Introduction and Overview of NEESit Software and Services

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Overview

- Overview of NEES and NEESit
  - NEES Community
  - Role of NEESit
  - Statistics
  - NEESit Organizational Structure
- NEESit Software & Services to promote earthquake eng research & collaboration
  - Data
  - Tools
  - Telepresence

NEES Equipment Sites
The Role of NEESit

Data IN

Applications

DATA

Data OUT

NEESit Users

• NEESR Projects
  - >50 projects, >150 PIs, >$37M funded
• Registered Users
  - 500 (FY06) -> 834 (FY07) -> 1042 (FY08)
  - ~500 unique logins/mo
• Projects
  - 93 (FY06) -> 364 (FY07) -> 564 (FY08)

Steady, continued growth in users and projects.
**NEESit Software and Services**

- Data
- Collaboration
- Tools
- Telepresence

**NEESit Software and Services**

- Create projects, experiments/simulations
- Collaborate with others
- Share data results
- Publish when ready

**Data: NEEScentral**

- Data ingestion
- Repository
- Export
- Long term preservation
- Publication
NEES Cyberinfrastructure Center at the San Diego Supercomputer Center, UCSD

Data Model

NEEScentral (https://central.nees.org) includes a repository of all equipment site information that a researcher might need, to utilize any of the NEES facilities

In NEEScentral digital information is archived about each site
- Equipment available at the site
- Sensor inventories and sensor properties
- Documents describing the facility and its usage
- Contact information for facility staff

Facilities Database

Facility: University of California at Davis

<table>
<thead>
<tr>
<th>Major Equipment</th>
<th>1</th>
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<tbody>
<tr>
<td>Geotechnical Centrifuge</td>
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<td>Horizontal Shaking Table</td>
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<td>Vibrating Shaking Table</td>
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<td>Nonlinear Shaking Table</td>
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<td>Data Acquisition Infrastructure</td>
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<td>Lab Infrastructure</td>
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<td>Robot</td>
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<td>Hydraulic Power Infrastructure</td>
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<td>Telepresence Equipment</td>
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<td>Mass Spec</td>
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Data Curation

NEES Experiment Data Curation Report

Project:
Development of a Performance-Based Seismic Design Philosophy for Mid-Rise Woodframe Construction

Award Number:
0525583

Experiment Title:
Data Curation

Phase 1 - Wood only

Research Status:
Complete

Curation Last Modified Date:
1/10/2007

Curation Status:
Complete

Visibility:
Public

Tools

- View/compare/edit data using data viewers (N3DV, 3DDV, RDV)
  - http://neesforge.nees.org/projects/n3dv/
  - http://neesforge.nees.org/projects/3ddv/
- Collaborate with colleagues on project research efforts
- Publish paper with e-content related to the work

Tools
Collaboration Tools

Welcome to NEESforge, the community code repository for the Network for Earthquake Engineering Simulation (NEES).

The purpose of this site is to enable all members of the NEES community to make their software available publicly, as well as to provide a means to view software other NEES sites have developed. This is intended to be a virtual site, to download and test code, and to find developers to collaborate on your software projects.

NEESforge has tools to help your team collaborate, including:

- Source repositories (SVN or Subversion)
- Mailing lists
- Discussion forums
- Wiki for publishing tips and change requests
- Project management for assigning tasks to users

Repository
Scripts and data (public and private)
Workspace
OpenSees scripts and data organized into simulations
Local File system
TeraGrid
Job Submission Service
Access job status and simulation results
Monitoring Service

George E. Brown, Jr. Network for Earthquake Engineering Simulation
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Other Activities: SPOE

Summary of Software and Services

- **NEEScentral v1.8**
  - Web Services APIs for integration
  - Migration to Oracle backend
- **NEESdaq**
  - Interface to labview
- **iSeismograph**
  - Teaching tool for Apple Mac
- **flexTPS**
  - Video collaboration
- **Data Turbine**
  - High performance time-synchronized data streaming services for both static and dynamic data.
- **OpenSees**
  - Earthquake Engineering Simulation software
- **WebEX**
  - Collaboration for meetings
- **NEESforge**
  - Sourceforge for developers
- **NHCP**
  - Secure communication for hybrid simulation
- **N3DV**
  - UC Davis 3D animated data viewer
- **3DDV**
  - RPI 3D data viewer
- **RDV v1.9**
  - Real-time Data Viewer for remote collaboration and play-back
Questions?