

# Unified Incident Command and Decision Support (UICDS)

**A Department of Homeland Security Initiative for Information Sharing Among Commercial, Government, Academic, and Volunteer Technology Providers to Support the National Incident Management System**



## UICDS in Brief

Unified Incident Command and Decision Support (UICDS) is a national middleware framework to enable information sharing and decision support among commercial, academic, volunteer, and government incident management technologies used across the country to prevent, protect, respond, and recover from natural, technological, and terrorist events. UICDS is designed around data standards and the National Information Exchange Model (NIEM) to support the National Response Framework (NRF) and the National Incident Management System (NIMS), including the Incident Command System (ICS).

UICDS links homeland security and emergency management organizations, from incident command at the scene of an emergency to local and state operations centers to federal departments and agencies, from intelligence fusion centers to transportation management centers to health service organizations, and many other groups. UICDS is the standards-based middleware that exposes selected data from commercial and government applications and allows relevant emergency applications to subscribe to that information in order to have more than situational awareness – UICDS enables true sharing of information among applications so that each application’s user can process, manipulate, expand, visualize, and share better and new information.

As middleware, UICDS does not interface directly with end users. Rather, it relies on regular, daily use, applications as the source of and visualization for relevant data. UICDS is the transporter of uniform data in common formats. Emergency applications (sensors, incident logs, personnel management, dispatch systems, video surveillance and intelligence tools – anything related to homeland security) provide a portion of their data to UICDS, which then publishes it to subscribers’ applications. The applications then see the consumed data inside their own user interface. Thus, to the user, there is no new application, no new learning, and no conscious sending of information.

The portion of data obtained from applications is based on NIEM to compose a view of the incident. Such incident data also contain a link back to the original source so if someone wants the full details, they can link to external source data if they have appropriate permissions. Selecting the right information for delivery to the right person is accomplished by the UICDS Profile Service. The UICDS Agreement Service provides cross-agency and cross-jurisdictions information-exchange using the information equivalent of mutual-aid agreements.

UICDS accomplishes all this with a decentralized network of, perhaps, thousands of UICDS Cores with capabilities matched to end-user needs. For example, a large city, state, or multijurisdictional region's UICDS installation may be a network of UICDS Core servers fully integrated with computer-aided dispatch, traffic sensors, hospital admissions systems, public works equipment maintenance records, arrest and warrant management systems, weather sensors, and more. Scale down UICDS to a single computer, lower communication bandwidth, add fewer external applications, and UICDS serves any type or size of community – urban or rural, coastal or desert, ski resort or football stadium, multiagency and multijurisdictional.

To date, more than 250 companies, universities, and government technology providers are engaged in UICDS. The technology providers participate in biweekly conference calls to discuss implementing and improving the UICDS services that support information sharing. This open setting has helped harmonize the UICDS data exchanges with the standards, data formats, and interfaces of current technology products to assure that technology providers can implement their UICDS adapters efficiently and with minimal effort. More than 125 organizations have downloaded the UICDS Development Kit which contains sample code and tools to build UICDS adapters for applications.

In 2009 a major demonstration of the UICDS prototype was hosted by the Virginia Division of Emergency Management to validate UICDS interfaces. The demonstration enabled information sharing among 23 applications across three jurisdictions. In 2010 the Federal Emergency Management Agency hosted an extensive demonstration of information sharing among applications used by federal, state, and local agencies in the National Capital Region. Throughout 2010-11, more than 100 pilots are being conducted in jurisdictions in more than 20 states to expand the number and type of technology provider applications that are integrated with UICDS and to further assure the proper use of UICDS in the field.

UICDS is being developed under a contract with the Department of Homeland Security, Directorate of Science and Technology, Infrastructure and Geophysical Division.

Department of Homeland Security contacts are:

- Michael B Smith, program manager, Infrastructure and Geophysical Division, [michael.smith3@hq.dhs.gov](mailto:michael.smith3@hq.dhs.gov)
- Nabil R. Adam, Ph.D., technical fellow, Infrastructure and Geophysical Division, [Nabil.Adam@dhs.gov](mailto:Nabil.Adam@dhs.gov)

To learn more about UICDS contact:

- UICDS Project Manager Chip Mahoney, [mahoneyc@saic.com](mailto:mahoneyc@saic.com)
- UICDS Outreach Director James W. Morentz, Ph.D., [morentzj@saic.com](mailto:morentzj@saic.com)

**Get Involved Today – Visit [WWW.UICDS.US](http://WWW.UICDS.US)**