



The ChemResponder Network, Introductory Session February 24, 2021



23rd California Unified Program Annual
Training Conference
February 2 – March 18, 2021

Agenda

- Introductions
- CBRNResponder Presentation
- CUPA Pilot Program for Facility Data – Background
- Q&A

Development of the Network

Spring 2013



RadResponder
launched

October 2016



*"The National Standard and Whole
Community Solution for the
management of radiological data"*

Fall 2018



ChemResponder
launched

July 2019



CBRNResponder
Network launched

A Network Approach

A Network Approach: Interagency Sponsorship and Collaboration

RadResponder Steering
Committee: FEMA, EPA, DOE/
NNSA, DTRA, DHS S&T NUSTL



FEMA



FEMA



ChemResponder Steering
Committee: FEMA, CTSO
TSWG, state and local partners

Deployment

Coordinate Field Team Operations

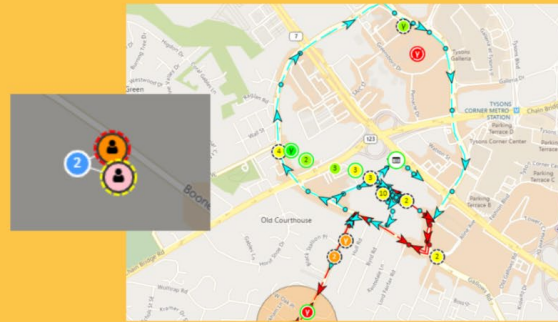
Upload
Equipment
&
Manage
Personnel



**Assign &
Deploy** Field
Teams



**Track Responders
& Monitor**
Dosimetry in the
Field



Deployment

Upload Facility Information

- Tier II Information
- Chemicals
- Documents
- Points of Contact

Add Facility Demo Chem Organization Save Changes Cancel

* Indicates required field

General Information

Name * Storage Terminal/Petroleum Distributor ✓

Description/Comments

Type Chemical Storage

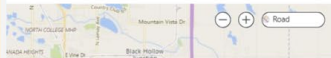
Sharing Mode * Partners Only

Active

Tier 2

Location Entry Mode Select from Map Enter Latitude/Longitude

Choose Visible Columns



Chemicals

Quick Search

+ Add Chemical

Name	CAS #	Physical Hazards	Health Hazards
Oil mist (mineral)	8012-95-1	Explosive Flammable (gases, aerosols, liquids, or solids)	Germ cell mutagenicity Hazard Not Otherwise Classified Reproductive toxicity
Crag® herbicide	136-78-7	Combustible Dust Flammable (gases, aerosols, liquids, or solids) Self-reactive	Acute toxicity (any route of exposure) Specific target organ toxicity(single or repeated exposure)
Ammonia	7664-41-7	Explosive Flammable (gases, aerosols, liquids, or solids)	Aspiration hazard

Showing 1 to 3 of 3 entries

Previous 1 Next

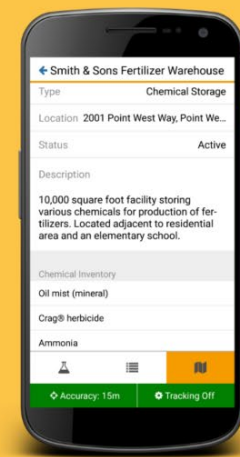
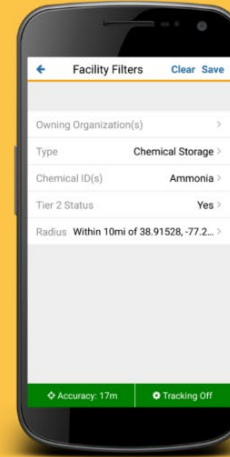
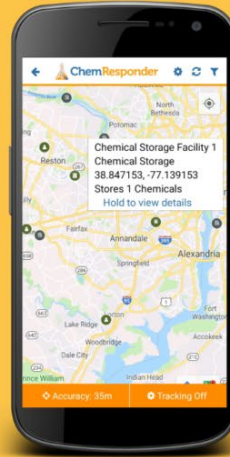
Deployment

