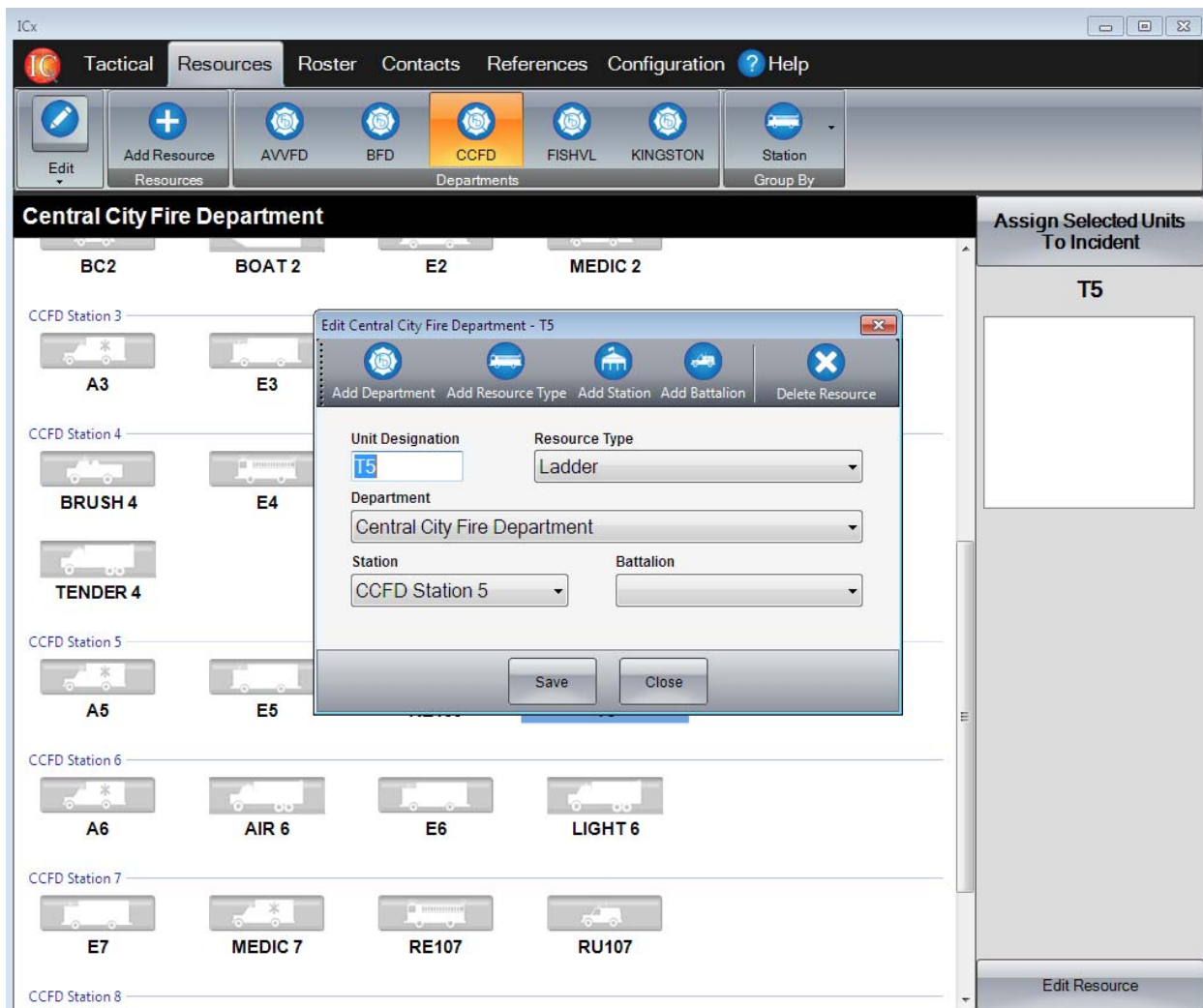


Figure 9: Resource Management

A similar interface enables the user to list department personnel in ICx and track their crew or shift assignments. **Figure 10: Roster Management** illustrates this UI. The vendor states that ICx is designed to integrate with their free FireRoster online roster management service to provide more detailed personnel management functions, but assessment of FireRoster's capabilities was outside the scope of this evaluation.²

² The test engineer did use FireRoster during setup to load the data set that assessors used during the evaluation.

