
Predictive Analytics

Tim Brost

Product Specialist

Wonderware California

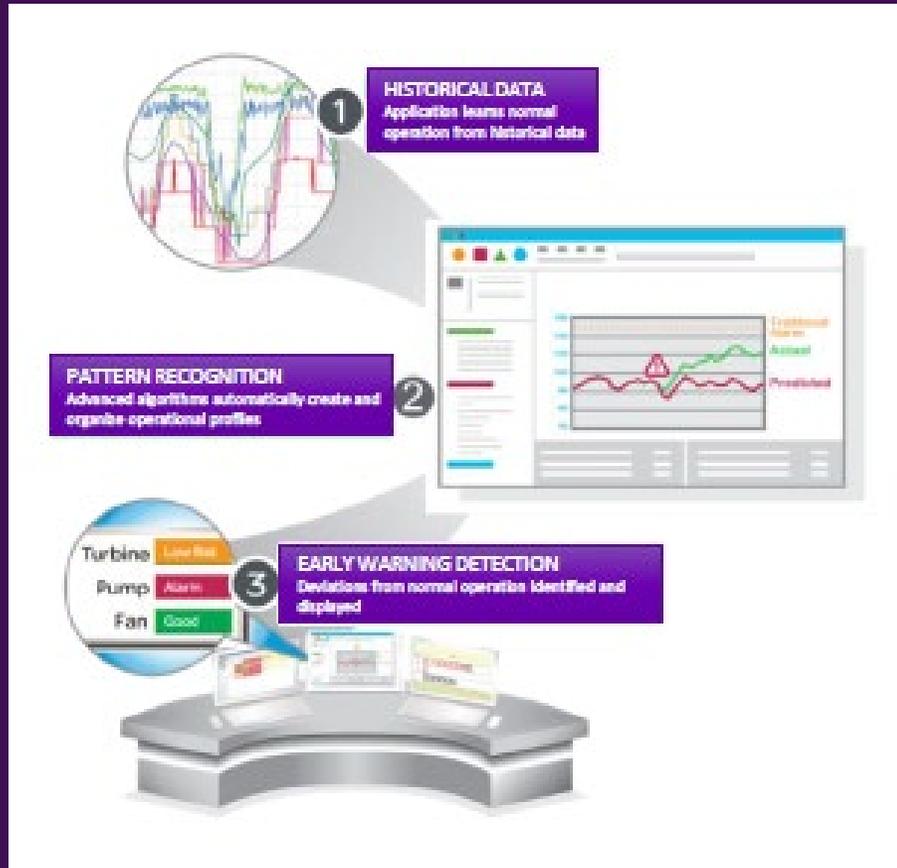
Predictive & Beyond

Four P's of AVEVA Industrial Artificial Intelligence

- **Predictive**
- **Performance**
- **Prescriptive**
- **Prognostics**

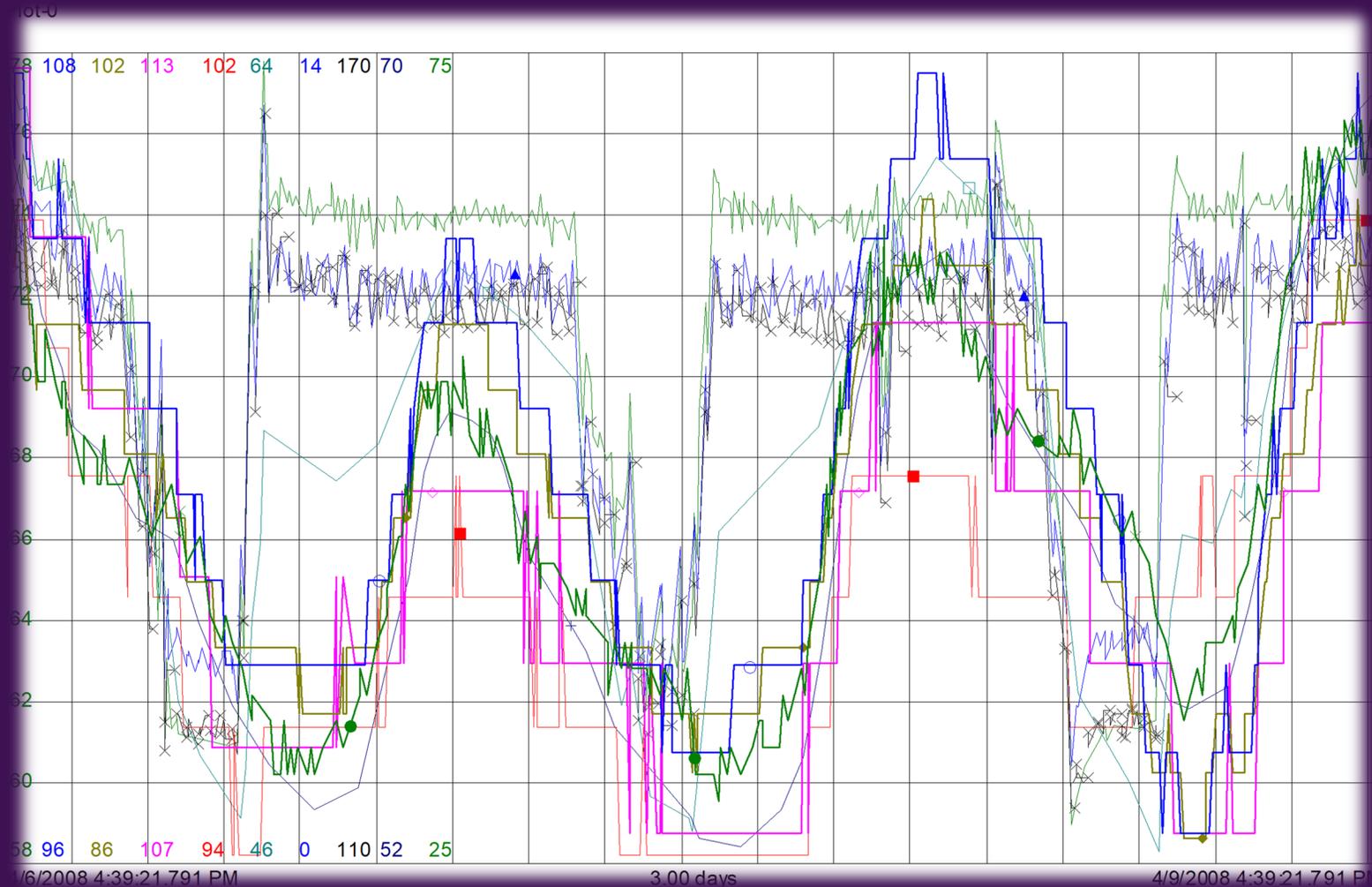


Advanced Pattern Recognition (APR)

