

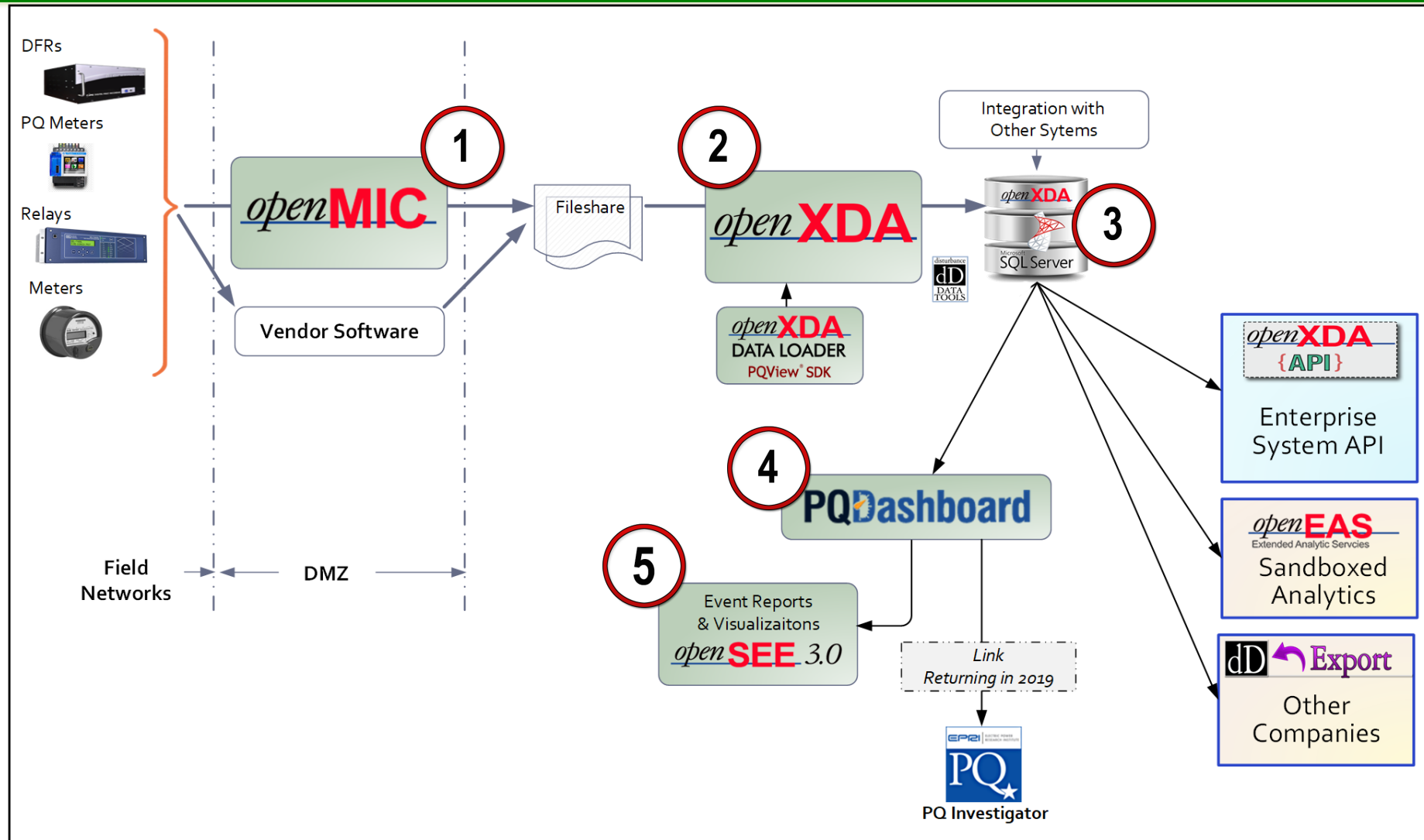
PQDashboard User's Group

What's new for 2019?

Russell Robertson

May 9, 2019

GPA's Disturbance Monitoring Tool Suite



Additions since April 2018

- Release Version 1.3 (*May, 2018*)
- Added support for multiple instances configured against one database
- General improvements to usability and stability of MODBUS device configuration
- Improved stability of FTP downloader
- Updated OpenDnp3 libraries to July 10 build using the latest source code
- Added configuration parameter to control polling interval for DNP3

2019 Development Plans

- Modified to be a distributed, load-balanced system with automated failure recovery
 - Lower latency for large infrastructures
 - High-availability
- Option to have configuration managed by the new “openXDA System Center” application

Additions since April 2018

- Release Version 2.4 (May, 2019)
- Improved **email engine** to allow for self-subscription and added trip logic to prevent email flooding
- Faults verified by checking **SCADA for breaker state change**
- Expanded the list of “**simple stats**” retained for event data.
- Added logic for voltage **transient event classification**.
- Added option to use “**last faulted cycle**” for representative fault cycle.
- Added logic to automatically calculate **line-to-line quantities** from line-to-neutral quantities for analysis.
- Added logic for **estimating probable fault causes** from waveform signatures.
- Added hooks for **integration with lightning data** providers
- **Improvements to dD Tools** - data file reprocessing, new periodic data display, step-change report, supra-harmonics charts, plus others.
- Added data readers for JSON data from **Eaton EMCB devices**.

