OASIS

EMERGENCY INTEROPERABILITY

EMERGENCY EXCHANGE DATA STANDARDS: EDXL CAP and DE

Eight vendors and government agencies demonstrate interoperability of the OASIS Emergency Data Exchange Language (EDXL) suite of standards including the Common Alerting Protocol (CAP) and Distribution Element (DE) standards. Simulating an incident defined by FEMA, DHS S&T, and the National Weather Service (NWS), the demo shows how authorities, responders, broadcasters, and other service providers can use EDXL to enact a concerted, coordinated emergency response.

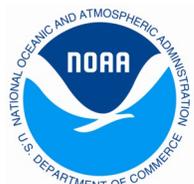**LEARN MORE AT OUR EMEX STAGE PRESENTATION:**

Tuesday, 2 November 7:40-8:00 AM

INTEROP PARTICIPANTS:

DesktopAlert

WSI Warning Systems, Inc.

Collaborative Fusion™

Solace Systems

Homeland Security Science and Technology

SET Environment Engineering

NOAA

FEMA

EDXL OASIS Standards Interop Scenario #1

A tanker overturns during rush hour on Elm Street in downtown San Antonio causing an Ammonia leak. The incident commander asks EOC communication staff to send an alert (CAP) message warning using NOAA Geo-Targeted Alerting System (GTAS) via weather radio urging the public to stay away from a half mile radius of the hot zone.

▶ **Warning Systems** receives the CAP alert and issues a siren warning which is broadcasted within the general area of the incident.

▶ **Collaborative Fusion** receives the CAP alert and sends a CAP message to the local emergency management operations and mutual aid areas warning them of the accident and potential danger.

▶ **Solace Systems** receives the CAP alert and transmits the message to be viewed on an online map.

▶ **Desktop Alert** receives the CAP alert and transmits the message to be viewed on an online map, sms, and text-to-speech devices.

First responders arrive at the scene. The hot zone is contained and the Hazmat technicians enter to determine the level of Ammonia. The meters send the readings to the incident command vehicle.

▶ **Safe Environment Engineering** receives the transmitted Ammonia readings from the Hazmat team via CAP. Messages are dispatched and received by the emergency operations center and the Incident Commander (IC).

The IC determines the Ammonia levels pose a high risk and issues an EAS-IPAWS notice to shut down portions of the road system and notifies the Public Works and State Police.

▶ **Desktop Alert** transmits the CAP EAS alert and issues a CAP message to the City of San Antonio public and Texas State Police, so they can assist with the road closures.

▶ **Collaborative Fusion** receives the CAP message and assists the Texas State Police in retrieving the message.

▶ **Solace Systems** receives the CAP message and assists the City of San Antonio Department of Public Works in retrieving the message.

▶ **Warning Systems** receives the IPAWS EAS message and sends warnings to commuters via AM/FM radio and television.

The EAS message sets off EAS encoders that are located within the FEMA IPAWS booth behind the OASIS booth.

Non-ambulatory victims are brought to the cold zone for triage to determine the next step. Twelve seriously injured victims are transported to the nearest trauma center.

▶ **Desktop Alert** generates a CAP message to the nearest trauma centers advising them of the levels of injuries that will be arriving soon.

▶ **Collaborative Fusion** receives the CAP message and assists the trauma centers in retrieving the messages.

Additional scenarios demonstrated throughout the show:

▶ **Scenario #2** includes a radiological sensor that picks up low levels of radioactivity as two small vans pass through the Peace Bridge from Fort Erie, ON into Buffalo, NY. Intelligence surfaces on missing radioactive material from several international locations. Intelligence officials from several countries work together in an effort to prevent possible terrorist attacks. No official target is confirmed, although there is a major cause for concern. Operators of vehicles transporting material are interrogated to prevent any unexpected radioactive material from passing through customs. The Commander in Chief sends a Presidential Alert to all Federal, State, and Local Agencies in the United States.

▶ **Scenario #3** includes a National Weather Service (NWS) announcement of a depression that forms into Tropical Storm Kirby. Kirby strengthened into a Category Four Hurricane, with maximum sustained winds of 135 mph, and heads towards Corpus Christi, TX. The NWS issues a Hurricane Watch for the area. Mandatory evacuations are declared along the mid-Texas coast from Kingsville to Port O'Connor. The Texas Department of Public Safety opens the evacuation lane on I-37 and monitors traffic flow.

http://www.oasis-emergency.org/

OASIS EDXL: Open Standards for Emergency Management

Standardized messages are critical for coordinating emergency response. OASIS, a not-for-profit, international consortium, provides the **Emergency Data Exchange Language (EDXL)**, a suite of open standards that make it possible for information to be shared among emergency response and management services providers across local, state, tribal, national, and nongovernment organizations.

◼ EDXL CAP

The Common Alerting Protocol (CAP) allows consistent warning messages to be disseminated simultaneously over many different systems. This greatly increases warning effectiveness while simplifying the notification task. CAP addresses the challenges posed by the diversity of communication channels and independently developed warning systems. It serves as a universal adaptor for alert messages, defining one message format with features essential for the broad range of alert systems and sensor technologies. CAP 1.2 was approved as an OASIS Standard in 2010. The CAP 1.1 OASIS Standard is also published as International Telecommunications Union (ITU-T) Recommendation X.1303.

◼ EDXL-CAP Profiles

OASIS Profiles constrain a given Standard to particular needs. The CAP 1.2 U.S. Integrated Public Alert and Warning System (IPAWS) Profile describes an interpretation of OASIS CAP 1.2 necessary to meet the needs of IPAWS, a public alerting "system of systems" created by the U.S. Federal Emergency Management Agency (FEMA).

Other organizations may issue profiles for their particular needs, with or without endorsement by OASIS. For instance, the Canadian Association for Public Alerting and Notification (CAPAN) has specified CAP-CP, a Profile that addresses Canada's need for multi-language service.

◼ EDXL-DE

The EDXL Distribution Element (DE) describes a standard message distribution framework for data sharing among emergency information systems. DE is designed to package and deliver any OASIS EM Standard or other data message. The DE format may be used over any data transmission system, including but not limited to the SOAP HTTP binding. The DE may be thought of as a "container" that carries a "payload" of formatted message sets (such as Alerts or Resource Messages) and facilitates their delivery using key routing information such as distribution type, geography, incident, and sender/recipient IDs. Its key features include an option for policy-based routing and non-repudiation. The current release is DE 1.0. Work on DE 2.0 is underway.

OASIS EDXL standards are developed through an open process -- one that provides for fairness, transparency, and full participation from the entire community.

Become a member of OASIS and ensure your voice is heard as EDXL standards continue to be advanced. Government agencies, vendors, and implementers are all invited to participate.