Improving Incident Response and Preparedness

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Homeland Incident & Disaster Response

Technical Challenge: Organize, coordinate, and command the efforts of dozens of agencies and thousands of responders

First Responder Mission
- Safety
- Rescue
- Restore order
- Protect property

Challenges
- Complexity / Scale
- Interoperability
- Harsh Environments
- Diverse Community

Partnership with CAL FIRE (Since 2007)
- State All-Risk/All-Hazard agency
- Significant scope of responsibility
- Forward-leaning agency

Command Levels*

Command & Control Challenges
- Extreme Events
- Resource Challenges
- Scale
- Number of Responders

- 1
- 10
- 100
- 1K
- 10K
- 100K

Command & Control Challenges
- HazMat
- Medical Response
- Wildland Fire
- Train Wreck
- Massive Earthquake
- Fire Siege

*Assumes 5 person span of command (nominal Incident Command System standard)
The Next-Generation Incident Command System (NICS) Overview

Emergency Operations Centers

External Data
- Satellite Imagery
- Weather
- Historical Maps
- Geographic Information System

Tactical Aerial Surveillance

Imagery

Mobile Displays & Collaboration

Citizen Reporting

Reports

Distributed Servers

GPS Tracking

Fire
Police
Medical
Hazmat
FEMA
Coast Guard
National Guard
DoD
NICS: Web-Based Collaborative Online Environment

Challenge: Provide distributed situational awareness for Tired-Dirty-Hungry Responders

Approach: Develop simple, web-based collaborative online situational awareness interface

- Picture is worth 1,000 words
- Improves essential human communication: sketch, gesture, speech
- Incidents
- Maps & Data
- Real-Time Collaboration
- Text Chat
- Field Reports
- Apps
- Tired-Dirty-Hungry Interface
Information is sandboxed within Collaboration Rooms according to ICS structure
NICS Users’ Group formed in 2012

- 450+ Organizations: Fire, Law, Medical, OES/OEM/EMA, Private Industry, Utilities, NGOs, Tribal Partners, etc.
- 450+ Operational Evaluations; CAL FIRE adopted State-wide (2012)
- Organizations in 25+ States using or evaluating NICS
- Victoria, Australia training 40K users; hosted in the Cloud

Technological advancements supporting evolving CONOPs
DHS S&T continues as technical innovation sponsor
- Technical vision developed through broad engagement across the Homeland Protection enterprise
  - First Responders, National Guard, USCG, FEMA, …