2019 Development Plans

- Refactoring of data-base to become “asset” centric rather than line centric
- Correlation of voltage sags to fault events
- Identification of normal-switching events
- Improved fault typing (L-L-G)
- Improved techniques to detect a transient
- Logic to determine breaker timing characteristics from trip-coil current waveform
- Additional testing of automated data exchange with EPRI PQ-Mark

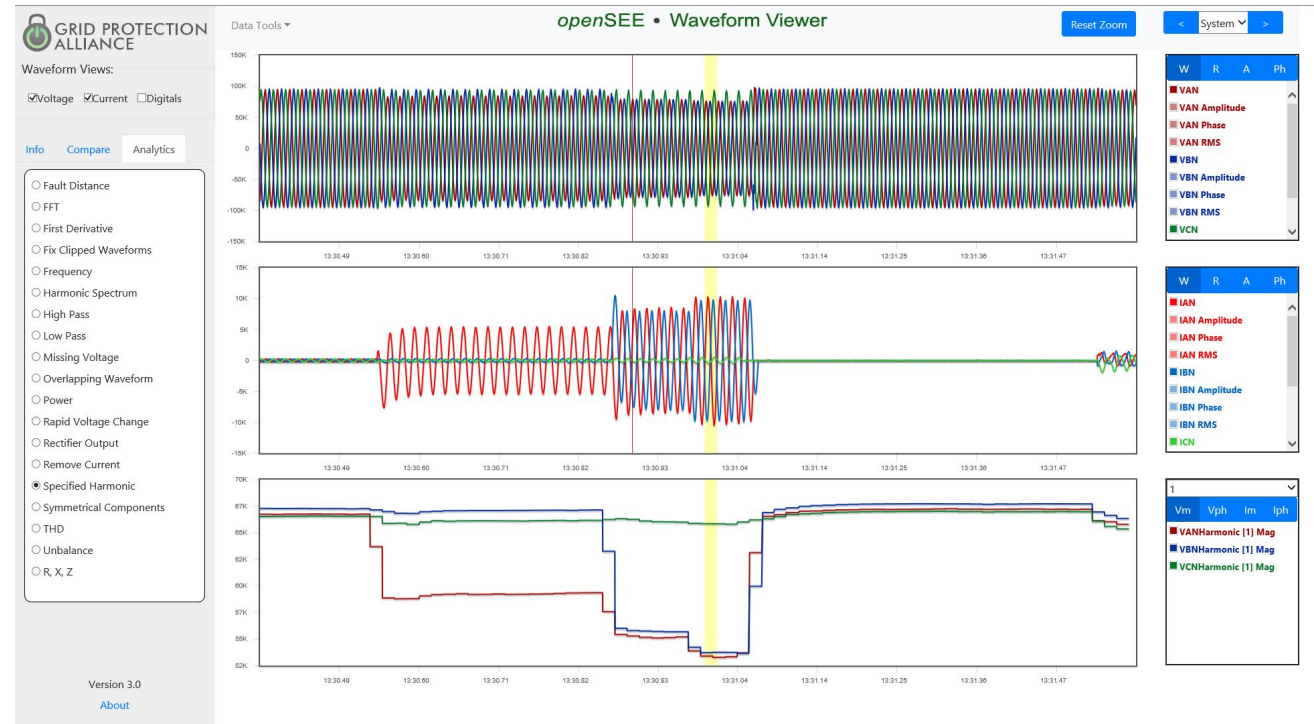
Additions since April 2018

- Release Version 2.2 (*May, 2019*)
- Added the ability to attach notes in multiple locations
- Added quick search page for quickly finding and filtering events within a time range.
- Fixed usability issues on the Meter Activity tab.