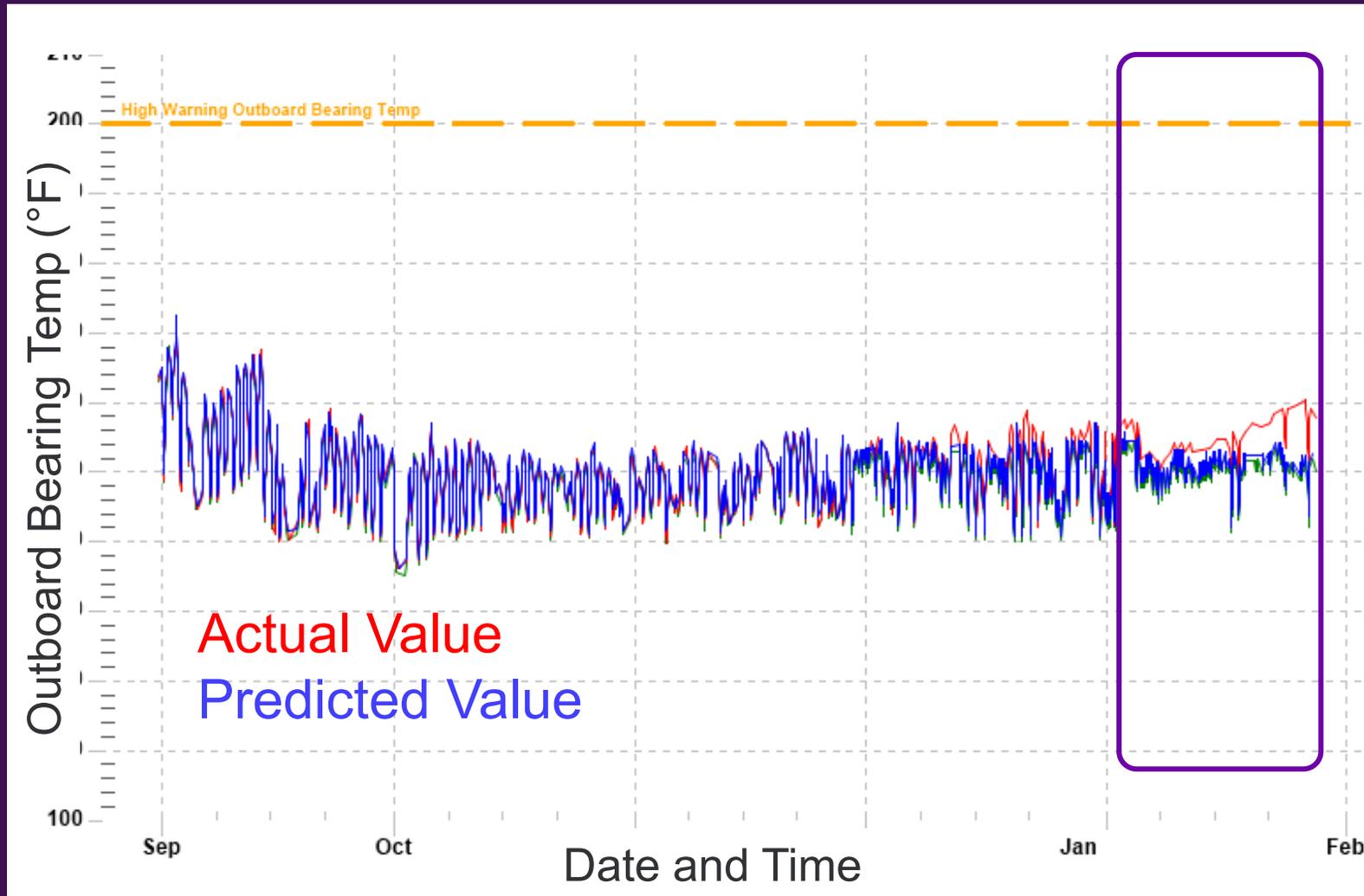


- APR software for online equipment condition monitoring
- Uses existing sensor historical data to describe how an asset normally operates and build a model
- Data driven model
- APR algorithms continuously monitor and identify small deviations in operating behavior in real-time
- Early warning detection of equipment problems
- Offerings: on-premise, cloud, hybrid

