

# The Benefits of Component Reliability Data for the Full Well Lifecycle

Colin Smith, Regional Technology Manager, Wood Group

[colin.jb.smith@woodgroup.com](mailto:colin.jb.smith@woodgroup.com) | 281-675-7752

30<sup>th</sup> March 2017

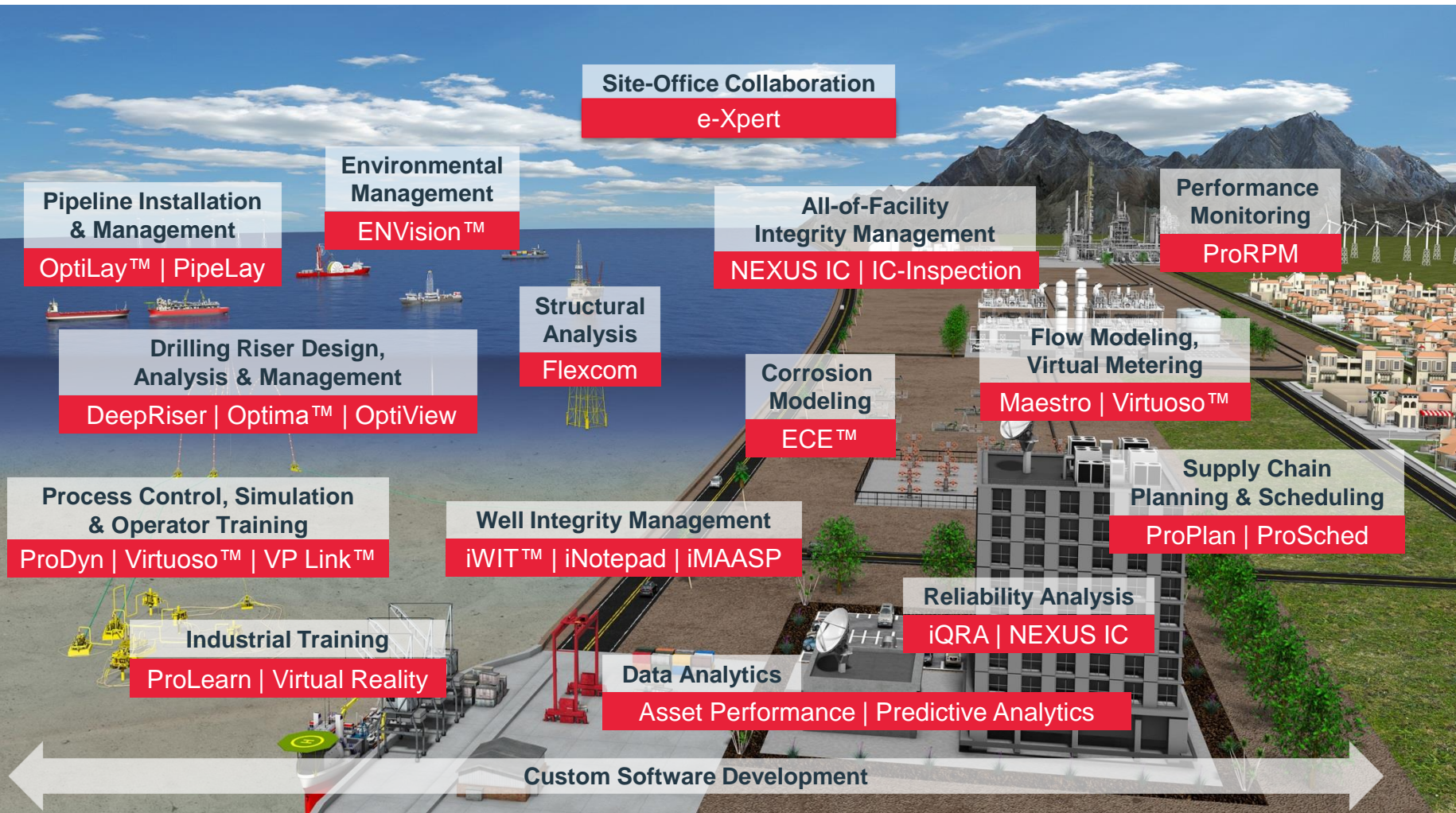


# Agenda



1. Digital Solutions
2. Well Integrity / Well Failure
3. Component Reliability Information
4. iQRA demo
5. Predictive Failure (Machine Learning)

