AVEVA PI WORLD

The Enterprise PI Journey and Power System Data Centralization at SRP

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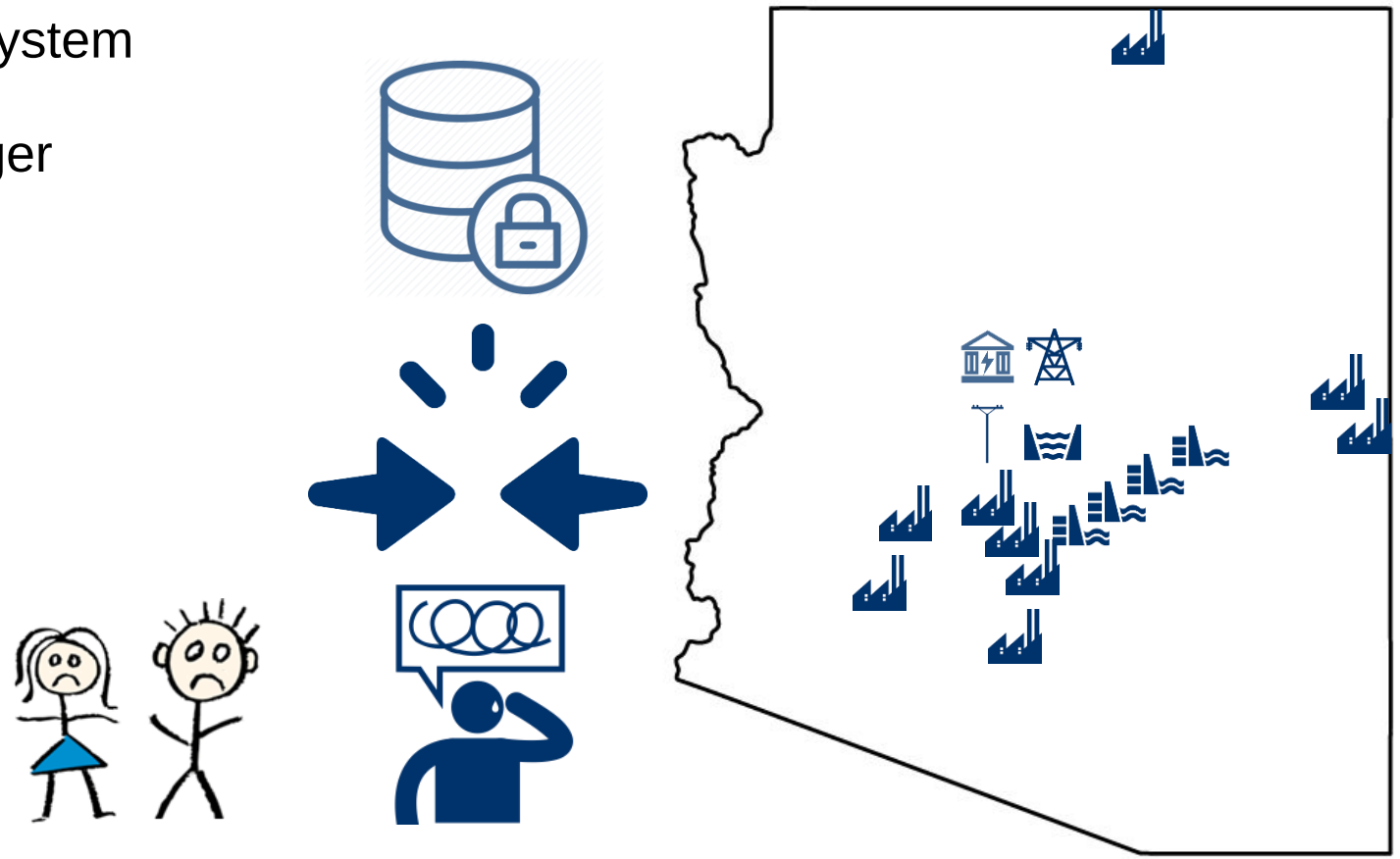
About SRP