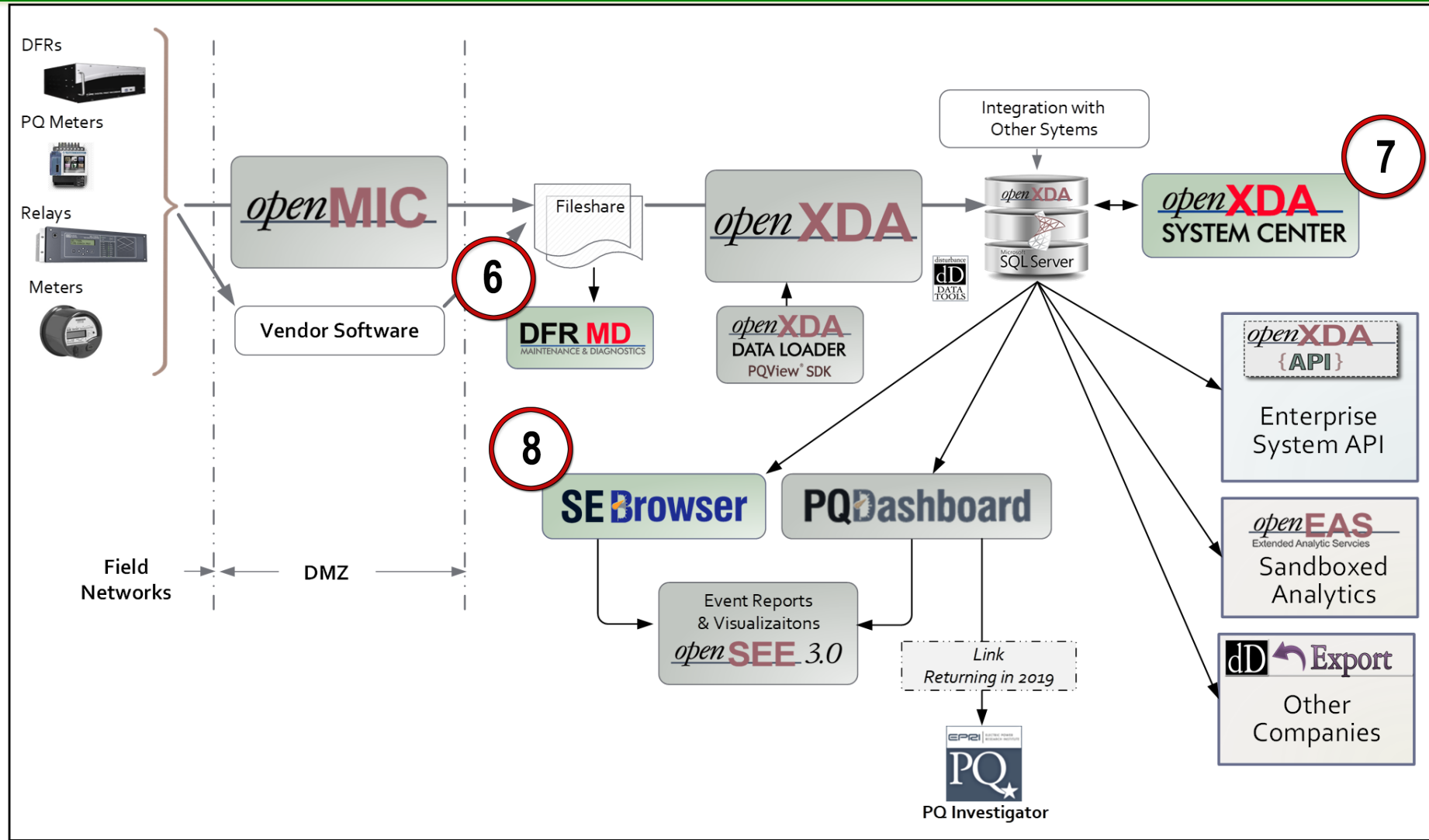
2019 Development Plans

- Scalability improvements
- Integration with PQI-Web

- All functionality from previous versions preserved
 - Event summary information
 - Useful “forward and back” navigation features
 - Tool panels that provide additional pop-up displays
- Changes include:
 - Reorganized menu
 - Added scalar stats
 - Added lightning data query
 - Added waveform analytics
 - Included CSV exports on tabular data and event data
 - Included COMTRADE exports on event data
 - Added time-correlated event comparisons and sag list
 - Added snapshot harmonics analysis



New TVA-Funded Applications Coming in 2019



6

DFR MD

MAINTENANCE & DIAGNOSTICS

New TVA Funded Application

A service to monitor DFR Configuration and Health

- Parses DFR configuration and diagnostic files
- Issues automated email notifications
 - Communications issues – connectivity / high latency
 - Self-reported DFR diagnostic errors
 - DFR configuration change
- Includes annunciation dashboard to alarm on DFR issues for 24x7 NOC desk
- Available late 2019 / early 2020

A browser-based reporting system for communications desk & DFR SMEs



*open***XDA** SYSTEM CENTER

New TVA Funded Application

Integrates System Configuration

- One-point stop to manage application settings
 - Substation & Asset information
 - Individual application settings
 - Meter & DFR Configuration
 - User administration, contacts, and notification groups
- Some configuration is maintenance of link tables to external data providing systems
- Available late 2019 / early 2020