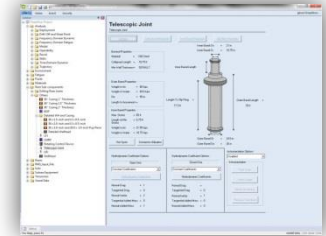
# Digital Solutions for the Asset Lifecycle



# Drilling Riser Design, Analysis & Management

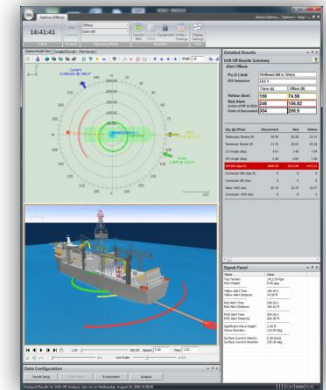
## **DeepRiser™** | Automated Drilling Riser FE Analysis

Optimise the design & analysis of drilling risers & top-tensioned production riser systems. Increase productivity with reduced potential for error – highly automated modelling of specialist components.



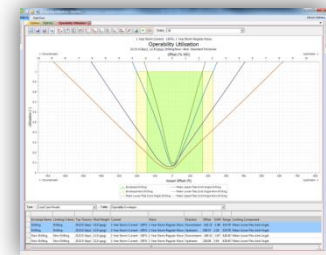
## **Optima™** | Onboard FE Riser Monitoring & Management

Better plan riser operations in prevailing or forecasted met-ocean conditions – eliminate unnecessary conservatism & reduce the risk of incidents.