- US Bureau of Reclamation Project
- Supply water & power to the Salt River Valley and large portions of the Phoenix Metropolitan area
- SRP facts per end of FY21
  - 1,093,265 electric customers
  - Peak system load: 7615 MW
  - Available MW resources: >8800 MW
- Generation Resources
  - Gas, coal, nuclear, hydro, solar, biomass, wind & geothermal

Historians across SRP

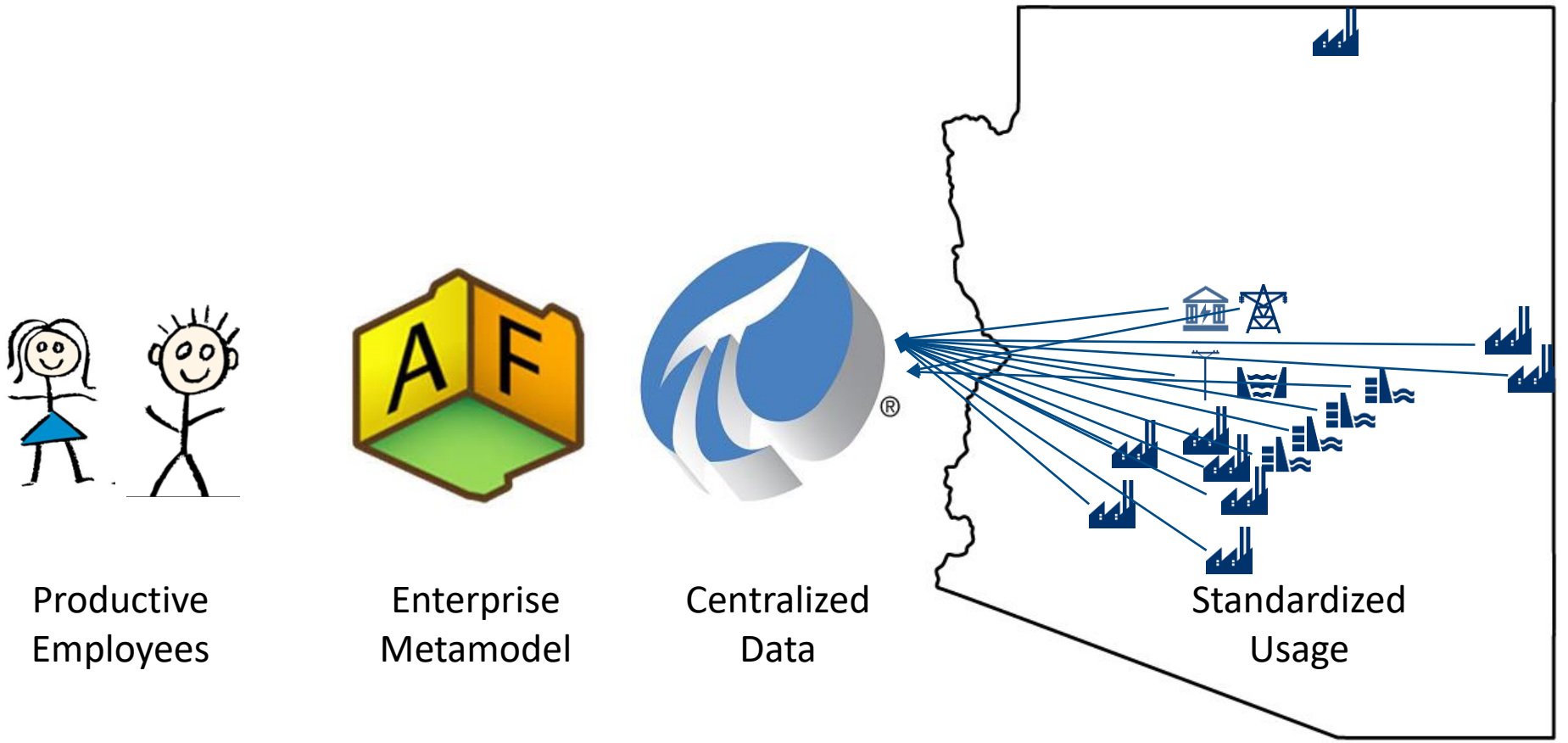
- Energy Management System
- Substation Data Manager
- Relay Synchrophasers
- Generation
- Water