Situational Awareness on Mobile App

Display data points, facilities, sampling locations, and responders on map

Search and filter facilities

View facility details: chemicals present, descriptions, locations



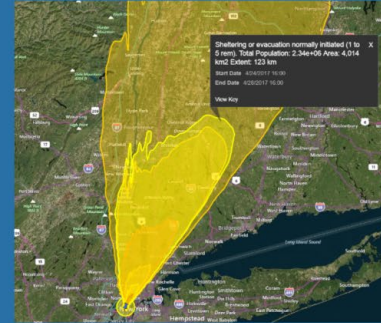
Modeling

GIS Files

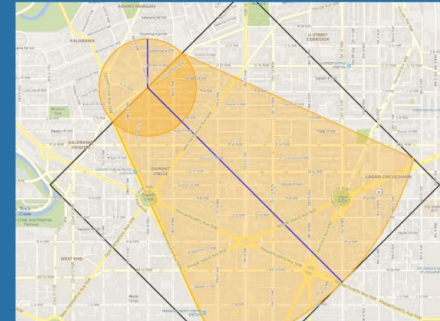
Get initial prediction models or products pushed directly to the event map from federal systems

Upload your own GIS files (KML, KMZ, or Shape files)

- ERG, Aloha or DTRA products
- Critical infrastructure
- Weather



IMAAC Initial Prediction Model (Exercise)



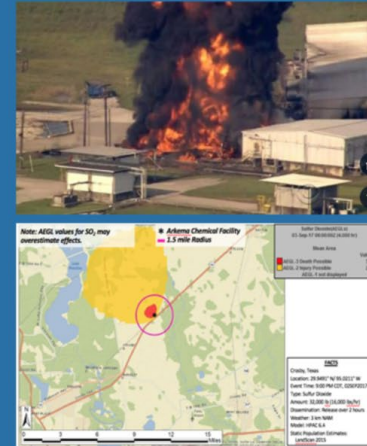
ERG Protective Distances

Modeling



Interagency Modeling and Atmospheric Assessment Center Overview

- Provides a single point for the coordination and dissemination of Federal dispersion modeling and hazard prediction products that represent the Federal position during actual or potential incidents involving hazardous atmospheric releases.
- The IMAAC provides atmospheric modeling support for:
 - Real-world events and emergencies
 - Exercises
- Led by FEMA CBRN Office; stakeholders include DoD, DOE, EPA, HHS, NRC, and NOAA/NWS
- Provides Reachback center staffed 24/7 by CBRNE subject matter experts, with decision support tools to assist Interagency customers.
- Responds quickly to requests for assistance.
- **To activate IMAAC or request assistance, please call (703) 767-2003.**



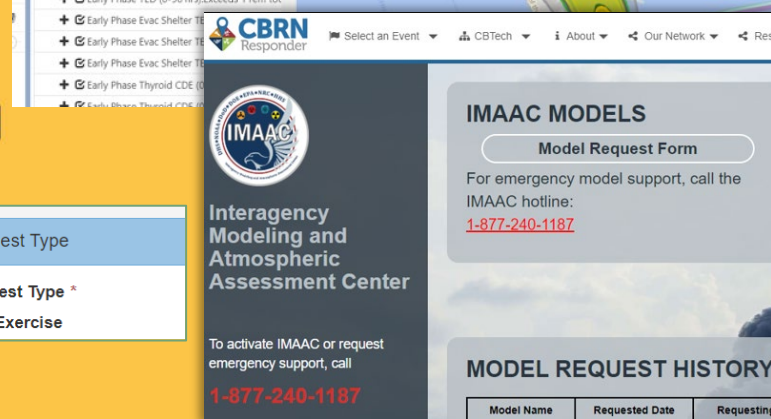
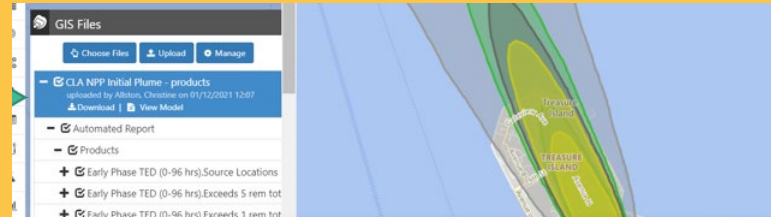
(Images Above: The Arkema chemical plant fire in Crosby, TX, and one of the modeling products IMAAC provided in response.)