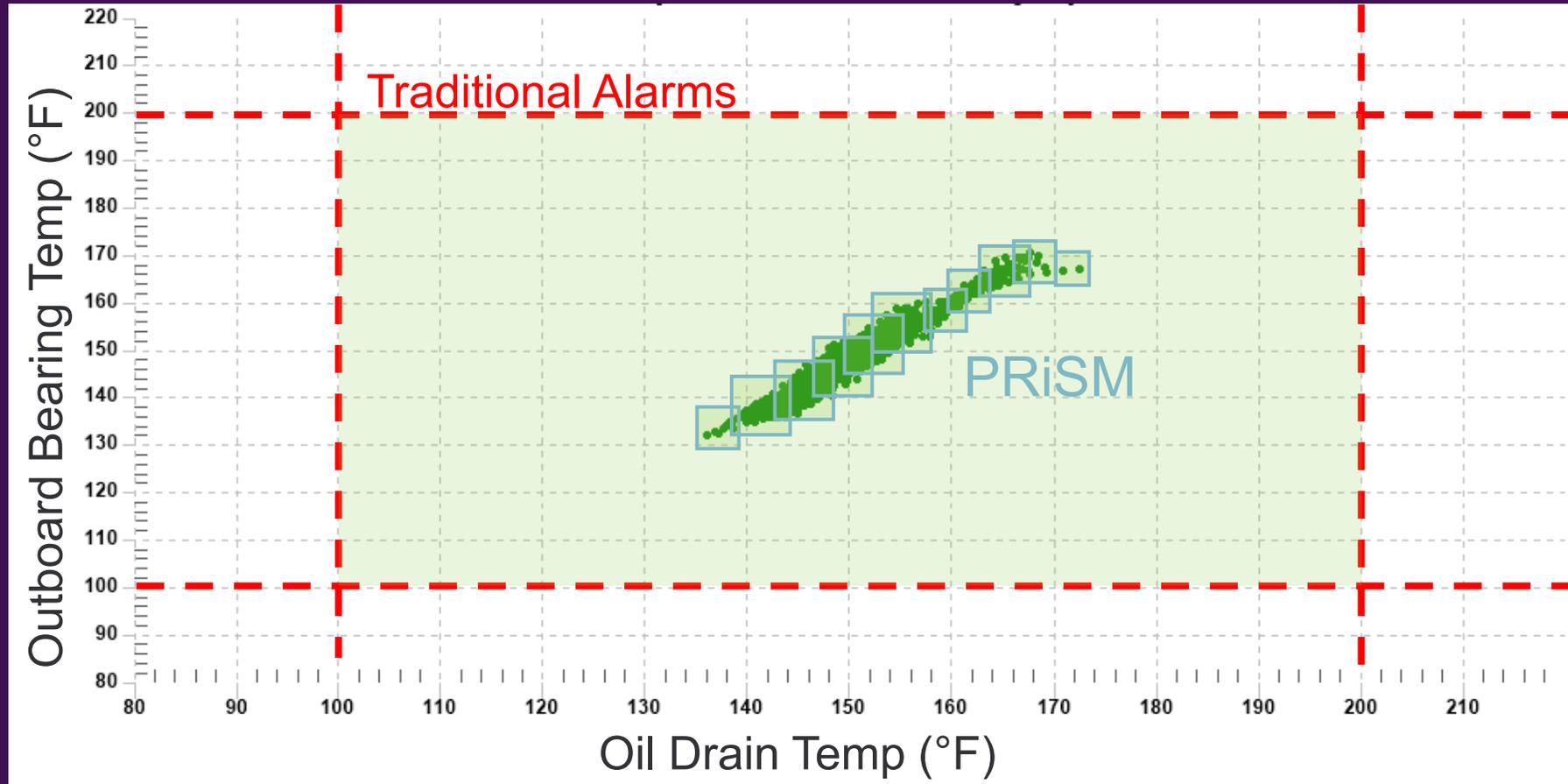
Monitoring Without Advanced Analytics



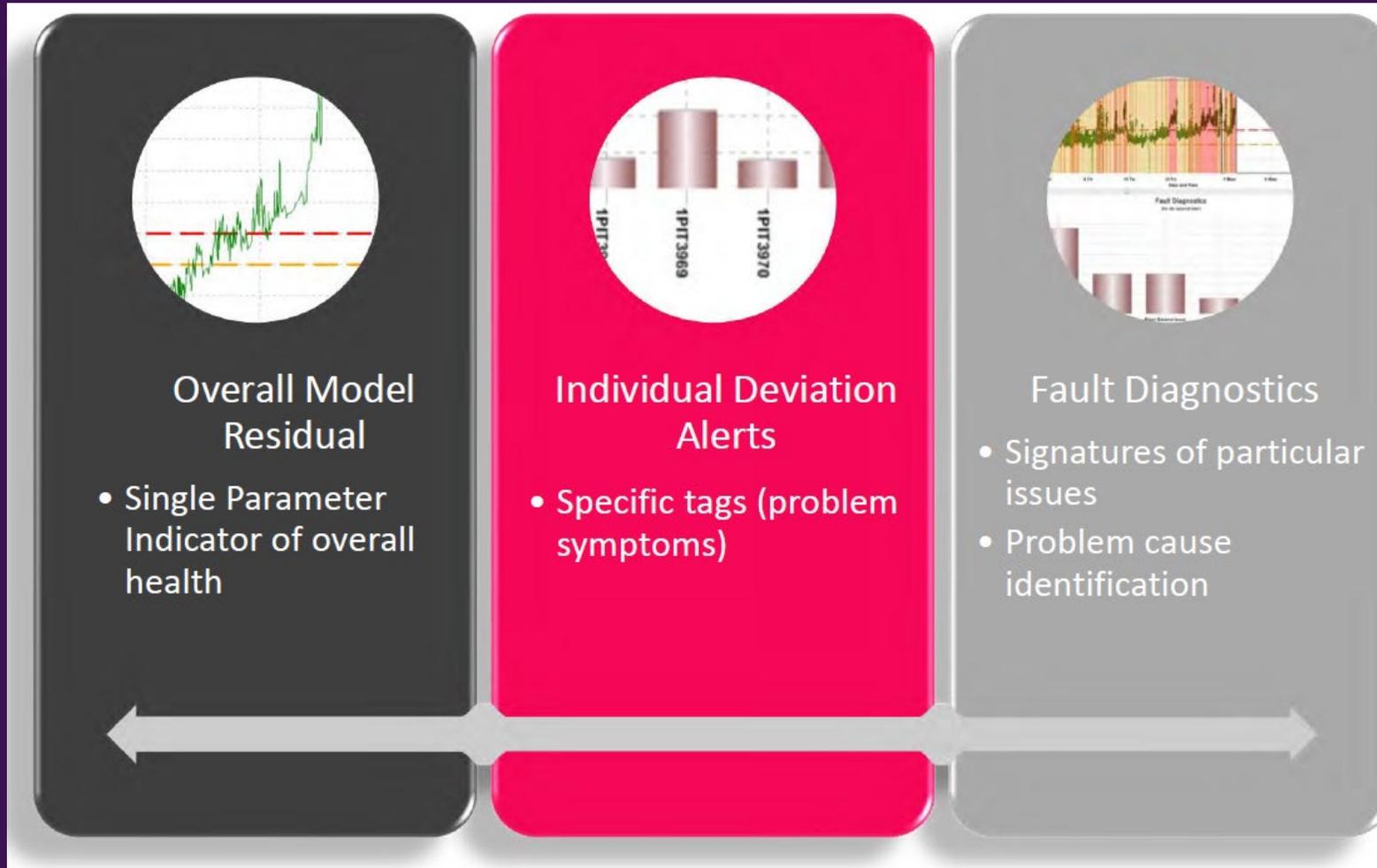
Subtle Changes



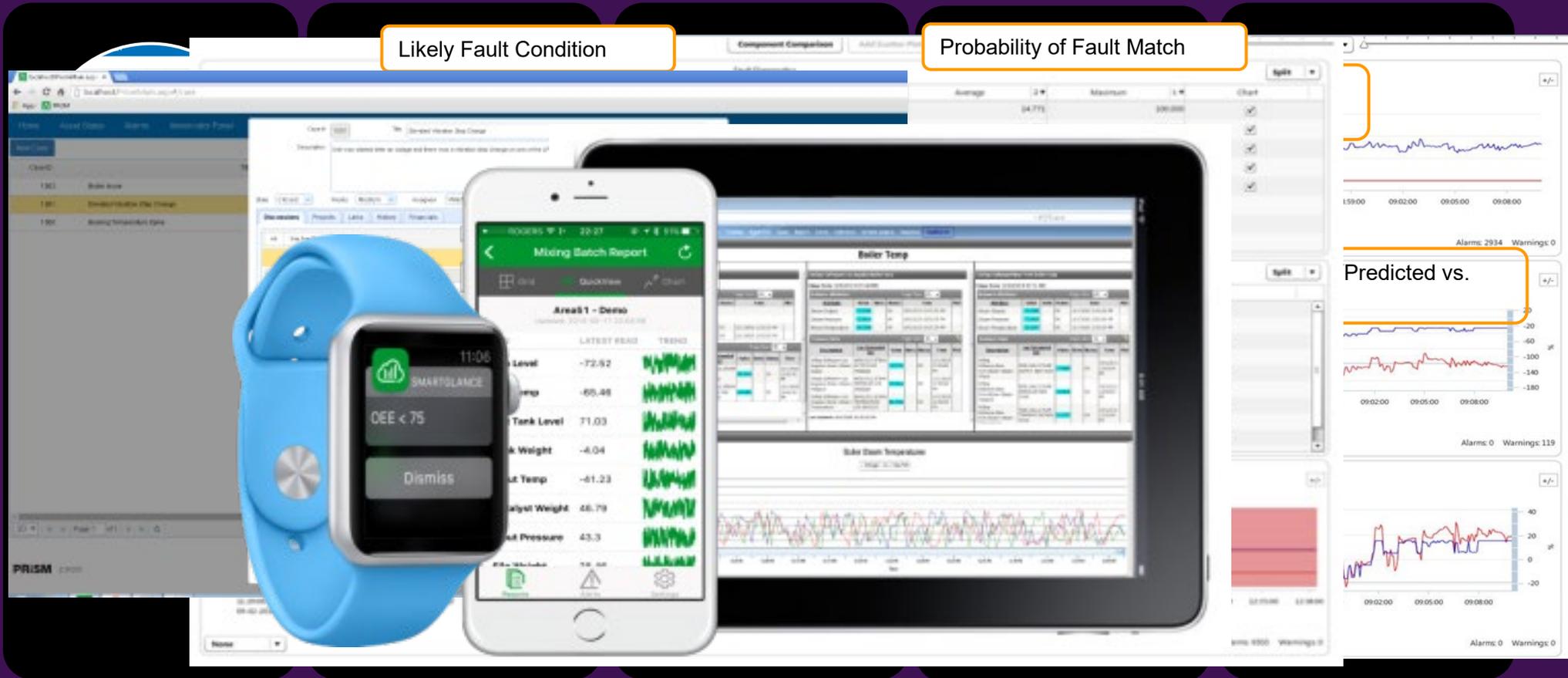