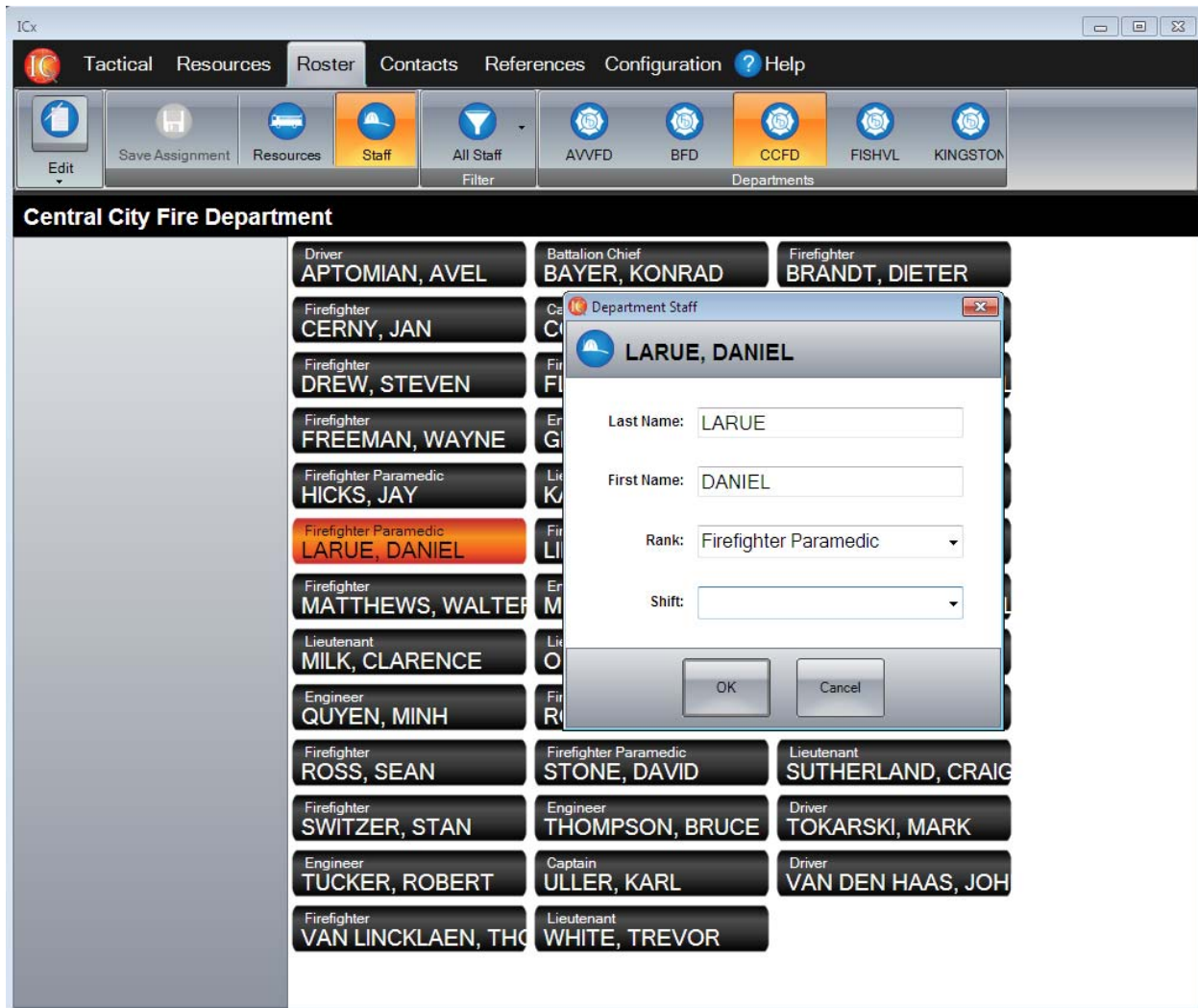


Figure 10: Roster Management

1.2.3 Reference and Contact Management

ICx provides additional information management functionality through its reference and contact management features. Its reference functions enable users to store PDF documents and to bookmark Web pages within the application. Resources stored in this fashion can be viewed inside ICx. Viewing bookmarked Web pages does require Internet connectivity.