Upcoming in GIS Capabilities

Request IMAAC Products

- Request IMAAC models for exercises with a web form
- A 24/7 emergency support number is available for real-world emergency requests
- Models are seamlessly pushed directly to users' CBRNResponder events

* These are forthcoming features not yet available to end-users. But these features will be available soon. The screenshots here are from the CBRNResponder development region.



Request Type

Request Type *

Exercise

IMAAC MODELS

Model Request Form

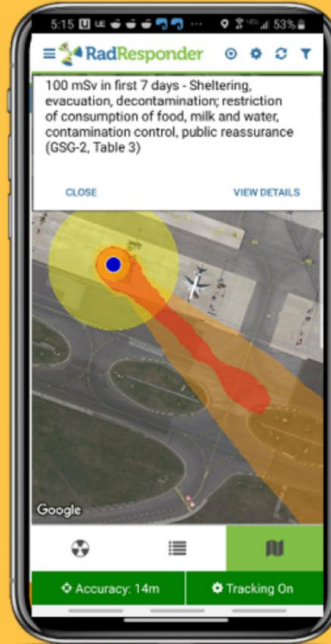
For emergency model support, call the IMAAC hotline:
[1-877-240-1187](tel:1-877-240-1187)

MODEL REQUEST HISTORY

Model Name	Requested Date	Requesting
------------	----------------	------------

Upcoming in GIS Capabilities

Display IMAAC GIS Products on Mobile



Collecting Data

Integrate Raw Data



- Field Surveys
- Field Samples
- Observations
- Spectra



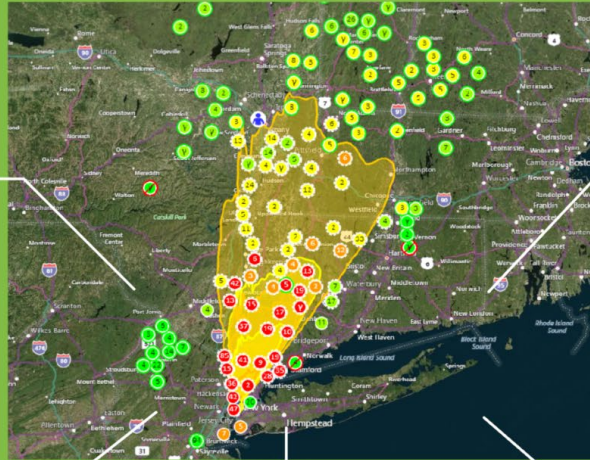
- Chemical IDs
- Gas Meter
- Calorimetric
- SitReps
- Spectra (coming soon)

Mobile application uploads data in real-time, saves data locally when no connection is detected

Surveys

Collected	Type	Source	Value	Units	Name	Collected	Comment	Location
1/26/2016 10:41	Gas	Background	1.74000	ppmV	Allyl Chloride	38.012		29.200
1/16/2019 14:30	Gas	Background	3.00000	ppmV	Diethyl Ether	38.012		40.700

Enter individual records or bulk upload data via the **website**



Integrate **fixed monitoring sensors** to stream minute-by-minute data



Visit our website to see a full list of integrated equipment

Integrated **Bluetooth-enabled equipment** can telemeter data directly to the website



