

**CIF21 DIBBs:** Building a Modular Cyber-Platform for Systematic Collection, Curation, and Preservation of Large Engineering and Science Data – A Pilot Demonstration Project | **Award #** 1443027 | **PI:** Santiago Pujol | **co-PIs:** Michael McLennan, Ann Christine Catlin, Chungwook Sim, Lisa Zilinski

## Innovative Features

### Discipline-Neutral Organization

Datasets are organized as experiments (one per row), with common top-level metadata describing **what**, **when**, and **where** the work was done and **by whom**.

*DataHub contains experiments from civil engineering, agronomy, earthquake engineering, and gene sequencing, all presented alongside one another.*

**Each row represents one experiment**, making exploration and understanding collections easier.

### Simple Interface

Tabular interface is scalable and intuitive. Contribution is a **3-step process**: (1) define experiments, (2) upload files, and (3) define parameters. The contribution dashboard echoes the discovery interface, making it easier for users to learn to use the platform.

### Annotated File Collections

When uploading files, hierarchies are **extracted** automatically and used as annotation. Keywords can be **recommended** based on uploaded reports. And annotations can be applied to many files at once. Best of all, **these metadata all become searchable fields**.

### Parameters for Custom Interaction

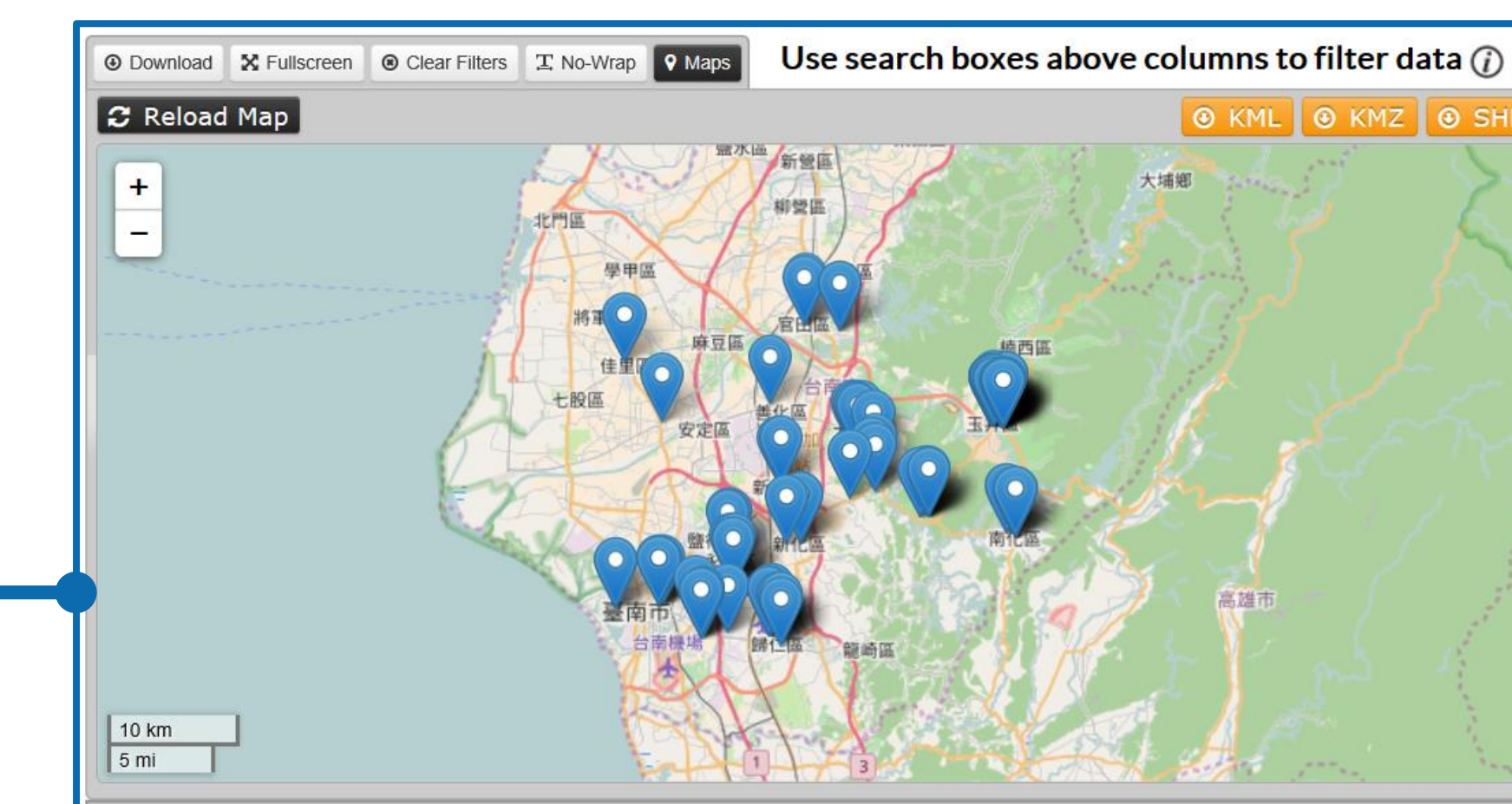
Researchers can define **custom parameter sets**, which can be used to surface important values about the experiments. These parameter sets can be standardized within a research community and published as predefined sets. And they can be used by viewers to explore the datasets.