The product's reference area is pre-loaded with two hazardous materials (HAZMAT) reference sources: the 2012 edition of the Emergency Response Guidebook (ERG) and a bookmark for WebWiser. **Figure 11: ERG** illustrates the ERG interface.

ICx

Tactical Resources Roster Contacts References Configuration Help

ERG WebViewer Modify Custom

Type in Material ID or Name of Material

Material	ID	Guide
Ferric arsenate	1606	151
Ferric arsenite	1607	151
Ferrous arsenate	1608	151
Hexaethyl tetraphosphate	1611	151
Hexaethyl tetraphosphate, II	1611	151
Hexaethyl tetraphosphate, s	1611	151
Hexaethyl tetraphosphate, a	1612	123
Hydrocyanic acid, aqueous	1613	154
Hydrocyanic acid, aqueous	1613	154
Hydrogen cyanide, stabilize...	1614	152
Lead acetate	1616	151
Lead arsenates	1617	151
Lead arsenites	1618	151
Lead cyanide	1620	151
London purple	1621	151
Magnesium arsenate	1622	151
Mercuric arsenate	1623	151
Mercuric chloride	1624	154
Mercuric nitrate	1625	141
Mercuric potassium cyanide	1626	157
Mercurous nitrate	1627	141
Mercury acetate	1629	151
Mercury ammonium chloride	1630	151
Mercury benzoate	1631	154
Mercuric bromide	1634	154
Mercurous bromide	1634	154
Mercury bromides	1634	154

Orange Guide Isolation and Protective Distances Water Reactive

GUIDE 154 **SUBSTANCES - TOXIC AND/OR CORROSIVE (NON-COMBUSTIBLE)** **ERG2012**

POTENTIAL HAZARDS

HEALTH

- **TOXIC**; inhalation, ingestion or skin contact with material may cause severe injury or death.
- Contact with molten substance may cause severe burns to skin and eyes.
- Avoid any skin contact.
- Effects of contact or inhalation may be delayed.
- Fire may produce irritating, corrosive and/or toxic gases.
- Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

FIRE OR EXPLOSION

- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
- Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.).
- Contact with metals may evolve flammable hydrogen gas.
- Containers may explode when heated.
- For UN3171, if Lithium ion batteries are involved, also consult GUIDE 147.

Figure 11: ERG

ICx also includes a contact management UI for storing information on individuals and organizations that may be critical during an incident. **Figure 12: Contact Management** depicts the contact management UI.