***New API Update:**
Data from **unmanned aerial systems**

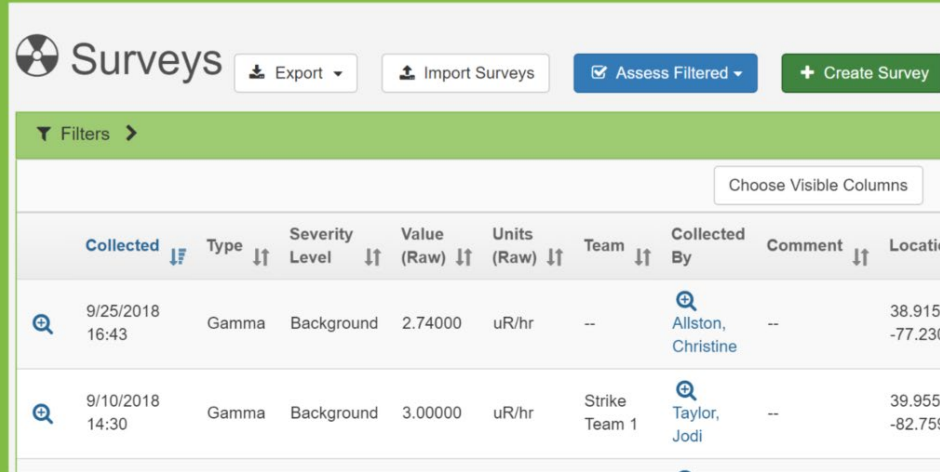
Collecting Data



- Field Surveys
- Field Samples
- Observations
- Spectra
- Dose Readings
- Data Sets

Mobile application uploads data in real-time, saves data locally when no connection is detected

Collecting Data

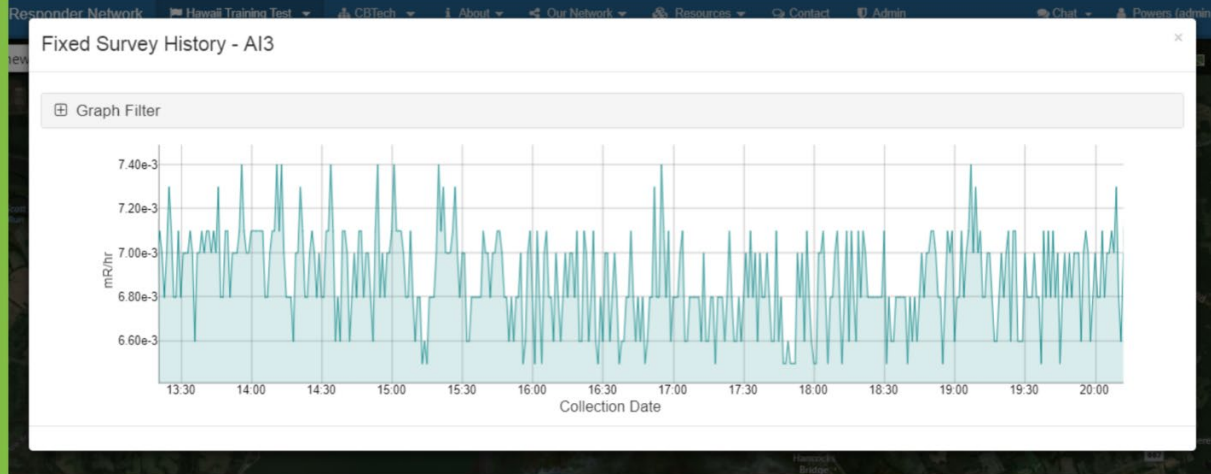


The screenshot shows a web application interface for managing surveys. At the top, there is a header with a radiation symbol, the word "Surveys", and buttons for "Export", "Import Surveys", "Assess Filtered", and "Create Survey". Below the header is a "Filters" section and a "Choose Visible Columns" button. The main content is a table with the following columns: "Collected", "Type", "Severity Level", "Value (Raw)", "Units (Raw)", "Team", "Collected By", "Comment", and "Location". Two data rows are visible:

