

## ChemResponder Operations & Planning Concept

The ChemResponder Responder Network will provide an operational tool to collect, manage and share chemical data during an emergency. The system will operate similar to the RadResponder Network, enabling a partnership driven approach to collecting critical incident data necessary to support lifesaving operations and decision making. The system will be based on a proven, multi-platform architecture leveraging both mobile applications for rapid collection of incident data and a web-based application for the aggregation and sharing of data into a single location to foster situational awareness and promote effective decision making. Data such as chemical identification, concentration, equipment information, responder information, and environmental conditions are aggregated into a single “Event” space. Events in ChemResponder are virtual locations for partner organizations to share data, pictures, atmospheric dispersions models and other GIS files to form a common operating picture during a chemical emergency.

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*First responders, LEPCs, and community residents believe that information and data-sharing efforts need significant improvement.”<sup>1</sup>*

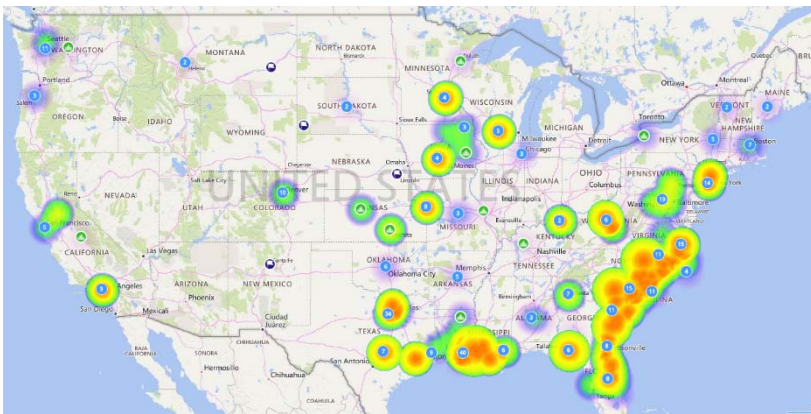
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Presently there is no solution to the problem of sharing, in near-real time, critical information among Federal, State Local, Territorial and Tribal organizations. ChemResponder would help address these shortfalls identified in national doctrine such as *Executive Order 13650 on Improving Chemical Facility Safety and Security*, which seeks to **“improve operational coordination with state and local partners; and enhance Federal agency coordination and information sharing.”** The ultimate goal is to provide a solution for the chemical community’s information sharing capability gap that emulates the success of the RadResponder Network, now utilized by over 1,000 FSLTT organizations and recently codified in the Nuclear/Radiological Incident Annex.

In addition to the operational elements of ChemResponder a major preparedness and planning function can be readily incorporated into the system. Because Rad/Nuc incidents are rare there are few opportunities to derive lessons learned and conduct analysis on responses. Chemical HAZMAT responses however, number in the 10,000s annually around the country, spanning the severity spectrum from pepper spray response to major rail car incidents. This amount of data maintained in a central location could prove invaluable from a data analysis perspective. Conducting trend analysis and using machine

learning to identify patterns implicit in a massive data set could reshape how we collectively prepare for chemical response.

In short, ChemResponder offers a unique opportunity to replicate the success of RadResponder for a community that is in need of a common operational and planning network.



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<sup>1</sup> Executive Order 13650 Actions to Improve Chemical Safety and Security – a Shared Commitment – Report to the President

## Primary ChemResponder Functions:

### Operations:

- Mobile applications (iOS, Android, Windows) to collect data from significant/enduring incidents
  - Chemical identification & concentration
  - Environmental conditions
  - Responder location
  - Pictures
  - Investigative Data Collection
    - Pictures
    - Interview information
    - Notes
    - Other
- Web application
  - Real-Time Situational Awareness
  - Partnership functions for a Common Operating Picture
  - Notifications and alerts for rapid response
  - GIS tools (KML/KMZ, ShapeFiles)
  - Responder Tracking/Personnel Accountability
  - Live Fixed Sensor Data Stream
  - Equipment Management
- Atmospheric Dispersion Models
  - Dynamic Plume Model Integration (IMAAC/DTRA, Other)
    - Supports operational planning and responder safety

### Planning & Preparedness

- Provide a centralized repository for all HAZMAT related events
- Improve the capture and centralization of lessons learned and best practices
- Act as a force multiplier to establish standards across the community
- Conduct outreach, training and exercises
- Provide free operational, planning and preparedness resources to LEPCs