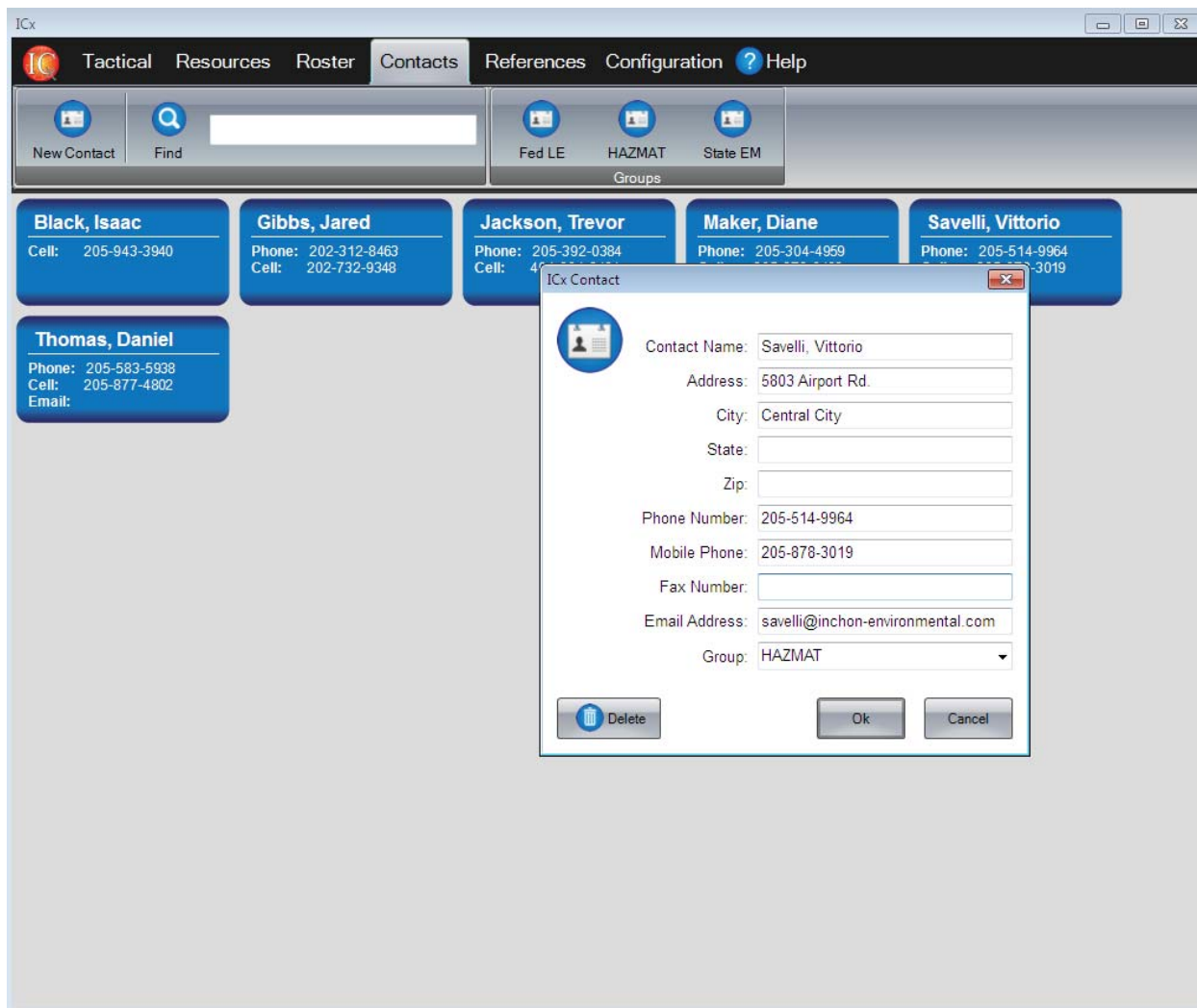


Figure 12: Contact Management

1.2.4 Configuration Options

The user has several options for customizing ICx's behavior. Most of this customization centers on the incident type templates which provide default values for specific types of responses. The user can adjust many elements of these templates to match department-specific organizational structures and SOPs. These include:

- When the product launches alert dialogs for specific events (e.g., a unit has been on air for __ minutes);
- Which units are dispatched to the first and second alarms for a given incident type (providing one-button ability to assign multiple units to the incident on the tactical screen);
- Default command staff positions and scene assignments;
- The incident's benchmark and mayday checklists; and

- Elements to be recorded in the scene details list.

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 and remotely. The vendor provided a software license for ICx with authorization to install the product on two computers. Using this license, the test engineer established two product configurations for this evaluation:

- a desktop PC running Windows 7, located in the IMTEL laboratory, and
- a notebook PC running Windows 7, used remotely by the lead assessor.³

The test engineer also established a screen sharing link via WebEx to enable on-site and remote personnel to coordinate their activities.

1.5 Test Schedule

The vendor provided remote training (presentation, demonstration, and hands on) to participants via WebEx on 06 August 2013. The STEP team conducted the ICx test from 06 through 08 August 2013.

1.6 Scope and Limitations

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

Table 2: Scope and Limitations

Limitation	Impact	Mitigation Strategy
None.		

³ The vendor states ICx is compatible with Microsoft Windows XP, Windows Vista, Windows 7, and Windows 8, including support for touch-screen and tablet computers. IMTEL staff did not examine the product's touch-screen or tablet functionality during this evaluation.

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	Lead assessor; law enforcement and emergency management subject matter expert (SME)	25
SME	Assessor; emergency management SME	18
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** and **Appendix A: Detailed Results for 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. Other individual findings, observations, and results that fall outside the scope of accreditation are marked with an asterisk (*).