Collected	Type	Severity Level	Value (Raw)	Units (Raw)	Team	Collected By	Comment	Location
9/25/2018 16:43	Gamma	Background	2.74000	uR/hr	--	Allston, Christine	--	38.9152 -77.2307
9/10/2018 14:30	Gamma	Background	3.00000	uR/hr	Strike Team 1	Taylor, Jodi	--	39.9555 -82.7590

Enter individual records or bulk upload data via the **website**

Collecting Data



Integrate **fixed monitoring sensors**
to stream minute-by-minute data

Collecting Data with APIs



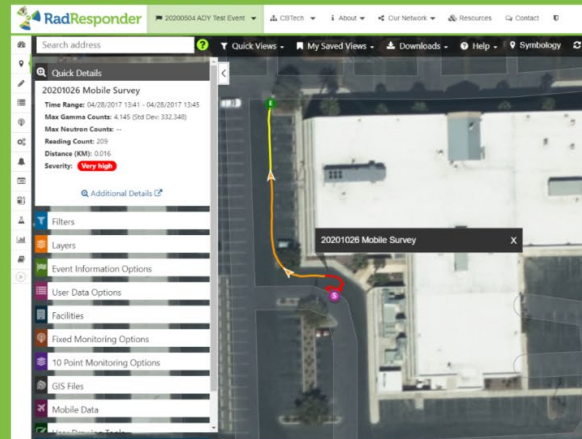
Visit our website to see a full list of integrated equipment

Integrated **Bluetooth-enabled equipment** can telemeter data directly to the website