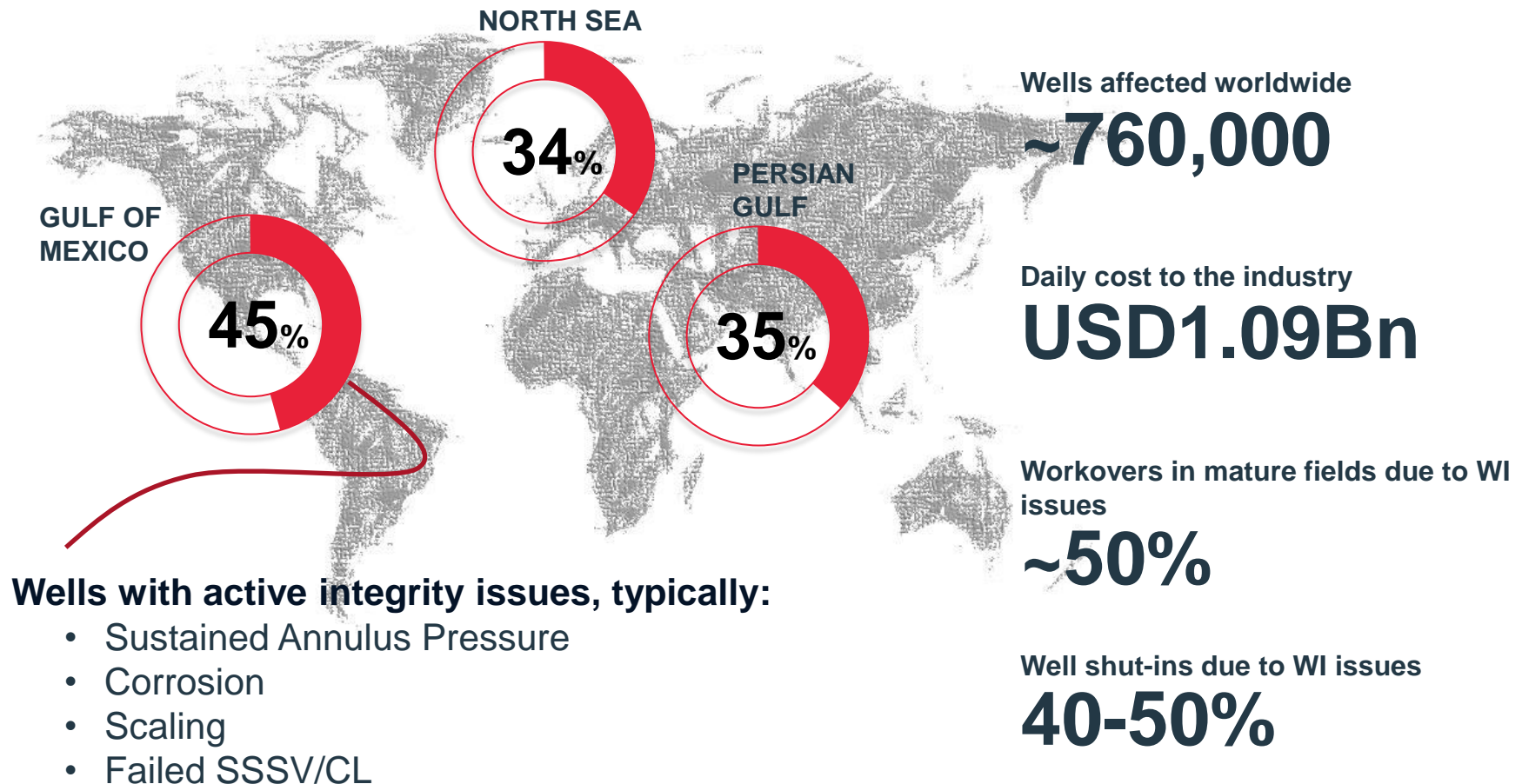


## **OptiView™** | Interactive Riser Analysis

Powerful post-processing – graphical viewing of all results variables in the form of time histories, spectra, envelopes, snapshots & statistics.



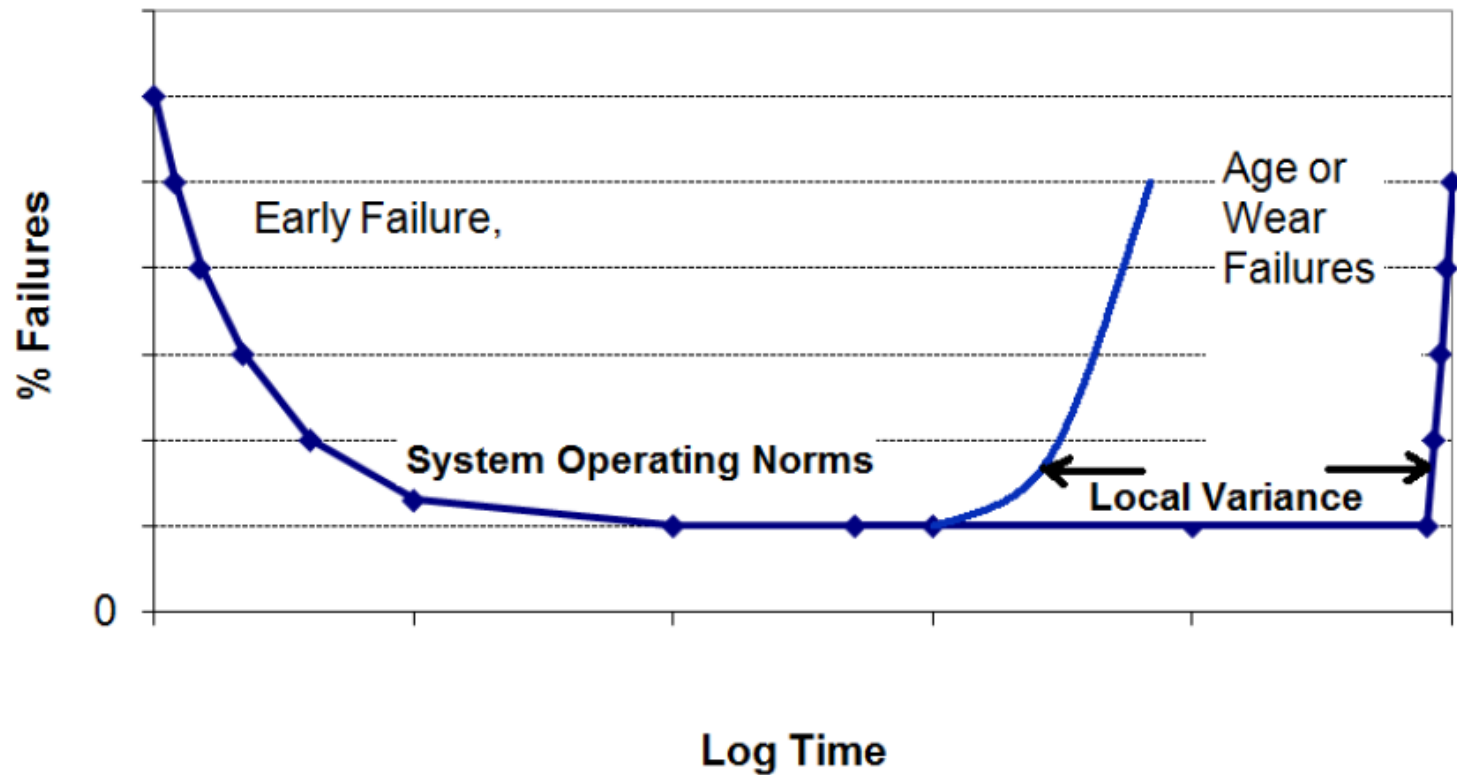
# Well Integrity – a Global Industry Problem