A Smaller Box



Predictive Analytics Indicators



Core Features

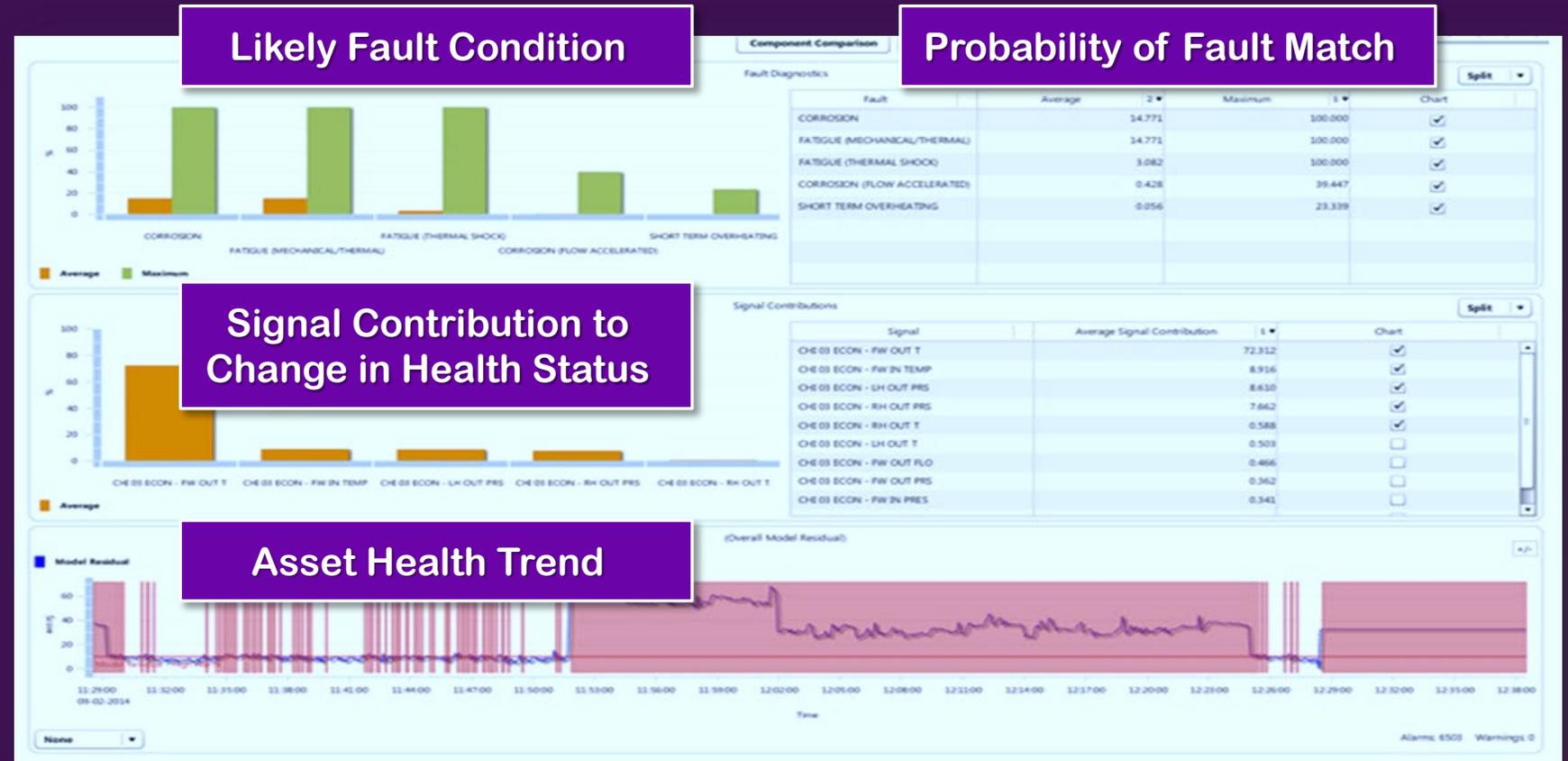


What Defines a Model

- Templates are built around a logical collection of engineering parameters
 - A Process Model would track flows, temperatures, and pressures
 - A Mechanical Model would track vibration, bearing temperatures etc.
- 1 asset may have more than one model
 - Pump: Mechanical, process
 - Gas turbine: compressor, combustion, turbine cooling, mechanical
 - Centrifugal compressor: Process (one model per stage), seal system, mechanical