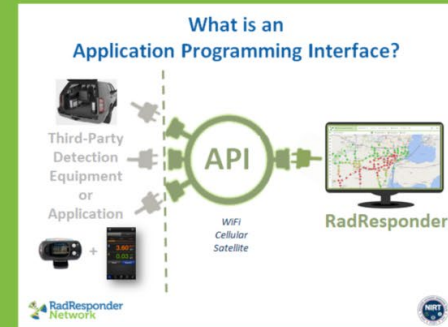
Collecting Data with APIs

Bluetooth Integrated Detection Equipment

NEW: Mobile & UAV Systems For High Volume Data Acquisition and Visualization

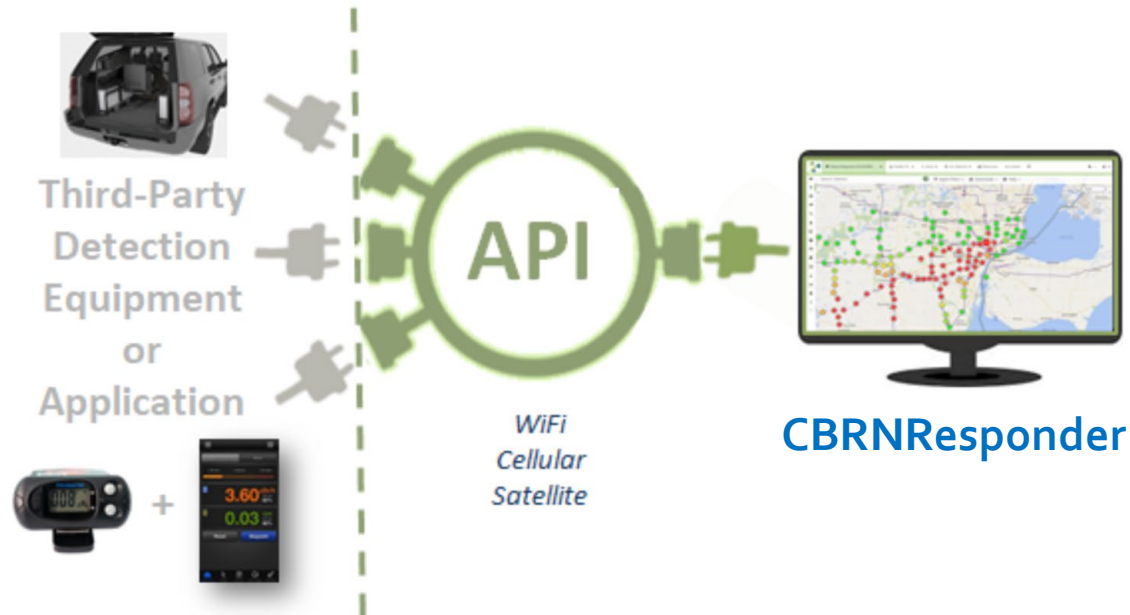


New: Chemical Gas Detection



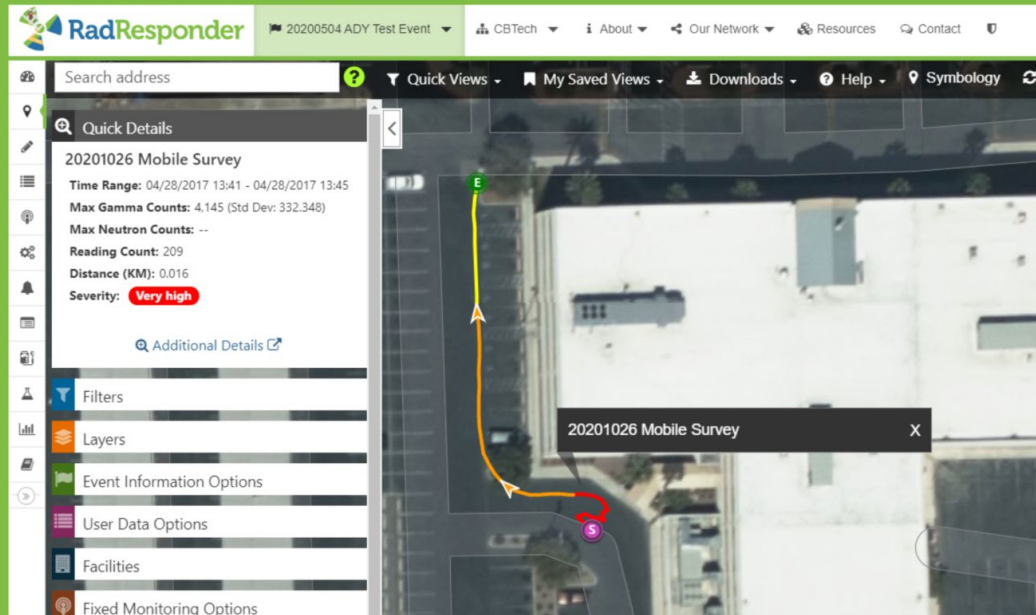
Collecting Data with APIs

What is an Application Programming Interface?



Collecting Data with APIs

NEW: Mobile & UAV Systems For High Volume Data Acquisition and Visualization



The screenshot displays the RadResponder web application interface. The top navigation bar includes the RadResponder logo, a dropdown menu for "20200504 ADY Test Event", and links for "CBTech", "About", "Our Network", "Resources", and "Contact". Below the navigation bar is a search address field and a toolbar with "Quick Views", "My Saved Views", "Downloads", "Help", "Symbology", and "Print".

The main content area is split into two panels. The left panel, titled "Quick Details", displays the following information for a "20201026 Mobile Survey":

- Time Range: 04/28/2017 13:41 - 04/28/2017 13:45
- Max Gamma Counts: 4,145 (Std Dev: 332.348)
- Max Neutron Counts: --
- Reading Count: 209
- Distance (KM): 0.016
- Severity: **Very high**

Below the details is a link for "Additional Details". The right panel shows a satellite map with a yellow path and a red circle. A tooltip for "20201026 Mobile Survey" is visible over the map.