PI Systems at SRP

- 15 Generating Sites
- PMC – Performance Monitoring Center
- EMS – Transmission & Distribution
- SDM – Substation Automation

Enterprise PI System



Productive Employees

Enterprise Metamodel

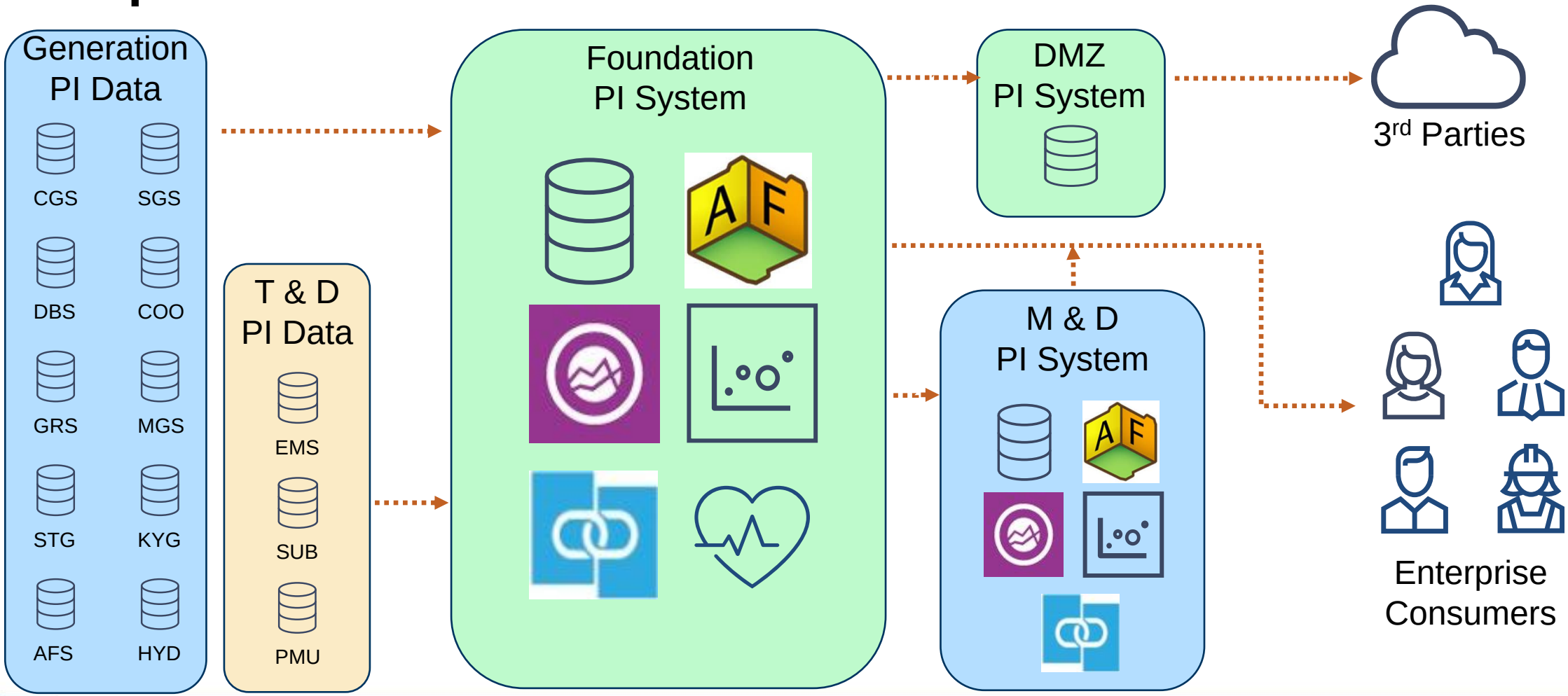
Centralized Data

Standardized Usage

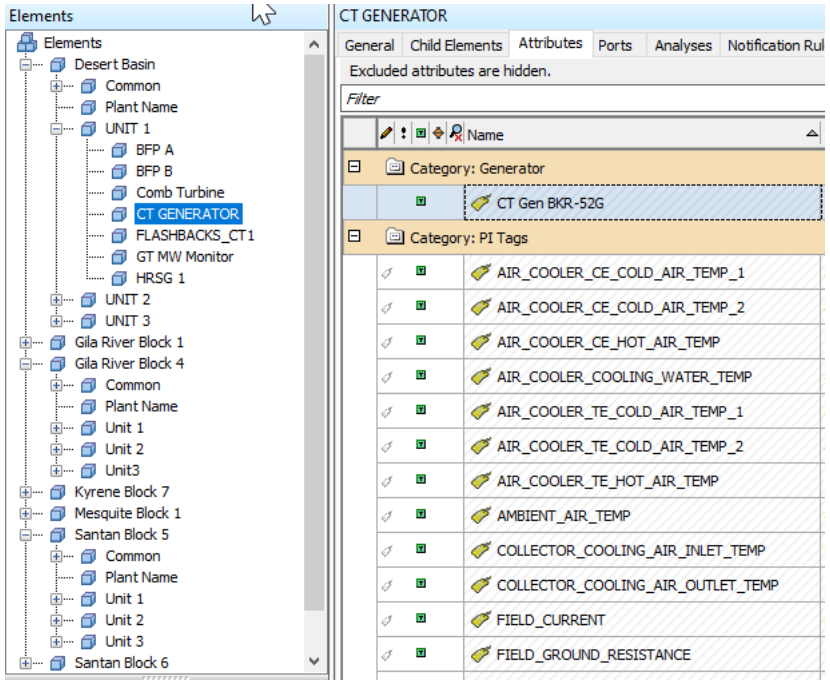