2.1 NIMS Concepts and Principles

2.1.1 Objective 1: Evaluate Incorporation of NIMS Concepts and Principles

Assessors evaluated ICx 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.

ICx 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*

ICx applies to 4 of 15 Emergency Support Functions (ESFs): Firefighting; Emergency Management; Search and Rescue; and Oil and Hazardous Materials Response.

ICx applies to 4 of 9 Incident Command functions: Incident Command; Operations; Planning; and Safety.

2.1.1.2 *Hazards*

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

2.1.1.3 *Preparedness*

ICx 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:

ICx provides access to critical information. The system offers an incident overview by collating and gathering information that enables users to make effective decisions and it has the capability to be

updated continually in order to maintain situational awareness. Providing the same information about an incident for on-scene and off-scene personnel is not a function of the version of ICx under evaluation.

Interoperability:

The product runs as a single instance (i.e., one license allows one computer to run one copy of the product, and different instances of the product cannot communicate with each other). Thus, because it does not communicate with other information systems, it is not conducive to the SAFECOM Interoperability Continuum data sharing requirements [Ref 2].

Scalability:

ICx can be used during small- and large-scale events. It is designed to be used on scene. It could be used by an Incident Commander at a staging area, base, or camp if that site were co-located with the incident command post (ICP), such as might occur in a search and rescue or wildland firefighting operation. The product is usable by multiple levels of government and by both the public and private sectors.

ICx is intended for on-scene use by incident command staff. Remote or off-scene use, such as would occur in an EOC or a Federal Joint Field Office (JFO), would be possible with robust two-way communication to ensure the user's situational awareness of the incident. Because the product is optimized for the fire service's procedures and likely response scenarios, it is not usable across the full spectrum of multi-agency or multi-discipline incidents and events.

Plain Language:

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

Information Security:

As tested, ICx is not designed with redundancy. It does not include a means to authenticate and certify users for security purposes, nor does it provide controls to restrict access to sensitive information. It does not introduce any unique security or vulnerability concerns.

The product is not designed to store personally-identifiable information (PII). However, through use of free-form text fields, it is possible that some users might record PII in the product. This introduces legal and/or security risks which the organization operating the product must address with access control policies and user account permissions

2.1.1.5 Resource Management

ICx addresses the need to manage resources. The product addresses the use of mutual aid agreements and resources through its ability to track units deployed from multiple departments. It provides a means for performing personnel accountability through its assistance with personnel accountability reports (PARs) and mayday declarations.

2.1.1.6 *Command and Management*

ICx is consistent with 12 of 14 management characteristics of the Incident Command System (ICS): Common Terminology, Modular Organization, Management by Objectives, Incident Action Planning, Manageable Span of Control, Comprehensive Resource Management, 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 standard ICS forms. However, it does support the use of a standard ICS organizational scheme for a response, including the ability to expand the organization chart as an incident increases in size or complexity.

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). The system is designed for use in a fireground environment by personnel whose concerns do not include detailed computer system knowledge, and this design objective is reflected in the product's ease of use. Vendor-provided training is comprehensive and applicable to real-world use of the product.

ICx's user documentation provides an overview of the product's functionality by means of a PDF that is launched within Adobe Reader. The documentation is organized in parallel with the product's user interface architecture.

Customer support was available via email and phone during the business hours in which the STEP assessors conducted the evaluation. The vendor states that email contacts will be answered within 24 hours, though most often "within minutes" of receipt.

The product was reliable during the evaluation.

2.2 **Additional Observations***

The results in this section are observations made by SMEs during the evaluation. Such observations were not used in determination of any test results and/or ratings in this report and are provided for informational purposes only.

System Capabilities

- The product is designed with a limited scope: fire and emergency service response operations. While it could be adapted for use with other ESFs, much of its functionality is specific to the industry standards and best practices of the fire service, and wider use is outside its design intent.

Preparedness

- The product's primary use is during an incident's response phase. It is not a purpose-built tool for authoring or documenting procedures and policies. However, it is flexible enough that an individual agency can adapt much of its function to that agency's SOPs for different incident types.