The left sidebar contains a menu with the following options:

- Filters
- Layers
- Event Information Options
- User Data Options
- Facilities
- Fixed Monitoring Options

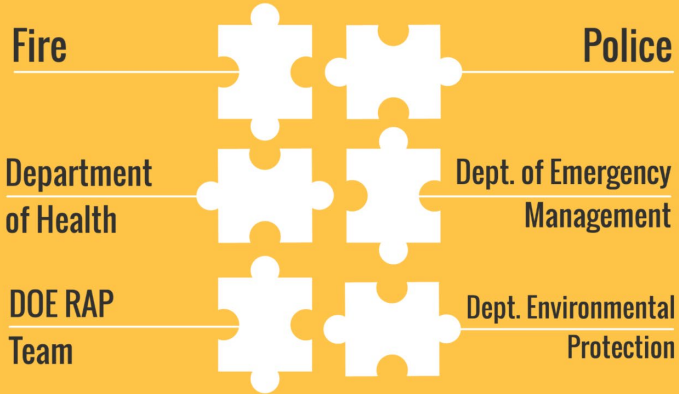
Collecting Data with APIs

New: Chemical Gas
Detection

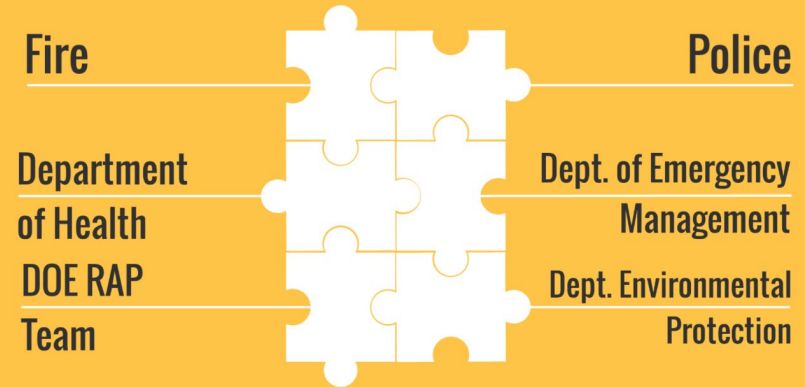


Data Sharing

Establish Default Partnerships...



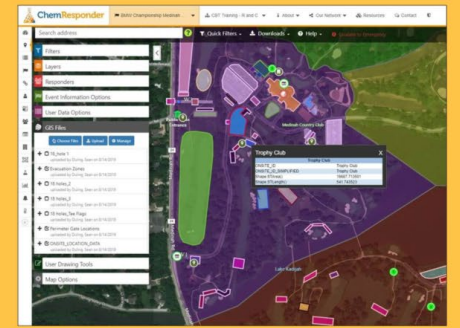
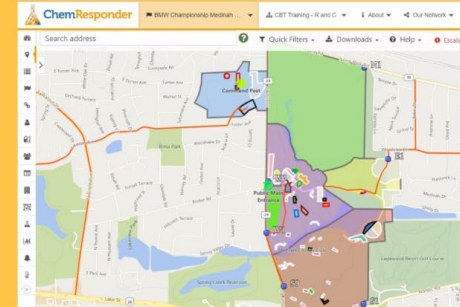
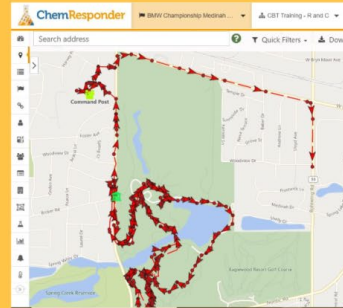
...To Share Data in Real-Time...



Use Cases

BMW Classic Golf Tournament - Illinois, 2019

- Joint Hazards Assessment Team (JHAT), 30k in attendance/day
- Rad/Chem event used
- Responder tracking for field teams
- GIS files
- Background measurements
- Assignments



Use Cases

Real World Monitoring Events | 2019

- College Football Championship
- Women's March
- NHL All-Star Game
- Monster Jam
- State of the Union Address
- NYC St. Patrick's Day Parade
- UAL Half Marathon
- USAFA Grad 2019
- Fair St. Louis
- World Pride Parade
- July 4th Celebrations
- BMW Championship
- College Football Games (WVU, Clemson)
- UN General Assembly
- 2019 Rockefeller Christmas Tree Lighting
- NFL Games (Falcons, Rams, 49ers, Super Bowl)
- Rose Bowl
- NYC New Years Eve

Bringing it all together...