Enterprise PI Infrastructure at SRP

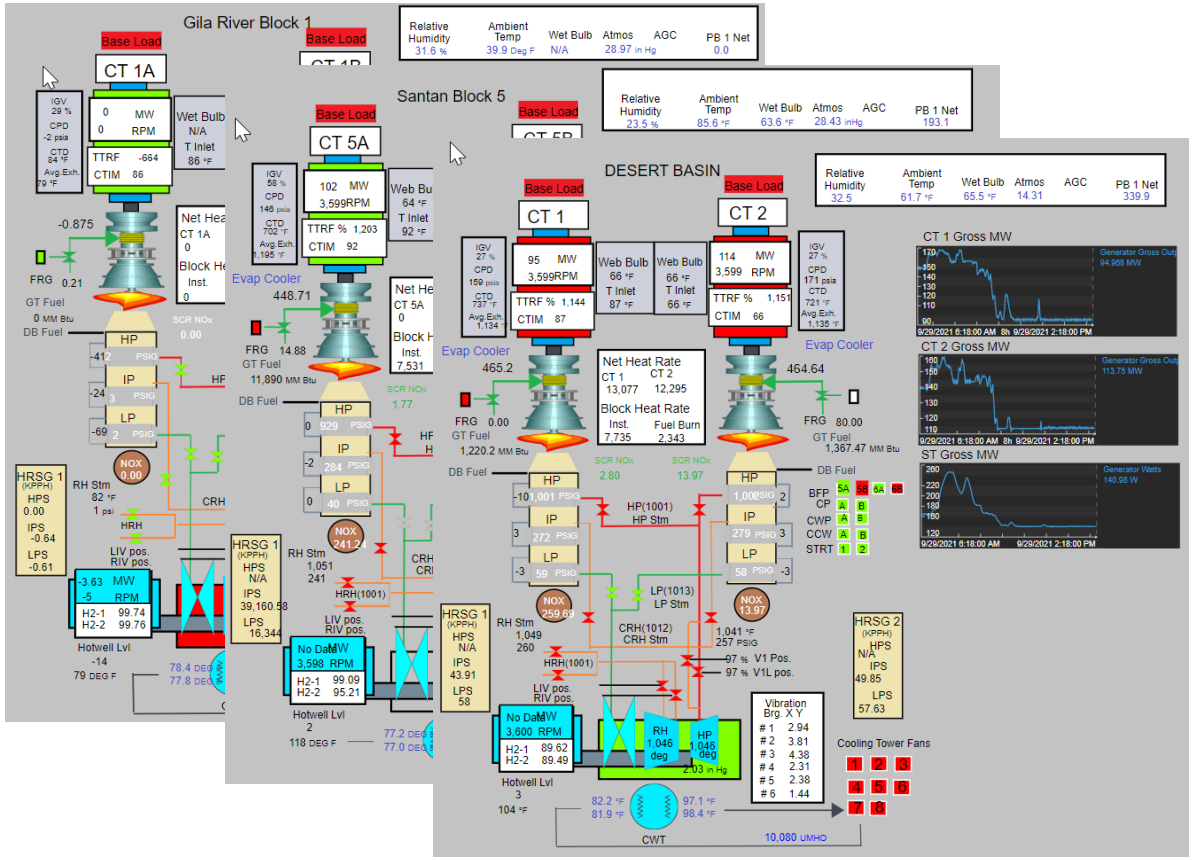
- Serves as a **“Real Time Data Infrastructure”**
- Pulling data together from diverse sources, Generation and T&D
- Multiple applications & business units have access to same data
- Infrastructure essential to Daily Operations
- Foundation PI to centralize PI Data for Enterprise access