Replaces functionality in dDTools

8

System Event Browser

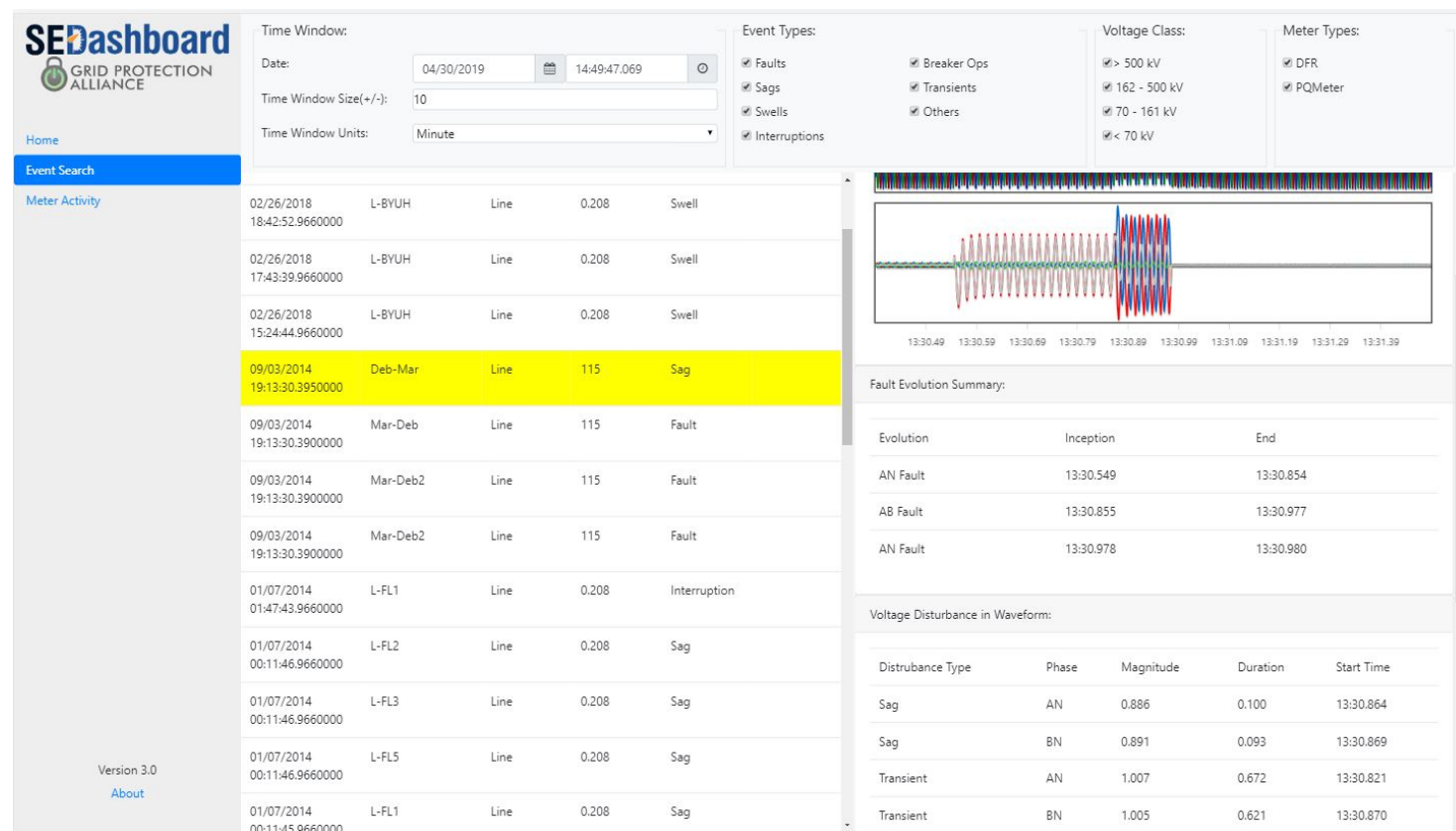
New TVA Funded Application

Optimized for engineering analysis

- Quickly find data and investigate a specific event
- Includes a “data preview” panel
- Review the historical performance of an asset or a customer.
- URL-driven to allow links to be placed into emails and investigation reports
- Available Summer 2019

Modeled after MS Outlook

- Complements the Open PQ Dashboard
- Outlook-like navigation model: Filter – preview results – show details
- Based on a robust, high-performance web framework that includes Signal-R
- Funded by TVA to replace an aging list-based web system, PQMS



The progression of the openXDA & the Open PQ Dashboard