*The American Concrete Institute (ACI) uses standardized parameter sets in their shear wall and column databases, both of which are in regular use by subcommittees.*

## Robust, Scalable Infrastructure

### Discovery

Id	Title	Experiment or Case ID	Keywords	Report(s)	Parameters	Data	Photos, Videos, etc.	Drawings/Diagrams	Source
94662	Yujing Junior High School B	A01-E01	2016 Taiwan Earthquake Meinong		Taiwan EQ Parameter Set		View 137 media	View 8 drawings(s)	NCREE Purdue University
94663	TREC Store Yujing	A02-C02	2016 Taiwan Earthquake Meinong		Taiwan EQ Parameter Set		View 123 media	View 2 drawings(s)	NCREE Purdue University
94664	Yujing Elementary School NE Wing	A03	2016 Taiwan Earthquake Meinong		Taiwan EQ Parameter Set		View 73 media	View 35 drawing(s)	NCREE Purdue University
94665	Yujing Elementary School NW Wing	A04	2016 Taiwan Earthquake Meinong		Taiwan EQ Parameter Set		View 38 media	View 30 drawing(s)	NCREE Purdue University
94666	Yujing Vocational School Hospitality Dep.	A05	2016 Taiwan Earthquake Meinong		Taiwan EQ Parameter Set		View 35 media	View 2 drawings(s)	NCREE Purdue University
94667	Yujing Vocational School - New Building (N)	A06	2016 Taiwan Earthquake Meinong		Taiwan EQ Parameter Set		View 21 media	View 61 drawing(s)	NCREE Purdue University
94668	Shanshang District Office Building	A07	2016 Taiwan Earthquake Meinong		Taiwan EQ Parameter Set		View 95 media		NCREE Purdue University



**Maps** to visualize and explore datasets

**Every column is searchable**, allowing users to “zero in” on data of interest to them by applying searches and filters to multiple columns

**Galleries** to view drawings and photos, watch videos, and listen to audio before downloading.



*Earthquake reconnaissance data from trips funded by NSF and ACI are preserved on DataHub.*

Define experiments in bulk using **spreadsheets**, or individually using the **web interface**.

Files relevant to multiple experiments can be uploaded as **shared files** and linked to selected experiments

**Experiment IDs** in step 1 automatically propagate to steps 2 and 3 (file upload & parameters)

**Upload** files using SFTP or your web browser.

File Manager

Experiment or Case Files 0

Search ID	Search ID	File Name	File Description	File Date & Time	Classification	Actions	Select
File ID	File ID	File Name	File Description	File Date & Time	Classification	Actions	Select
				<a href="#">Add</a>	<a href="#">Remove</a>	<a href="#">Add</a>	<a href="#">Delete</a>
						<a href="#">Add</a>	<a href="#">Delete</a>
Search File ID	Search File Name	Search File Description	Search File Date & T	Search Classification			
94723	2016-03-0301	2016-03-0301-001	Drawings	<a href="#">Data</a>	<a href="#">Delete</a>		
94724	2016-03-0301	2016-03-0301-023	Drawings	<a href="#">Data</a>	<a href="#">Delete</a>		
94727	2016-03-0301	2016-03-0301-041	Drawings	<a href="#">Data</a>	<a href="#">Delete</a>		
94729	2016-03-0301	2016-03-0301-049	Drawings	<a href="#">Data</a>	<a href="#">Delete</a>		
94741	2016-03-0311	2016-03-0311-040	Drawings	<a href="#">Data</a>	<a href="#">Delete</a>		

**File manager** helps users manage files and annotations