Enterprise PI Architecture



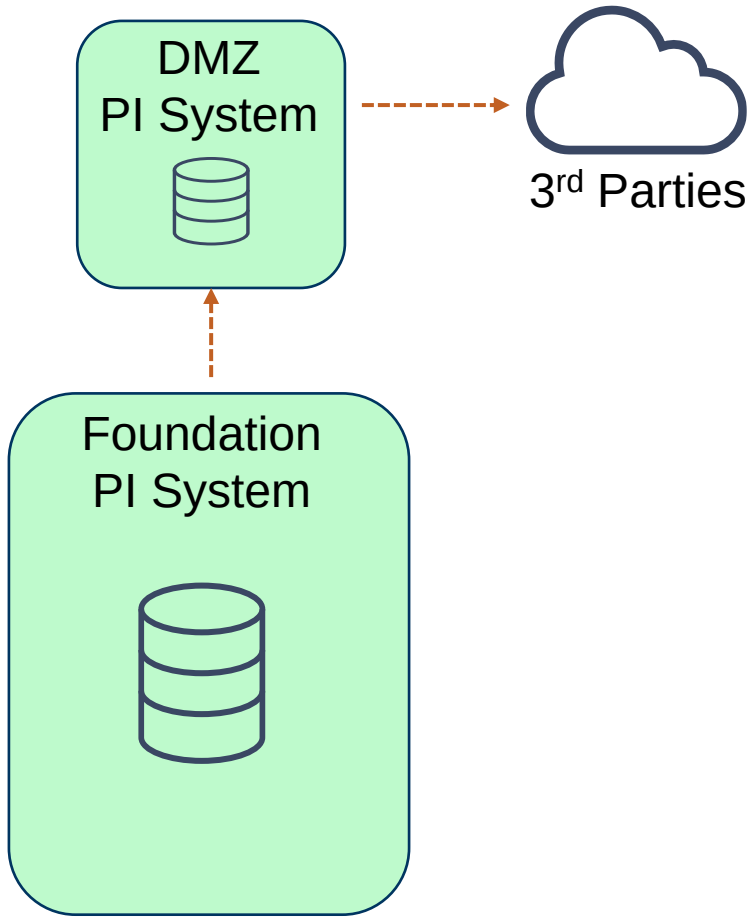
PI AF Templates Enable Fleetwide Monitoring