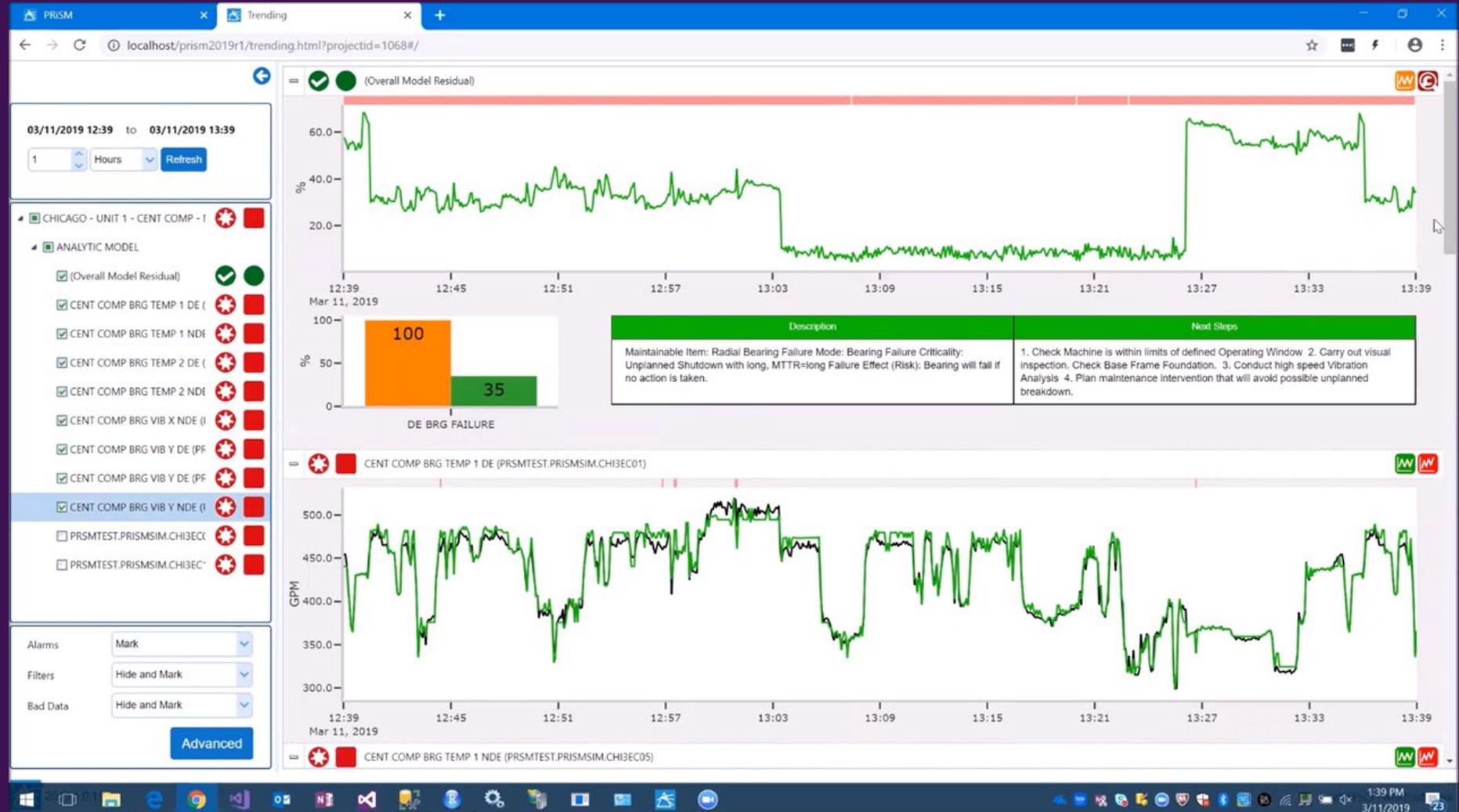
Prescriptive

- Signal impact
- Pinpoint problem
- Root cause analysis
- Upstream/downstream line impacts
- Case management



Prescriptive

- Leveraging library of over 900 asset types and 10,000 faults with prescriptive actions