Communications and Information Management

- As tested, the product operates in a single instance (i.e., one license allows one computer to run one copy of the product, and different instances of the product cannot communicate with each other). The vendor states that future versions of the product will be able to share data across multiple instances, providing real-time situational awareness for all users.
- As tested, the product does not include geospatial functions or geospatial data. The vendor states that future versions of the product will be able to interface with computer-aided dispatch (CAD) systems.
- Securing access to the product is the responsibility of the user and must be done through external measures (e.g., physical control of access to the computer running the product, operating system user ID/password schemes, etc.).
- The product is designed for on-scene use by an IC or another command staff member. Remote use would depend on accurate and reliable communications with units in the field and could introduce span of control issues.

Resource Management

- The product can be configured to reflect multiple agencies' resources, though actual tasking of these resources to incidents is a function of mutual aid agreements, not the product itself.

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

EMERGENCY SUPPORT	
Criteria and Question	Result
EMERGENCY SUPPORT FUNCTIONS	
1. This product supports the following ESFs:	Agree/Disagree/Not Applicable
a. ESF #1 – Transportation	Not Applicable
b. ESF #2 - Communications	Not Applicable
c. ESF #3 - Public Works and Engineering	Not Applicable
d. ESF #4 - Firefighting	Agree
e. ESF #5 - Emergency Management	Agree
f. ESF #6 - Mass Care, Emergency Assistance, Housing, and Human Services	Not Applicable
g. ESF #7 - Logistics Management and Resource Support	Not Applicable
h. ESF #8 - Public Health and Medical Services	Not Applicable
i. ESF #9 - Search and Rescue	Agree
j. ESF #10 - Oil and Hazardous Materials Response	Agree
k. ESF #11 - Agriculture and Natural Resources	Not Applicable
l. ESF #12 - Energy	Not Applicable
m. ESF #13 - Public Safety and Security	Not Applicable
n. ESF #14 - Long-Term Community Recovery	Not Applicable
■ Community Planning and Capacity Building	Not Applicable
■ Health and Social Services	Not Applicable
■ Infrastructure Systems	Not Applicable
■ Economic	Not Applicable
■ Housing	Not Applicable
■ Natural and Cultural Resources	Not Applicable
o. ESF #15 - External Affairs	Not Applicable
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.	By design, the product's primary focus is fire and emergency service response operations.
INCIDENT COMMAND	
4. This product supports the following Incident Command functions:	Agree/Disagree/Not Applicable
a. Incident Command	Agree
b. Operations	Agree

<i>c. Planning</i>	Agree
<i>d. Logistics</i>	Not Applicable
<i>e. Finance/Administration</i>	Not Applicable
<i>f. Intelligence/Investigations</i>	Not Applicable
<i>g. Public Information</i>	Not Applicable
<i>h. Safety</i>	Agree
<i>i. Liaison</i>	Not Applicable
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.	The ability to establish hazard-specific templates supports fire service pre-planning. Personnel accountability features support the safety officer's role in incident command.
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
<i>a. Natural hazards</i>	Agree
<i>b. Human-caused events</i>	Agree
<i>c. Technological-caused events</i>	Agree
9. Provide comments on hazards applicability.	None.
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
<i>a. Planning</i>	Agree
<i>b. Procedures and Protocols</i>	Agree
<i>c. Training and Exercises</i>	Agree
<i>d. Personnel Qualifications, Licensure, and Certification</i>	Not Applicable
<i>e. Equipment Certification</i>	Not Applicable
<i>f. Evaluation and Revision</i>	Agree
12. Provide comments on the product's support to preparedness activities.	The product can be configured to support agency-specific SOPs. Its logging functions also can be used to inform AARs and policy review and revision processes.
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).	Not Applicable
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.	Not Applicable
19. This product includes geographic information system (GIS) features or functions. Identify the grid coordinate system(s) it supports:	Agree/Disagree/Not Applicable
a. <i>Latitude/Longitude</i>	Not Applicable
b. <i>Military Grid Reference System (MGRS)</i>	Not Applicable
c. <i>North American Datum of 1983 (NAD83)</i>	Not Applicable
d. <i>Universal Polar Stereographic (UPS)</i>	Not Applicable
e. <i>Universal Transverse Mercator (UTM)</i>	Not Applicable
f. <i>US National Grid (USNG)</i>	Not Applicable
g. <i>Other (specify)</i>	None.
20. Provide comments on the common operating picture.	The product's ability to support a common operating picture is limited by the fact that each copy of the product runs on a single computer at once and multiple copies cannot communicate with one another.
INTEROPERABILITY	
	Agree/Disagree/Not Applicable
21. Incident reporting and documentation procedures are standardized to ensure situational awareness.	Not Applicable
22. Comment on incident reporting and documentation procedures.	None.
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.	While it is possible to include PDF-formatted ICS forms in ICx's References tab, the product is not designed to fill out or edit those forms.