The CBRNResponder Network

Launched July 2019

Chemical

ChemResponder
Launched 2018

Biological

BioResponder
Coming in 2021

IMAAC

Interagency Modeling and
Atmospheric Assessment Center
Coming in 2021

Radiological and Nuclear

RadResponder
Launched 2013



Bringing it all together...

Mobile Application vs. Website Access



- Designed primarily for data collection
- Limited situational awareness
- Can be used with or without wifi/cell connection
- Responder tracking

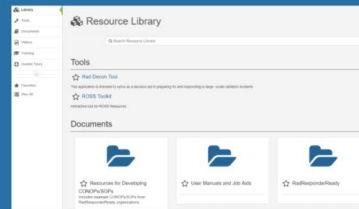
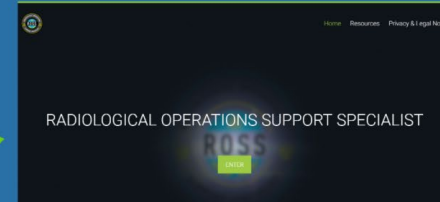
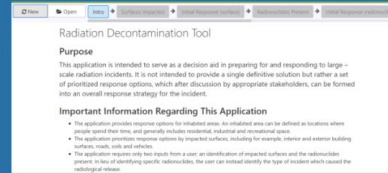


- Optimal for situational awareness
- Data Assessment
- Event creation and management
- Organization management
- Must have internet connection

Resources

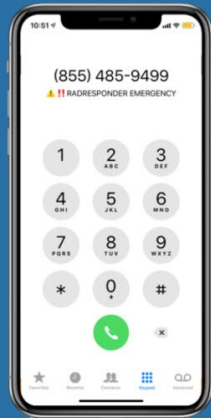
The One Stop Shop Resource Library

- Rad/Nuc Decon Tool
- Radiological Operations Support Specialist (ROSS) Toolkit
- FEMA REPP Disaster Initiated Review (DIR)
- References



Resources

24/7 Emergency Support Hotline



24/7 emergency hotline supports users during real-world operations and interagency exercises/drills

Toll-free number can be found on the CBRNResponder **Contact** page **(855) 485-9499**

CUPA Pilot with ChemResponder

- **Purpose:** develop implementation guidelines for using CBRNResponder as a local hazmat response tool, an electronic Unified Program Area Plan using real world organizations and limitations, and for DEAP integration
- **Partners:** Cal EPA (lead), Yuba County, Contra Costa County, Roseville County, San Diego County
- **Approach:**
 - 4 CUPAs participating
 - Uploading CUPAs' facility information (from CERS) into their respective ChemResponder organizations
 - Accrue feedback on ChemResponder incident response and facility management capabilities from CUPAs; use as basis for developing implementation guidelines
- **Current status:** uploading CUPA facility information this month to proceed with pilot activities

Post-Presentation Q&A

- After our Session is over, we are offering a Zoom Room opportunity to continue the conversation started in this Session
- Near the end of the Session in the QandA box, we will post the Zoom Room link
- To join in the conversation, you will need to copy that link BEFORE we close out the Session and paste it to a new browser tab/window
- In this Zoom Room, you may meet with the Speaker, Moderator and/or fellow Attendees for a post meeting de-brief



Any Questions?

Dante Stellar – FEMA CBRN Office, ChemResponder Program Manager

Dante.Stellar@fema.dhs.gov, 202-786-9480

Sean Duling – Chainbridge Technologies, Project Manager

sduling@chainbridgetech.com, 703-424-3207