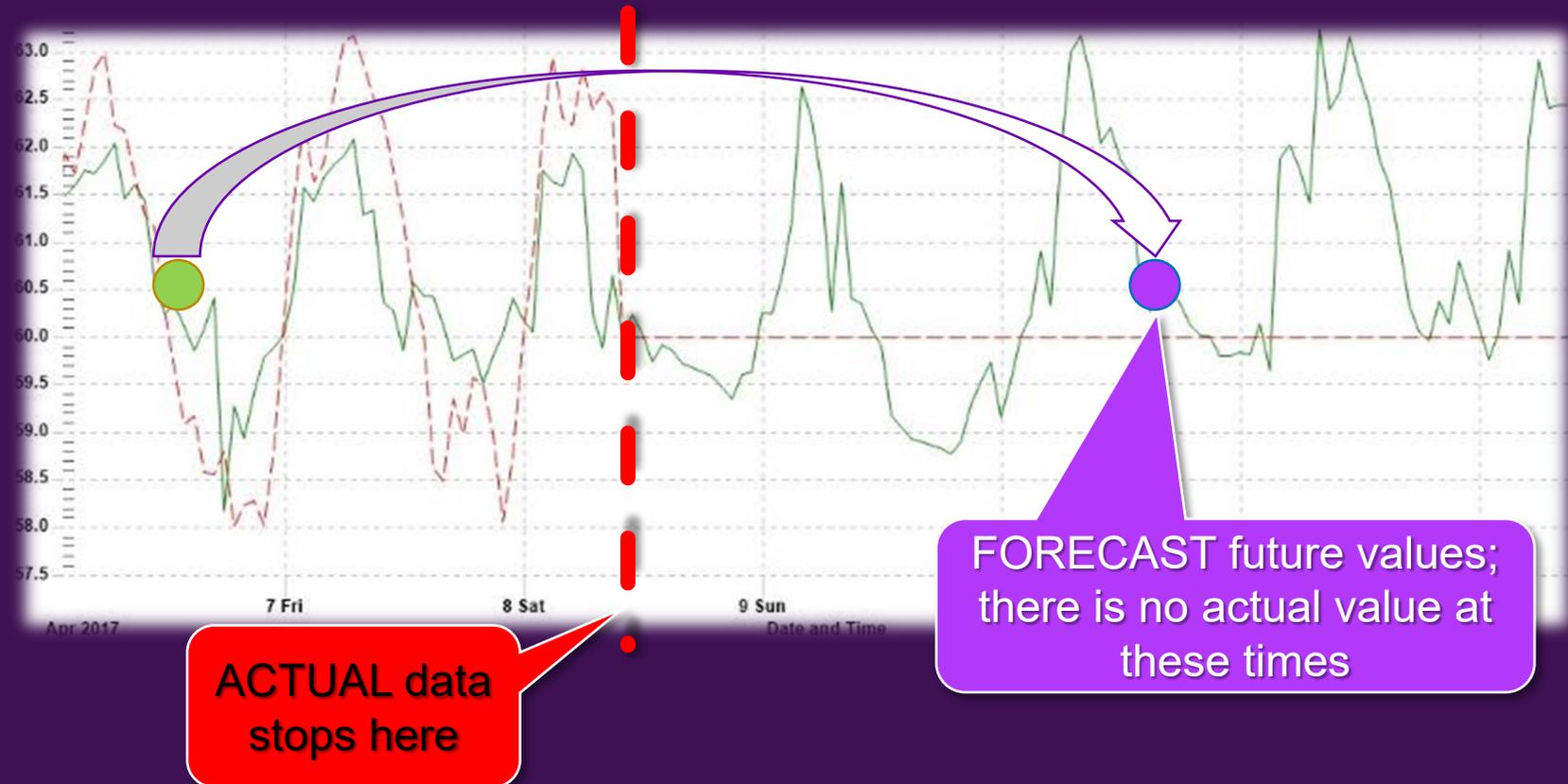
Prognostics

➤ Neural Net

➤ Deep Learning

➤ Easy to Use

- How fast will the situation worsen?
- What-if analysis
- Can you make it to the next planned maintenance outage?





Key Takeaways

- Benefits
 - Reduces unplanned downtime
 - Prevents Equipment Failure
 - Optimizes maintenance strategy
 - Reduces cost and risk for critical assets

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ABOUT AVEVA

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The company's engineering, planning and operations, asset performance, and monitoring and control solutions deliver proven results to over 16,000 customers across the globe. Its customers are supported by the largest industrial software ecosystem, including 4,200 partners and 5,700 certified developers. AVEVA is headquartered in Cambridge, UK, with over 4,400 employees at 80 locations in over 40 countries.

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