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. <i>Swap Files</i>	Not Applicable
b. <i>Common Applications</i>	Not Applicable
c. <i>Custom-Interfaced Applications</i>	Not Applicable
d. <i>One-Way Standards-Based Sharing</i>	Not Applicable
e. <i>Two-Way Standards-Based Sharing</i>	Not Applicable
27. Provide comments on data sharing.	As tested, the product runs as a stand-alone application and does not share data.
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)	Not Applicable
33. This product can be used across the full spectrum of multi-discipline incidents and events. (Minimum Product Requirement 10)	Not Applicable
34. This product allows responders to increase the number of users on a system.	Disagree
35. Provide comments on scalability.	The product is designed to support fire service response operations. The limits of its scalability reflect this, as indicated above and in Section 2.2: Additional Observations* .
36. The product can be used at the following:	Agree/Disagree/Not Applicable
a. <i>On scene as a portable or static device.</i>	Agree
b. <i>On scene at the ICP.</i>	Agree
c. <i>At a Staging Area, Base, or Camp.</i>	Agree
d. <i>At a local EOC.</i>	Not Applicable
e. <i>At a State EOC.</i>	Not Applicable
f. <i>At a Federal JFO or EOC.</i>	Not Applicable

37. Provide comments on Command and Coordination levels.	<p>The product is designed for on-scene use by an IC or other command staff member.</p> <p>The assessors' rating for Response 36(c) assumes the IC is working from an ICP which is co-located with a staging area, base, or camp.</p>
38. This product can be used by the following levels of government:	Agree/Disagree/Not Applicable
<i>a. Municipality</i>	Agree
<i>b. County</i>	Agree
<i>c. Regional</i>	Agree
<i>d. Tribal</i>	Agree
<i>e. State</i>	Agree
<i>f. Federal</i>	Agree
<i>g. Special District</i>	Agree
<i>h. Agency</i>	Agree
<i>i. Other</i>	Agree
39. This product can be used to support communications among multiple levels of government(s).	Not Applicable
40. Provide comments on levels of government.	The functions available in this product are usable by the fire service, regardless of the level of government to which a given department reports.
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.	Private-sector fire services operate on the same principles as those in the public sector and would be equally able to use the product.
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 uses plain language, except where fire service technical terms are necessary to avoid ambiguity.
INFORMATION SECURITY	
	Agree/Disagree/Not Applicable
45. This product has redundancy capabilities as a part of its functionality.	Not Applicable
46. The product provides a means to properly authenticate and certify users for security purposes.	Not Applicable
47. This product provides controls to restrict access to sensitive information. (Minimum Product Requirement 12)	Not Applicable
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.	The product is not designed to store PII, patient information, or other sensitive data, though the use of free-form text fields may allow users to record such data.
50. Provide comments on information security.	None.
Minimum Product Requirement Summary: Rating for the Communications and Information Management category.	Agree: 4 of 9 Disagree: 0 of 9 Not Applicable: 5 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.	Not Applicable
54. This product addresses the use of Mutual Aid Agreements and resources. (Minimum Product Requirement 13)	Agree
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)	Not Applicable
61. This product provides a means for resource tracking/reporting. (Minimum Product Requirement 20)	Agree
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.	Not Applicable
65. Provide comments on resource management.	Resource management functions are limited in scope to those which incident command staff members typically perform on the fire ground.
Minimum Product Requirement Summary: Ratings for the Resource Management category.	Agree: 3 of 10 Disagree: 0 of 10 Not Applicable: 7 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. <i>Common Terminology</i>	Agree
b. <i>Modular Organization</i>	Agree
c. <i>Management by Objectives</i>	Agree
d. <i>Incident Action Planning</i>	Agree
e. <i>Manageable Span of Control</i>	Agree
f. <i>Incident Facilities and Locations</i>	Not Applicable
g. <i>Comprehensive Resource Management</i>	Agree
h. <i>Integrated Communications</i>	Not Applicable
i. <i>Establishment and Transfer of Command</i>	Agree
j. <i>Chain of Command and Unity of Command</i>	Agree
k. <i>Unified Command</i>	Agree
l. <i>Accountability</i>	Agree
m. <i>Dispatch/Deployment</i>	Agree
n. <i>Information and Intelligence Management</i>	Agree
68. Overall, this product is consistent with the applicable 14 ICS management characteristics. (Minimum Product Requirement 23)	Agree
69. If the product references ICS, the organization charts and/or terminology are consistent with it. (Minimum Product Requirement 24)	Agree
70. Comment on the product's integration of ICS management characteristics.	Within the scope of ICS that the product is designed to support (command staff and operations section), it is consistent with the ICS management characteristics. The product's command board can be modified to include additional positions and assignments as an incident expands.
Minimum Product Requirement Summary: Ratings for the Command and Management category.	Agree: 2 of 2 Disagree: 0 of 2 Not Applicable: 0 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.	Disagree
73. Comment on implementation.	The product's user documentation is organized by feature/function rather than by task flow. The documentation does not comprehensively address all features and does not include navigation cues.

