NASPI Synchrophasor Software Exchange

Alison Silverstein
NASPI Project Manager
NASPI Work Group Meeting
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Meet the NASPI Synchrophasor Software Exchange

Purpose – share software that can be used for synchrophasor system management and data analysis at no cost to the user.

Sources – anything you and your colleagues want to contribute

Why – sharing useful software will accelerate the availability and use of high-quality, high-value synchrophasor software tools

Types of software we want:
- Data analytics, including event analysis
- PMU installation and commissioning
- PDC code
- Network management
- Data cleaning and management
- Whatever you find useful
Warnings

Contributors

• You must own the IP for your software.
• You must post software and documentation on a third-party software hosting site.

Users – use this software at your own risk!

• Please respect others’ IP
• DOE, PNNL & NASPI do not guarantee and are not responsible for the quality, safety or usability of the software.
https://www.naspi.org/synchrophasor
software
Software contributor information

**Synchrophasor Software Overview**

**Dynamic System Identification Toolbox**

<table>
<thead>
<tr>
<th><strong>Title</strong></th>
<th>Dynamic System Identification Toolbox</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>MATLAB-based Dynamic System Identification Toolbox (DSI Toolbox), including the EPA/PHNL Prony Ringdown GUI</td>
</tr>
<tr>
<td>** Contributor**</td>
<td>ftuffner</td>
</tr>
<tr>
<td><strong>Contributor Email</strong></td>
<td><a href="mailto:francis.tuffner@pnnl.gov">francis.tuffner@pnnl.gov</a></td>
</tr>
<tr>
<td><strong>Categories</strong></td>
<td>Oscillation detection, Transient stability</td>
</tr>
<tr>
<td><strong>Purposes</strong></td>
<td>Off-Line Analytics (including all types of &quot;modeling&quot;)</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>Local Application</td>
</tr>
<tr>
<td><strong>Platforms</strong></td>
<td>64-bit Windows</td>
</tr>
<tr>
<td></td>
<td>32-bit Windows</td>
</tr>
<tr>
<td><strong>Languages</strong></td>
<td>MATLAB</td>
</tr>
<tr>
<td><strong>Keywords</strong></td>
<td>disturbance analysis, mode meter, small signal stability, oscillation analysis, modal analysis</td>
</tr>
<tr>
<td><strong>License Type</strong></td>
<td>Client-Server Application</td>
</tr>
<tr>
<td><strong>License Comments</strong></td>
<td>Open Source BSD 2-clause license</td>
</tr>
<tr>
<td><strong>First Use Date</strong></td>
<td>8/1/2008</td>
</tr>
<tr>
<td><strong>Software URL</strong></td>
<td><a href="https://github.com/ftuffner/DSIToolbox">https://github.com/ftuffner/DSIToolbox</a></td>
</tr>
</tbody>
</table>

**Documentation Available**

Last Updated: March 2013
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Software list & filter/search options

[Image of NASPI Synchrophasor Software Search page]

- **Dynamic System Identification Toolbox**
  - [GitHub Repository](https://github.com/Turffor/DSIToolbox)
  - Contributor: Turffor
  - Type: Local Application
  - Platform: 64-bit Windows, 32-bit Windows
  - Created Date: 03/22/2015
  - MATLAB-based Dynamic System Identification Toolbox (DSI Toolbox), including the BPA/PNNL Prony Ringdown GUI

- **open Phasor Data Concentrator - openPDC**
  - [Website](https://www.gridprotectionalliance.org/products.aspPDC)
  - Contributor: Russell Robertson
  - Type: Other
  - Platform: OSX, 64-bit Linux, 32-bit Linux, 64-bit Windows
  - Created Date: 03/23/2015
  - The openPDC is a high-performance data concentrator platform for the management of streaming synchrophasor and other time-series data in real-time. The openPDC is a suite of applications and services that assure highest-availability phasor data collection and distribution from the smallest of implementations, such as aggregating data from 2 PMUs at a substation -- to the very large, such as management of synchrophasor data for a U.S. Interconnection. The openPDC has been in production use since 2004. It has a proven performance record and it continues to be on a steep improvement curve.
Thank You!

PNNL staff
- Cara Engeman
- Teresa Carlon
- Eric Andersen

Idea generators
- Kyle Thomas
- Kevin Jones
- Russell Robertson

Early testers
- Russell Robertson
- Ritchie Carroll
- Anurag Srinivasta
- Kevin Jones
- Kyle Thomas

Early contributors
Your job now

Please share your good software!

Please use others’ good software and let them know it’s good.

Please take good software and make it better.
Now – elevator pitches

• Ritchie Carroll (GPA) – Project Alpha
• Anurag Srivasta & HyoJong Lee (Clemson) – PMU Animation Software
• Kevin Jones (Dominion) – Synchrophasor Analytics
• Pavel Etingov (PNNL) – Frequency Response Analytics Tool