DHS Science and Technology Directorate and USCG R&D Center

Portable Handset Integrated Next-Generation Incident Command System

A Clear Opportunity

First responders routinely use mobile devices to stay informed, aware, on time, and connected. Mobile devices allow for access to digital information repositories and broader data acquisition. Imaging, notes, Internet, calendar, maps, apps—all of these capabilities may be in the pockets of first responders today, but can they interface within an incident command system? The Portable Handset Integrated Next-Generation Incident Command System (PHINICS) explores the possibilities for applying mobile technology to incident command.

What Is NICS?

The Next-Generation Incident Command System (NICS) is a web-based, collaborative online environment that provides rich and timely situational awareness to first responders. The NICS includes an incident map, chat functionality, and decision support tools, and a virtual whiteboard where responders can team up, manage a pool of resources, and plot strategies. Developed by the Massachusetts Institute of Technology Lincoln Laboratory in partnership with the California Department of Forestry and Fire Protection, NICS is funded by the Department of Homeland Security's Science and Technology Directorate (S&T).

What Is PHINICS?

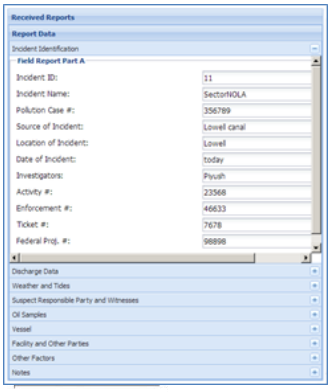
PHINICS, a U.S. Coast Guard (USCG) funded-initiative, examines how mobile devices can streamline data entry from the field, leading to a more complete, rapid, and accurate common operating picture. PHINICS extends and enhances NICS by putting an incident command interface into the pocket of anyone with a mobile device. Over a two-year timeframe (which began in 2013), the PHINICS prototype system will demonstrate improved situational awareness—command and control (SA/C2) information flows during several readiness exercises.

During catastrophic incidents, such as Hurricane Sandy, USCG Incident Management Assistance Teams require one to two days to gather data and build an initial first operational picture. Teams often collect incident data via paper that must be manually distributed or the information must be entered into electronic systems which can result in incurring errors or may require repetitive entry.

With remote servers hosted in data centers across the U.S., PHINICS can stand up a full incident command through a web browser. This allows incident reports to be developed on a mobile device instead of paper. With boots-on-the-ground assessments available real-time, decision makers can better understand, plan, and develop a response, thereby minimizing information delays. Based on interviews with teams that provided support during Hurricane Sandy, PHINICS could reduce the two-day lag time by nearly 75 percent.

The Way Forward

First responders are mobile by definition. PHINICS enables their information to retain mobility while tapping into incident command dataflows. SA/C2 information can flow in both directions in the form of blue force tracking, weather and maritime data feeds, and data inputs from various camera feeds or Bluetooth enabled sensors. Mobile devices can reduce the time and effort of entering data into forms through optical character recognition, voice input, and barcode readers, thereby improving response time and resource logistics.



The PHINICS team, working with USCG subject matter experts, designed, developed, and deployed a functional prototype of the mobile and server software at USCG's Sector New Orleans in July 2013. Overall, the Sector New Orleans users found the mobile device easy to use, offered an intuitive display, and provided significant time savings, especially in the area of post-mission documentation. The prototype will undergo additional evaluation and testing during multiple disaster readiness exercises in 2014.

S&T and USCG's successful partnership resulted in the development of an initial operating capability that will allow USCG to create a request for proposals, and moved one step closer to putting mobile SA/C2 directly into the hands of first responders.

Figure 1: PHINICS captures and displays integrated incident command data using standardized forms and map-based situational awareness. Building upon standard smartphone capabilities, PHINICS adds features to organize and manage tasks and alerts, as well as use peripheral environmental and measurements sensors.

Homeland Security
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To learn more about the Portable Handset Integrated Next-Generation Incident Command System (PHINICS), contact SandTFRG@DHS.gov.

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