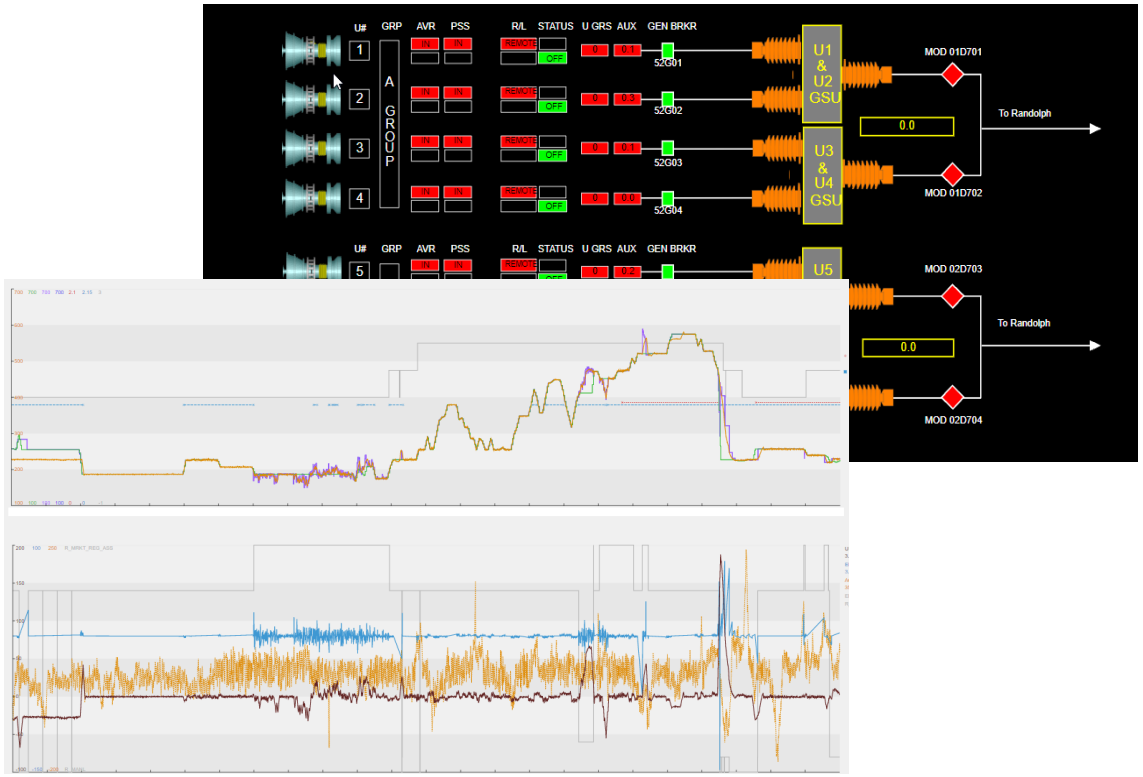
External Party Access to PI Data

- Vendor Access
  - **Before:** VPN Tunnel into control network
  - **Now:** One PI System in DMZ connected to outside
- Participant Owner Access
  - **Before:** Access to plant data on a Citrix connected desktop with PI Vision in Kiosk mode
  - **Now:** PI to PI to owner from DMZ PI System



Centralized Reporting and Analytics

- PI Vision
- PI DataLink
- PI Integrator for Business Analytics
  - Power BI
  - Tableau
  - Hadoop



Centralization of Power System Data

Challenge

Taking data that is stored at many individual sites, in disparate systems, with different standards, and making that data consistently available to the entire enterprise via one standardized, central platform for use in analytics, reporting, monitoring and engineering.

Solution

Implemented a centralized enterprise level PI System on the SRP network enabling access to fleetwide operational data by the business via PI tools such as PI AF, PI Vision, and PI DataLink, while standardizing individual site PI Systems across the company. “One stop shopping”

Benefits

Enabling the business to more efficiently locate and access the operational data they really need via “one stop shopping”, they can focus more on information and less on technology, thus improving productivity and inherently reducing costs.

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