



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

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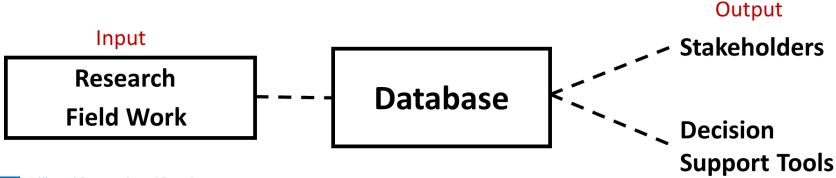
Outline

- 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



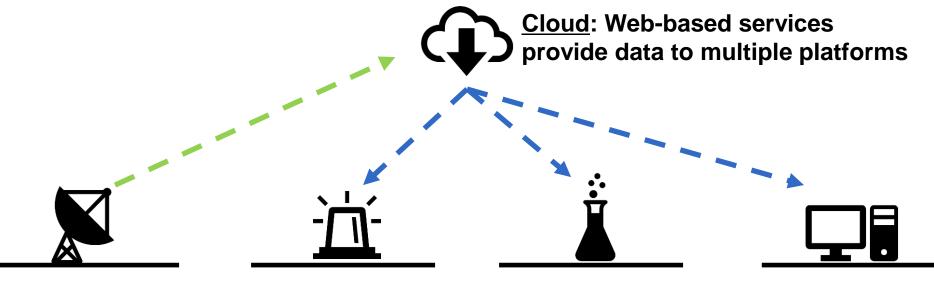


Description

- 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 ondemand data to the right people at the right time



Approach



<u>Upload</u>

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

Emergency

Provide support to cleanup and recovery operations

Research

Inform research and facilitate use of results

Software

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:





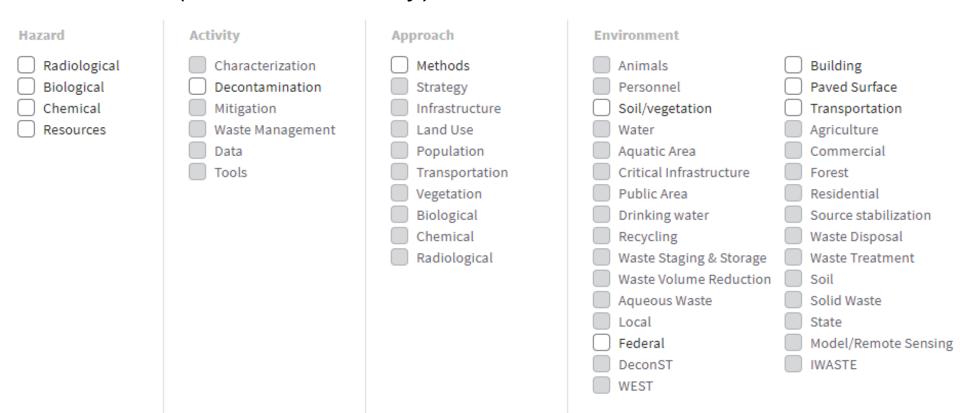






Search and Results Cont.

- 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





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-todate 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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