

RADAR

RemediAtion DAta Repository

**A Multi-Hazard Research Tool for Searching, Applying, &
Sharing Scientific Information**

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Outline

- **Scope**
- **Description**
- **Approach**
- **Implementation**
- **Search and Results**
- **Features**
- **Demo**
- **Next steps**

Scope

- Easily search literature and display results in a standard format
- Support custom widgets for displaying data in a meaningful way
- Connect tools and models with up-to-date research
- Mobile friendly (i.e., compatible with tablets and cell phones)
- **Consolidate and better communicate data while simultaneously reducing hosting services and costs**



Description

- Remediation Data Repository (RADAR): A Multi-Hazard Research Tool for Searching, Applying, & Sharing Scientific Information
- Provides a simple, user-friendly interface to search and explore research
- Intended for a wide audience including scientists, engineers, and operational experts
- Enhances the power of information by delivering on-demand data to the right people at the right time

Approach



Cloud: Web-based services provide data to multiple platforms



Upload

Emergency

Research

Software

Collect research from EPA, federal/state, and international partners

Provide support to cleanup and recovery operations

Inform research and facilitate use of results

Provide models and software tools with the most up-to-date research

Implementation

- The front-end component powers the user experience
 - Consists of HTML 5, CSS, JavaScript, and API web services consumption.
- The back-end powers the website and consists of a database and server-side programming components
- Back-end data are stored in a MySQL database and server-side programming in the middle-tier was implemented with PHP (Laravel 5)

Search & Results

- Users can search for the information they desire through the use of keywords and operators
- Keywords or tags are assigned upon uploading
- Alternatively, users may also browse by category type:



Chemical



Biological



Radiological



Resources

Search and Results Cont.

- Results can be further defined by category:
 - Hazard → Activity → Approach → Environment
 - Filter designed to align with operational needs
- Results can be previewed, easily identified according to its source (lab vs field study), and saved to a notebook

Hazard	Activity	Approach	Environment	
<input type="checkbox"/> Radiological	<input checked="" type="checkbox"/> Characterization	<input type="checkbox"/> Methods	<input checked="" type="checkbox"/> Animals	<input type="checkbox"/> Building
<input type="checkbox"/> Biological	<input type="checkbox"/> Decontamination	<input checked="" type="checkbox"/> Strategy	<input checked="" type="checkbox"/> Personnel	<input type="checkbox"/> Paved Surface
<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> Mitigation	<input checked="" type="checkbox"/> Infrastructure	<input type="checkbox"/> Soil/vegetation	<input type="checkbox"/> Transportation
<input type="checkbox"/> Resources	<input checked="" type="checkbox"/> Waste Management	<input checked="" type="checkbox"/> Land Use	<input checked="" type="checkbox"/> Water	<input checked="" type="checkbox"/> Agriculture
	<input checked="" type="checkbox"/> Data	<input checked="" type="checkbox"/> Population	<input checked="" type="checkbox"/> Aquatic Area	<input checked="" type="checkbox"/> Commercial
	<input checked="" type="checkbox"/> Tools	<input checked="" type="checkbox"/> Transportation	<input checked="" type="checkbox"/> Critical Infrastructure	<input checked="" type="checkbox"/> Forest
		<input checked="" type="checkbox"/> Vegetation	<input checked="" type="checkbox"/> Public Area	<input checked="" type="checkbox"/> Residential
		<input checked="" type="checkbox"/> Biological	<input checked="" type="checkbox"/> Drinking water	<input checked="" type="checkbox"/> Source stabilization
		<input checked="" type="checkbox"/> Chemical	<input checked="" type="checkbox"/> Recycling	<input checked="" type="checkbox"/> Waste Disposal
		<input checked="" type="checkbox"/> Radiological	<input checked="" type="checkbox"/> Waste Staging & Storage	<input checked="" type="checkbox"/> Waste Treatment
			<input checked="" type="checkbox"/> Waste Volume Reduction	<input checked="" type="checkbox"/> Soil
			<input checked="" type="checkbox"/> Aqueous Waste	<input checked="" type="checkbox"/> Solid Waste
			<input checked="" type="checkbox"/> Local	<input checked="" type="checkbox"/> State
			<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Model/Remote Sensing
			<input checked="" type="checkbox"/> DeconST	<input checked="" type="checkbox"/> IWASTE
			<input checked="" type="checkbox"/> WEST	

Additional Features

- **Widgets:** Build custom widgets using data stored in the database
- **Share:** Share data with other applications using a built-in application programming interface (API)
- **Upload:** Upload custom datasets. Once approved, these data are shared with other users and applications
- **Stats:** Metrics illustrating the availability of current research data

Conclusion

- EPA HSRP is looking for innovative ways to support its scientists and stakeholders
- How we access data is changing – solutions must be dynamic mobile friendly
- Reports and whitepapers are an integral part of this process
- **HOWEVER**, access may be limited and/or the material is too 'hefty' and time-consuming to read
- Emergency response personnel and decision makers require prompt and concise information
- Decision support tools and models should reference a central repository consisting of up-to-date research
- Prototype undergoing testing

Future Enhancements

- **Create Admin Module Functions**
 - Admin user management feature
 - Data entry mechanism/standard operating procedures (SOPs)
- **Enhance Search Results**
 - Enhance search
 - Manage notebook feature
 - Improve data mining
- **Enhance View Notebook**
 - Implement “Merge Data”
 - Modify or filter notebooks
- **Dynamic Stats Tab**
 - Create dynamic research stats
- **Enhanced Widget Features**
 - Creating custom tools/calculators

Disclaimer

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Thank You

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