74. The vendor provides the following types of practitioner training:	Agree/Disagree/Not Applicable
<i>a. Online</i>	Agree
<i>b. Train-the-trainer</i>	Agree
<i>c. On-site presentation</i>	Agree
<i>d. Hands-on training</i>	Agree
75. Comment on practitioner training.	According to the vendor, all of the enumerated training types are available.
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.	Disagree
80. Comment on the help tool.	The product's help system is a PDF copy of the user manual, which launches within Acrobat Reader.
81. Is customer support available? If so, what is its availability and what medium is used (e.g., e-mail, phone, live-chat)?	The vendor states that email and phone support are available.
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 licensed on a per-computer basis. Implementation and license management thus scales with the number of licenses purchased.
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.	None.
87. Identify any issues with urban or rural implementation.	None.
88. Identify any issues with paid, combination, or volunteer departments.	None.
89. Identify associated expenditures that may be incurred in addition to the initial procurement of this product.	<p>The product is not licensed on an annual renewal model. However, maintenance releases and new/updated versions are only free for the first year after initial purchase.</p> <p>Information technology expenditures may be required to ensure all users have computers capable of running the product.</p>
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.	Within its design scope, the product is consistent with NIMS.
92. Comment on what position(s) would benefit most from this product and how it will impact the job performance for the user.	The product is intended for use by incident command staff (typically, incident commanders and safety officers). These positions will benefit from the product's simplification of what otherwise would be a manual process of unit assignment and personnel accountability.
93. This product was easy to use and intuitive.	Agree
94. Comment on the products ease of use.	The product requires minimal training to develop user proficiency.
95. This product was reliable during the evaluation.	Agree
96. Describe any issues with reliability.	None.
97. Comment on the primary capability/features provided by this product.	This product's primary function is that of a command board for fire department operations. It tracks unit assignments, provides incident and assignment-specific time records, records major events and status changes in a log file, and provides checklists and alerts. The product can be customized to reflect an individual fire department's SOPs.
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_FIN_AL.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
DHS	Department of Homeland Security
EOC	Emergency Operations Center
ERG	Emergency Response Guidebook
ESF	Emergency Support Function
FEMA	Federal Emergency Management Agency
HAZMAT	Hazardous Materials
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
N/A	Not Applicable
NIMS	National Incident Management System
NPD	National Preparedness Directorate
PAR	Personnel Accountability Report
PII	Personally-Identifiable Information
PIO	Public Information Officer
P-TAC	Preparedness-Technology, Analysis, and Coordination
RIT	Rapid Intervention Team
SAIC	Science Applications International Corporation

SCBA	Self-Contained Breathing Apparatus
SME	Subject Matter Expert
STEP	Supporting Technology Evaluation Project
TR	Test Report
UC	Unified Command
UI	User Interface