# Well Failure

**Generalized Failure Incidence vs. Time**



# Component Reliability Information

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- Information can help substantially **reduce OPEX**
  - Enabling operators to adopt risk-based inspection frequencies
  - Performance-led maintenance schedules instead of having to contend with corrective remedial maintenance, including urgent well interventions
- Historical information gives insight **for more reliable equipment selection** for new wells.
- Can **improve component performance** by highlighting areas for existing product modification or paving the way for the development of new ones.
- Helps operators to **quantify risk**.



# Component Reliability Information

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- **Global component reliability data** enables operators to understand how their equipment performs where there are different regulations, working cultures, or different standards of equipment manufacturing or operations.
- Making the correct evaluation with **high quality data** delivers huge benefits for operators in driving up the reliability of their equipment over time, and realizing substantial reductions in **total cost of ownership**.
- Component performance (safety critical, high cost impact) allows operators to track **how their assets are performing**. In turn, assess whether that equipment is failing at a rate that is higher than the industry average.







**Benchmark reliability** from your own organization against a global dataset of industry averages

**Assess mean-time-to-failure (MTTF)** for quantitative risk assessments and critical decision making

**Construct queries** to generate an analysis instantly, from anywhere

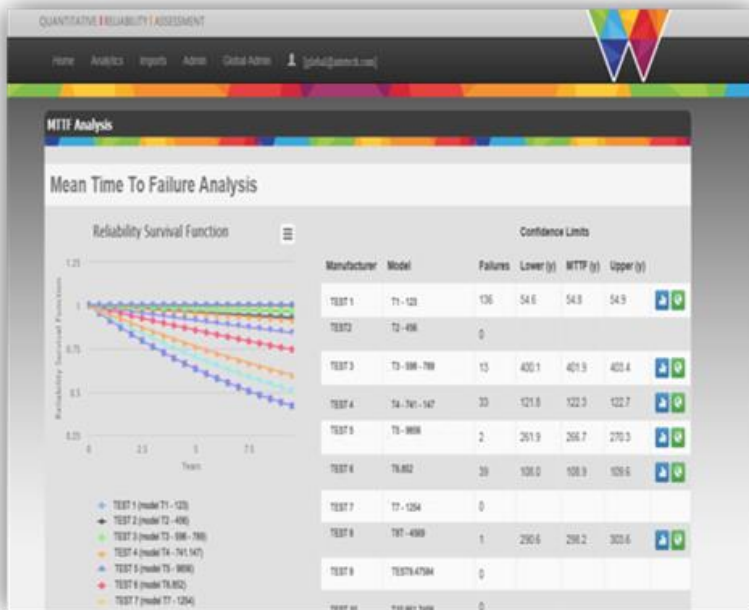
A vehicle to **assess reliability** for all forms of **asset/component type**

**Secure web interface**

**Based on proven  
iWIT functionality**

**Conforms to  
ISO 14224**

# iQRA | Quantifying Risk & Reliability



Quantitative reliability data delivers safeguards to ensuring continuous production

- Establish optimum maintenance intervals
- Reduce corrective maintenance
- Quantify underperformance

QR Assessments are key inputs:

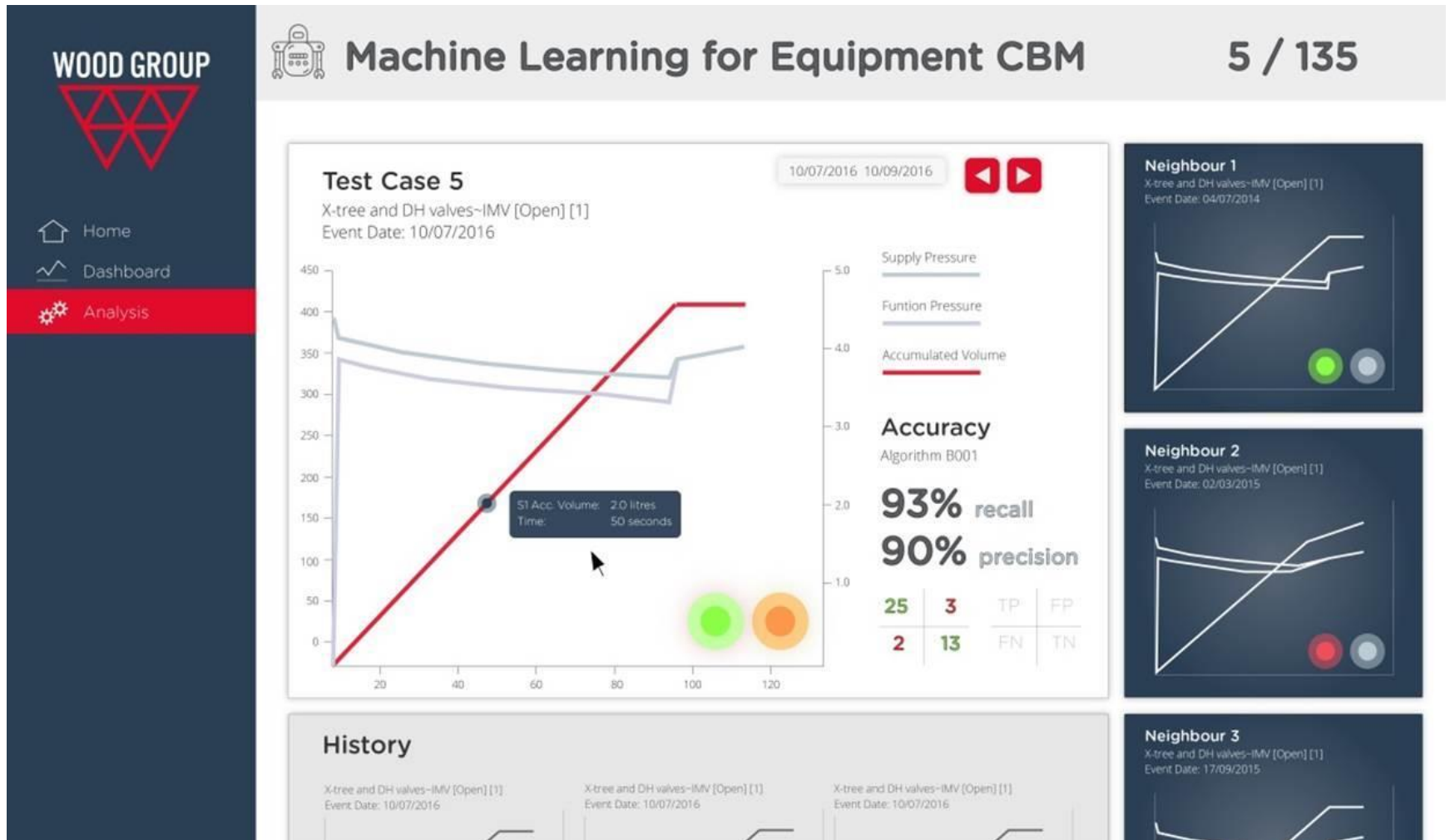
- To derive optimal workover timing
- For candidate selection
- Also materials selection

Automated indication of survivability of well components into the future

Better insight, better decisions



# Predictive Failure using Machine Learning



# Demo

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For iQRA, see <https://www.iqra-database.com/>

To discuss the contents of this presentation or  
arrange a demo please contact Colin Smith  
[colin.jb.smith@woodgroup.com](mailto:colin.jb.smith@woodgroup.com) | 281-675-7752

